



The Effect Of Capital, Financing, And Operational Efficiency On Profitability Through Financing Risk Mediation In Sharia BPR

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ABSTRACT

This study investigates the impact of capital adequacy (CAR), financing (FDR), and operational efficiency (BOPO) on profitability (ROA), with financing risk (NPF) as a mediating variable, in Islamic Rural Banks (BPRS) in East Java during 2019–2023. Using a quantitative approach with panel data regression on 24 BPRS over five years of observation (N = 120), model selection tests (Chow, Hausman, and Lagrange Multiplier) identified the Random Effect Model as the most appropriate estimation method. Mediation analysis was conducted using the Baron & Kenny causal step approach. The findings show that financing risk (NPF) and operational efficiency (BOPO) negatively and significantly affect profitability, while capital adequacy (CAR) and financing (FDR) exert no significant effect. Importantly, NPF demonstrates a full mediating role in the relationship between FDR and ROA, suggesting that financing can enhance profitability only when supported by effective risk management. This study underscores the necessity for Islamic banks to strengthen adaptive risk management and operational efficiency to achieve sustainable profitability.

INTRODUCTION

Banks, including Islamic banks, play an essential role as financial intermediaries by collecting funds from surplus units and channeling them to deficit units (Bongomin et al., 2021; Brei et al., 2020; Buchory, 2023). This function is crucial in supporting both regional and national economic development (Gbadebo, 2024). In Indonesia, Islamic banking has experienced significant growth over the past few decades, driven by increasing public awareness of Sharia-based financial systems and regulatory support from the government (Keuangan, 2023).

One of the key entities in the Islamic banking ecosystem is the Bank Perekonomian Rakyat Syariah (BPRS) or Islamic Rural Bank. BPRS focuses on providing Sharia-compliant financial

services to micro, small, and medium enterprises (MSMEs) (Pasaribu & Indra, 2024; Rahmah & Karem, 2024). Its presence is strategic in expanding Islamic financial inclusion and fostering more equitable economic growth (Cahyaningrum, 2017). Through flexible Sharia-based financing schemes, BPRS also contributes to improving community welfare (Rifa'i, 2017).

Nevertheless, BPRS faces considerable challenges in maintaining profitability amid intense competition with Islamic commercial banks and other Sharia-based financial institutions (Aji & Asmarawati, 2023). Profitability serves as a key indicator of bank performance since it is closely linked to institutional sustainability and competitiveness (Ichsan et al., 2021). Higher profitability enables banks to strengthen their capital base, expand their services, and enhance customer and investor confidence (Gazi et al., 2024). Conversely, low profitability may constrain business expansion and jeopardize the bank's ability to meet its financial obligations.

Data from the Financial Services Authority (OJK, 2023) indicate that BPRS profitability experienced a significant decline during the period 2019–2021. However, since 2022, profitability has shown a strong recovery trend, even surpassing the performance of Islamic Commercial Banks (BUS) and Islamic Business Units (UUS). This phenomenon raises important questions about the main determinants of BPRS profitability, particularly in the midst of evolving economic dynamics and Sharia-based regulatory frameworks.

Several financial factors are considered to influence the profitability of Islamic banks, including capitalization, financing, financing risk, and operational efficiency. Adequate capitalization allows banks to maintain stability and extend financing more effectively (Saleh & Abu Afifa, 2020; Alharbi, 2017). On the other hand, some studies found a negative relationship, suggesting that excessive capital may lead to idle funds, thereby reducing profitability (Tabak et al., 2017; Tran et al., 2016). In terms of financing, the Financing to Deposit Ratio (FDR) serves as an important indicator of bank intermediation. A higher FDR generally increases profitability but also carries the risk of higher non-performing financing (NPF), which can erode profits due to provisioning requirements (Alzoubi, 2018; Belkhaoui et al., 2020).

Financing risk, measured by NPF, has a significant impact on profitability. Some studies report that higher NPF negatively affects the profitability of Islamic banks (Abbas & Ali, 2022; Sriyana, 2015), while other findings suggest that effective risk management and diversified portfolios may mitigate these effects (Ichsan et al., 2021; Madugu et al., 2020). Another factor influencing profitability is operational efficiency, measured by the Operating Expense to Operating Income ratio (BOPO). A lower BOPO ratio reflects better efficiency, which leads to higher profitability (Buchory, 2015; Tan et al., 2017).

Based on the above discussion, this study aims to analyze the effects of capitalization, financing, and operational efficiency on the profitability of BPRS, with financing risk as a mediating variable. This research is expected to contribute theoretically to the literature on Islamic banking performance and provide practical implications for regulators, BPRS managers, and other stakeholders in formulating strategies to enhance the profitability and competitiveness of BPRS in a sustainable manner.

LITERATURE REVIEW

Financial Intermediation Theory

Financial intermediation theory emphasizes the role of banks as intermediaries between surplus and deficit units, reducing transaction costs and information asymmetry (Gbadebo, 2024; Saunders & Cornett, 2021). In the context of Islamic Rural Banks (BPRS), this function is particularly crucial since they provide financing to micro and small enterprises often excluded from conventional banks. The effectiveness of intermediation strongly influences their financial performance, especially profitability.

Prior studies highlight that adequate capital (CAR) strengthens banks' capacity to extend financing, enhances public trust, and acts as a buffer against potential losses, thereby supporting

stable intermediation (Abbas & Ali, 2022; Tabak et al., 2017). Financing (FDR) as the core of intermediation can improve profitability if effectively managed; however, excessive or poor-quality financing increases non-performing financing (NPF), which in turn reduces profitability (Aryati & Purwanto, 2019; Alharbi, 2017). This underlines the mediating role of financing risk, suggesting that the quality rather than the volume of financing determines financial performance.

Operational efficiency (BOPO) is also central to sound intermediation. Efficient cost management allows BPRS to maximize profit margins and sustain operations (Aliyu & Yusof, 2016; Buchory, 2015). Thus, profitability is not only driven by the scale of intermediation but also by effective risk management and operational efficiency (Belkhaoui et al., 2020; Saleh & Abu Afifa, 2020). Overall, literature indicates that successful financial intermediation links internal managerial factors to the financial performance of BPRS.

Bank Profitability

Profitability is a key performance indicator for banks, reflecting their ability to generate profit through operational activities and demonstrating the efficiency and effectiveness of resource management (Alharbi, 2017; Buchory, 2015). In addition to being a benchmark of financial soundness, profitability plays a crucial role in ensuring business sustainability amid operational risks and intense competition. High profitability enables banks to strengthen capital, expand services, and enhance resilience against economic shocks (Aliyu & Yusof, 2016; Saleh & Abu Afifa, 2020).

For Islamic Rural Banks (BPRS), profitability is not only linked to business continuity but also to the effectiveness of their socio-economic role in supporting the MSME sector and promoting Islamic financial inclusion (Rifa'i, 2017; Pasaribu & Indra, 2024). Thus, maintaining profitability becomes a strategic priority in managing BPRS.

Bank profitability is generally measured through three main indicators: Return on Assets (ROA), Return on Equity (ROE), and Net Imbalan (NI). ROA, as the primary indicator used by the Financial Services Authority (OJK), measures a bank's ability to generate profit from its total managed assets (Alharbi, 2017; Saleh & Abu Afifa, 2020). ROE, on the other hand, reflects the rate of return on shareholders' equity and is significant for investors as it illustrates the efficiency of capital management (Aliyu & Yusof, 2016; Abbas & Ali, 2022). Meanwhile, NI serves as a distinctive indicator for Islamic banking, measuring the difference between financing return income and profit-sharing obligations to fund providers. This indicator evaluates the effectiveness of the profit-and-loss sharing model in Islamic finance (Rifa'i, 2017; Aryati & Purwanto, 2019).

Overall, the literature emphasizes that profitability is a fundamental aspect of banking performance, not only to ensure business sustainability but also to support socio-economic functions, particularly in BPRS.

Bank Capital

Capital is a fundamental element in banking operations, serving as the basis for providing credit, financial services, and as a cushion to absorb potential losses arising from inherent risks (Saunders & Cornett, 2021). Regulation places capital as a benchmark for bank soundness and stability, making it a primary concern for the Financial Services Authority (OJK, 2022).

The main objectives of capital are to maintain public trust, ensure business continuity, and comply with prevailing regulations. Banks with strong capitalization are considered more capable of bearing risks, expanding their business, and protecting depositors' funds when facing financial pressures (Tran, Lin, & Nguyen, 2016; Tabak et al., 2017).

The capital structure of banks is divided into Tier 1 Capital (core capital), which reflects real financial strength. This consists of Common Equity Tier 1 (CET1)—such as common shares, retained earnings, and reserves—and Additional Tier 1 (AT1) instruments, which are

subordinated instruments that can be converted when a bank faces distress. Meanwhile, Tier 2 Capital (supplementary capital) includes subordinated bonds, revaluation reserves of fixed assets, and loan loss provisions (Saleh & Abu Afifa, 2020).

Capital adequacy is measured by the Capital Adequacy Ratio (CAR), which is the ratio of capital (Tier 1 + Tier 2) to risk-weighted assets (RWA). CAR reflects a bank's ability to cover risks associated with its assets and serves as a critical indicator of banking resilience in the face of economic uncertainty (Madugu, Ibrahim, & Amoah, 2020; Abbas & Ali, 2022). OJK (2022) emphasizes CAR as the primary instrument in assessing bank capitalization strength.

Overall, the literature highlights that bank capitalization is not merely about the amount of funds, but also about the structure designed to safeguard the stability, sustainability, and security of the banking system.

Bank Financing

Financing is the core activity of banks, functioning as a channel for distributing funds to customers for both consumptive and productive purposes (Alharbi, 2017). In conventional banks, the term "credit" is used, whereas in Islamic banks, the term "financing" is applied, based on profit-and-loss sharing principles and free from riba (Zarrouk, Ben Jedidia, & Moualhi, 2016). This instrument plays a vital role in fostering economic growth by providing capital for individuals and businesses (Cahyaningrum, 2017).

The objectives of bank financing include generating profit (through interest or margin), channeling excess liquidity, and promoting financial inclusion (Pasaribu & Indra, 2024). From the customer's perspective, financing helps meet consumptive needs, working capital, and long-term investments (Rifa'i, 2017). However, financing carries default risks, requiring banks to conduct thorough creditworthiness assessments (Saleh & Abu Afifa, 2020).

In conventional banks, financing generally takes the form of Working Capital Loans, Investment Loans, and Consumer Loans (Buchory, 2015). In contrast, Islamic banks base financing on contracts such as murabahah (sale with margin), mudharabah (profit-sharing with the customer as the manager), and musyarakah (profit-sharing with joint capital contribution) (Belkhaoui, Alsagr, & Van Hemmen, 2020). Each contract has distinct characteristics and profit mechanisms (Alzoubi, 2018).

The efficiency of financing distribution is measured by the Loan to Deposit Ratio (LDR) in conventional banks or the Financing to Deposit Ratio (FDR) in Islamic banks, which indicates the proportion of third-party funds disbursed as financing (Ichsan et al., 2021). The Financial Services Authority (OJK, 2022) establishes FDR as a key indicator to assess the effectiveness of Islamic banks' intermediation function.

Overall, the literature affirms that financing is the core banking function contributing to profitability, financial inclusion, and economic growth, while also demanding sound risk management to maintain asset quality.

Financing Risk

Financing risk is one of the main risks faced by both conventional and Islamic banks, arising when customers fail to meet their obligations as agreed (Saleh & Abu Afifa, 2020; Madugu, Ibrahim, & Amoah, 2020). In conventional banks, this is known as credit risk, while in Islamic banks it is referred to as financing risk (Alzoubi, 2018). This risk directly affects banks' profitability and operational sustainability because it relates to potential losses from disbursed funds (Alharbi, 2017).

The main sources of financing risk include customers' inability to manage their businesses, changes in economic conditions, moral hazard from debtors, and weaknesses in the bank's creditworthiness analysis (Chowdhury & Rasid, 2015). Therefore, banks apply prudential principles such as the 5C analysis (Character, Capacity, Capital, Collateral, Condition of Economy)

or the 5P analysis (Personality, Purpose, Payment, Protection, Prospect) (Saunders & Cornett, 2021).

The level of financing risk is generally measured by the Non-Performing Financing (NPF) ratio in Islamic banks or the Non-Performing Loan (NPL) ratio in conventional banks, which compares problematic financing to total financing (Ichsan et al., 2021). The Financial Services Authority (OJK) sets the maximum NPF/NPL threshold at 5% as the benchmark of a bank’s sound condition (OJK, 2022). High NPF levels negatively impact financial performance and may undermine public trust (Buchory, 2023).

To mitigate financing risk, banks employ strategies such as requiring collateral, diversifying portfolios, establishing early warning systems, and implementing comprehensive risk management (Abbas & Ali, 2022). Specifically, in Islamic banks, selecting financing contracts that match customers’ business characteristics also serves as an important tool to reduce risk (Belkhaoui, Alsagr, & Van Hemmen, 2020). Effective risk management ensures that the intermediation function of banks remains productive, secure, and contributes to the stability of the financial sector (Gazi et al., 2024).

Operational Efficiency

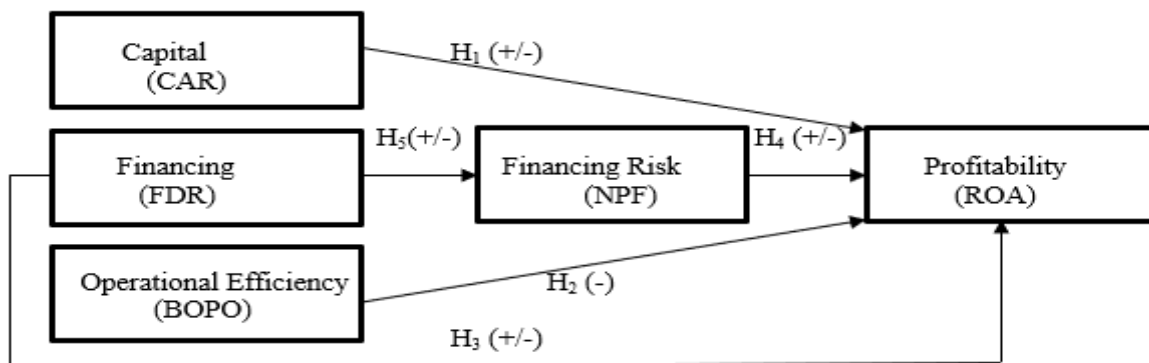
Operational efficiency is a fundamental aspect of maintaining the financial soundness and long-term performance of banks, both conventional and Islamic. The primary indicator used to measure it is the Operating Expenses to Operating Income ratio (BOPO), which reflects the proportion of operating costs relative to operating income. The lower the BOPO value, the more efficient the bank is in managing its resources, since operating expenses do not significantly erode income (Rizal & Rofiqo, 2020; OJK, 2022).

Operational efficiency is crucial because a high BOPO indicates inefficiency, which can suppress bank profitability. Buchory (2015; 2023) emphasizes that low efficiency negatively impacts a bank’s ability to generate profit due to the shrinking margin between income and costs. Cross-country studies also show that operational efficiency is a major determinant of profitability. Mehzabin et al. (2023) found that efficient banks tend to maintain stable financial performance under economic pressure, while Aliyu & Yusof (2016) highlight that cost efficiency is key to the long-term profitability of Islamic banks.

In the context of Islamic Rural Banks (BPRS) in Indonesia, Aryati & Purwanto (2019) and Aji & Asmarawati (2023) identified operational efficiency as a primary determinant of profitability. However, high BOPO often becomes a challenge for BPRS due to limited operational scale and their focus on community-based financing.

Thus, operational efficiency not only reflects internal effectiveness but also demonstrates the managerial capacity of banks in allocating resources. Controlling BOPO is a critical prerequisite for business sustainability, enhancing competitiveness, and expanding financial inclusion in society.

Figure 1. Research Framework



The Effect of Capital on Profitability

Capital is the primary foundation for maintaining stability, public trust, and a bank's ability to perform its intermediary function. The Capital Adequacy Ratio (CAR) serves as a risk buffer, protecting banks from potential losses while enabling financing expansion (Saunders & Cornett, 2021).

Empirically, the majority of studies show that CAR has a significant positive effect on profitability. Strong capital increases investor and depositor confidence, thereby strengthening bank competitiveness (Aji & Asmarawati, 2023; Rizal & Rofiqo, 2020; Ichsan et al., 2021). However, Gazi et al. (2024) found different results, highlighting that excess capital actually reduces profitability because it is not channeled productively. This means that the effect of CAR depends on how effectively the capital is utilized.

H1: Capital Adequacy Ratio (CAR) has a significant effect on profitability (ROA) in Islamic rural banks.

The Effect of Operational Efficiency on Profitability

Operational efficiency is a key indicator of bank health. The Operating Expense to Operating Income (BOPO) ratio reflects the level of efficiency; the lower the BOPO, the higher the bank's ability to generate profits. A high BOPO indicates inflated operating costs, thus depressing profitability (Rizal & Rofiqo, 2020).

Empirical studies consistently support this. Aji & Asmarawati (2023) and Aryati & Purwanto (2019) found BOPO to have a significant negative effect on the profitability of Islamic rural banks (BPRS). Cross-country research (Aliyu & Yusof, 2016; Mehzabin et al., 2023) also confirms operational efficiency as a key determinant of Islamic bank profitability, demonstrating a consistent relationship across various contexts.

H2: Operational Efficiency (BOPO) has a significant negative effect on profitability (ROA) in Islamic rural banks.

The Effect of Financing Risk on Profitability

Financing risk, reflected in Non-Performing Financing (NPF), is a major challenge for Islamic banks. A high NPF means a high number of non-performing loans, resulting in banks losing profit-sharing income and requiring banks to increase their Allowance for Impairment Losses (CKPN). This directly depresses profitability (Alharbi, 2017).

Empirically, almost all studies support a significant negative effect of NPF on profitability (Belkhaoui et al., 2020; Rizal & Rofiqo, 2020; Ichsan et al., 2021). Therefore, maintaining financing quality is key to sustainable Islamic bank profits.

H3: Financing Risk (FDR) has a significant effect on profitability (ROA) in Islamic rural banks.

The Effect of Financing on Profitability

Financing is the core of Islamic bank intermediation and a primary source of revenue. The Financing to Deposit Ratio (FDR) illustrates the extent to which third-party funds are channeled into productive financing. An optimal FDR increases profitability due to higher margins or profit-sharing ratios (Rifa'i, 2017).

Several studies support a significant positive effect of financing on profitability (Aji & Asmarawati, 2023). However, conflicting results emerged from research by Rizal & Rofiqo (2020) and Belkhaoui et al. (2020), which found insignificant or even negative effects. This occurs when financing expansion is not balanced with risk management, thus triggering an increase in the NPF.

H4: Financing Risk (NPF) has a significant effect on profitability (ROA) in Islamic rural banks.

Financing Risk as a Determinant of Profitability

Conceptually, a high NPF reduces profitability by increasing reserve costs and reducing financing income (Abdul-Rahman & Nor, 2016). However, the impact can vary depending on the contract structure. For example, murabahah-based financing is more stable because its income is in the form of a fixed margin, unlike mudharabah/musyarakah, which are high-risk (Hasan & Dridi, 2011; Nasution et al., 2020). Thus, the type of contract can weaken or strengthen the effect of NPF on profitability.

H5: Financing Risk (FDR) has a significant effect on Financing Risk (NPF) in Islamic rural banks.

The Effect of Financing on Financing Risk

Logically, the larger the financing volume, the higher the potential risk of default. Widagdo & Gunardi (2016) emphasize that financing without adequate feasibility assessment can increase NPF. However, Rosavina et al. (2019) showed the opposite result: financing can actually reduce NPF if sector diversification is implemented and strict risk management is implemented. This confirms that the influence of financing on risk is highly dependent on governance and mitigation strategies.

H6: Financing Risk (NPF) mediates the effect of Financing Risk (FDR) on profitability (ROA) in Islamic rural banks.

METHODS

This research is a quantitative study using a causality approach, investigating the possibility of a causal relationship between certain factors that may cause the symptoms being investigated and between variables (Cooper & Schindler, 2014: 127). Based on its data source, this study uses secondary data in the form of ratio data available in the financial reports of each sample bank.

The population in this study is all 25 Sharia BPRs registered with the East Java Financial Services Authority (OJK) during the 2019-2023 period. The population list represents Sharia Rural Banks in East Java for the 2019-2023 period. The sampling technique used was purposive sampling, which selects samples based on specific criteria relevant to the research objectives. The data analysis technique used was Panel Data Regression.

RESULTS

Data Analysis

Variable Description Test

Table 1. Variable Description Test

Variable	Mean	Median	Maximum	Minimum	Std. Dev.
ROA (%)	2,0674	2,0000	25,8800	-15,9100	4,5296
CAR (%)	41,8655	35,1150	198,5300	3,9200	29,1794
FDR (%)	95,9286	91,3700	371,1500	37,0600	37,3805
NPF (%)	7,3155	6,2050	30,3400	0,0100	5,8748
BOPO (%)	91,4102	85,4900	312,8700	42,3000	32,7739

Source: Author, 2025

Based on Table 1. the following points can be elaborated: Profitability (ROA). The average profitability (ROA) of BPRS is 2.07 percent, which still meets the OJK minimum standard of 1.5 percent. However, this value reflects relatively low performance since the profit margin on assets is very thin. The variation across BPRS is quite high, with a standard deviation of 4.53, indicating significant differences in profitability performance. This can be seen from the highest ROA

achieved by PT BPRS Tanmiya Artha in 2023 at 25.88 percent, in contrast to PT BPRS Al Mabruur Babadan in 2021, which recorded -15.91 percent. These findings demonstrate that while some BPRS are able to manage assets productively, others fail to sustain profitability and consequently incur losses.

Capitalization (CAR). The average Capital Adequacy Ratio (CAR) is 41.87 percent, far above the OJK minimum requirement of 12 percent, indicating that BPRS generally has a very strong capital buffer. However, an excessively high value may also suggest idle capital that is not productively channeled into financing. The large standard deviation of CAR (29.18) highlights significant disparities among BPRS. For example, PT BPRS Unawi Barokah recorded the highest CAR of 198.53 percent in 2022, whereas PT BPRS Al Mabruur Babadan only reached 3.92 percent in 2021, falling below the minimum requirement. This condition underscores fundamental differences in the effectiveness of capital utilization among BPRS.

Financing (FDR). The average Financing to Deposit Ratio (FDR) is 95.93 percent, within OJK's healthy range of 80–110 percent, meaning that BPRS are generally active in channeling third-party funds into financing. However, the variation is very high, with a standard deviation of 37.38. The maximum value was recorded by PT BPRS Bakti Artha Sejahtera in 2019 at 371.15 percent, reflecting extremely aggressive financing expansion. In contrast, PT BPRS Mitra Mentari Sejahtera in 2023 recorded only 37.06 percent, indicating low effectiveness in fund distribution. This disparity suggests that the intermediation function of BPRS remains inconsistent across institutions.

Financing Risk (NPF). The average Non-Performing Financing (NPF) of BPRS is 7.32 percent, exceeding OJK's maximum threshold of 5 percent, which indicates asset quality problems in financing portfolios. The high financing risk serves as a major obstacle to BPRS profitability. A standard deviation of 5.87 shows considerable variation across BPRS. At the extreme, PT BPRS Mandiri Mitra Sukses in 2020 recorded an NPF of 30.34 percent, a very high figure that threatens business sustainability. Conversely, PT BPRS Ngawi in 2019 recorded an almost zero NPF of 0.01 percent. These facts highlight sharp differences in financing risk management among BPRS.

Operational Efficiency (BOPO). The average Operating Expense to Operating Income ratio (BOPO) of BPRS is 91.41 percent, higher than OJK's ideal threshold of 90 percent, indicating that most BPRS are still inefficient in managing their operating costs. The relatively high standard deviation of 32.77 reflects wide disparities in efficiency among BPRS. The minimum value was recorded by PT BPRS Mitra Mentari Sejahtera in 2020 at 42.30 percent, demonstrating a very high level of efficiency. In contrast, PT BPRS Unawi Barokah in 2022 recorded an extreme BOPO of 312.87 percent, meaning its operating expenses far exceeded its revenues. This sharp contrast reinforces the fact that operational efficiency remains a fundamental challenge for many BPRS.

Panel Data Model Selection

Table 2. Chow Test, Hausman Test, and Lagrange Multiplier Test

Test	Hypothesis	Value	Result
Uji Chow	H0: Accepted if prob. Cross Section F > 0.05 (Select CE) H1: Accepted if prob. Cross Section F < 0.05 (Select FEM)	48,368934 (0,0006)	FEM
Uji Hausman	H0: Accepted if probability > 0.05 H1: Accepted if probability < 0.05 (Select FEM)	7,284732 (0,1216)	REM
Uji Lagrange Multiplier	H0: No effect	Breusch-Pagan: 7.355813 (0.0067)	REM

Source: Author, 2025

Chow Test (Common Effect vs. Fixed Effect)

The Chow test is used to determine whether the Fixed Effect model is more appropriate than the Common Effect model. The test results show a p-value of $0.0006 < 0.05$. This indicates a significant difference between the CEM and FEM models, indicating that the Fixed Effect model is more appropriate than the Common Effect model.

Hausman Test (Fixed Effect vs. Random Effect)

The Hausman test is conducted to compare the Fixed Effect Model (FEM) and the Random Effect Model (REM). The test results show a Chi-square p-value of $0.1216 > 0.05$. This indicates that the Random Effect model is more appropriate than the Fixed Effect model.

Lagrange Multiplier Test (Common Effect vs. Random Effect)

The Lagrange Multiplier (LM) test is used to test whether the Random Effect model is better than the Common Effect model. The Breusch-Pagan test results show a p-value of $0.0006 < 0.05$. This indicates a significant random effect in the panel data, thus rejecting the Common Effects model and declaring the Random Effects Model superior.

Based on the three tests above, it can be concluded that the best estimation model in this study is the Random Effects Model (REM). This model was chosen because it is statistically more appropriate for accommodating random variation between BPRS units while controlling for potential bias due to unobserved heterogeneity. REM also allows for more efficient estimation in situations where individual effects are uncorrelated with the independent variable. This model will be used to examine the relationship between the independent variables (CAR, FDR, NPF, BOPO) and the dependent variable (ROA), and will serve as the basis for hypothesis testing and mediation testing in the following sections.

Panel Regression Test Without Mediation

Table 3. Panel Regression Result

Variable	Coefficient	Std. Error	t-Statistik	t-Table	HA
Constant (C)	6,5970	1,4407	4,5788		
CAR	0,0017	0,0125	0,1374	+/-1,983	Not significant
FDR	0,0283	0,0091	3,1026	+/-1,983	Significant positive
NPF	-0,0252	0,0692	-0,3645	+/-1,983	Not significant
BOPO	-0,0780	0,0121	-6,4329	-1,695	Significant negative
R-squared	0,3959				
F-statistic	17,2041				Significant
Prob(F-statistic)	0,0000				

Source: Author, 2025

The estimation results show that of the four independent variables tested, only two variables have a statistically significant effect on ROA, namely: The CAR (Capital) coefficient is 0.0017. This means that every 1% increase in CAR is predicted to increase ROA by 0.0017%, assuming other variables remain constant. The calculated t-value of 0.1374 falls between the t-table values of +/-1.983. Therefore, the effect of capital on profitability is insignificant, thus rejecting H1.

The FDR (Financing) coefficient is 0.0283. This means that every 1% increase in FDR is predicted to increase ROA by 0.0283%, assuming other variables remain constant. The calculated t-value of 3.1026 is greater than the t-table value of +1.983. Thus, the effect of financing on profitability is significantly positive, thus H2 is accepted.

The NPF (Financing Risk) coefficient is -0.0252. This means that every 1% increase in NPF is predicted to decrease ROA by 0.0252%, assuming other variables remain constant. The

calculated t-value of -0.3645 lies between the t-table values of +/-1.983. Therefore, the effect of financing risk on profitability is insignificant, thus H3 is rejected.

The BOPP (Operational Efficiency) coefficient is -0.0780. This means that every 1% increase in BOPO is predicted to decrease ROA by 0.0780%, assuming other variables remain constant. The calculated t-value of -6.4329 is smaller than the t-table value of -1.695. Thus, the effect of operational inefficiency on profitability is significantly negative, thus H4 is accepted.

The R-squared value of 0.3959 indicates that approximately 39.59% of the variation in ROA can be explained by the CAR, FDR, NPF, and BOPO variables, while the remainder is explained by other factors outside the model. The F-statistic value of 17.2041 with a p-value of 0.000 indicates that the overall model is significant and suitable for analysis.

Panel Regression Test with Mediation

Table 4. NPF Regression Results (Random Effect)

Variable	Coefficient	SE	t-Statistics	t-Table	Conclusion
C	4,2025	1,5372	2,7337		
FDR	0,0324	0,0129	2,5038	+/-1,983	Significant Positive

Source: Author, 2025

Table 5. Sobel Test Results

Variable	Coefficient	SE	t-Statistics	t-Table	Conclusion
FDR → NPF (a)	0,0324	0,01296	2,5038	+/-1,983	Significant Positive
NPF → ROA (b)	-0,0252	0,0692	-0,3645	+/-1,983	Not Significant
FDR → NPF → ROA	-0,0008		0,3400	+/-1,983	Not Significant
FDR → ROA (c)	0,0283	0,0091	3,1026	+/-1,983	Significant Positive

Source: Author, 2025

These findings confirm that the higher the financing disbursement ratio (FDR), the greater the potential for non-performing loans (NPF), which in turn reduces rural bank profitability (ROA). This is consistent with banking risk management theory, which states that financing expansion can boost profits, but without adequate risk management, it will actually increase non-performing loans. Therefore, these results provide important empirical evidence that financing risk management needs to be strengthened to maintain the sustainability of rural bank financial performance.

DISCUSSION

Based on the results of the analysis, it shows that Capital Adequacy Ratio (CAR) has no significant effect on profitability. The research findings, which show that CAR (Capital Adequacy Ratio) does not significantly affect profitability (ROA) of Islamic rural banks (BPR Syariah), confirm that the amount of capital held is not always a determining factor in generating profits. In theory, capital is a crucial element in maintaining bank health because it serves as a risk buffer and supports financing expansion. However, in practice at Islamic rural banks (BPR Syariah), high capital is often not accompanied by improved intermediation performance, thus limiting its impact on profits. Descriptive data provides a clear picture: the average CAR of Islamic rural banks reached 41.87%, well above the OJK minimum requirement of 12%. In fact, the maximum CAR value was 198.53% at PT BPRS Unawi Barokah in 2022, while the lowest was only 3.92% at PT BPRS Al Mabur Babadan in 2021. This wide variation indicates that some Islamic rural banks

have excess capital, while others are at the minimum limit. However, this difference is not directly proportional to the ROA level, which averages only 2.07%, with quite high variation (standard deviation of 4.53%). This indicates that high capital does not guarantee a bank's ability to utilize it productively to increase profits.

The characteristics of Islamic rural banks (BPR Syariah) in Indonesia also explain this phenomenon. As microfinance institutions operating in the local market segment with limited product offerings, networks, and business diversification, their ability to disburse funds is heavily influenced by the quality of financing, operational efficiency, and the economic conditions of the surrounding community. Large amounts of capital are often unable to be fully channeled into productive assets due to limited intermediation capacity, prudence in financing disbursement, or low demand for viable financing. Consequently, despite having high capital levels, banks are not necessarily able to convert this into increased profitability. This finding also aligns with several previous studies that suggest the relationship between CAR and profitability is not always significant. Ichsan et al. (2021) and Gazi et al. (2024) showed that in small-scale banks, high capital plays a more of a stability factor than a profit driver. This is also evident in the context of Islamic rural banks (BPR Syariah), where the primary function of capital is to ensure resilience to risk, while profitability is largely determined by cost efficiency and the success of disbursing productive financing. Therefore, it can be concluded that high CAR in Islamic rural banks reflects regulatory compliance and the strength of the capital structure, rather than being the primary factor in increasing ROA. The profitability of Islamic rural banks is more determined by the bank's ability to utilize this capital through effective financing distribution strategies, risk management, and increased operational efficiency.

The second result indicates a positive influence of financing on profitability. The results of this study indicate that financing distribution, as measured by the Financing to Deposit Ratio (FDR), has a significant positive effect on the profitability (ROA) of Islamic rural banks (BPR Syariah). This finding confirms that the more optimally Islamic rural banks channel third-party funds into financing, the greater the margins and profit sharing they achieve, thus increasing profits. Within the framework of financial intermediation theory, a bank's primary role is to collect funds from the public and channel them back into the productive sector. The effectiveness of this intermediary role is reflected in the FDR level: the higher the ratio, the better the bank's ability to perform its intermediary function. Descriptive data supports this, with an average FDR of Islamic rural banks of 95.93%, indicating that banks are generally able to channel almost all of the funds collected. This positive finding aligns with research by Sudarsono (2017), which found that an increase in the FDR of Islamic banks significantly drives ROA, because the greater the third-party funds channeled as financing, the greater the margin income earned. Pratama (2018) also showed that the FDR positively impacts the profitability of Islamic rural banks (BPRS), emphasizing that financing is the primary source of income. Similarly, Andriyanto (2019) emphasized that an effective intermediation function is reflected in a high FDR, which directly impacts profitability. Even at the Islamic commercial bank level, Husna and Satria (2020) demonstrated that the FDR has a significant positive effect on ROA, confirming that this finding is consistent across various Islamic institutional contexts.

The context of Islamic rural banks (BPRs) in Indonesia further strengthens this relationship. Unlike Islamic commercial banks, which have diversified products (investment, treasury, and fee-based income), the primary source of income for Islamic rural banks is the margin from financing the MSME sector. This means that the profitability of Islamic rural banks is highly dependent on the extent to which third-party funds can be allocated to productive financing. Therefore, the significant positive result in this study reflects that the higher the FDR, the greater its contribution to increasing ROA, as long as it is managed with prudent principles to control financing risks. Overall, this study confirms the view that FDR is one of the most crucial determinants of BPR Syariah profitability. This finding is consistent with financial intermediation theory and supported by previous research findings (Sudarsono, 2017; Pratama, 2018;

Andriyanto, 2019; Husna & Satria, 2020). It also confirms that optimizing fund intermediation into productive financing is the primary path to improving BPR Syariah's profit performance in Indonesia.

The next result is that there is no significant influence of financing risk on profitability. The results of this study indicate that financing risk, measured by Non-Performing Financing (NPF), does not have a significant effect on the profitability (ROA) of Islamic Rural Banks (BPRS). Theoretically, a high NPF should reduce profitability because it decreases margin income and increases provisions for financing losses. However, in the context of BPRS, this effect does not appear to be significant, suggesting the presence of mitigation factors and distinctive risk management patterns. This finding can be explained by several characteristics specific to BPRS in Indonesia. First, although in theory non-performing financing should erode income due to the need to establish impairment reserves, in practice BPRS often manage to offset this impact through profits from their financing portfolios. The dominance of murabahah contracts plays a role, as the profit margin in this contract is predetermined, allowing income recognition even when financing later becomes problematic. Generally, murabahah financing carries high risk, but the relatively large margins or profit-sharing can partially cover potential losses. Second, the relatively small scale of BPRS results in wide variations across banks: some have very low NPF, close to zero, while others face very high levels exceeding 30 percent. This variation reduces the statistical average, weakening the overall relationship between NPF and ROA.

This result is consistent with several previous studies. Sudarsono (2017) found that NPF does not always significantly affect ROA in Islamic banks, particularly in small-scale banks. Similarly, Andriyanto (2019) showed that in BPRS, the impact of NPF on profitability is often insignificant because the high level of non-performing financing is already accounted for in the margin or profit-sharing arrangements. Thus, the findings of this study reinforce the view that high NPF in BPRS does not always become a significant determinant of profitability, in contrast to the context of larger Islamic commercial banks. This conclusion is consistent with earlier research (Sudarsono, 2017; Andriyanto, 2019), which emphasized that the relationship between financing risk and profitability is strongly influenced by business scale, financing structure, and the risk mitigation mechanisms applied in each BPRS.

The next result is a significant negative effect of operational efficiency on profitability. The study finds that operational efficiency, measured by BOPO (Operating Expenses to Operating Income ratio), has a significant negative effect on the profitability (ROA) of BPRS. Economically, the lower the BOPO ratio, the smaller the operating burden compared to income, thereby increasing net profit. Conversely, a high BOPO reflects inefficiency, where nearly all operating income is consumed by expenses, directly reducing ROA. The average BOPO of BPRS in the research sample reached 91.41%, well above the ideal efficiency threshold set by OJK at around 80%. This indicates that most BPRS still face serious challenges in controlling operating costs. The wide variation (minimum 42.3% to maximum 312.87%) demonstrates managerial and structural disparities among banks. While some BPRS achieve efficiency levels that support profitability, most remain burdened by high cost structures due to small business scale, limited use of technology, and heavy fixed costs, such as employee salaries and office expenses.

This finding is consistent with efficiency theory, which emphasizes that banks with better cost management tend to achieve higher profitability. Previous studies also support this result. Haryanto (2016) and Anggraeni (2019) found that BOPO has a significant negative effect on ROA in Islamic banks, where cost inefficiency is a major determinant of weak profit performance. Rahmawati (2020), focusing on BPRS, highlighted that BOPO is the most dominant variable compared to other financial ratios in explaining variations in profitability. Likewise, Fadilah (2021) indicated that high BOPO directly signals weak competitiveness of Islamic banks in the microfinance sector. Thus, this study's findings are not only consistent with theory but also reinforce recurring empirical patterns from previous research.

The next result is the positive effect of financing on financing risk. The results show that financing distribution, measured by the Financing to Deposit Ratio (FDR), has a significant positive effect on financing risk (NPF) in BPRS. This means that the more aggressively banks channel third-party funds into financing, the higher the likelihood of problematic financing. This finding aligns with financial intermediation theory, which stresses that banks, in their role as intermediaries between fund owners and fund users, face a trade-off between financing expansion and risk management. As the proportion of funds disbursed increases, the likelihood of mismatches between customers' repayment capacity and the bank's credit analysis also rises, leading to higher financing risk. Descriptively, the data show that the average FDR of BPRS in this study reached 95.93%, close to 100%, meaning that nearly all third-party funds collected were disbursed as financing. While this strengthens the intermediation function, it also narrows liquidity space and increases exposure to financing risk. This is reflected in the average NPF of 7.31%, far above OJK's safe threshold of 5%. Thus, the high level of financing relative to deposits has significantly contributed to the high level of financing risk in BPRS.

This finding is consistent with earlier studies. Haryanto (2017) found that overly aggressive financing expansion without proper risk management leads to higher NPF in BPRS. Anggraeni (2019) also confirmed a significant positive relationship between FDR and NPF in Islamic banks, where increased financing is often accompanied by weakening asset quality. Meanwhile, Rahmawati (2020) emphasized that in the context of BPRS, which primarily serves MSMEs, the larger the financing disbursed, the greater the probability of default, as microbusinesses are highly vulnerable to income fluctuations.

The finding that financing increases financing risk underscores the need for BPRS to balance financing expansion with strict risk management to safeguard profitability. This can be achieved through improved creditworthiness analysis, portfolio diversification across business sectors to reduce risk concentration, and applying prudential principles in fund distribution. Moreover, strengthening post-disbursement monitoring and implementing early warning systems for potential problematic financing are essential to minimize NPF and its impact on profitability. In the Indonesian BPRS context, this significant positive relationship reflects a strategic dilemma: on the one hand, banks must maximize financing to fulfill intermediation functions and boost margin income; on the other hand, the repayment capacity of MSME customers—the main target of BPRS—is highly influenced by local economic conditions such as business seasonality, purchasing power, and limited market access. As a result, any increase in FDR without stricter financing analysis and business support is likely to raise NPF. Thus, the findings highlight the importance of balancing financing expansion targets with risk management strategies to ensure that intermediation remains optimal without sacrificing bank profitability stability.

The next result is Financing Risk as a Mediator in the Relationship between Financing and Profitability. The results indicate that financing risk (NPF) does not significantly mediate the effect of financing (FDR) on profitability (ROA) in BPRS. This means that the positive contribution of financing to profitability occurs directly through increased margin income, while financing risk accompanying financing expansion does not significantly weaken this relationship. In other words, disbursed financing still positively affects profitability, even though NPF levels are relatively high in some BPRS. From the perspective of financial intermediation theory, banks primarily generate profit through financing distribution. The higher the portion of third-party funds disbursed, the greater the murabahah margins or mudharabah/musyarakah profit shares obtained, thereby driving profitability. Financing risk, in principle, can reduce profit because higher NPF decreases realized income. However, the findings of this study show that such risk is not strong enough to sever or weaken the positive impact of financing on profitability. This may occur because, despite the relatively high average NPF of 7.31% in the sample, banks still gained profit as financing expansion targeted high-margin sectors, particularly consumer financing, microbusinesses, and murabahah contracts, where margins already incorporate potential risks.

This result aligns with studies that highlight the dominant direct effect of financing on profitability compared to its indirect effect via financing risk. Haryanto (2017) found that financing significantly and positively influences ROA in Islamic banks, while NPF does not play a significant mediating role. Similarly, Anggraeni (2019) suggested that although FDR increases the potential for NPF, it does not automatically reduce profits because most margins are still realized. Thus, this study strengthens the view that for BPRS, financing serves as the primary driver of profitability, while financing risk remains more of a residual factor that is not strong enough to offset the positive relationship. In the Indonesian BPRS context, this can be understood as small-scale Islamic banks being more focused on maximizing financing volumes to sustain operations. Rising NPF is often seen as an inherent risk managed through provisioning (CKPN), so its effect on profit is not directly significant. Therefore, the influence of financing on profitability is predominantly direct, whereas financing risk does not function as a decisive mediator.

CONCLUSION

Research on the performance of Islamic Rural Banks (BPRS) in Indonesia using the variables of capital adequacy (CAR), operational efficiency (BOPO), financing (FDR), and financing risk (NPF) yielded several important findings that can serve as a basis for understanding the profitability dynamics of these Islamic financial institutions.

First, the capital variable, as measured by the Capital Adequacy Ratio (CAR), was shown to have no significant effect on profitability, as proxied by Return on Assets (ROA). This indicates that the amount of capital held by a BPRS does not automatically guarantee increased profits. In other words, the effectiveness of capital utilization for productive activities is far more important than simply the amount of available capital.

Second, operational efficiency, as measured by the Operating Expenses to Operating Income (BOPO) ratio, had a significant negative effect on profitability. This finding suggests that the more efficient a bank is in managing its operating costs, the higher its profits. This aligns with the basic concept of financial management, which emphasizes the importance of cost control to improve profit performance.

Third, financing, as represented by the Financing to Deposit Ratio (FDR), has a significant positive effect on profitability. These findings confirm that the greater the amount of public funds disbursed in the form of financing, the greater the bank's opportunity to generate income from the financing margin, which is the primary source of BPRS profits.

Fourth, financing risk, as measured by Non-Performing Financing (NPF), does not significantly impact profitability. This indicates that despite the presence of non-performing financing, this condition has not significantly reduced profits. This phenomenon can occur due to the existence of a fairly effective risk management mechanism and regulatory support that helps minimize the negative impact of non-performing financing on BPRS profits.

Fifth, financing (FDR) has been shown to have a significant positive effect on financing risk (NPF). This means that the higher the financing disbursement, the greater the potential for non-performing financing. This finding illustrates the dilemma faced by BPRS: increasing fund disbursement can boost profitability, but simultaneously has the potential to increase credit risk.

Finally, the results show that financing risk (NPF) does not significantly mediate the effect of financing (FDR) on profitability (ROA). Thus, the positive effect of financing on profitability is direct, without the mediation of financing risk. This means that BPRS can increase profitability through financing expansion, while maintaining portfolio quality to prevent the risk of non-performing financing from escalating.

Overall, this study suggests that BPRS management strategies should focus on improving operational efficiency and optimizing financing distribution, while still paying attention to risk management to maintain long-term profitability stability.

LIMITATION

This study has several limitations identified after the analysis. First, the coefficient of determination (R^2) obtained was relatively low, at 39.59 percent. This indicates that the research model is only able to explain approximately 39.59 percent of the variation in profitability (ROA) in Islamic rural banks (BPR Syariah). More than 60 percent of the variation in profitability is influenced by factors outside the model, such as macroeconomic conditions, management quality, competition, and regulatory policies not included in the research variables.

Second, the distribution of data across Islamic rural banks shows significant variation, as reflected in the relatively large standard deviation values for key variables. This condition limits the ability to draw truly uniform conclusions for all Islamic rural banks, given the differences in business scale, location, and ownership characteristics.

Based on the research findings and limitations, several steps are recommended for both practitioners and further researchers:

Recommendations for Sharia Rural Bank Management

1. Sharia Rural Bank management needs to prioritize operational efficiency, given that research results indicate that BOPO has a significant negative impact on profitability. This means that the more efficient a bank is in managing operational costs, the higher the level of profit it can achieve. Therefore, management needs to strengthen its cost control system, utilize digital technology to reduce administrative costs, and improve human resource productivity through training and the implementation of performance-based management.
2. Financing (FDR) has been shown to have a significant positive impact on profitability, so management needs to optimize its fund distribution strategy through productive financing, while still adhering to Sharia-compliant prudential principles. Focus can be directed toward real sectors with stable growth prospects, such as MSMEs, trade, and the service sector, which are in accordance with Sharia principles. This will strengthen the intermediary role of Sharia Rural Banks while supporting local economic growth.
3. Although capital adequacy (CAR) does not significantly impact profitability, management must still ensure capital adequacy to maintain stakeholder trust and comply with regulatory requirements. Adequate capital can be allocated more strategically for productive financing expansion, thus serving not only as a security support but also as a driver of profit growth.

RECOMMENDATIONS

1. The coefficient of determination in this study is relatively low (39.59 percent). Future research is recommended to expand the model by adding other variables that could potentially influence the profitability of Islamic rural banks. These variables could include macroeconomic factors (such as inflation, interest rates, or regional economic growth), institutional factors (ownership structure, governance, or management quality), and technological factors (adoption of digital banking), which are increasingly relevant in the context of Islamic banking.
2. To address the significant differences in characteristics among Islamic rural banks, future research could conduct analysis using a subsample or panel data approach that excludes outlier observations.

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