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## **Comparative Analysis of Financial Performance between Digital Banks and Conventional Banks Registered with Financial Services Authority**

**Shasa Nur Anggraini<sup>1\*</sup>, Zaenal Abidin<sup>2</sup>**

Perbanas Institute, Indonesia<sup>1</sup>

Perbanas Institute, Indonesia<sup>2</sup>

Corresponding Email: [shasa.nur22@perbanas.id](mailto:shasa.nur22@perbanas.id)\*

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### **Abstract**

This study aims to analyze the comparison of financial performance between Digital Banks and Conventional Banks for the 2021-2023 period. Financial performance is measured based on the indicators Return On Asset (ROA), Return On Equity (ROE), Net Interest Margin (NIM), Operating Costs to Operating Income (OC/OI), Loan to Deposit Ratio (LDR), Non-Performing Loan (NPL) and Fee-Based Income Ratio (FBI). The type of research used is quantitative research. The data used in this study is secondary data obtained from the company's annual report from 2021 to 2023. The sample used consisted of 7 Digital Banks and 7 Conventional Banks. The hypothesis testing includes using the Independent Samples t-test and the Mann-Whitney U test. There is a significant difference in the financial performance of Digital Banks and Conventional Banks, specifically in the NIM and NPL ratios. Meanwhile, there is no significant difference in the financial performance between Digital Banks and Conventional Banks for 2021-2023, based on the ROA, ROE, OC/OI, LDR, and FBI ratios.

**Keywords:** Digital Bank, Conventional Bank, Financial Performance, Independent Sample t-test, Mann-Whitney u test

### **Introduction**

The rapid development of information and communication technology, accelerated by the COVID-19 pandemic, has pushed all industries to incorporate technology-based service or product innovations. This has presented challenges and opportunities for the banking sector to align with society's move towards digital technology, which is widely seen as more efficient.

Digitalization refers to the increased use of information or digital technology within a company to improve business processes. Banks have implemented digitalization through services such as ATMs, SMS banking, internet banking, and mobile banking, collectively

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known as digital banking services. The majority of traditional commercial banks in Indonesia have adopted digital banking services.

The rise of digital banking in 2021 gained significant attention. According to data from Yahoo Finance, Bank Jago, one of the digital banks, had a market capitalization of Rp209 trillion as of September 2021, surpassing Bank BNI Rp94 trillion (Yogatama, 2021). The increasing public preference for digital services and the rapid growth of digital banking resulted in a 45.64% year-on-year increase in digital banking transactions, totaling Rp39,841.4 trillion (Bank Indonesia, 2021).

In 2016, the digital banking trend in Indonesia started with introduction of the "Jenius" platform by Bank Tabungan Pensiun Negara (BTPN). BTPN's move was followed by other commercial banks that transformed in the following years, with the introduction of Bank Jago, Allo Bank, and Neo Bank. The growth of digital banks is accelerating, as shown by the growing trend of banks being acquired and transformed into digital banks. These acquisitions are being carried out by larger banks or technology companies. For example, BCA acquired Bank Royal, which was then rebranded as BCA Digital. Additionally, several commercial banks have been acquired by technology companies and converted into digital banks, like Bank Artos, which was rebranded as Bank Jago after its acquisition by Gojek.

Indonesia Financial Services Authority has issued Regulation POJK/No.12/2021 on Commercial Banks and Regulation POJK/No.13/2021 on the Implementation of Commercial Bank Products. These regulations further solidify the presence of digital banks in Indonesia. According to POJK/No.12/2021, a digital bank is defined as a bank that operates a business model providing services to customers through electronic channels without physical branches or with limited physical branches.

According to data from Bank Indonesia for the fourth quarter of 2023, digital financial transactions (SMS/Mobile/Internet Banking) in 2023 amounted to Rp58,478.24 trillion, showing a 13.48% increase from 2022. Meanwhile, the value of transactions using ATM cards, debit cards, and credit cards reached Rp8,178.69 trillion, marking a decrease of 0.81% (Bank Indonesia, 2024). This data indicates the growing preference of the public for conducting transactions via smartphones.

The process of digital transformation does not always lead to a direct improvement in the financial performance of banks. According to data from the Boston Consulting Group in 2021, only 13 out of 249 digital banks worldwide were able to make a profit (Asian Banking&Finance, 2023). Research conducted by Nguyen-Thi-Huong et al. (2023) also suggests that digital transformation harms banking financial performance, particularly in terms of profitability. Based on Sudrajad & Ramadhan (2022), there is a significant difference in the financial performance of digital banks and conventional banks. However, this does not necessarily lead to improved performance of digital banks.

In contrast, Theiri & Hadoussa (2024) suggests that digital transformation leads to better profitability. The efficiency of neobanks increases after digital transformation, and there is a long-term relationship between digital transformation and efficiency (Shanti et al., 2024).

Shanti et al. (2023) also state that digital transformation supports long-term profitability but may reduce profitability in the short term due to high IT investment costs. Research by Suharbi & Margono (2022) concludes that transforming into a digital bank can increase a bank's revenue by leveraging fee-based income from each transaction and enhancing efficiency by reducing expenses.

Based on the background, research gaps, and phenomena previously described in this study, the author aims to compare the financial performance of digital banks with conventional banks. This will be measured using ratios such as Return On Assets (ROA), Return On Equity (ROE), Operating Expenses to Operating Income (OC/OI), Net Interest Margin (NIM), Loan to Deposit Ratio (LDR), Non-Performing Loans (NPL), and Fee-Based Income Ratio (FBI).

## **Literature Review**

### **Bank and Digital Bank**

The definition of a bank according to the Republic of Indonesia Law No. 10 of 1998 on banking, a bank is a business entity that collects funds from the public as deposits and channels them as credit to improve public welfare. A bank's profit comes from the difference between the interest paid on deposits and the interest received from loans, known as spread-based income (Kasmir, 2017). Riyadi (2017) states that in the modern era, banks no longer consider loans sourced from public funds as their main source of income. Instead, banks now prioritize income derived from fee-based services such as money markets, capital markets, and fees from services offered by the bank.

Indonesia Financial Services Authority Regulation No. 12/POJK.03/2021 on Commercial Banks, a digital bank is a legal entity that conducts its business activities through electronic channels without physical branches or with limited physical branches. The establishment of a digital bank in Indonesia can be achieved by either transforming an existing commercial bank into a digital bank or by establishing a new bank as a digital bank.

The main differences between conventional bank and digital bank business models lie in their operational efficiency, their ability to adapt to changing customer preferences and behavior, and their use of collected data (Temelkov, 2020). Galazova & Magomaeva (2019) point out that the main difference between conventional banks and digital banks is conventional banks are limited by branch networks and specific operational hours, while digital banks can operate beyond geographical locations and offer 24-hour access.

### **Bank Financial Statements**

According to IAS 1, financial statements provide information on an entity's financial position, performance, and cash flows to help users make decisions. In banking, financial statements are mandated by the Financial Authority Services in POJK No. 37/POJK.03/2019 on Transparency and Financial Publication for commercial banks on a monthly, quarterly, and annual basis. They include a statement of financial position, a profit and loss statement, and a statement of commitments and contingencies.

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Rose & Hudgins (2013) explain the accounting equation as the equation used for banks and financial companies as follows:

$$C + S + L + MA = D + NDB + \text{Equity Capital}$$

C = Cash Assets

S = Security Holdings

L = Loans

MA = Miscellaneous Asset

D = Deposits

NDB = Nondeposits Borrowing

In the balance sheet of a bank's financial statement, assets are referred to as accumulated uses of funds, while liabilities and equity are referred to as accumulated sources of funds (Rose & Hudgins, 2013).

### **Bank Financial Performance**

Performance in banking or financial companies refers to how well a company meets the needs of shareholders, employees, depositors, and creditors (Rose & Hudgins, 2013). Financial performance can guide investment and credit decision-making and provide information on economic resources (Riyadi, 2017). Evaluating financial performance varies based on the company's scope of business. One way to evaluate a bank's financial performance is by using financial ratios, which provide a benchmark for assessing its financial health over a specific period (Riyadi, 2017).

There are several ratios used as determinants of financial performance such as Return On Assets (ROA), Return On Equity (ROE), Net Interest Margin (NIM), Operating Costs to Operating Income (OC/OI), Loan to Deposit Ratio (LDR), Non-Performing Loan (NPL) and Fee-Based Income Ratio (FBI).

Return on Assets (ROA) is a profitability ratio that compares the pre-tax profit to the total assets of a bank (Riyadi, 2017). According to Rose & Hudgins (2013), ROA is a crucial indicator for evaluating management efficiency as it demonstrates the management's capability to generate profit from the assets. The greater the use of bank funds allocated to productive assets, the higher the ROA that will be achieved (Riyadi, 2017). Sudrajad & Ramadhan (2022) in his research stated that digitalization does not improve financial performance. The findings of Nguyen-Thi-Huong et al. (2023) and Coryanata et al. (2023) also asserted that digital transformation has a negative impact on financial performance or reduces profitability, specifically by lowering the Return on Assets (ROA). On the other hand, the studies by Lantip & Daljono (2023), Hussain (2024), and Theiri & Hadoussa (2024) stated that digital transformation significantly improves financial performance (ROA).

Return on Equity (ROE) is a profitability ratio that compares the company's after-tax profit to its core capital Riyadi (2017). It measures how effectively the company can generate

profit from its core capital and represents the return for shareholders. Research conducted by Sudrajad & Ramadhan (2022) stated that digitalization strategies have not been proven to improve financial performance. The findings of Nguyen-Thi-Huong et al. (2023) stated that digital transformation reduces profitability, specifically by lowering the Return on Equity (ROE). On the other hand, the study by Theiri & Hadoussa (2024) stated that digital transformation significantly improves financial performance (ROE).

Net Interest Margin (NIM) is the ratio of interest income minus interest expense (net interest income) divided by average interest-earning assets. It measures a bank's efficiency by evaluating its ability to maintain growth in interest income relative to rising costs, especially from interest expenses on deposits. NIM measures the extent of interest income and interest expense spread that management achieves through strict control over productive assets and pursuing cheaper funding sources (Rose & Hudgins, 2013). Research conducted by Prabantarikso et al. (2022) states that credit and deposit are variables that affect net interest income in the long term. Net interest income reflects the net interest margin ratio. The higher the net interest margin (NIM) achieved, the better the bank's profitability. Sudrajad & Ramadhan (2022) stated that there is a significant difference in the Net Interest Margin (NIM) between digital banks and conventional banks, but digitalization causes a decline in financial performance (NIM). Shanti et al. (2024) also stated that the digital transformation of neobanks improves bank efficiency in terms of the NIM variable. On the other hand, the study by Jikrillah & Fadah (2023) stated that there is no significant impact of digital banking on NIM.

Operating Expenses to Operating Income (OC/OI) ratio compares a bank's operating expenses to its operating income (Riyadi, 2017). This ratio indicates how efficiently a bank utilizes its available resources. If the ratio is above 90% and approaching 100%, it suggests that the bank's performance is not very efficient. Conversely, if the ratio is lower, such as close to 75%, it indicates that the bank's performance reflects a high level of efficiency. Abidin et al. (2024) state if organizations effectively implement digital business transformation, they will be more efficient in their use of resources than companies that do not. Shanti et al. (2023) state that digital transformation initially decreases financial performance, but in the long term, it increases efficiency as measured by the OC/OI.

Loan Deposit Ratio (LDR) is the ratio of total loans to total third-party funds (Riyadi, 2017). Third-party funds can include demand deposits, savings accounts, and time deposits. According to Kasmir (2017), LDR measures the proportion of loans granted compared to the funds collected from the public and the bank's core capital. This indicates that if a bank has LDR more than 100%, its loan disbursement comes from the bank's core capital. LDR indicates the bank's ability to distribute the third-party funds that have been gathered by the bank. LDR is part of liquidity ratios that show the extent to which a bank can repay customer deposits by relying on the loans issued (Pradina & Saryadi, 2019). The research by Linggadjaya et al. (2022) found that the Loan Deposit Ratio (LDR) at Bank Jago increased significantly after becoming a digital bank compared to when it was a conventional bank. Meanwhile, it contradicts the findings of Shanti et al. (2023), who argued that digital banks experience loan growth with a maintained LDR ratio.

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Non-Performing Loan (NPL) is the ratio of the number of loans issued by the bank that have a collectability rating of substandard, doubtful, or loss. The NPL ratio is used to measure the credit risk that the bank has extended to borrowers. Credit risk arises due to the possibility that borrowers may be unable to repay their loans. A higher NPL ratio indicates that the bank is not managing its loans effectively. Shanti et al. (2023) stated in a short-term digital bank could increase credit growth and decrease the NPL. The research by Alkahfi et al. (2024) indicated that digitalization does not affect Non-Performing Loans (NPL).

Banks earn income through interest and non-interest sources. Fee-Based Income (FBI) refers to revenue from banking operations outside of interest income, such as commissions, fees, investments, and income derived from services provided by the bank (Alkahfi et al., 2024). The FBI ratio measures a bank's ability to generate non-interest income compared to total income, indicating its diversification strength. Diversification can improve banks' overall profitability due to the uncertainty of interest rates set by Bank Indonesia regulations. When interest rates decline, banks can sustain themselves through fee-based income. Abidin et al. (2024) state large banks find it easier to generate non-interest revenue, possibly due to their scale and resources, allowing for more efficient diversification of income sources. Alkahfi et al. (2024) stated that investment in information technology for the implementation of digitalization can significantly increase fee-based income. However, that is not in line with the opinion of Simamora & Waspada (2023), which stated that digital services do not affect fee-based income.

### **Research Method**

#### **Data Types and Sources**

This study utilizes a quantitative approach and research data in the form of numerical figures, which are analyzed using statistics. The research problem addressed in this study falls into the category of comparative research. The source of data used is secondary data obtained by the researcher from the official websites of each bank. The secondary data consists of financial statements and annual reports for the 2021-2023 period.

#### **Population and Sample**

The population of this study consists of national private banks registered with the Financial Services Authority since 2021. This research uses the purposive sampling method with several criteria set by the researcher. The criteria or basis for determining the sample set in this research are as follows:

1. Conventional private banks that have transformed into digital banks starting in 2021 and called as digital banks.
2. Conventional private banks of equivalent company size, measured by total assets, compared to digital banks.
3. Banks that have published financial reports on the company's official website for the period of 2021-2023.

Based on the established criteria, it was found that the number of digital banks in Indonesia from 2021 to 2023 amounts to 7 digital banks. As a comparison, with the same sample size, 7 conventional banks with total assets are equivalent to digital banks.

### **Data Collection Techniques**

The method for collecting secondary data uses documentation techniques, such as conducting a literature review to gather articles, books, journals, and previous research. Additionally, it includes reviewing secondary data, such as financial statements and annual reports from each bank for the periods of 2021 and 2023.

### **Data Analysis Techniques**

The next step after collecting and processing data is data analysis. This research involves using quantitative comparative data analysis with descriptive statistical methods. A normality test is then conducted to assess the validity of the data, followed by hypothesis testing using the Independent Sample T-test and the Mann-Whitney U-test. The data analysis is performed using SPSS software version 29.

The hypotheses of this research are:

H<sub>1</sub> = There is a significant difference in ROA between digital banks and conventional banks.

H<sub>2</sub> = There is a significant difference in ROE between digital banks and conventional banks.

H<sub>3</sub> = There is a significant difference in NIM between digital banks and conventional banks.

H<sub>4</sub> = There is a significant difference in OC/OI between digital banks and conventional banks.

H<sub>5</sub> = There is a significant difference in LDR between digital banks and conventional banks.

H<sub>6</sub> = There is a significant difference in NPL between digital banks and conventional banks.

H<sub>7</sub> = There is a significant difference in FBI between digital banks and conventional banks.

## **Result and Discussion**

### **Result**

Testing the data in this study was carried out in several stages such as descriptive statistics, normality test, and hypothesis test.

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**Descriptive Statistics**

Descriptives	Bank	N	ROA	ROE	NIM	OC/OI	LDR	NPL	FBI
Mean	Konvensional	21	0,19	0,70	3,95	96,71	99,13	3,65	10,15
Min		21	-4,67	-24,49	2,36	72,78	68,58	1,21	1,46
Max		21	1,87	9,48	5,87	154,17	146,06	9,08	37,12
Std. Deviation		21	1,46	7,52	1,18	18,21	23,99	2,34	10,62
Mean	Digital	21	-1,02	-7,84	9,80	112,79	109,67	2,45	14,01
Min		21	-14,75	-95,44	3,40	52,38	47,30	0,00	1,54
Max		21	4,78	25,64	20,23	287,86	373,61	9,23	37,42
Std. Deviation		21	5,15	28,77	5,92	53,54	73,94	2,47	10,47

Source: Data processed using SPSS 29

**Normality Test**

	Bank	Kolmogorov-Smirnov		
		Statistic	df	Sig.
ROA	Bank Konvensional	0,232	21	0,005
	Bank Digital	0,246	21	0,002
ROE	Bank Konvensional	0,294	21	<0.001
	Bank Digital	0,331	21	<0.001
NIM	Bank Konvensional	0,133	21	0,2
	Bank Digital	0,18	21	0,074
OC/OI	Bank Konvensional	0,204	21	0,023
	Bank Digital	0,263	21	<0.001
LDR	Bank Konvensional	0,177	21	0,083
	Bank Digital	0,245	21	0,002
NPL	Bank Konvensional	0,211	21	0,015
	Bank Digital	0,186	21	0,055
FBI	Bank Konvensional	0,237	21	0,003
	Bank Digital	0,190	21	0,046

Source: Data processed using SPSS 29

Data is considered to be normally distributed if the Kolmogorov-Smirnov significance value is greater than 0.05. According to the table, only the NIM variable has a significance value greater than 0.05, indicating that it is normally distributed. On the other hand, the ROA, ROE, OC/OI, LDR, NPL, and FBI variables have significance values less than 0.05, suggesting that the data is not normally distributed.

**Hypothesis Testing**

As a result, the NIM variable will undergo hypothesis testing using the independent sample t-test method, while the ROA, ROE, OC/OI, LDR, NPL, and FBI variables will be

tested using the Mann-Whitney U-test, which is a non-parametric statistical method suitable for non-normally distributed data.

**Independent Sample T-test**

	<b>Levene's Test for Equality of Variances</b>		<b>T-test for equality of means</b>			
	F	Sig	T	df	Sig (two-sided p)	mean difference
<b>Equal variances assumed</b>	39,573	< 0,001	-4,443	40	< 0,001	-5,85714
<b>Equal variances not assumed</b>			-4,443	21,592	< 0,001	-5,85714

Source: Data processed using SPSS 29

According to the results of the hypothesis testing, the calculated significance value (two-sided p) for the NIM variable is less than 0.001. If the significance value is less than 0.05, we can conclude that the research hypothesis (H1) is accepted, indicating that the NIM of conventional banks is significantly different from digital banks.

**Mann-Whitney U-test**

<b>Variable</b>	<b>Mann-Whitney U</b>	<b>Asymp. Sig (2-tailed)</b>	<b>Monte Carlo Sig. (2 tailed)</b>
<b>ROA</b>	192,5	0,481	0,489
<b>ROE</b>	177	0,274	0,284
<b>OC/OI</b>	168	0,187	0,204
<b>LDR</b>	191	0,458	0,472
<b>NPL</b>	135	0,031	0,029
<b>FBI</b>	152	0,085	0,084

Source: Data processed using SPSS 29

Based on the results of the hypothesis testing, only the NPL variable has a significance value (two-sided p) < 0.05. This means that the NPL of digital banks is significantly different from conventional banks. On the other hand, the ROA, ROE, OC/OI, LDR, and FBI variables of conventional banks do not exhibit significant differences compared to digital banks.

**Discussion**

From 2021 to 2023, conventional banks had higher average Return on Assets (ROA) and Return on Equity (ROE) than digital banks. Digital banks experienced negative average ROA and ROE due to losses incurred during their initial phase of transformation. Some banks set high allowances for impairment loss to improve their asset portfolios. Furthermore, rising operational costs resulted in losses for banks such as Bank Neo Commerce and Sea Bank. Although digital banks initially had low or negative Return on Equity (ROE), they were able to increase it in the following years. However, Bank Neo Commerce and Sea Bank saw a

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continued decline in their ROE. This research shows that digital transformation will initially lead to a decline in financial performance, indicated by a decrease in ROE. However, after incurring high costs and experiencing negative impacts in the early stages of digital transformation, banks can achieve positive impacts in terms of profitability in the long term as supported by Shanti et al. (2023). These findings are supported by research conducted by Sudrajad & Ramadhan (2022) and Nguyen-Thi-Huong et al. (2023), which suggest that digitalization strategies reduce profitability.

Digital banks demonstrated a significantly higher average Net Interest Margin (NIM) compared to conventional banks. This suggests that digital banks are better at maintaining the growth of interest income relative to interest expenses when compared to conventional banks. Digital banks achieved this by implementing higher deposit and loan interest rates, particularly for consumer loans such as “pay later” services. The deposit interest rate offered by digital banks above the rate guaranteed by the Deposit Insurance Corporation (LPS) is due to competition to attract customer interest. The highest NIM ratio is held by Bank Amar, a digital bank because Bank Amar has a digital loan product called 'Tunaiku,' which disbursed loans amounting to 3.7 trillion in 2023. The composition of interest income from loans, which accounts for 88.69%, generated interest income of 874.9 billion. Unlike conventional banks, digital banks offer the convenience of enabling customers to activate "pay later" credit and digital loans solely through smartphone apps, eliminating the need for customers to visit bank branches for deposits or arrange loan agreements. These findings are consistent with a study by Shanti et al. (2024).

Conventional banks had a lower average OC/OI than digital banks. The OC/OI of conventional banks remained below 100%, with an average of 96.71%. Digital banks had a higher average OC/OI in 2021 and 2022 due to increased operational costs related to their transformation. Based on the annual reports of each bank, the OC/OI of digital banks increased sharply due to information technology and promotional expenses aimed at expanding the user base of digital banking applications. In practice, consistent updates and improvements to features and services are required also leading to an increase in general and administrative expenses. Additionally, there was an increase in human resources to support the transformation, which also caused a rise in salary expenses. Due to asset investments to support information technology, the depreciation expense of assets increased significantly. Most digital banks saw a continuous decline in OC/OI from 2021 to 2023, indicating improved operational cost efficiency following the implementation of digital banking. This study also supported by Abidin et al. (2024) and Shanti et al. (2023) that implementing digital transformation will increase efficiency.

Digital banks had a higher average Loan-to-Deposit Ratio (LDR) than conventional banks. Digital banks had an average LDR above 100%, indicating that the loans they disbursed exceeded the deposits they received. An excessively low LDR may indicate that a bank is not effectively using the deposits it has collected. Conversely, an excessively high LDR increases the risk for the bank, especially if it cannot maintain healthy loan quality. Digital banks with LDRs above 100% include Bank Jago, Allo Bank, and Bank Amar. These banks are recognized for their "pay later" products and digital loans. Also, there is conventional banks with LDR

above 100% which is Bank Oke Indonesia in 2022. This is because Bank Oke Indonesia collaborates to distribute loans through P2P Channeling and partners with fintech companies. However, there is a digital bank that was less productive in managing deposits, as seen from the LDR ratio below 50%, namely Bank BCA Digital in 2021.

Conventional banks typically had a higher average Non-Performing Loan (NPL) ratio compared to digital banks. A lower NPL ratio indicates a bank's better ability to collect its receivables. On average, digital banks have shown better NPL performance. The Financial Services Authority has set a maximum NPL threshold for the banking industry at 5%. By 2023, two banks had NPLs above this threshold: Bank of India Indonesia and Bank Amar. The high NPL was a result of aggressive lending, as indicated by a high LDR. Among both digital and conventional banks in the sample, Bank Amar had the highest LDR at 373.61%. Digital banks are believed to have better NPL ratios compared to conventional banks, partly due to the implementation of digital technology. They can utilize detailed customer data through machine learning to make informed decisions about loan approvals. Additionally, digital banks have credit distribution strategies that involve partnerships with trusted entities, such as Bank Jago's collaboration with the GoTo company. This study is consistent with Shanti et al. (2023).

Digital banks typically have a higher average Fee-Based Income (FBI) compared to traditional banks. A higher FBI ratio indicates a better ability to generate income outside of interest income. Both conventional and digital banks generally earn fee-based income from bank service administration fees and fees from provisions and commissions. Bank Raya has the highest FBI ratio among other banks due to significant and consistent recoveries of financial assets that had been written off during the years 2021-2023. Meanwhile, the conventional bank with the highest FBI is Bank Commonwealth, which has substantial income from other commissions derived from bancassurance fees and mutual fund fees. The higher average FBI of digital banks compared to conventional banks suggests that the integration of information technology into their business model leads to higher administrative income. This is also supported by Alkahfi et al. (2024).

## **Conclusion**

Based on the analysis using the Independent Sample T-test and Mann-Whitney U-test and analysis from the annual report for comparing the financial performance of conventional banks and digital banks during the 2021-2023 period, the research results can be summarized as follows:

1. There is a significant difference in NIM and NPL between digital banks and conventional banks.
2. There is no significant difference in ROA, ROE, OC/OI, LDR, and FBI between digital banks and conventional banks.
3. Banking companies should consider transforming into digital banks to increase efficiency in the long run.
4. Investors can consider digital banks as an investment option due to their potential for rapid market growth.

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5. The transition of banks into digital banks started in 2021, leading to a small sample size and short observation period of three years (2021-2023). This period may not adequately represent the long-term condition of the banks. Furthermore, the financial performance analysis relies solely on financial ratios.
6. Future researchers should increase the sample size of digital banks as the number of digital banks in Indonesia continues to grow over time. Extending the observation period will provide a more accurate reflection of long-term financial performance. Additionally, other indicators could be used to differentiate between conventional and digital banks, such as the number of customers, technology investment, branch offices, and employees.

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