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**Original Research Article**

# Comparative Analysis of the Islamic Banking Financial Performance before and after Collaboration in Financing Distribution with Islamic Fintech: A Study of Mega Islamic Bank

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**Abstract:** This study examines the comparative the financial performance of Bank Mega Syariah prior to and following partnering with Sharia Fintech in financing distribution. Utilizing a quantitative and descriptive approach, it analyzes key financial ratios including NPF, ROA, ROE, NOM, and BOPO. Data from Bank Mega Syariah's financial reports over a 10-year period (2014-2023) are analyzed. Statistical analysis is performed using SPSS, applying the Paired Sample T-Test is utilized for normally distributed data, while the Wilcoxon Signed Ranks Test is used for non-normally distributed data. The outcomes indicate noteworthy distinctions in NPF, ROA, ROE, and BOPO after the collaboration, while NOM shows no significant variance. The findings suggest a positive impact of collaboration with Sharia Fintech on Bank Mega Syariah's financial performance, particularly in reducing NPF and enhancing ROA, ROE, and BOPO. However, it is noted that regulatory concerns highlighted in the AMS 2022/2023 survey remain a barrier to financial literacy and inclusion via Fintech. This study adds to the comprehension of the dynamic environment of Islamic banking within the framework of Fintech integration, offering insights for policymakers and industry practitioners.

**Keywords:** NPF, ROA, ROE, NOM, and BOPO.

## 1. INTRODUCTION

Along with the advancement of technology, the financial industry is undergoing a massive transformation driven by digital innovation. One of the paradigm-shifting innovations in this industry is Sharia Financial Technology (Fintech). By providing technology-based financial services, Sharia Fintech promises to enhance efficiency, accessibility, and inclusiveness in Islamic financial services. Some commonly used banking fintech services include Cash Management Systems, mobile banking, internet banking, SMS banking, QR codes, e-money, and ATMs. The evolution of fintech, particularly in Indonesia, is considered one of the factors that are changing people's economic behavior (Barata, 2019). Research by Rabbani *et al*., (2020) reports that the Islamic finance industry is rapidly adopting Fintech.

A rise in the Financial Literacy and Inclusion Index was observed in 2022 compared to 2019, with the financial literacy score increasing to 49.7% and financial inclusion reaching 85.1%. The Fintech sector has been identified as having significant potential to enhance financial literacy and inclusion. However, the AMS 2022/2023 survey highlighted regulatory concerns that still pose obstacles to promoting financial literacy and inclusion through Fintech. The government has been actively working to strengthen the sector through Law No. 4/2023 and OJK Regulation No. 3/2023, as well as dynamic approaches such as regulatory sandboxing. In addition to regulation, infrastructure development is also a focus, particularly in expanding internet coverage to support the growth of Fintech across Indonesia. Public education and guidance are considered crucial for improving financial literacy, and the Government is expected to support broader education programs to address gaps in financial literacy (Fintech Indonesia, 2023).

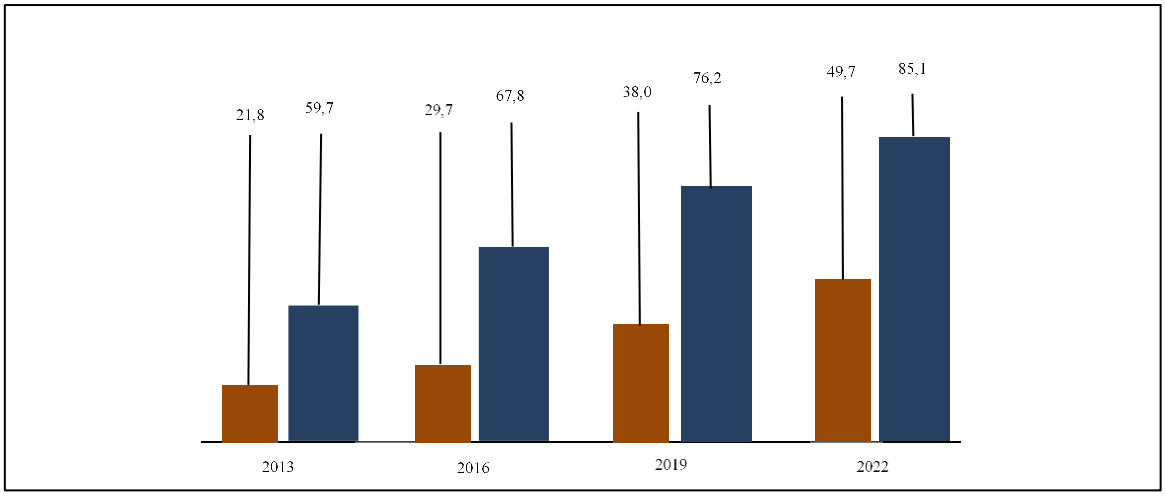


**Figure 1: The Indonesia Financial Literacy and Inclusion Index (2013-2022)**
*Source: National Survey on Financial Literacy and Inclusion 2022 - OJK (Processed by Databoks)*

However, the precise impact of collaboration distinguishing Islamic banks from Islamic fintech regarding the financial performance of Shariah-compliant banks remains unclear. Therefore, further analysis is required to understand the contrast in the financial performance of Islamic-compliant banks before and after cooperating in financing distribution with Islamic fintech. Conversely, various studies, including those by Buchak *et al.*, (2018); Tang, (2019); Nugroho *et al.*, (2020), underscore the adverse impacts of digital finance, especially financial technology and peer-to-peer lending, on the performance and stability of banks. Consequently, while digital finance facilitates the growth of the financial industry, it also introduces potential risks for systemic harm. The proliferation of digital financial technology carries the risk of negatively impacting banking risks. Indeed, the extensive utilization of telecommunications technology and its related e-banking features might change banks' overall risk profiles.

The aim of this study is to carry out a comparative an examination of the financial performance of Sharia-compliant banks prior to after collaborating with Islamic fintech, focusing on financial ratios such as NPF, ROA, ROE, NOM, and BOPO. This aligns with previous research findings (Mar'atushsholihah & Karyani, 2021; Putri *et al*., 2021), which indicate variations in financial performance, particularly in terms of profitability, before and after the introduction of Financial Technology. This study aims to provide deeper insights into the impact of this collaboration on the financial outcomes of Sharia-compliant banks. Additionally, other objectives include identifying trends or patterns that may emerge post-implementation of Islamic fintech, offering guidance for Bank Mega Syariah, and providing greater insights into the role or purpose of fintech in reshaping the Islamic banking landscape within the digital era. One of the novel aspects of this research is the focus on the effect of cooperation among Islamic banks and the integration of Islamic fintech on the financial outcomes of Sharia-compliant banks, a topic that remains incompletely understood. By comprehensively understanding and evaluating the effect of collaboration between Islamic banks and the integration of Islamic fintech, this examination is expected to deliver greater insights into the function of fintech in the context of Islamic banking, as well as offer clearer guidance for Islamic banks in leveraging technology to enhance their financial performance in the digital era.

**2. Sharia Financial Technology (Fintech)**

According to an expansive definition, Fintech encompasses pioneering technology aimed at improving and streamlining financial services, facilitating seamless management for companies, investors, and clients via dedicated programs and apps (Zhang-Zhang *et al*., 2020). Fintech, derived from the terms "finance" and "technology," represents the intersection of technology and established business practices within the banking sector (Miswan, 2019; Suryono *et al*., 2020). It embodies the application of digital technology to address challenges within the financial sector (Syahwildan & Damayanti, 2022). Its significance extends to enhancing financial inclusion in Indonesia by broadening access to financial services and introducing innovation to payment systems. This illustrates that fintech is not only an alternative but also a key driver of financial inclusion in Indonesia (Norrahman, 2023; Johan, 2024). Fintech utilizes technology within the financial system to facilitate the development of products, services, and business operations, significantly impacting monetary stability and the efficiency of the financial system. It enhances smoothness and security in financing systems, ensuring a more effective and reliable framework for transactions and operations (Anugrah *et al*., 2022).

Recently, the Majelis Ulama Indonesia (MUI) released two fresh fatwas concerning Sharia-compliant electronic money (e-Money) and sharia fintech. These two fatwas are part of the 13 latest fatwas issued in 2018. Fatwa No. 116/DSN-MUI/IX/2017 on Sharia-compliant Electronic Money and Fatwa No. 117/DSN-MUI/IX/2018 on Sharia-based Information Technology Financing Services are both relevant to the operations and offerings of Sharia financial institutions and Sharia

business entities. According to The DSN MUI fatwa No. 117/DSN-MUI/II/2018 pertains to Sharia-compliant Information Technology-Based Financing Services, which represent a financing service model feasible for implementation by organizer includes, among others, accounts receivable financing, financing for the acquisition of products requested by external parties, financing for the acquisition of items for internet-based transactions sellers, and financing for employees (Indonesian Ulema Council, 2018).

**3. Islamic Banking**

Under Law No. 21 of 2008, Article 1 regarding Islamic Banking, Islamic banks can be described as defined as financial entities conducting business operations in line with principles derived from Sharia or Islamic jurisprudence. These principles encompass justice and equilibrium (‘adl wa tawazun), welfare (maslahah), universality (alamiyah), and exclude elements like gharar, maysir, usury, oppression, and prohibited objects, as outlined in the fatwas issued by the Indonesian Ulema Council. Sharia rules are explained in Law 10 of 1998, wherein sharia rules represent agreements in accordance with Islamic law between financial institutions and other entities, aimed at saving funds or financing for business activities, and are governed by Sharia principles (Syahwildan & Damayanti, 2022). Islamic banking, also referred to as interest-free banking, is a financial system that abstains from employing interest (usury), speculation (maysir), and uncertainty (gharar) in its operational framework. In other words, Islamic banking is a financial institution where all financial activities must be implemented based on Islamic sharia principles, ensuring that all transactions at Islamic banks adhere to the rules and regulations governing contracts in fiqh muamalah (Rahmi *et al*., 2024).

**4. Financial Performance**

Financial performance analysis is undertaken to evaluate how much a company has enforced its regulations correctly, aiming to achieve its goals, particularly in earning profits reflected in the company's total assets (Tumandung *et al*., 2017; Sari & Giovanni, 2021). Meanwhile, according to Tamallo, financial performance pertains to the results attained by a company's within the financial sector during a specific timeframe, serving as an indicator of the company's overall health within that particular domain (Tamallo, 2018). From this understanding, financial performance can be construed as an assessment or analysis of how a company or entity has implemented and managed its finances. It reflects the firm's achievements in handling financial matters and can describe the level of health of the company within a specific timeframe. This indicates that financial performance does not only refer to financial aspects but also describes how the company has complied with financial rules and the extent to which they have achieved success in managing their finances properly.

**5. Non-Performing Financing (NPF)**

Non-performing financing (NPF) is an essential indicator that must be considered, reflecting the proportion of non-performing financing within a bank's portfolio. When non-performing loans (NPF) decrease, it is expected that the bank's profits will increase. However, if the NPF level rises, the bank may incur losses due to bad credit (Widiawati, 2019; Suprianto *et al*., 2020; Purwanti *et al*., 2022). Including Islamic banks typically using the term "NPF" (Non-Performing Financing), while conventional banks refer to it as "NPL" (Non-Performing Loan). NPF is defined as the proportion of bad financing relative to the overall financing disbursed by Islamic banks (Muhammad *et al*., 2020). Poor risk management in financing distribution can lead to an increase in NPF (Ibrahim & Rahmati, 2017). NPF reflects the profit rate on financing provided by banks, highlighting the significance of efficient risk management practices in guaranteeing the stability and profitability of financial institutions.

$$\boldsymbol{NPF} = \frac{Non\text{-}Performing\ Financing}{Total\ Financing} \text{ x } 100\% \text{ …….. Equation 2.1}$$

**6. Return on Asset (ROA)**

Return on Asset (ROA) is among the ratios employed to evaluate a company's capability in utilizing its total assets for operational activities with the aim of generating profits (Amalya, 2018; Shenurti *et al*., 2022). ROA also serves as an indicator of management efficiency in overseeing investments. The greater the ROA, the more profitability develops, indicating improved company performance (Masitoh & Zannati, 2021). ROA facilitates companies in measuring the efficiency of capital utilization against factors influencing the company's financial condition (Wijaya, 2019). A higher ROA signifies greater profitability for the company derived from asset management. Improved asset management enhances investor confidence in the company (K & Al Rasyid, 2022). ROA (Return on Assets) is the proportion of net income relative to total assets, calculating the return on all assets post-interest and taxes (Astuti, 2022). Due to the comparatively modest equity of banks in developing nations, the combination of ROA and Return on Equity (ROE) is commonly employed as the primary metric for assessing bank performance (Saona, 2016; Zeitun & Goaied, 2022).

$$\boldsymbol{ROA} = \frac{Net\ Income}{Total\ Assets} \text{ x } 100\% \text{ …….. Equation 2.2}$$

**7. Return on Equity (ROE)**

Return on Equity (ROE) is a metric that illustrates a company's capacity to produce net income using its own capital and produce net income accessible to investors or owners (Amalya, 2018). ROE, representing the ratio of profit before tax to equity, serves as a proxy for bank profitability (Le *et al*., 2019). One way to assess how efficiently a business

generates profits by utilizing its equity is by examining Return on Equity (ROE) (Shenurti *et al*., 2022). The ROE ratio indicates how well the company is performing in generating profits. The greater the ROE, the greater the stock price, as it demonstrates how effectively the company's management utilizes shareholders' investments. Investors become interested in purchasing shares because a high ROE indicates the return investors will receive, leading to an increase in the stock market price (K & Al Rasyid, 2022).

$$\boldsymbol{ROE} = \frac{Net\ Income}{\text{Total Equity}} \text{ x } 100\% \text{ …….. Equation 2.3}$$

**8. Net Operating Margin (NOM)**

Net Operating Margin (NOM) is a ratio utilized by Islamic banks to gauge the capacity of their productive assets to generate profits (Munandar, 2020). NOM can also be described as a ratio that illustrates the capacity of assets in generating profits earnings by comparing revenue and expenses with the mean productive assets. NOM must remain stable; therefore, if NOM is low, it means the profit earned will be smaller (Suryanto & Susanti, 2020). Net Operating Margin (NOM) can illustrate how effectively the bank manages all of its productive assets for produce higher net income. The greater the margin income obtained by the bank, the larger the NOM ratio of the bank, indicating that the bank has efficiently worked to generate higher income. With a high ratio, it becomes easier for banks to avoid various banking problems (Munandar, 2020).

$$\boldsymbol{NOM} = \frac{(\text{PO} - \text{DBH}) - \text{BO}}{\text{Average AP}} \text{ …….. Equation 2.4}$$

**9. Operating Expenses to Operating Income (BOPO)**

BOPO (Operating Expenses on Operating Income) represents the expenditures banks accumulate for their primary operations, including interest, personnel, marketing, and other operational costs (Ningsih & Dewi, 2020). BOPO is the proportion of operating expenses to operating income (Syakhrun *et al*., 2019; Ningsih & Dewi, 2020). A lower BOPO ratio indicates greater efficiency in the bank's incurred operating costs (Astuti, 2022). A high value of the BOPO ratio suggests inefficiency in operational activities; a high BOPO value indicates that more operating costs must be incurred to obtain operating income.

$$\boldsymbol{BOPO} = \frac{\text{Operating Expenses}}{\text{Operating income}} \text{ x } 100\% \text{ …….. Equation 2.5}$$

In this study, the hypothesis is formulated based on the research problem, which is to test whether Financial Technology (FinTech) influences Islamic Banking Profitability. Therefore, the hypothesis in this study is:

1. The Effect of Financial Technology on Non Performing Financing (NPF)
   $H_0$1: There is no difference in NPF Bank Mega Syariah before and after cooperation in financing distribution with Sharia Fintech.
   $H_a$1: There is a difference in NPF Bank Mega Syariah before and after cooperation in financing distribution with Sharia Fintech.

2. The Effect of Financial Technology on Return on Assets (ROA)
   $H_0$2: There is no difference in ROA of Bank Mega Syariah before and after cooperation in financing distribution with Sharia Fintech.
   $H_a$2: There is a difference in ROA of Bank Mega Syariah before and after cooperation in financing distribution with Sharia Fintech.

3. The Effect of Financial Technology on Return on Equity (ROE)
   $H_0$3: There is no difference in ROE of Bank Mega Syariah before and after cooperation in financing distribution with Sharia Fintech.
   $H_a$3: There is a difference in ROE of Bank Mega Syariah before and after cooperation in financing distribution with Sharia Fintech.

4. Effect of Financial Technology on Net Operating Margin (NOM)
   $H_0$4: There is no difference in the NOM of Bank Mega Syariah before and after cooperation in financing distribution with Sharia Fintech.
   $H_a$4: There is a difference in the NOM of Bank Mega Syariah before and after cooperation in financing distribution with Sharia Fintech.

5. The Effect of Financial Technology on Operating Expenses to Operating Income (BOPO)
   $H_0$5: There is no difference in BOPO Bank Mega Syariah before and after cooperation in financing distribution with Sharia Fintech.

$H_a5$: There is a difference in BOPO Bank Mega Syariah before and after cooperation in financing distribution with Sharia Fintech.

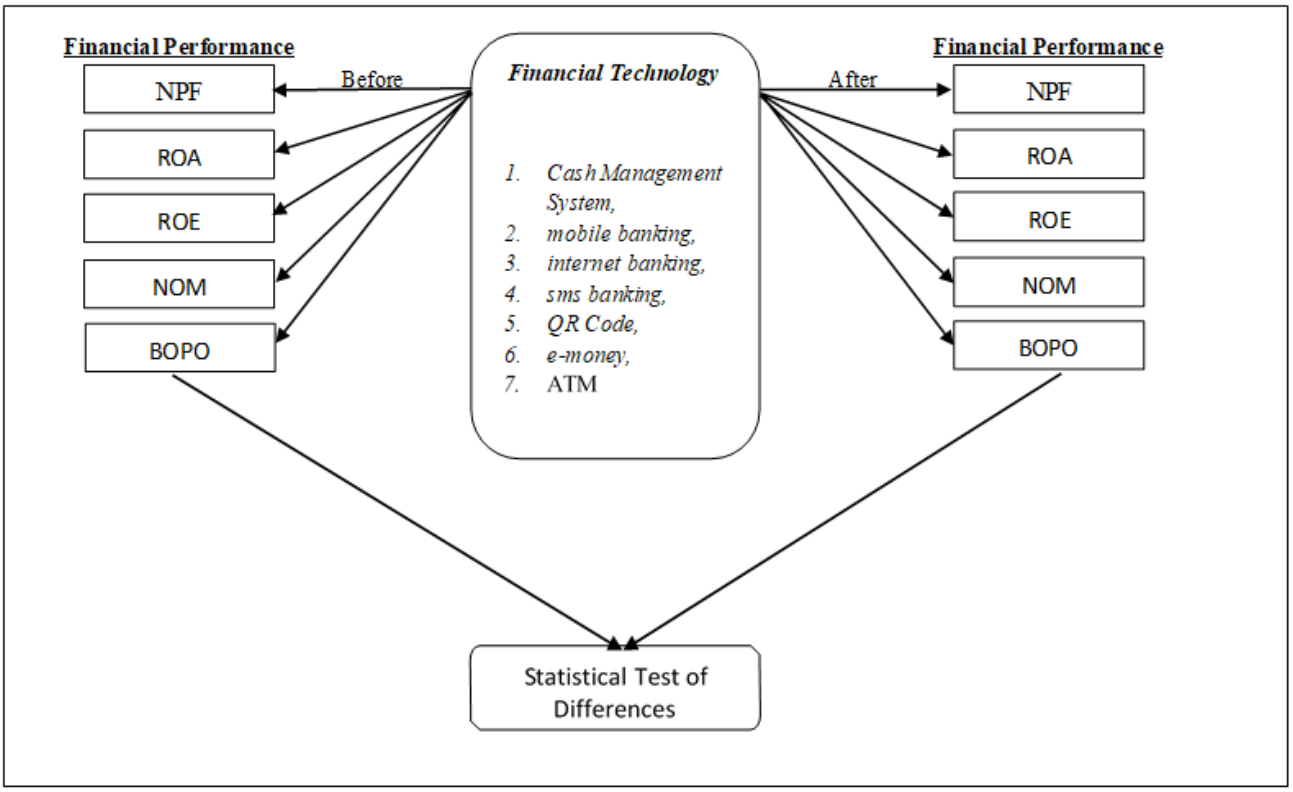


**Figure 2: Conceptual Framework**

## 10. RESEARCH METHODS

This research utilizes a quantitative approach and descriptive method to explore comparing the financial performance of Islamic banking prior to and following cooperation in financing distribution with Sharia Fintech, with a focus on Bank Mega Syariah. The data utilized is sourced from secondary data, sourced from the financial statements of Bank Mega Syariah, including quarterly financial ratio reports throughout a period of about 10 years, starting from 2014 to 2023 obtained through the official website of Indonesia's Bank Mega Syariah. This data includes financial performance indicators such as NPF, ROA, ROE, NOM, and BOPO. Data analysis utilized SPSS statistical software for analysis. The analysis stage involves evaluating financial ratios with a comparison test to determine the difference in financial performance before and after cooperation with Fintech Syariah. The analysis method employed includes a normality test and paired t-test. The aim of the normality test is to evaluate whether the collected the data conforms to a normal distribution. While the paired sample test (Paired t-test) is utilized to compare the averages of two samples with the assumption of normal distribution, the results of this test are seen from the significance value. If the generated data doesn't adhere to a normal distribution, the Wilcoxon Signed Rank Test is employed as an alternative. This method is a non-parametric test intended to assess the level of significance between two sets of paired data. The outcomes of the analysis will be interpreted to ascertain whether there exists a noteworthy disparity as it relates to Bank Mega Syariah's financial standing prior to and following cooperation with Fintech Syariah. The results will offer a more comprehensive insight into the impact of financing channeling cooperation with Fintech Syariah regarding the financial performance of Islamic banking industry.

The following is a simple linear regression equation model:

$$NPF_{i,t} = \beta_0 + \beta_1 \times Fintech_t + \varepsilon_{i,t}$$
$$ROA_{i,t} = \beta_0 + \beta_1 \times Fintech_t + \varepsilon_{i,t}$$
$$ROE_{i,t} = \beta_0 + \beta_1 \times Fintech_t + \varepsilon_{i,t}$$
$$NOM_{i,t} = \beta_0 + \beta_1 \times Fintech_t + \varepsilon_{i,t}$$
$$BOPO_{i,t} = \beta_0 + \beta_1 \times Fintech_t + \varepsilon_{i,t}$$

Where:

NPF, ROA, ROE, NOM, and BOPO = dependent variables

$t$ = time

$i$ = entity
$\beta_0$ = intercept (dependent variable ratio value when fintech = 0)
$\beta_1$= regression coefficient (measures the change in the dependent variable due to the implementation of fintech Fintecht = dummy independent variable which is 0 before FinTech implementation and 1 after FinTech implementation).
$\varepsilon$ = error

## 11. RESEARCH RESULTS AND DISCUSSION

**Descriptive Analysis of Variables before Cooperation in Financing Distribution with Fintech Sharia**

Below is an overview of the factors considered in this research, including the NPF, ROA, ROE, NOM, and BOPO ratios in the Bank Mega Syariah sample. Here is a descriptive statistical analysis of these variables over the period before cooperation with Islamic fintech.

**Table 1: Descriptive Statistics of Bank Mega Syariah's Financial Performance Prior Cooperation in Financing Distribution with Sharia Fintech**

| Descriptive Statistics | | | | | |
|---|---|---|---|---|---|
| | **N** | **Minimum** | **Maximum** | **Mean** | **Std. Deviation** |
| NPF before | 20 | 1.81 | 3.25 | 2.5630 | .49855 |
| ROA before | 20 | -1.21 | 4.86 | 1.2190 | 1.39745 |
| ROE before | 20 | -9.96 | 23.23 | 5.8720 | 7.38310 |
| NOM before | 20 | -1.45 | 8.39 | 1.1185 | 2.08479 |
| BOPO before | 20 | 84.92 | 110.53 | 93.8425 | 6.48803 |
| Valid N (listwise) | 20 | | | | |

*Source: Output IBM SPSS 20*

From the data, it is evident that NPF shows the asset quality ratio ranging from a minimum of 1.81 to a maximum of 3.25, with the lowest variation, having an a mean of 2.5630 and a standard deviation of 0.49855, indicating relative stability in asset quality. ROA ranges from a minimum of -1.21 to a maximum of 4.86, with a mean of 1.2190 and a standard deviation of 1.39745. Significant variations in ROA indicate large fluctuations in asset quality. The bank's capability to earn profit from its assets, evaluated through Return on Equity (ROE), exhibits a range from a minimum of -9.96 to a maximum of 23.23. On average, it stands at 5.8720, with a standard deviation of 7.38310. Significant variations in ROE indicate large fluctuations in the return on investment for shareholders. NOM ranges from a minimum of -1.45 to a maximum of 8.39, with an average of 1.1185 and a standard deviation of 2.08479. The significant variation in NOM illustrates the large fluctuations in the bank's operating profit margin. BOPO ranges from a minimum of 84.92 to a maximum of 110.53, with an average of 93.8425 and a standard deviation of 6.48803. Although BOPO tends to be stable with a moderate standard deviation, the variation in operating expenses relative to the bank's operating income is noteworthy.

**Descriptive Analysis of Variables before Cooperation in Financing Distribution with Fintech Sharia**

The following text is a descriptive statistical analysis of variables for the period after cooperation with Islamic fintech.

**Table 2: Descriptive Statistics of the financial performance of Bank Mega Syariah subsequent to collaboration in Financing Distribution with Sharia Fintech**

| Descriptive Statistics | | | | | |
|---|---|---|---|---|---|
| | **N** | **Minimum** | **Maximum** | **Mean** | **Std. Deviation** |
| NPF after | 20 | .72 | 4.04 | 1.3695 | .75218 |
| ROA after | 20 | .61 | 4.08 | 2.0525 | 1.03548 |
| ROE after | 20 | 2.96 | 28.48 | 11.9765 | 7.73278 |
| NOM after | 20 | .41 | 2.45 | 1.6250 | .73837 |
| BOPO after | 20 | 64.64 | 95.43 | 80.5855 | 10.87959 |
| Valid N (listwise) | 20 | | | | |

*Source: Output IBM SPSS 20*

According to the table, it is evident that NPF experienced variations with a minimum value of 0.72 and a maximum of 4.04 following collaboration. Nonetheless, the average NPF after cooperation is 1.3695, indicating stability in asset quality, with a standard deviation of 0.75218. Then, ROA showed significant fluctuations with a minimum value of 0.61 and a maximum of 4.08. The average Return on Assets (ROA) afterward was 2.0525, indicating a variation in the efficiency of the bank's asset utilization, with a standard deviation of 1.03548. Furthermore, ROE also fluctuates with a minimum value of 2.96 and a maximum of 28.48. The average Return on Equity (ROE) afterward was 11.9765, indicating variations in the return on investment for shareholders, with a standard deviation of 7.73278. NOM shows variation with a minimum

value of 0.41 and a maximum of 2.45. The average NOM afterward was 1.6250, indicating a fluctuation in the bank's operating profit margin, with a standard deviation of 0.73837. Finally, BOPO fluctuates with a minimum value of 64.64 and a maximum of 95.43. The average BOPO after cooperation is 80.5855, indicating the variation in operating expenses relative to the bank's operating income, with a standard deviation of 10.87959.

**12. Data Normality Test**

The Normality Test is utilized to ascertain if the data originates from a population with a normal distribution or not. Provided that normally distributed data can meet the criteria for a in the event that the significance value exceeds 0.05, indicating that the data is widely regarded as be normally distributed, whereas a In the event that the p-value falls below 0.05, suggests that The data exhibits a non-normal distribution. The Normality Test was conducted utilizing the Shapiro-Wilk Normality Test with SPSS Statistic 20. The first step is to determine the test hypothesis, namely:

$H_0$ accepted: the data follows a normal distribution

$H_a$ is accepted: the data does not conform to a normal distribution

$H_0$ is accepted if Sig. value > α value and rejected if Sig. value < α value

$H_a$ is accepted if Sig. value < α value and rejected if Sig. value > α value.

This study conducted a normality test twice, namely for the Shapiro-Wilk normality test results for Bank Mega Syariah, both before (2014-2018) and after (2019-2023), are as follows.

**Table 3: Normality Test Results on Bank Mega Syariah Financial Performance Ratios 2014-2018 (Before) Tests of Normality**

| | Shapiro-Wilk | | | |
|---|---|---|---|---|
| | **Statistic** | **df** | **Sig.** | **Conclusion** |
| NPF% | 0.895 | 20 | 0.034 | Non-normally distributed |
| ROA% | 0.955 | 20 | 0.450 | Non-normally distributed |
| ROE% | 0.972 | 20 | 0.794 | Distributed Normally |
| NOM% | 0.788 | 20 | 0.001 | Distributed Normally |
| BOPO% | 0.893 | 20 | 0.030 | Non-normally distributed |

*Source: Normality Test Calculation Output, IBM SPSS 20 (Data processed, 2024)*

Table 3 displays the outcomes of the Shapiro-Wilk normality test on the financial results ratios of Bank Mega Syariah prior to cooperation in financing distribution with Sharia Fintech in the 2014-2018 period. From the normality test results, it can be inferred that the variables NPF and BOPO are not normally distributed, as indicated by a p-value lower than the specified level of significance (0.05). This means that the NPF and BOPO data have a distribution pattern that is not symmetrical or there is significant skewness. Meanwhile, the ROA and ROE variables are declared normally distributed, with a p-value exceeding the specified significance level. This indicates that ROA and ROE data tend to have symmetrical distribution patterns and do not have significant skewness. The last variable, NOM, shows interesting normality test results. Although the p-value is 0.003, indicating it is below the specified significance level, the results are concluded as not normally distributed. This indicates a violation of the normality assumption even though the p-value may look very small. This suggests that the NOM data may have a non-symmetrical distribution pattern or a significant skew.

**Table 4: Normality Test Results on Bank Mega Syariah Financial Performance Ratios 2019-2023 (After) Tests of Normality**

| | Shapiro-Wilk | | | |
|---|---|---|---|---|
| | **Statistic** | **df** | **Sig.** | **Conclusion** |
| NPF% | 0.728 | 20 | 0.000 | Non-normally distributed |
| ROA% | 0.950 | 20 | 0.365 | Distributed Normally |
| ROE% | 0.900 | 20 | 0.041 | Non-normally distributed |
| NOM% | 0.852 | 20 | 0.006 | Non-normally distributed |
| BOPO% | 0.886 | 20 | 0.023 | Non-normally distributed |

*Source: Normality Test Calculation Output, IBM SPSS 20 (Data processed, 2024)*

Table 4 illustrates the findings of the Shapiro-Wilk normality test on the financial condition ratio the financial performance of Bank Mega Syariah subsequent to cooperation in financing distribution with Sharia Fintech, for the period 2019-2023. The findings from the normality test suggest that the NPF, ROE, NOM, and BOPO variables are not indicative of a normal distribution, as the p-value obtained from the Shapiro-Wilk test is lower than the specified significance level (0.05). This indicates that the data for these variables has an unsymmetrical distribution pattern or there is significant skewness. Meanwhile, the ROA variable is declared normally distributed, as the p-value of the Shapiro-Wilk test p-value is greater than the specified significance level. This indicates that ROA data tends to have a symmetrical distribution pattern and has no significant skewness.

**Table 5: Summary of Normality Test Results for Bank Mega Syariah**

| Ratio | Sig. | | Significance Level α = 0.05 | Results | |
|---|---|---|---|---|---|
| | Before | After | | Before | After |
| NPF | 0.034 | 0.000 | 0.05 | Not Normal | Not Normal |
| ROA | 0.450 | 0.365 | 0.05 | Normal | Normal |
| ROE | 0.794 | 0.041 | 0.05 | Normal | Not Normal |
| NOM | 0.001 | 0.006 | 0.05 | Not Normal | Not Normal |
| BOPO | 0.030 | 0.023 | 0.05 | Not Normal | Not Normal |

*Source: IBM SPSS 20 Calculation Results (Data processed, 2024)*

According to the table provided in 5 above, it is evident that statistically, the data in the ratios above can affect the data analysis tool that will be used next. If both datasets (before and after) pass the normality test, the Paired Sample T-Test is used. However, if both datasets show abnormality, the Wilcoxon Signed Ranks Test is employed.

**13. Hypothesis Testing**

a) Determining the Hypothesis

$H_0$ = There exists no discrepancy in financial performance (NPF, ROA, ROE, NOM, BOPO, and FDR) of Islamic Banks before and after cooperation in financing distribution with Islamic Fintech.

$H_a$ = There is variation in financial performance (NPF, ROA, ROE, NOM, BOPO, and FDR) of Islamic Banks before and after cooperation in financing distribution with Islamic Fintech.

b) Significant Level

If the asymptotic significance (2-tailed) value is greater than α (0.05), the null hypothesis (H0) is accepted, while the alternative hypothesis (Ha) is rejected. Conversely, if the asymptotic significance (2-tailed) value is less than α (0.05), the null hypothesis (H0) is rejected, while the alternative hypothesis (Ha) is accepted.

Next, we will perform the Paired Sample T-Test and the Wilcoxon Signed Ranks Test on quarterly data from Bank Mega Syariah spanning the period 2014-2023. The outcomes of the comparative analysis are as follows:

**Table 6: Results of Wilcoxon Signed Ranks Test on NPF Ratio of Bank Mega Syariah Ranks**

| Ranks | | | | |
|---|---|---|---|---|
| | | **N** | **Mean Rank** | **Sum of Ranks** |
| NPF After-NPF Before | Negative Ranks | 18[a] | 11.19 | 201.50 |
| | Positive Ranks | 2[b] | 4.25 | 8.50 |
| | Ties | 0[c] | | |
| | Total | 20 | | |
| **Test Statistics[a]** | | | | |
| NPF After-NPF Before | | | | |
| Z | -3.603[b] | | | |
| Asymp. Sig. (2-tailed) | 0.000 | | | |

*Source: NPF Ratio Calculation Results, IBM SPSS 20 (Data processed, 2024)*

According to the table provided in 6 above, the outcomes of the difference test indicate that the Wilcoxon Signed Ranks Test results display an asymptotic significance (2-tailed) value of 0.000, which is lower than the significance level of α 0.05. This suggests that the null hypothesis ($H_0$) is rejected. The conclusion drawn is the rejection of ($H_0$) and the acceptance of ($H_a$), indicating that a discrepancy exists in NPF Bank Mega Syariah before and after collaborating in financing distribution with Sharia Fintech. This conclusion is reinforced by the findings of a study conducted by Sry Lestari, Winda Sari Siregar, and Nurul Madania Ayla (2021), based on the results of their research showing that Fintech affects the financial status of Islamic banking institutions, including the NPF ratio (Lestari *et al*., 2021).

**Table 7: Results of Paired Samples Test on ROA Ratio of Bank Mega Syariah**

| | Mean | Std. Deviation | Std. Error Mean | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|
| NPF after-ROA Before | -0.83350 | 0.89670 | 0.20051 | -4.157 | 19 | 0.001 |

*Source: ROA Ratio Calculation Results, IBM SPSS 20 (Data processed, 2024)*

According to the table provided in 7 above, the results of the t-test utilizing the Paired Samples Test indicate a significance level approaching infinity (2-tailed) value of 0.001, which is less than the significance level α of 0.05. This implies the rejection of ($H_0$). The conclusion is that ($H_0$) is invalidated, and the alternative hypothesis ($H_a$) is upheld,

signifying a discrepancy in NPF Bank Mega Syariah before and after cooperating in financing distribution with Sharia Fintech. The findings in this study is corroborated by the research carried out by Riska Andini and Nurdin (2019), based on their research findings which demonstrate that the Bank after implementing Fintech has a positive impact on the ROA ratio due to the bank's profitability level has increased after implementing Fintech (Andini & Nurdin, 2019).

**Table 8: Results from the Wilcoxon Signed Ranks Test on ROE Ratio of Bank Mega Syariah Ranks**

| Ranks | | | | |
|---|---|---|---|---|
| | | **N** | **Mean Rank** | **Sum of Ranks** |
| ROE After- ROE Before | Negative Ranks | 3[a] | 8.00 | 24.00 |
| | Positive Ranks | 17[b] | 10.94 | 186.00 |
| | Ties | 0[c] | | |
| | Total | 20 | | |
| **Test Statistics[a]** | | | | |
| ROE After- ROE Before | | | | |
| Z | -3.024[b] | | | |
| Asymp. Sig. (2-tailed) | 0.002 | | | |

*Source: ROE Ratio Calculation Results, IBM SPSS 20 (Data processed, 2024)*

The findings from the Wilcoxon Signed Ranks Test as shown in table 8 indicate a significant result with an asymptotic significance (2-tailed) value of 0.002, which is lower than the chosen significance level at ($\alpha = 0.05$). This suggests that we reject the hypothesis of no difference ($H_0$) in favor of the alternative hypothesis. The inference is that the null hypothesis ($H_0$) is refuted, and therefore the alternative hypothesis ($H_a$) is accepted. This indicates that there is indeed a disparity in the Return on Equity (ROE) of Bank Mega Syariah before and after cooperation in financing distribution with Sharia Fintech. This outcome aligns with prior research conducted by Cupian and Farid Fauzy Akbar (2020), the results of which explain that the research conducted with a span of 8 quarters before and after getting The findings corroborate previous research indicating a noteworthy distinction in the Return on Equity (ROE) ratio among Islamic Banks (Cupian & Akbar, 2020).

**Table 9: Findings from the Wilcoxon Signed Ranks Test on the NOM Ratio of Bank Mega Syariah**

| Ranks | | | | |
|---|---|---|---|---|
| | | **N** | **Mean Rank** | **Sum of Ranks** |
| NOM After- NOM Before | Negative Ranks | 4[a] | 8.50 | 34.00 |
| | Positive Ranks | 16[b] | 11.00 | 176.00 |
| | Ties | 0[c] | | |
| | Total | 20 | | |
| **Test Statistics[a]** | | | | |
| NOM After- NOM Before | | | | |
| Z | -2.651[b] | | | |
| Asymp. Sig. (2-tailed) | 0.008 | | | |

*Source: NOM Ratio Calculation Results, IBM SPSS 20 (Data processed, 2024)*

The results from the t-test utilizing the Wilcoxon Signed Ranks Test in table 9 demonstrate that the asymptotic significance (2-tailed) value is 0.008, which is lower than the selected significance level of ($\alpha = 0.05$). As a result, we reject the null hypothesis ($H_0$). The inference is that the null hypothesis ($H_0$) is rejected, and thus the alternative hypothesis ($H_a$) is accepted. This suggests that there is indeed a disparity in the Return on Equity (ROE) of Bank Mega Syariah before and after the collaboration in financing distribution with Sharia Fintech. These study findings are reinforced by prior research undertaken by Muhammad Arief Aditya and Asri Noer Rahmi (2022). Their research outcomes indicate a substantial impact of Fintech on the NOM ratio. With the existence of fintech, the overall percentage of NOM has increased from 2017-2020 (Aditya & Rahmi, 2023).

**Table 10: The outcomes of the Wilcoxon Signed Ranks Test on the BOPO Ratio of Bank Mega Syariah**

| Ranks | | | | |
|---|---|---|---|---|
| | | **N** | **Mean Rank** | **Sum of Ranks** |
| BOPO After- BOPO Before | Negative Ranks | 18[a] | 11.33 | 204.00 |
| | Positive Ranks | 2[b] | 3.00 | 6.00 |
| | Ties | 0[c] | | |
| | Total | 20 | | |
| **Test Statistics[a]** | | | | |
| BOPO After- BOPO Before | | | | |
| Z | -3.696[b] | | | |
| Asymp. Sig. (2-tailed) | 0.000 | | | |

*Source: BOPO Ratio Calculation Results, IBM SPSS 20 (Data processed, 2024)*

The findings from the t-test utilizing the Wilcoxon Signed Ranks Test, as presented in table 4.10 above, reveal an asymptotic significance (2-tailed) value of 0.000, which is lower than the significance level of ($\alpha < 0.05$). This indicates that ($H_0$) is rejected. The conclusion drawn is that ($H_0$) is rejected and ($H_a$) is accepted, indicating a discernible difference in the BOPO of Bank Mega Syariah before and after collaboration in financing distribution with Sharia Fintech. This aligns with previous research carried out by Riska Andini and Nurdin (2019). The findings of the research indicated that there were variations in the BOPO ratio in Islamic Banks after implementing electronic money (e-money) as Financial Technology. The study shows a significant difference in the BOPO ratio, which serves as further evidence of the efficiency level of the bank in its operational activities being better after implementing fintech (Andini & Nurdin, 2019).

**Table 11: Summary of Differential Test Results for Bank Mega Syariah**

| Ratio | Difference Test | Sig. | Significance Level $\alpha = 0.05$ | Results |
|---|---|---|---|---|
| NPF | *Wilcoxon Signed Ranks Test* | 0.000 | 0.05 | There is a Difference |
| ROA | *Paired Sample T-Test* | 0.001 | 0.05 | There is a Difference |
| ROE | *Wilcoxon Signed Ranks Test* | 0.002 | 0.05 | There is a Difference |
| NOM | *Wilcoxon Signed Ranks Test* | 0.008 | 0.05 | There is a Difference |
| BOPO | *Wilcoxon Signed Ranks Test* | 0.000 | 0.05 | There is a Difference |

*Source: IBM SPSS 20 Calculation Results (Data processed, 2024)*

According to the data presented in Table 11 above, it is evident that different tests were conducted on the Bank Mega Syariah ratio data. The Wilcoxon Signed Ranks Test was used for NPF, ROE, NOM, and BOPO ratios, while the Paired Sample T-Test indicated applied to the ROA ratio. This distinction in testing methods is based on whether the normality assumption holds for the data The outcomes indicate significant variances in NPF, ROA, ROE, NOM, and BOPO ratios of Bank Mega Syariah after collaborating in financing distribution with Sharia Fintech.

## 14. CONCLUSION

From the analysis and discussion results, it can be inferred that there are significant differences in the financial status of Bank Mega Syariah in the NPF, ROA, ROE, NOM, and BOPO ratios prior to (2014-2018) and subsequent to cooperation in financing distribution with Sharia Fintech (2019-2023). The Wilcoxon Signed Ranks Test table reveals a decrease in NPF before and after fintech, with only 2 positive data experiencing an increase. Similarly, ROE, NOM, and BOPO ratios also exhibit decreases from before, with some positive data showing an increase. Regarding the ROA ratio, the Paired Samples Test output indicates a notable disparity, with the average ROA before fintech being lower than after. Although the calculated t-value is negative (-4.157), in this context it is considered positive, making the value 4.157. With df = 19 and a significance value of $\alpha/2 = 0.025$, the computed t-value of 4.157 exceeds the t-table value of 2.093. Consequently, the null hypothesis (H0) is refuted in favor of the alternative hypothesis (Ha), concluding that there an average variance between ROA before and after fintech.

## RECOMMENDATION

Bank Mega Syariah should enhance supervision of asset quality (NPF), closely monitor fluctuations in asset utilization efficiency (ROA), strategize to improve return on investment for shareholders (ROE), ensure stability of operating profit margin (NOM), and conduct thorough evaluation of operating costs relative to income (BOPO) following cooperation with Fintech Syariah. These efforts are aimed at optimizing financial performance, identifying, and addressing significant differences in financial ratios observed before and after collaboration with Islamic Fintech. Consequently, this initiative is expected to sustain asset quality stability, enhance asset utilization efficiency, optimize shareholder returns, maintain operating profit margins, and efficiently manage operating costs to uphold a significant relationship between operating costs and income of the bank.

This study only considers a few financial performance ratios due to limited data availability from 2014 to 2023. Additionally, it focuses on a single company from the Islamic banking sector, limiting generalizability to the industry as a whole. Future investigations could derive advantages from diverse methodologies, incorporating extra variables and sample data, long-term impact analysis, and comparative studies. Addressing these limitations is crucial for providing deeper and more relevant insights into cooperation with Islamic Fintech and the overall financial performance of Islamic banks.

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