

# CAN CREDIT RISK EXPLAIN THE PERFORMANCE OF INDONESIAN BANKS?

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**Abstract.** *This study investigates the impact of credit risk on the profitability performance of Indonesian banks during the period 2022–2023. Non-Performing Loans (NPL) and Loan Loss Provisions (LLP) are used to measure credit risk, and Non-Interest Income to Total Assets (NoiITA) and Net-Interest Income to Total Asset (NiITA) are used to measure bank profitability. This study examines financial data from a sample of Indonesian commercial banks using multiple linear regression model. The empirical results show that both NPL and LLP significantly impair bank profitability, suggesting that higher credit risk lowers banks' financial performance. These results demonstrate how important it is to successfully manage credit risk in order to guarantee long-term profitability. In addition to offering useful insights for bank managers and policymakers in promoting the stability of the banking industry, the study adds to the body of literature by presenting current empirical evidence from a rising economy.*

**Keywords:** Credit Risk, Loan Loss Provision, Non-Performing Loan, Indonesian Commercial Banks

## 1. INTRODUCTION

In the banking industry, financial performance reflects the effectiveness of risk management and the bank's revenue strategy (Buzaubayeva et al., 2024). The two main components of bank revenue are interest income (net interest income) and non-interest income, which can each be measured against total assets using the Net Interest Income to Total Asset (NiITA) and Non-Interest Income to Total Asset (NoiITA) ratios (Islam, 2018). These ratios provide an overview of how effectively the bank's assets generate income, both from intermediation and non-intermediation activities.

However, in practice, the quality of bank assets is greatly influenced by the level of credit risk (Adem, 2022). Two key indicators reflecting this risk are Loan Loss Provision (LLP) and Non-Performing Loan (NPL). LLP is a reserve set aside by banks to anticipate losses due to loan defaults, while NPL indicates the proportion of problematic loans that may be uncollectible (Alnabulsi et al., 2023). High NPLs reduce interest income due to delayed cash flows from borrowers, while increased LLP adds to provisioning costs that can pressure profits (Xie et al., 2022).

Conceptually, both NPL and LLP have the potential to affect bank financial performance, not only on interest income (NiITA) but also on non-interest income (NoiITA), as high risk burdens can hinder the development of fee-based services and other non-credit activities (Natufe & Evbayiro-Osagie, 2023).

Preliminary observations of several banks in Indonesia from 2022 to 2023 compared to the previous year, 2021, reveal an interesting pattern: a decrease in the LLP and NPL ratios was followed by an increase in the NiITA and NoiITA ratios. This pattern suggests that the decline in credit risk and credit loss provisioning expenses may contribute to improved income efficiency, both from interest and non-interest sources. This condition is relevant to the banking sector's post-pandemic recovery strategy and the national regulator's efforts to stabilize the financial system.

This phenomenon serves as an important foundation for this study to empirically

examine whether LLP and NPL significantly influence the NilTA and NoiITA ratios, thereby contributing academically and practically to the understanding of credit risk management dynamics and their impact on the income structure of banks in Indonesia.

## **2. LITERATURE REVIEW**

### **1.1 Loan Loss Provision (LLP)**

Loan Loss Provision (LLP) is an allocation of funds made by banks to cover potential losses due to non-performing loans or defaults by debtors. LLP acts as a mechanism to protect against credit risk and is one of the indicators of risk management in banking (Dal Maso et al., 2024). According to prudential banking theory and credit risk management, banks are required to establish loan loss reserves to maintain financial stability and preserve investor and customer confidence in the financial institution (Ahmed et al., 1999). LLP reflects the bank's preventive efforts to anticipate losses due to an increase in non-performing loans (Salazar et al., 2023).

LLP also affects bank profitability, particularly through the net interest income channel. When LLP increases, the bank's pre-tax profit may be compressed due to an increase in provision expenses recorded in the income statement (Gao et al., 2022). This indirectly impacts the Net Interest Income to Total Asset (NilTA) ratio. On the other hand, good LLP management can enhance market confidence and minimize income volatility (Ozili & Arun, 2023).

Furthermore, LLP can also have implications for Non-Interest Income to Total Assets (NoiITA) through earnings management practices, particularly in banks that seek to maintain profit stability by recognizing non-interest income as compensation for fluctuations in interest income (Kanagaretnam et al., 2005). Within the framework of income smoothing theory, LLP is used to stabilize reported profits over time by strategically increasing or decreasing provisions (Skala, 2021).

Previous studies have shown a relationship between LLP and bank profitability or financial ratios. For example, LLP has a significant impact on interest income variability and serves as an important tool in banks' profit stabilization strategies (Gao et al., 2022; Proença et al., 2023). Similarly, other research has found that management uses LLP to adjust net interest income in the context of regulatory and tax provisions (Resende et al., 2024).

### **2.2 Non-Performing Loan (NPL)**

Non-Performing Loan (NPL) is a loan that has defaulted or is delinquent in principal and/or interest payments for a certain period of time, usually more than 90 days. NPL is a key indicator of credit risk in the banking industry and reflects the quality of a bank's assets (Sewanyina et al., 2025).

In credit risk management theory, an increase in NPLs indicates weak credit risk assessment and ineffective credit supervision by banks, which can ultimately disrupt financial stability and reduce profitability (Ghosh, 2015). High NPLs reduce a bank's ability to generate income from productive assets, particularly net interest income (Shah et al., 2022). Theoretically, an increase in NPL reduces Net Interest Income to Total Assets (NilTA) because problem loans do not generate interest or experience interest accrual cessation (non-accrual loans) (Alnabulsi et al., 2023). This reduces the volume of interest income received by the bank, thereby lowering income efficiency relative to total assets (Louzis et al., 2012).

The impact of NPLs on Non-Interest Income to Total Assets (NoiITA) can also occur indirectly. When interest income is pressured due to rising NPLs, banks may increase non-interest income such as service fees, foreign exchange transactions, or treasury activities as compensation (Ho et al., 2023). However, non-interest income is generally more volatile and does not always offset losses caused by high NPLs (Makri et al., 2014).

Empirical research by previous scholars indicates that an increase in NPLs has a negative impact on bank profitability in Southeast Europe, with significant effects on the Return on Assets (ROA) and Return on Equity (ROE) ratios (Boussaada et al., 2023). Additionally, other research also confirms that high NPLs are correlated with a decline in

the efficiency and competitiveness of banks in developing countries (Messai & Jouini, 2013). Thus, in the context of this study, NPLs are an important variable that influences bank profitability ratios through both interest and non-interest income channels.

## **2.2 Net Interest Income to Total Asset (NiITA)**

Net Interest Income to Total Assets (NiITA) is a ratio that describes a bank's efficiency in generating net interest income from its total assets. Net interest income (NII) is the difference between interest income received from productive assets (such as loans granted) and interest expenses paid on funds collected (such as customer deposits or debt) (Fixler & Zieschang, 1999).

Conceptually, NiITA is a measure of the profitability efficiency of a bank's intermediation activities. Within the framework of financial intermediation theory, banks act as intermediaries between parties with surplus funds and those in need of funds. A bank's efficiency in generating NII from total assets reflects its success in managing interest margins and optimally allocating assets (Sealey & Lindley, 1977).

The level of NiITA is influenced by several factors, including asset quality, funding cost structure, and provisioning policies such as Loan Loss Provision (LLP) (Ali et al., 2011; Demircuc-Kunt & Huizinga, 1999; Ozili & Outa, 2017). When LLP increases due to high credit risk, pre-tax profit and NII may be compressed, resulting in a decline in NiITA (Athanasoglou et al., 2008). Similarly, Non-Performing Loans (NPLs) reduce interest income through the cessation of interest accrual (non-accrual loans), causing the NiITA ratio to decline significantly (Dietrich & Wanzenried, 2011).

Empirical studies support this. Previous research shows that NII and its efficiency relative to total assets are significantly influenced by credit risk and operational costs (Istaiteyeh et al., 2024; Tarigan & Tandias, 2022). Meanwhile, other studies have found that NiITA is a key indicator of bank profitability in China and is highly sensitive to loan loss provisioning policies and credit quality (Rathnayake et al., 2022). Thus, NiITA not only reflects a bank's ability to generate core income from lending activities, but is also closely related to the quality of credit risk management and banking policies on loan loss provisions.

## **2.3 Non-Interest Income to Total Asset**

Non-Interest Income to Total Assets (NoiITA) is a ratio that measures a bank's ability to generate non-interest income from all of its assets. Non-interest income includes various sources other than interest income, such as banking service commissions, fee-based income, foreign exchange transaction income, gains from securities investments, and treasury activities (Saunders et al., 2023).

According to the income diversification theory, banks that rely on various sources of income outside of interest will have stronger financial stability, especially during interest rate fluctuations or increased credit risk (Baselga-Pascual et al., 2018; Köhler, 2015). Non-interest income contributes to the sustainability of bank profits, especially when interest margins narrow or asset quality declines (DeYoung & Rice, 2004).

NoiITA is an important indicator in assessing the efficiency of a bank's alternative income relative to total assets. Non-interest income tends to be more flexible but also more volatile depending on market conditions (Williams & Prather, 2010). The portfolio income approach theory explains that diversifying into non-interest income can improve financial performance and reduce reliance on credit activities, but its effects also depend on risk management and the bank's ability to manage non-credit activities (Keating et al., 1994).

The link between NoiITA and Loan Loss Provision (LLP) and Non-Performing Loan (NPL) emerges when interest income is pressured due to an increase in non-performing loans or provisioning costs, prompting banks to rely on non-interest income to maintain profit performance (Iskandar et al., 2022). Previous research shows that banks experiencing pressure on interest income due to credit risk tend to increase non-interest activities as compensation (Busch, 2009).

More recent research shows that banks in South Asia are beginning to expand the

contribution of non-interest income to total income in response to asset quality pressures and declining interest margins (Imran Hunjra et al., 2020). Thus, in the context of this study, NoiITA not only serves as an indicator of on- interest income efficiency but also as a reflection of banks' strategies in maintaining profitability when faced with credit risk challenges and loss provisioning.

#### **2.4 Theory of Financial Intermediation**

The Theory of Financial Intermediation explains the primary function of banks as institutions that collect funds from the public and channel them to those in need of financing. In this context, banks not only act as fund distributors but also as risk processors, information providers, and economic efficiency managers (Kennedy, 1960).

Banks generate profits through intermediation activities, particularly by leveraging the difference between the interest paid to depositors and the interest received from borrowers, known as net interest income (NII) (Allen & Santomero, 1997). When net interest income is compared to total assets, the Net Interest Income to Total Asset (NiITA) ratio is formed as a measure of intermediation profitability efficiency.

Banks are production organizations that transform financial inputs (capital, labor, and public funds) into financial outputs (loans, investments, and services) (Sealey & Lindley, 1977). The efficiency of this process is reflected in the bank's ability to maximize interest income while minimizing credit risk.

This theory is reinforced by the concept of delegated monitoring, which explains that banks as intermediaries are tasked with assessing and managing debtor risk, including default risk (Diamond, 1984). Therefore, Loan Loss Provision (LLP) and Non- Performing Loan (NPL) are two important components in maintaining intermediation stability.

When credit risk increases (NPL rises), banks are forced to form larger LLPs. This will reduce net income, decrease asset utilization efficiency, and directly affect NiITA (Anandarajan et al., 2005; Bouvatier & Lepetit, 2008). On the other hand, to maintain financial performance, banks may increase Non-Interest Income to Total Assets (NOIITA) through business diversification (Busch, 2009).

Financial intermediation is also closely related to the stability of the financial system as a whole (Freixas & Rochet, 2008). When asset quality declines, the effectiveness of intermediation is disrupted, forcing banks to adjust their income structure. In the modern era, the role of intermediation is not limited to lending and borrowing, but also includes risk management, financial innovation, and the creation of non- interest income in response to tight interest margins (Allen & Santomero, 1997).

### **3. RESEARCH METHODS**

The impact of Loan Loss Provision (LLP) and Non-Performing Loans (NPL) on two banking profitability indicators—Net Interest Income to Total Assets (NiITA) and Non-Interest Income to Total Assets (NoiITA)—is analyzed in this study through a quantitative method and causal-comparative research design. Secondary data gathered in this study were derived from the 2022–2023 annual reports of banks on the Indonesia Stock Exchange (IDX). The selection of secondary data from financial statements is due to the objectivity and completeness of audited information, which are assumed to represent a fair and consistent picture of the financial situation of the company (Ghozali, 2019). Financial statements are appropriate for empirical analysis in this study since they also serve as the basis for financial policy and administrative practice decision-making (Brigham & Houston, 2019). The population of this study is the entire 54 listed banking firms in IDX. Purposive sampling was used to choose 33 banks as samples from the population. The rationale of using this technique is that this type of sampling allows researchers to choose samples according to certain standards that are of concern to the study purpose. The requirements for selection of the samples are as follows:

1. Banks that consistently report their annual financial statements to the IDX during 2022–2023
2. Banks that provide complete data related to the variables being studied, namely LLP, NPL, NIITA, and NOIITA

3. Banks that use the Rupiah currency in their financial reports
4. Banks with positive Net Interest Income
5. Banks with an NPL ratio below the threshold set by the Financial Services Authority (OJK), which is a maximum of 5%.

These criteria are selected so that the sample is operationally and accounting-viable in such a way that research results are reliable and not biased by outliers or extreme values. Multiple linear regression techniques were used to analyze data gathered with the assistance of SPSS version 25 software. Hypotheses included in the current study are based on finance theory and previous empirical studies, as follows:

1. H1: Loan Loss Provision (LLP) has a negative effect on Net Interest Income to Total Assets (NiITA).
2. H2: Non-Performing Loans (NPL) have a negative effect on Net Interest Income to Total Assets (NiITA)
3. H3: Loan Loss Provision (LLP) and Non-Performing Loans (NPL) together affect Net Interest Income to Total Assets (NiITA).
4. H4: Loan Loss Provision (LLP) has a positive effect on Non Interest Income to Total Asset (NoiITA)
5. H5: Non Performing Loan (NPL) has a negative effect on Non Interest Income to Total Asset (NoiITA)
6. H6: Loan Loss Provision (LLP) and Non-Performing Loans (NPL) together affect Non-Interest Income to Total Assets (NoiITA).

#### 4. RESULTS AND DISCUSSION

In the analysis section, key terms in the study are explored from historical data and analyzed through graphical analysis. Next, the impact analysis is discussed along with the conditions of LLPs, NPLs, and the profitability of banks in Indonesia.

##### 4.4 Loan Loss Provision (LLP) and Non-Performing Loan (NPL) on Net-Interest Income to Total Asset (NiITA)

**Table 1.** Simultaneous Test (ANOVA) of LLP and NPL on NiITA

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,496	2	,248	6,090	,047 <sup>b</sup>
	Residual	1,230	30	,041		
	Total	1,726	32			

a. Dependent Variable: NiITA

b. Predictors: (Constant), NPL, LLP

In Table 1, it can be seen that the F value is 6.090 with a significance level of 0.047. Because the F value > the table F value (6.090 > 3.316) and the significance level 0.047 < 0.05. This indicates that Loan Loss Provision (LLP) and Non-Performing Loan (NPL) simultaneously or together influence the Net Interest Income to Total Asset (NiITA) ratio of the banking sector in Indonesia.

Simultaneously, an increase in NPL drives an increase in LLP. This combination puts double pressure on NiITA. First, because interest from non-performing loans is no longer considered valid interest income. Second, because banks must allocate LLP, which can reduce the allocation of funds for other productive loans. This overall reduces the bank's efficiency in generating interest income from total assets.

However, this relationship is also dynamic. In improving macroeconomic conditions, a decline in NPLs can reduce LLP, leading to an increase in NII and the NiITA ratio. Therefore, the declining trend in NPLs and LLP is often followed by an increase in the

NiITA ratio, as seen in several banks in Indonesia during the 2022–2023 period, where a decrease in non-performing loan levels was accompanied by an improvement in interest income efficiency relative to assets.

**Table 2.** Partial Test (Coefficient) LLP and NPL on NiITA  
**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	3,567		6.171	,002
	LLP	-,246	-,710	-5,407	,000
	NPL	-,003	-,626	-2,087	,041

a. Dependent Variable: NiITA

Based on the table, the multiple regression equation can be described as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$$

$$Y = 3,567 - 0,246LLP - 0,003NPL + e$$

From the multiple linear regression equation above, it can be explained as follows:

1. The constant value of 3.567 is positive. This means that if the independent variables LLP (Loan Loss Provision) and NPL (Non-Performing Loan) are zero or unchanged, the value of NiITA (Net Interest Income to Total Assets) is estimated to be 3.567.
2. The regression coefficient for the LLP variable is -0.246, which indicates a negative (opposite) effect on NiITA. This means that if the value of LLP increases by 1 unit, NiITA will decrease by 0.246, assuming that other variables remain constant. This interpretation suggests that an increase in loan loss reserves indicates an increase in credit risk, thereby reducing the efficiency of net interest income relative to total bank assets.
3. The regression coefficient for the NPL variable is -0.003, which also indicates a negative effect on NiITA. This means that every 1-unit increase in NPL will decrease NiITA by 0.003, assuming all other variables remain constant. Although this coefficient value is relatively small, it still statistically indicates a significant negative impact on the bank's net interest profitability.
4. The calculated t-value for LLP is -5.407, which is greater than the t-table value (2.011) in absolute terms and has a significance level of 0.000 (< 0.050). This indicates that LLP has a significant effect on NiITA. Therefore, it can be concluded that loan loss reserves have a strong and significant relationship in reducing the level of net interest income relative to total assets.
5. The calculated t-value for NPL is -2.087, which is also greater than the t-table value (2.011) in absolute terms, and has a significance value of 0.041 (< 0.050). Therefore, it can be concluded that NPL also has a significant effect on NiITA. This means that an increase in non-performing loans can significantly reduce the effectiveness of banks in generating interest income from their assets.

Loan Loss Provision (LLP) is a loss reserve set aside by banks to anticipate potential defaults on their loan portfolios. Although LLP is not a direct component of interest income, an increase in LLP reflects higher expectations of credit risk. When banks increase LLP, part of the interest income generated must be allocated to form the loss reserve, thereby reducing the net interest income (NII) that can be reported. The allocation of LLP also has an impact on asset utilization efficiency, as funds that should be used for productive credit expansion are instead held as reserves. As a result, even though the bank's total assets remain relatively unchanged, the decline in net interest income due to the increased LLP burden will lower the NiITA ratio. Thus, an increase in

LLP negatively affects NilTA by reducing the bank's profitability in terms of net interest income relative to total assets.

Non-Performing Loans (NPL) are an indicator of the quality of a bank's credit assets, where a high NPL ratio indicates a significant proportion of problematic or uncollectible loans. This condition directly has a negative impact on net interest income (NII), as problematic loans no longer generate interest, which is the primary source of the bank's income. Additionally, an increase in NPL causes the bank to cease recognizing interest income from loans classified as non-performing, in accordance with the principle of conservatism in accounting. When interest income decreases while total assets do not undergo significant changes, the NilTA ratio will decline. This indicates that high levels of non-performing loans reduce the bank's efficiency in generating interest income from its total assets. Therefore, high NPLs have a negative impact on NilTA because they reduce the bank's ability to earn income from intermediation activities.

**Table 3.** Model Summary LLP and NPL on NilTA

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,783 <sup>a</sup>	,613	0,596	2,07037

a. Predictors: (Constant), NPL, LLP

The coefficient of determination (R Square) in this study is 0.613 or 61.3%. This indicates that 61.3% of the variability in the dependent variable, NilTA (Net Interest Income to Total Assets), can be explained by the independent variables, LLP (Loan Loss Provision) and NPL (Non-Performing Loan). Meanwhile, the remaining 38.7% (100% - 61.3%) is explained by other variables outside the model that were not examined in this study. Thus, this model has a sufficiently strong relationship in explaining the influence of LLP and NPL on NilTA.

#### 4.5 Loan Loss Provision (LLP) and Non-Performing Loan (NPL) on Non-Interest Income to Total Asset (NoiTA)

**Table 4.** Simultaneous Test (ANOVA) LLP and NPL on NoiTA

ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0,788	2	,394	7,744	,025 <sup>b</sup>
	Residual	15,300	30	,051		
	Total	16,088	32			

a. Dependent Variable: NOIITA

b. Predictors: (Constant), NPL, LLP

In Table 4, it can be seen that the F value is 7.744 with a significance level of 0.025. Because the F value > the table F value (7.744 > 3.316) and the significance level 0.025 < 0.05. This indicates that Loan Loss Provision (LLP) and Non-Performing Loan (NPL) jointly or together influence the Non-Interest Income to Total Asset (NoiTA) ratio of the banking sector in Indonesia.

Loan Loss Provision (LLP) and Non-Performing Loan (NPL) can simultaneously affect the Non-Interest Income to Total Asset (NoiTA) ratio because both reflect the health of the bank's credit, which impacts non-interest income. When NPLs increase, this indicates a high level of non-performing loans, which reduces customer and investor confidence and disrupts the bank's operational efficiency in generating income from non-credit sources such as services or fee-based income. In response, banks will increase LLP to reserve for potential credit losses, which in turn increases operational costs and reduces the flexibility of asset utilization for non-interest activities. While high NPLs reduce non-



interest income potential, increased LLP—when managed prudently—can support operational stability, indirectly contributing to non-interest income growth.

**Table 5. Partial Test (Coefficient) LLP and NPL on NoilTA Coefficients<sup>a</sup>**

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	4,026	,646		6,232	,002
	LLP	,395	,207	,401	1,909	,034
	NPL	-,005	,001	-,889	-3,266	,022

a. Dependent Variable: NOIITA

Based on the table, the multiple regression equation can be described as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$$

$$Y = 4,026 + 0,395LLP - 0,005NPL + e$$

From the multiple linear regression equation above, it can be explained as follows:

1. The constant value of 4.026 is positive. This means that if the independent variables LLP (Loan Loss Provision) and NPL (Non-Performing Loan) are zero or unchanged, the NoilTA (Non-Interest Income to Total Assets) value is estimated to be 4.026. This figure represents the bank's basic non-interest income relative to total assets when there is no credit risk pressure.
2. The regression coefficient for the LLP variable is 0.395, indicating a positive effect on NoilTA. This means that if the LLP value increases by 1 unit, NoilTA will increase by 0.395, assuming all other variables remain constant. This can be interpreted as an increase in loan loss reserves reflecting strengthened risk management, enabling the bank to focus on non-interest income sources, such as fee-based services and other service transactions.
3. The regression coefficient for the NPL variable is -0.005, indicating a negative impact on NoilTA. This means that every 1-unit increase in NPL will decrease NoilTA by 0.005, assuming other variables remain constant. Although the value is small, this effect is still economically significant and indicates that an increase in non-performing loans can reduce a bank's ability to generate non-interest income efficiently.
4. The t-value for LLP is 1.909, with a significance level of 0.034 (< 0.050). This indicates that LLP has a statistically significant effect on NoilTA. Therefore, it can be concluded that loan loss reserves have a significant and positive relationship with a bank's non-interest income relative to total assets.
5. The t-value for NPL is -3.266, with a significance level of 0.022 (< 0.050). This means that NPL also has a significant negative effect on NoilTA. An increase in the non-performing loan ratio can significantly reduce the bank's effectiveness in generating non-interest income from activities such as financial services, transactions, and other services.

Loan Loss Provision (LLP) is a reserve set aside by banks to cover potential losses from non-performing loans. When banks proactively and conservatively establish LLP, this reflects good risk management and effective credit control. With an increase in LLP, the risk of losses due to bad debts can be reduced, thereby increasing non-interest profitability due to improved bank operational stability. Additionally, adequate LLP can also enhance market confidence and operational efficiency, which impacts the increase in other income such as fee-based income, foreign exchange transactions, or other financial services. Therefore, well-managed LLP can have a positive impact on Non-



Interest Income to Total Assets (NoiITA).NPL reflects the level of debtor default in meeting their credit payment obligations.

An increase in NPL indicates a high risk of non-performing loans, which not only affects interest income but can also reduce overall operational quality. A high NPL requires banks to increase their loss provisions (LLP), bear a greater provisioning burden, and incur losses from other operational activities due to financial pressure. This can reduce the bank's ability to develop and manage non-interest income sources such as administrative fees, transaction services, and commissions. Thus, an increase in NPL can have a negative impact on NoiITA, due to declining operational performance and increased costs.

**Table 6.** Model Summary LLP and NPL on NoiITA

<b>Model Summary</b>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.570 <sup>a</sup>	.324	.279	1,6714518

a. Predictors: (Constant), NPL, LLP

The coefficient of determination (R Square) in this study is 0.324 or 32.4%. This indicates that 32.4% of the variability in the dependent variable, NOIITA (Non-Interest Income to Total Assets), can be explained by the independent variables, LLP (Loan Loss Provision) and NPL (Non-Performing Loan). Meanwhile, the remaining 67.6% (100% - 32.4%) is explained by other variables outside the model that were not examined in this study. Thus, this model has a moderately strong relationship, yet it still provides meaningful information regarding the influence of LLP and NPL on NoiITA.

## CONCLUSION

Based on the results of data analysis from banking financial reports in Indonesia for the period 2022–2023, it can be concluded that the variables Loan Loss Provision (LLP) and Non-Performing Loan (NPL) have a significant effect on both Net Interest Income to Total Asset (NiITA) and Non Interest Income to Total Asset (NoiITA).

First, the results of the simultaneous test (ANOVA) show that LLP and NPL together have a significant effect on NiITA, with a significance value of 0.047 (< 0.05). This result is reinforced by a partial analysis showing that both LLP and NPL have a negative and significant influence on NiITA. This means that the higher the loan loss provision (LLP) and the non-performing loan (NPL) ratio, the lower the bank's efficiency in generating interest income relative to its total assets. This is due to two main pressures: (1) interest income from non-performing loans cannot be fully recognized, and (2) part of the funds must be allocated to loss reserves, thereby reducing the potential interest income from other productive assets.

Second, in the NoiITA ratio, the simultaneous test results also show that LLP and NPL together have a significant influence on Non-Interest Income to Total Assets (NoiITA), with a significance value of 0.025 (< 0.05). The partial regression results show that LLP has a significant positive effect on NoiITA, while NPL has a significant negative effect. Thus, it can be concluded that an increase in LLP, which reflects good risk management, can actually promote operational stability and enable banks to focus more on generating non-interest income such as administrative fees, service commissions, and foreign exchange transactions. Conversely, an increase in NPL reduces the bank's ability to develop income from non-interest sources, as high risk burdens impact declining trust and operational efficiency.

Overall, the results of this study indicate that credit quality conditions (as reflected in NPL) and risk management strategies (as reflected in LLP) are important factors influencing bank profitability performance, both from the interest side (NiITA) and non-interest side (NoiITA). Therefore, effective credit risk management and a reduction in the non-performing loan ratio are crucial in improving the bank's overall financial

performance.

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