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Momtaj Parvin[1]
Metropolitan University, Sylhet, Bangladesh

Md. Merajul Islam[2]
Pabna University of Science and Technology, Pabna, Bangladesh

Larysa Vdovenko[3]
Vinnytsia National Agrarian University, Vinnytsia, Ukraine

Impact of Non-Performing Loans on the Growth of the Banking Sector in Bangladesh

Abstract. *The banking system of a country is a predictor of its economic prosperity. However, the financial sector has experienced contradictory reactions. The rise of non-performing loans is a notable feature of the banking industry's financial crisis. According to Bangladesh Bank, state-owned banks are prone to substantial collapses, which have a knock-on effect on the entire commercial banking sector. The aim of the study is to determine the impact of non-performing loans on the growth of the banking system in Bangladesh. The paper is mostly an investigative desk study that prioritizes secondary data. Nonetheless, primary data was used, such as in-person interviews with bank personnel and staff, as well as casual conversations with clients. Secondary sources for this article include Bangladesh Bank bulletins, current newspapers and periodicals, some published and unpublished research reports, various websites, and a large number of peer-reviewed publications. The paper incorporates multiple regression analysis to assess the impact of non-performing loans on banking sector growth from 2012 to 2021. The findings revealed a highly significant inverse correlation among NPL, CRAR, and ROE, as well as a significant but negative relationship among NPL, ROA, NIM, and SLR. However, the alternative hypothesis is accepted, whereas the null hypothesis is rejected. Therefore, NPLs have a severe effect on banking advancement since they worsen banks' liquidity issues, lower profitability, trigger capital constraints, and even jeopardize the financial system's stability and viability.*

Keywords: *banking industry, non-performing loans, bank expansion, commercial bank, financial indicators.*

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[1] **Momtaj Parvin**, Department of Business Administration, Metropolitan University, Sylhet, Bangladesh.
ORCID 0000-0003-0268-3418
E-mail: momtajparvin28@gmail.com (*Corresponding author*)

[2] **Md. Merajul Islam**, Department of Business Administration, Pabna University of Science and Technology, Pabna, Bangladesh.
ORCID 0000-0002-3841-7050

[3] **Larysa Vdovenko**, Vinnytsia National Agrarian University, Vinnytsia, Ukraine.
ORCID 0000-0002-6283-2385

Момтадж Парвін
Університет Метрополітен, Силхет, Бангладеш

Мераджул Іслам
Університет науки і технологій Пабна, м. Пабна, Бангладеш

Лариса Вдовенко
Вінницький національний аграрний університет, м. Вінниця, Україна

Вплив непрацюючих кредитів на зростання банківського сектора в Бангладеш

Анотація. *Одним із помітних аспектів фінансової кризи в банківській галузі Бангладеш є збільшення непрацюючих кредитів (NPL). Проблемні кредити завдають шкоди економіці, оскільки загострюють проблему безробіття. Якщо позичальники втрачають роботу, вони намагаються повернути свої борги, а коли цього не вдається зробити, економічне зростання в країні значно сповільнюється. Метою цього дослідження є визначення впливу непрацюючих кредитів на зростання банківського сектора в Бангладеш. Загалом, це дослідження побудоване на аналізі вторинних даних. Проте, для аналізу були використані й первинні дані, включаючи особисті інтерв'ю з персоналом і працівниками банку, а також випадкові бесіди з клієнтами. Вторинні джерела даних включають бюлетені банку Бангладеш, актуальні статті в періодичних виданнях, деякі опубліковані та неопубліковані дослідницькі звіти, веб-сайти фінансових установ. У статті застосовано множинний регресійний аналіз для вивчення впливу непрацюючих кредитів на зростання банківського сектора, представленого вибіркою із 61 комерційного банку, зареєстрованого в Bangladesh Bank з 2012 по 2021 рік. Залежними змінними в цьому дослідженні є співвідношення капіталу до зважених за ризиком активів (CRAR), рентабельність активів (ROA), рентабельність власного капіталу (ROE), чиста процентна маржа (NIM), співвідношення витрат і доходів (EIR) і нормативний коефіцієнт ліквідності (SLR), а незалежною змінною є непрацюючі кредити (NPL). За результатами дослідження виявлено значну негативну кореляцію між NPL, CRAR і ROE, а також значний зв'язок між NPL, ROA, NIM і SLR. Альтернативна гіпотеза, однак, приймається, тоді як нульова гіпотеза відхиляється. Таким чином, непрацюючі кредити можуть зменшити доходи від традиційних позик і здатність банку отримувати від них прибуток.*

Ключові слова: *банківський сектор, непрацюючі кредити, зростання банківського сектору, комерційний банк, фінансові показники.*

1. INTRODUCTION

A bank is a form of financial organization that takes deposits from surplus units and lends money to deficit units. Advances and loans make up the majority of the bank's sources of income. A loan is a sum of money taken by a bank from surplus units and borrowed from a bank for a particular anticipated or unforeseen occurrence. By adding interest to loans and investments, the bank hopes to make money. Within the allocated time, the borrower is required to repay the principal amount of loan plus interest. As a result, it is crucial to offer loans to potential clients so that the chance of debt rescheduling can be ensured in good time (Onyango, 2015).

However, the previous few years have been challenging for Bangladesh's banking industry. One of the main contributing factors to the crisis, according to experts, is the rising trend of non-performing loans (NPLs). Without lowering delinquent loans, banking cannot be stabilized. The primary causes of annoyance in the banking sector include bad lending practices, a lack of corporate governance, political pressures, non-payment and so on (Hossain, 2018).

The researcher has found, non-performing loans have a bad relationship with performance effectiveness. A credit crisis is brought on by NPLs. Credit disbursements safeguard new credit commitments, but due to increased risk, the credit crunches also see an increase in bank ratios, which in turn raises the NPL rate (Balasubramaniam, 2012). In times of crisis, financial institutions not only aim to increase their equity bases but also reduce their risk assets or alter the structure of their asset portfolio to re-establish credibility between creditors and depositors. Corporate borrowers have long been the target of such defensive actions, resulting in sluggish economic growth overall. Because of the rise in NPL, the money cycle came to an end and any business will always suffer from a slow cash flow (İslamoğlu, 2015). However, a defaulted loan has a big impact on any financial scenario.

Non-performing loans are mainly caused by a significant number of wrong economic decisions and general misfortunes by individuals. In this situation, the borrowers may pay an allowance for a simple portion of the non-performance in the form of bad loan provisions, or they may spread the risk by taking out insurance (Ekanayake et al., 2015). NPLs can be considered as an unintended consequence or expense of the lender which reduces the efficiency of the bank (Messai et al., 2013). The problem of NPLs can have serious adverse effects on the economy. The government has implemented various policy measures to manage NPLs and gain confidence in the financial system. Thus, the study's objective is to determine the impact of non-performing loans on the growth of the banking sector in Bangladesh.

2. LITERATURE REVIEW

2.1 Conceptualization of Non-Performing Loans

Non-performing loans (NPL) are called defaulted loans or classified loans or non-performing assets that occur when borrowers are unable to pay the interest and principal amount of the loan within the specified period (Kingu et al., 2018). Many loans become non-performing after defaulting for 90 days but this may depend on the terms of the contract. According to IMF, *the definition of NPLs is "A loan is non-performing when payments of interest and principal are past due by 90 days or more, or at least 90 days of interest payments have been capitalized, refinanced or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons to doubt that payments will be made in full."*

As per Section 5 (cc) of the Bank Company Act 1991, *'defaulting debtor' means any person or institution served with advance, loan granted in favor of him or an institution involving interest or any portion thereof, or any interest which has been overdue for six months by the definition of Bangladesh Bank. If a defaulting borrower is not a director of any public limited company or does not hold more than 25 percent of the shares of that company, the said public limited company shall not be considered an interest-related institution. Provided further that, the shares of a borrower not exceeding 20 percent other than a public limited company, which is cited as an institution, shall not be considered as an interest-concerning institution under the clause. Bad loans may not perform to serve interest or principal, other charges, VAT, tax, etc. That is why it is called a non-performing loan (NPL).*

A financial crisis may be indicated by a high number of non-performing loans, which would impede the banking industry's expansion. High-level NPLs negatively affect the supply and demand of credit and can be a sign of financial distress, reducing the lending of the real economy when the economy needs help (Do et al., 2020). Depositors are impacted by loan defaulters and loan payback. The monies from depositors are used to cover bank deficits. Due to loan failures, banks are unable to pay lower interest rates. To boost economic growth, loan defaults in the banking industry must be stopped (Haneef et al., 2012).

On the other hand, there are numerous negative repercussions associated with the high number of NPLs (Syed, 2017). The NPL harms the economy because it makes the unemployment issue worse. As the borrowers lose their jobs, they struggle to pay back their debts, and when they fail, economic growth suffers. As a result of the client's limited growth, their capacity declines. Similarly, demand from them will decline and fewer investments will be made, which will lead to NPL difficulties in the economy and possible efficiency issues in the banking industry (Murthy et al., 2017). There is no global standard for defining NPL at the practical level. An NPL is a sum of money borrowed by the debtor who has not paid its due amount, which is by default or close to default. Once the loan is not executed, its repayments are considered to be substantially less than the full repayment. If the borrower starts playing against the non-performing loan, it becomes a performing loan. If payments are delayed for a short period, the loan is classified as past reasons. Once the payment is late (usually 60 days), the loan is classified as non-performing (Guy, 2011).

2.2 Scenario of Non-Performing Loans in Bangladesh

Loans are the most important asset as well as the primary source of income for banking financial institutions and on the other hand the main source of risk for bank management. So prudent bank management should always try to strike a proper balance between return and risk portfolio. However, the recent activities, guidelines, and their concentration in the banking sector are not satisfactory (BIBM, 2000). The country's banking sector is currently going through the challenges of lowering the lending rate to a single-digit rate, reducing the deposit ratio, tackling corruption, ensuring good governance, maintaining adequate liquidity, keeping it alive, and weakening depositors' confidence through scandals, lowering deposit interest rates and restoring the confidence of giant depositors, recover default loans, etc. But the biggest challenge is recovering the defaulted loans. This sector is understood by the sky-high default loan and over time it has become a curse (Hossain, 2020).

According to Bangladesh Bank (BB), the total outstanding loans in the banking sector as of December 2019 was Tk.10,11,828 crores, of which Tk.94,331 crore was classified (as non-performing). This means that after December 2019, the ratio of total NPLs to gross outstanding loans stood at 9.32%. In the latest Global Economic Prospects report of the World Bank, the ratio of NPLs in Bangladesh for 2019 was 11.4%. On the other hand, the classified loans in the banking sector slightly decreased and stood at Tk.88,734 crore in 2020 compared to Tk.94,331 crore the year before (Bangladesh Bank, 2020). NPLs in the country's banking sector increased 16.38% year-on-year to Tk.103,274 crore in 2021 despite a relaxed loan classification policy taken by the Bangladesh Bank due to the COVID-19 pandemic. The ratio of default loans to outstanding loans and advances stood at 9.25% in 2021 compared to 8.53% in 2020, according to the Bangladesh bank data. In June 2021, the amount of defaulted loans was Tk.99,205 crores. But at the end of June 2022, the amount of defaulted loans in the country was Tk.1,25,257 crores (8.96% of total loans), which is the highest ever. Based on the data of BB, the amount of defaulted loans increased by 26.5% in June 2022 (Bangladesh Bank, 2022).

Banks in Bangladesh are primarily categorized into two types: Scheduled and Non-Scheduled banks. On the other hand, scheduled banks include State-Owned Commercial Banks (SOCBs), Specialized Development Banks (SDBs), Private Commercial Banks (PCBs), and Foreign Commercial Banks (FCBs). Scheduled banks are licensed under the Bank Company Act, of 1991 and currently, there are 61 scheduled banks in Bangladesh. According to BB, state-owned banks and specialized development banks have the highest amount of NPLs out of total loans.

In 2021, the NPLs for SOCBs is Tk.44,977 crore and Tk.2,785 crore for SDBs which is comparatively higher for other categories of banks. From 2012 to 2021, the amount of NPLs for SOCBs is increasing day by day and the amount is always higher from PCBs.

However, there are some indicators of banking performance like the Capital to Risk-Weighted Assets Ratio also known as the capital adequacy ratio or the ratio of a bank's capital against its risk. The ratio is used to measure the bank's financial stability by measuring its available capital as a percentage of its risk-weighted credit exposure. According to BB the minimum CRAR of 10% of the total RWA. In 2021 the SOCBs had only 6.8% CRAR, in 2020 it was 9.6%, in 2019 it was 5%, in 2018 it was 10.3% and in 5% in 2017. On the other hand, SDBs had always negative CRAR last 5 years. But PCBs always maintain higher CRAR according to the requirement of BB. The FCBs CRAR condition is also similar to SOCBs and SDBs.

The profitability ratio is used to measure the ability to earn profit relative to its assets, revenue, shareholder's equity, etc. The profitability ratio of the banking industry of Bangladesh from 2012 to 2021 and the analysis is based on Return on Assets (ROA) and Return on Equity (ROE). The private banking sector and foreign commercial banks maintain positive returns but the public banking sector always has negative returns based on assets and equity. Net Interest Margin (NIM) measures the amount of interest earned by the bank from their total loan. It is another profitability ratio that measures how well the banks made their investment decisions by providing loans in different sectors. It is another indicator of determining the bank's performance. Other metrics for assessing the performance and growth of the banking industry are Statutory Liquidity Ratio (SLR).

2.3 Causes of Non-Performing Loans

Loan default is defined as the inability of the recipient to comply with the obligations of his loans at the time of payment due (Abd Karim et al., 2010). NPLs have become a major concern for the banking sector due to multiple prolonged adverse effects on the bank's balance sheet, resulting in loss of capital and earnings, profit, liquidity and losses of the banking industry (Annual Report, 2018-2019). Causes of loan default include a lack of goodwill to repay loans, intentional negligence, and reasonable assessment by credit officials (Waqas et al., 2017).

The default increases as the actual gross domestic product decreased and the exchange rate devaluation directly affects the recipient's ability to repay (Kwakwa, 2009). Lack of the importance on loan repayment, delay in loan disbursement, small industry size, high-interest rate, age of borrowers, low supervision, non-profitability of enterprise, and unnecessary government intervention in government-sponsored credit programs are the major causes of a loan default (Siddiqui et al., 2012). The size of the industry or business, the size of the family, the scale of the operation, the cost of living, and the exposure to sound management strategies are some of the factors that can affect the ability of borrowers to repay (Kaur et al., 2011).

The main causes of NPLs in the industrial sector such as improper selection of an entrepreneur, lack of success of the project analysis, inadequate collateral/loan against the fair mortgage, unrealistic terms and schedule of payment, non-compliance, and natural causes (Murshed et al., 2018). The nature of loans, delivery time, supervision, and profitability of the enterprise contribute to the repayment of the loan etc are another reasons for loan default (Bholat et al., 2016). The following critical factors leading to NPLs have been identified from the responses of interviewees (Figure 1).

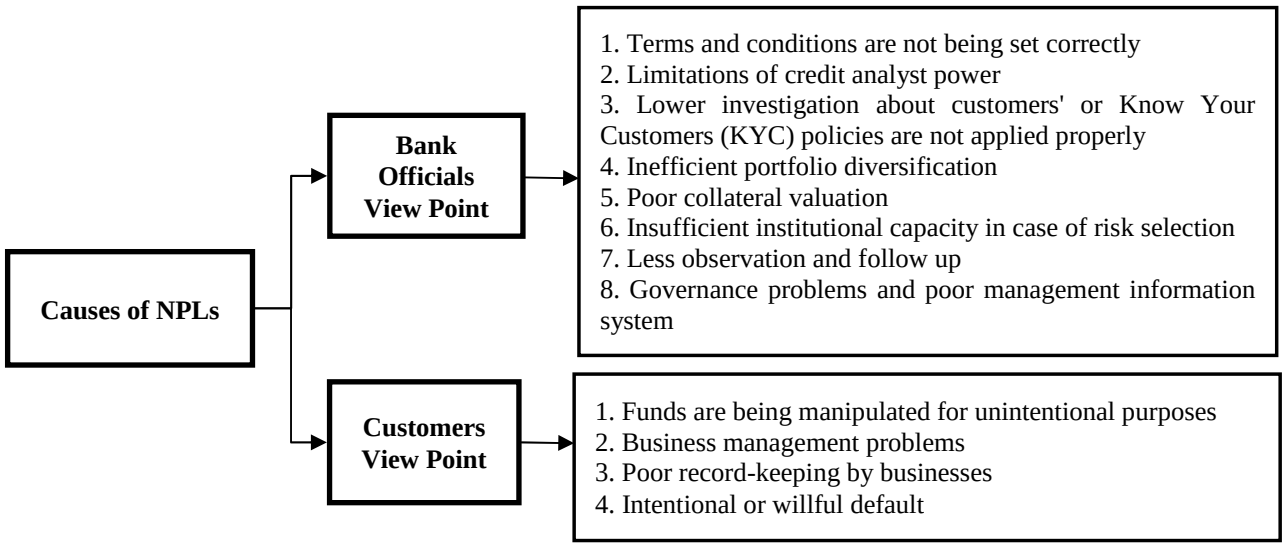

Figure 1. **Causes of Non-Performing Loans**

Source: Developed by the authors.

2.4 Impact of Non-Performing Loans on the Growth of the Banking Sector

Non-performing loans reduce banks' loanable funds and shut down reusable banking businesses. All types of NPLs reduce the profitability of banks and banks face capital constraint problems that have adversely affected our banking sector (Ashraf et., 2019). The effects of NPLs include stop cycling, reduce earnings, decrease capital, increase the value of loans and interest rates, economic depression situation, and so on. High NPLs cannot be a boon for the economy. If funds invested in an economy are not recovered, it reduces the number of classified loans to reuse funds which can lead to economic stagnation (Akhter et al., 2017).

NPLs can be considered as undesirable output or expenditure of the banks which reduces the efficiency of the bank (Obamuyi, 2011). The best indicator of the health of a country's banking industry is its NPLs. The reduction in the ratio of NPLs indicates an improvement in the asset quality of public-sector banks and private-sector banks (Stuti et al., 2013). On the other hand, commercial banks should be concerned about increasing the ratio of NPLs to total loans. The decline in overall progress in stable NPLs indicates an improvement in the credit portfolios of the banking sector (Ntiamoah et al., 2014). The total non-performing assets of total assets have a direct impact on the return on assets as well as the liquidity-risk management of the bank.

Non-performing assets are declining stability and reducing the profitability of the bank through loss of interest income will write off the principal loan amount itself. The loan portfolio affects the efficiency of NPLs management which in turn affects the profit and liquidity position of the bank (Wongnaa et al., 2013). NPLs have a devastating effect on the survival and growth of banking and if not managed properly lead to banking failure. When the NPLs of the banks exceed the settlement amount of their profits, they will decrease. Decreasing the net assets of banks and their risk-taking capacity makes it difficult to invest funds in risky projects and realize potential productive business (Kirui, 2014). If NPLs are increased, interest income stops but the cost of funding and management costs do not stop there. Existing lending costs need to be increased to manage operating costs as well as funding costs (Hossain, 2017).

The NPLs affect the opening of the Letter of Credit (LC). International importers always choose the healthy condition of the exporter's bank. The worst situation in the bank affects the opening of new LCs. The lower the rate of LCs the less the bank earns (Vatansever et al., 2013). The persistence of large amounts of defaults gives rise to several adverse consequences. People’s confidence in the banking system may become shaky leading to a slowdown of the growth of deposits to the detriment of the intermediate function of the system (Islam, 2018).

The income of the bank is affected by the defaulter. As a result, they charge higher interest rates on new loans to compensate for the loss of income from defaulted loans. Banks need to maintain larger provisions that affect their ability to pay. In some cases, they may fail to meet capital adequacy requirements and offer aggressive lending to cover loans (Beck et al., 2013). NPLs reflect the profitability and liquidity of a financial institution. This reduces the stability and profitability of the bank through loss of interest income and keeping the principal loan amount down (Gabriel et al., 2019). NPLs affect the mentality of bankers in terms of the spending trend of their funds towards distribution and expansion of credit. From the above discussion, it is clear that the relationship between non-performing loans and the economy is negative. Thus, it slows down the overall growth and development of the country.

2.5 Research Hypothesis

The hypothesis is an assumption that is proposed for the explanation so that it can be tested to find out whether the assumption is true or not. The hypothesis tested occurs by using the dependent variable and the independent variable. The independent variable for this study is non-performing loans (NPLs). On the other hand, the dependent variables are Capital to Risk-Weighted Assets Ratio (CRAR), Return of Asset (ROA), Return of Equity (ROE), Net Interest Margin (NIM), and Statutory Liquidity Ratio (SLR). The following hypotheses are presumptive based on the literature and factors associated with the banking industry and for achieving the study's goals.

H_1: There is a negative relationship between the Capital to Risk-Weighted Assets Ratio (CRAR) and NPLs.

H_2: There is a negative relationship between Return on Asset (ROA) and NPLs.

H_3: There is a negative relationship between Return on Equity (ROE) and NPLs.

H_4: There is a negative relationship between Net Interest Margin (NIM) and NPLs.

H_5: There is a negative relationship between Statutory Liquidity Ratio (SLR) and NPLs.

3. RESEARCH METHODOLOGY

The paper is primarily an investigative desk study that gives secondary data precedence. However, primary data has been used, including in-person interviews with bank personnel and employees as well as casual chats with clients. On the other hand, this article's secondary sources include Bangladesh Bank bulletins, current newspapers and periodicals, some published and unpublished research reports, several websites, and numerous peer-reviewed journals.

Sample Size

In this study, every commercial bank listed in Bangladesh Bank served as the sample size. As of December 31, 2022, 61 scheduled banks were operating in Bangladesh.

Data Collection

The relationship between the factors has been investigated in this paper using secondary data. The study will run for ten consecutive years, from 2012 to 2021. The Bangladesh Bank library, the yearly reports of all commercial banks, publications, research papers from reputable journals, and interviews with various people are the sources of the data.

Data Analysis Tools

The data have been analyzed using Statistical Package for the Social Sciences (SPSS), version 22.

Data analysis methods

The current study made use of ANOVA, correlation and regression analysis, and descriptive statistics. To determine how non-performing loans affected Bangladesh's banking sector's expansion, descriptive statistics of mean, maximum, and minimum were used. Pearson correlation calculated how closely the dependent variable and the independent variable were related. The effect of non-performing loans was also examined using the linear multiple regression method.

4. ANALYSIS AND FINDINGS

Table 1. **Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
CRAR	40	-35.5	28.5	4.628	19.9729
ROA	40	-3.3	3.4	0.385	1.7734
ROE	40	-29.6	17.7	1.028	13.1294
NIM	40	-.73	6.08	2.6700	1.68826
SLR	40	.00	56.90	26.0800	17.00855
NPL	40	-1.50	25.50	4.3625	6.62109

Source: SPSS output

In table 1, the descriptive statistics of a few variables employed in the empirical analysis are shown. The average CRAR value is 4.628, with a standard deviation of 19.9729; the average ROA value is 0.385, with a standard deviation of 1.7734; the average ROE value is 1.028, with a standard deviation of 13.1294; the average NIM value is 2.6700, with a standard deviation of 1.68826; the average SLR value is 26.0800, with a standard deviation of 17.00855.

Table 2. **Correlations**

		CRAR	ROA	ROE	NIM	SLR	NPL
CRAR	Pearson Correlation	1	.881**	.623**	.754**	.839**	-.446**
	Sig. (2-tailed)		.000	.000	.000	.000	.004
	N		40	40	40	40	40
ROA	Pearson Correlation		1	.770**	.894**	.748**	-.356*
	Sig. (2-tailed)			.000	.000	.000	.024
	N			40	40	40	40
ROE	Pearson Correlation			1	.797**	.402*	-.451**
	Sig. (2-tailed)				.000	.010	.003
	N				40	40	40
NIM	Pearson Correlation				1	.562**	-.369*
	Sig. (2-tailed)					.000	.019
	N					40	40
SLR	Pearson Correlation					1	-.320*
	Sig. (2-tailed)						.044
	N						40
NPL	Pearson Correlation						1
	Sig. (2-tailed)						
	N						

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS output

The findings of the correlation between the variables are displayed in table 2. With two-tailed significance, Pearson correlation was used to derive the study's findings. The NPLs analysis is displayed along with other dependent variables. The CRAR and NPLs have a negative and highly significant relationship (-0.446), which makes it clear that the CRAR will fall as the NPLs rise. The table also shows that there is a negative and significant relationship between NPLs and ROA, which means that as NPLs rise, ROA will fall by (-0.356). Additionally, it is shown that there is a negative and highly significant correlation between NPLs and ROE because rising NPLs are associated with a (-.451) decline in ROE by increasing NPLs. The table also shows a negative and significant correlation between the NIM and the NPLs, with an increase in the NPLs resulting in a decrease in the interest margin of (-.369).

It has also been demonstrated that there is a negative and significant correlation between the SLR and NPLs, with an increase in NPLs causing a (-0.320) decrease in bank liquidity.

H_1: There is a negative relationship between the Capital to Risk-Weighted Assets Ratio (CRAR) and NPLs.

Table 3. **Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.446	.199	.178	18.1124	.199	9.424	1	38	.004

a. Predictors: (Constant), NPL
Source: SPSS output.

The R-value of 0.46 in table 3 of the model summary indicates how much the independent variable and the variable vary from one another. The values of the R square and the corrected R square are .199 and .178, respectively. Therefore, 19.9% of the changes affecting the expansion of the banking industry can be attributed to the NPL.

Table 3(a). **ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	339.743	1	339.743	9.424	.004[b]
	Residual	1369.971	38	36.052		
	Total	1709.714	39			

a. Dependent Variable: CRAR
b. Predictors: (Constant), NPL
Source: SPSS output

The dependent factors (CRAR) significantly predict the independent variable (NPL), according to the ANOVA table 3(a), which is highly significant. As a result, our model is suitable for the study.

Table 3(b). **Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.046	.975		5.175	.004
	NPL	-.148	.048	-.446	-3.070	.004

a. Dependent Variable: CRAR
Source: SPSS output

NPLs have a highly significant negative impact on CRAR changes that affect the expansion of the banking sector, as shown in table 3(b).

H_2: There is a negative relationship between Return on Asset (ROA) and NPLs.

Table 4. **Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.356	.127	.104	1.6786	.127	5.530	1	38	.024

a. Predictors: (Constant), NPL
Source: SPSS output

In table 4, the multiple correlation coefficient R is shown to have a value of 0.356, and the ratio of interdependence R square is shown to have a value of 0.127, indicating that the independent variables are responsible for 12.7% of the variance of the dependent variable.

Table 4(a). **ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.581	1	15.581	5.530	.024[b]
	Residual	107.070	38	2.818		
	Total	122.651	39			

a. Dependent Variable: ROA
b. Predictors: (Constant), NPL
Source: SPSS output

Table 4(a), which demonstrates the high significance of the ANOVA table, reveals that the independent factors (NPL) strongly influence the dependent variable (ROA).

Table 4(b). **Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.801	.319		2.512	.016
	NPL	-.095	.041	-.356	-2.352	.024

a. Dependent Variable: ROA
Source: SPSS output

NPLs have a highly significant positive negative impact on ROA in changes that affect the expansion of the banking industry, as demonstrated in table 4(b).

H_3: There is a negative relationship between Return on Equity (ROE) and NPLs.

Table 5. **Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.451	.204	.183	11.8682	.204	9.729	1	38	.003

a. Predictors: (Constant), NPL
Source: SPSS output

The R, which expresses how far the dependent variable deviates from the independent variable, is displayed in table 5 of the model summary (R =.451). The R square and the corrected R square are, respectively, .204 and .183. Thus, 20.4% of the changes that affect the growth of the banking sector are caused by NPLs.

Table 5(a). **ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1370.392	1	1370.392	9.729	.003
	Residual	5352.468	38	140.854		
	Total	6722.860	39			

a. Dependent Variable: ROE
b. Predictors: (Constant), NPL
Source: SPSS output

According to the ANOVA table 5(a), the independent factors (NPL) strongly predict the dependent variable (ROE), which is very significant. As a result, we can state that our model is suitable for the study.

Table 5(b). **Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.933	2.256		2.187	.035
	NPL	-.895	.287	-.451	-3.119	.003

a. Dependent Variable: ROE
Source: SPSS output

Because of the significant changes that have affected the growth of the banking industry, NPL hurts ROE, according to table 5(b).

H_4: There is a negative relationship between Net Interest Margin (NIM) and NPLs.

Table 6. **Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.369	.136	.114	1.58942	.136	6.001	1	38	.019

a. Predictors: (Constant), NPL
Source: SPSS output

The R-value of .369 in table 6 of the model summary indicates how much the dependent variable varies from the independent variable where the R square and adjusted R square are .136 and .114 respectively. Therefore, 13.6% of the changes affecting the expansion of the banking industry can be attributed to the NPL.

Table 6(a). **ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.161	1	15.161	6.001	.019
	Residual	95.998	38	2.526		
	Total	111.159	39			

a. Dependent Variable: NIM
b. Predictors: (Constant), NPL
Source: SPSS output

The ANOVA table 6(a) demonstrates that the independent factors (NPL) strongly predict the dependent variable (NIM), which is highly significant. We may therefore say that our model is appropriate for the research.

Table 6(b). **Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.081	.302		10.197	.000
	NPL	-.094	.038	-.369	-2.450	.019

a. Dependent Variable: NIM
Source: SPSS output

Table 6(b) shows that NPLs have a highly significant negative influence on NIM, which has an impact on the expansion of the banking sector.

H_5: There is a negative relationship between Statutory Liquidity Ratio (SLR) and NPLs.

Table 7. **Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.320	.102	.079	16.32640	.102	4.327	1	38	.044

a. Predictors: (Constant), NPL
Source: SPSS output

The R-value, which measures how much the dependent variable varies with the independent variable, is .320 in table 7 of the model summary. R square and adjusted R square are .102 and .079 respectively. Thus, 10.2% of the changes affecting the expansion of the banking industry can be attributed to NPLs.

Table 7(a). **ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1153.394	1	1153.394	4.327	.044
	Residual	10128.950	38	266.551		
	Total	11282.344	39			

a. Dependent Variable: SLR
b. Predictors: (Constant), NPL
Source: SPSS output

The ANOVA table 7(a) demonstrates that the independent factors (NPL) strongly predict the dependent variable (SLR), which is highly significant. We may therefore say that our model is appropriate for the research.

Table 7(b). **Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	29.663	3.103		9.558	.000
	SLR	-.821	.395	-.320	-2.080	.044
a. Dependent Variable: SLR						

Source: SPSS output

As demonstrated in table 7(b), SLR is impacted by NPLs because of changes that have a large and unfavorable impact on the expansion of the banking industry.

5. RESULTS

The research found a highly significant negative correlation among NPL, CRAR, and ROE. On the other side, there are statistically significant adverse connections among NPL, ROA, NIM, and SLR. The alternative hypothesis, however, is accepted, while the null hypothesis is rejected. The study also discovered that NPLs have an impact on Bangladesh's banking industry's financial performance and growth.

Table 8. **Hypothesis Testing based on Significant**

Hypothesis	t	p	Result	Significance
The negative relationship between the Capital to Risk-Weighted Assets Ratio (CRAR) and NPLs	-3.070	.004	**Accepted**	**Highly Significant**
A negative relationship between the Return on Asset (ROA) and NPLs	-2.352	.024	**Accepted**	**Significant**
The negative relationship between the Return on Equity (ROE) and NPLs	-3.119	.003	**Accepted**	**Highly Significant**
A negative relationship between the Net Interest Margin (NIM) and NPLs	-2.450	.019	**Accepted**	**Significant**
A negative relationship between the Statutory Liquidity Ratio (SLR) and NPLs	-2.080	.044	**Accepted**	**Significant**

Source: Developed by the Authors

6. DISCUSSION

Non-performing loan culture has been found in many countries of the world, including Bangladesh. This problem has become evident in the last few years. Poor lending practices, an absence of corporate governance, political influences, and an unwillingness to pay are the main reasons for frustration in the banking industry. This study examines the reasons and effects of non-performing loans on the growth of the banking sector in Bangladesh. The results indicate that non-performing loans negatively affect profitability in banks and the overall economy in Bangladesh. The most major issue is with state-owned banks. The Bangladeshi government is considering increasing the amount of liquid money that is injected into the banking industry, but this is not the best course of action. The financial industry's problem is getting worse every day. Therefore, to overcome the current problem, the government, Bangladesh Bank, and the Ministry of Finance of Bangladesh should adopt

short, medium, and long-term strategies to assure sustainable development in the country's banking sector.

State-owned banks in Bangladesh hold the majority of the sector's overall defaulted obligations. Therefore, the central bank should implement the necessary measures to ensure that loans and advances are distributed equally. Economic growth should be considered and defined by existing collateral in our country's lending laws. To develop the bank's management division, both the public and commercial sectors must contribute. The number of defaulters may decrease as a result of identifying defaulters and reliable or consistent payers. Bank employees should improve their analytical skills. We need to employ more competent personnel if we want to improve credit management and reduce its shortcomings. Banks are required to ensure efficient corporate management. To recover classified loans, trusted branches have been picked out for attack. The prosecution of intentional defaulters necessitates further court support. If defaulters suffer harsh penalties, non-performing loans will quickly drop.

A nation's capacity to pay back its debts increases as its economy develops and real GDP growth quickens. The NPL is decreasing as a result, and the default risk is decreasing. On the other hand, recipients will have less money available to repay loans if unemployment increases during a recession. Other macroeconomic factors that have been found to affect NPLs include exchange rates, interest rates, and inflation (Lee et al., 2020). For a bank to be liquid and profitable, it must be able to recover advances. A bank's primary source of income is interest on loans. Therefore, when such loans are non-performing, the financial situation of these banks deteriorates. Non-performing loans can reduce the earnings from traditional loans, as well as the bank's ability to profit from them.

7. CONCLUSIONS

The study discovered that NPLs hampered the growth of the banking sector based on the hypothesis. According to the first hypothesis, there is a highly significant negative relationship between CRAR and NPLs, implying that the more NPL there are, the less CRAR is available to reduce the banks' capital. The second hypothesis' results show that there is a negative significant relationship between ROA and NPLs, implying that having more NPL reduces the bank's assets. However, the findings were expected to show a negative and highly significant relationship between ROE and NPLs, reducing the amount of equity in the banking sector as a result of the increased amount of NPLs. The fourth hypothesis finds a significantly negative relationship between NIM and NPLs, indicating that the bank has more NPLs and less interest because the majority of loans are non-performing or defaulted. The results of the fifth hypothesis also show a negative significant relationship between SLR and NPLs. However, NPLs had a direct impact on banking growth because they exacerbated the banks' liquidity crisis.

Data from the commercial banks were gathered for the study between 2012 and 2021. Due to the need to maintain secrecy, the study was impeded by a lack of data from the participants' banks. The study only collected data on the relationship between non-performing loans (NPLs) and the bank's statutory liquidity ratio (SLR), return on assets (ROA), return on equity (ROE), net interest margin (NIM), and capital to risk-weighted assets ratio (CRAR). We haven't discussed the other metrics for measuring success and development, such as GDP, inflation, interest rates, and bank size.

The outcome will be different and more general in the future if researchers use a larger sample size, additional dependent variables, and other independent factors in their research.

Declaration of Conflicting Interests

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