Moderating effects of CSR on the performance and characteristics of banks: Tunisian evidence

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Abstract

Purpose: Our study examines the impact of the corporate social responsibility practices on bank performance. this research pursues to identify the determinants of the bank performance focusing on the moderating role of CSR.

Methods: Our research used an analytical data collected from BVMT website and bank annual reports. it composed to 13 Tunisian bank during the period 2018 to 2022**.**

Results: Our results examine how CSR practices enhance bank performance and its determinant that indicate a positive effect of CSR practices on bank performance emphasizing then the importance of CSR practices in bank sector.

Originality/Relevance: our study makes a significant contribution to the existing literature by investigating the link between CSR practices and bank performance and examining specific determinant such as nonperforming loans loan to deposit ratio and bank performance bank size. Our findings are relevant for policymakers, bank executives, and stakeholders' interests in CSR's effect on bank performance and sustainability.

Keywords: CSR practices, bank performance, bank characteristic, Tunisian evidence.

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Effets modérateurs de la RSE sur la performance et les caractéristiques des banques tunisiennes cotées à la BVMT

Objectif : Cette étude vise à examiner l'implication de la RSE sur la performance des banques tunisiennes. Elle cherche à identifier les caractéristiques qui influencent la performance des banques, en mettant l'accent sur le rôle modérateur de la RSE dans cette relation.

Méthode : Cette recherche a employé un échantillonnage rationnel et une analyse documentaire pour collecter des statistiques de la BVMT et des rapports annuels des banques tunisiennes. Les données de 13 banques de 2018 à 2022 ont été analysées pour évaluer l'influence des prêts non performants, du ratio prêts/dépôts et de la RSE sur la performance des banques. Le retour sur actifs (ROA) a été utilisé comme variable clé de performance.

Résultats : Notre étude a traité l'impact de la RSE sur la performance des banques. Elle visait à évaluer comment la RSE améliore la performance bancaire et à explorer les interactions entre les prêts non performants et le ratio prêts/dépôts. Nos résultats fournissent des informations précieuses sur l'effet de la RSE sur la performance des banques, soulignant l'importance de mettre en place des politiques de RSE dans le secteur bancaire.

Originalité/Pertinence : Notre recherche contribue à la littérature en examinant le lien entre la RSE et la performance des banques tunisiennes. En analysant des variables spécifiques telles que les prêts non performants, le ratio prêts/dépôts et la taille des banques, elle offre une perspective unique sur les facteurs influençant la performance bancaire. Nos conclusions sont pertinentes pour les décideurs, les cadres bancaires et les parties prenantes intéressées par l'effet de la RSE sur la performance et la durabilité des banques.

Mots-clés : Pratiques RSE, performance bancaire, caractéristiques bancaires, Tunisie

1. Introduction

The rise of digital technology has led to more complex and diverse business activities. This trend pressures Tunisian businesses to expand and diversify, especially in the banking sector during remain competitive. Additionally, challenges such as workplace conflict, environment degradation and human rights issues must be addressed (Huang et al., 2022).

Industrial development often results in some level of environmental contaminations, sparking renewed interest in corporate social responsibility (CSR) among various stakeholders. The ethical standards of business that generate and reinvest profits in society are inherently linked to their social responsibility. Managers can use CSR to boost a company's reputation, image, and public trust. Recording to Barnea and Rubin (2010), while this may result in agency costs., CSR significantly impacts and reinforces businesses success. Thus, CSR is vital and strategically important in enhancing businesses performance (Masulis and Reza, 2015).

In today's financial environments, CSR's relevance is undeniable. CSR activities can improve a bank's reputation, foster customer loyalty and potentially enhanced financial performance. By exploring the interaction between bank-specific characteristics and performance moderated by CSR, this study adds to the existing knowledge and offers insights valuable for both academic research and practical application in the banking sector. The nation's economy is influenced by the unpredictable global economy. Many businesses reduce her operations, impacting the demand for bank credit, thereby affecting the banking sector, which is the primary framework for a nation's economic activities. This situation leads to increased competition among businesses to survive in the market, companies need to maintain a positive reputation derived from their social responsibility efforts (Nyuur et al., 2019). A company's reputation is based on its CSR's initiatives as noted by Necib (2023). According to Mahmoud and Bashir (2020), some companies are more susceptible to reputational risks and adverse stakeholders' reactions. Consequently, businesses frequently invest million in CSR projects to enhance their reputation (Vuong et al., 2022). As they must uphold their good standing in society, business is now more attuned to social and environmental issues, as observed by Li et al. (2022). Thus, the concept of CSR has undergone substantial changes.

The banking sector is crucial for a country's economic stability and growth. In Tunisia, the performance of banks listed on the "*Bourse des Valeurs Mobilières de Tunis* (BVMT)", is particularly noteworthy in the context of CSR, often seen as a moderating factor. This study seeks to examine specific characteristics such as bank size, nonperforming loan (NPLs), and the loan to deposit ratio and their impact on the performance of this banks.

The structure of this study is. as follows: initially, we provide a review of literature that delves into theoretical foundations and empirical studies related to bank performance and CSR. The subsequent section details the methodology employed for data collection and analysis. Following this, we present and discuss the findings. The paper concludes with final thoughts and suggestions for future research.

2. Literature review

The term "*responsabilité sociale des entreprises*" refers to an approach to business management that addresses social and environmental issues in dealing with stakeholders and business operations. Therefore, the CSR is a tool that helps businesses strike a balance between their profit-driven economic goals and their social and environmental concerns. Simultaneously, this activity meets the expectations of participants and participants. The concept of corporate social responsibility (CSR), when properly implemented, can have many competitive advantages. These benefits include easier access to funding, larger sales, which ultimately translate into higher profits, lower operating costs for the business, increased quality and productivity, a stronger sense of the brand's equity, sound decision-making, and efficient risk management procedures. Information about CSR revolves around reports on sustainable development, and the report's independent verification is a sign of legitimacy and social acceptance (Necib, 2023).

One cannot separate a bank's performance from that of its employees since they are one of the key internal stakeholders and actively participate in CSR activities, which have an impact on the success of the bank.

Vuong et al. (2022) state that a business that implements a policy for its employees and complies with their requests would gain from it in multiple ways.

According to Vuong (2022), employee satisfaction with work environment and the belief that policies meet their needs will lead to active support for the banking industry, which will result in mutually beneficial social exchange. This will influence how well each of them performs professionally, and the overall effect will boost the bank's performance. The major banks will have more opportunities to implement this policy because they have the clout to support the implementation of corporate social responsibility activities.

An indicator of how well bank employees is implementing lending policies related to client loans and maintaining the quality of loans made is the ratio of loans to deposits and non-productive loans. The effects of the 2008 global financial crisis brought on by the real estate bubble, coupled with the scandal surrounding risky hypothecary loans in the United States and the 2019 COVID-19 pandemic in China that destroyed both the national and global economies, are still being felt today.

These factors have led to a decline in commercial activity, which has resulted in a decline in the demand for bank loans and an increase in non-productive loans. The effect of all this will be a decline in bank performance, which may erode public confidence in banks. Because of this, banks need to maintain their good name to continue enjoying the public's trust as institutions that receive and disburse public funds.

In relation to this subject, the corporate social responsibility is a part of a strategic effort that has the potential to enhance its reputation. To ascertain the extent to which this strategy is effective in enhancing the performance of the bank, a model that integrates the company's social responsibility as a moderating variable that strengthens its influence on the bank's performance must be developed.

This study's foundation is the financial intermediation theory, which describes how banks act as middlemen between those with money and those who need it to do business (Allen & Santomero, 1997). Apart from acting as intermediaries for public entities offering credit, banks are essential to the growth and development of individual economic activity as well as the flow of investment. Financial intermediaries are required to bridge the gap between fund owners and businesses due to the high cost of monitoring, liquidity, and price risk resulting from information asymmetry. As an intermediary organization, mediation is a challenging task since significant financial resources are required to ensure the smooth operation of the intermediary role. Therefore, if banks only rely on money collected from the general people, their ability to act as financial mediation institutions will be limited, and they will need additional funding from their owners.

The idea of scale economies provides an additional foundation for this research. In microeconomics, scale economies are related to the costs and benefits of business expansion (Stigler, 1958). The larger banks will operate more cheaply because they prioritize keeping costs as low as possible when the amount of credit extended to the community rises. Therefore, by developing banking operations through the expansion of credit, it is feasible to get an advantage at a minimal cost to create a competitive advantage.

Due to the growth of credit, the ratio of loans to deposits will rise, increasing bank profits. On the other hand, uncontrolled and widespread credit expansion may contribute to an increase in non-performing loans (NPLs). Due to the issues that have arisen since 2008, both sides of this divide are now major concerns because the global economic crisis has affected almost every nation. This is the reason why a clearly defined plan including all parties is required to ensure that a bank maintains its reputation as a financial intermediary and continues to win the trust of the community. The term "corporate social responsibility" refers to this tactic.

According to Zaitsev and Dror (2017), the corporate social responsibility strategy encourages firms to positively impact the environment and stakeholders, including consumers, employees, investors, communities, and others. According to Rinawiyanti et al. (2022), bank managers can also successfully incorporate corporate social responsibility into company operations to achieve superior social and financial performance, particularly in the setting of developing nations. Corporate social responsibility, according to Ebert and Gryphon (2003) in their book Business Essentials, is an organization's attempt to uphold a balance between its obligations to various groups and individuals within its environment, including customers, other businesses, employees, and investors. One way that banks can put corporate social responsibility into practice is by donating money to community development and partnership initiatives. According to research by Rachman and Saudi (2021), corporate social responsibility can affect bank performance through this activity. Meanwhile, banks who take part in CSR are probably going to get paid more than banks that don't, according to Barko et al. (2021).

Corporate social responsibility (CSR) can boost bank competitiveness in several ways, according to Gangi et al. (2018). The bank's reputation will be strengthened as a result. However, from a relational standpoint, a bank's legitimacy is based on both its strong financial results and its standing with the parties involved. One may say that an institution's reputation is derived from its ability to maintain its financial stability and social credibility through its involvement in corporate social responsibility. This study focuses on actual data that illustrates the connection between bank performance and corporate social responsibility.

This study develops an enterprise social responsibility model that serves as a moderating variable to verify this role. The CSR interacts with the NPL and LDR as a moderating variable in this model. To determine whether the size of the bank helps to improve its performance, this model will also include the bank's size as a control variable.

The ratio of loans to deposits (LDR) gauges a bank's ability to allocate resources for the eight-fold increase in loans to the public. This ratio is frequently used to assess the bank's liquidity-related characteristics. Because of this, banks need to be able to distribute loan funds effectively to generate entries without jeopardizing their liquidity.

Gangi et al. (2018) reported on the findings of earlier studies on LDR and CSR, which showed a favorable correlation between the two variables and ROA. On the other hand, Muhtadin et al. (2022) showed no association between LDR and CSR, whilst Sianturi and Rahadian (2020) observed a negative relationship.

When lending money to customers, bank directors must exercise caution because doing so increases the likelihood that they won't repay their capital and interest on time, which could result in nonperforming loans (NPL). According to Joseph et al. (2012), non-performing loans (NPLs) are bad for bank assets. The bank's operating income, which is derived from loan interest income, will therefore be impacted by the NPL. According to Liu (2016), non-performing loans (NPLs) are a measure of the present level of bank risk and can have an impact on a decline in bank revenue. This is a component of the credit risk that banks confront. The banking sector will suffer from the rise in non-performing loans (NPLs), particularly if it continues (Michael et al., 2006). Research by Karim et al. (2010), which discovered that NPLs impede economic growth and stability, lends credence to this.

A bank's wealth is characterized by its bank size, which is based on its asset count. Several earlier studies also employed the natural logarithm of total assets as a measure of bank size and total assets as a stand-in for bank size (Khan, 2022). Larger banks with guaranteed assets have more chances and access to a wider range of outside funding sources. Because they have the most affordable sources of capital from the deposits they receive, large banks typically have higher economies of scale, which makes it easier to channel lending. As the primary source of capital available to banks, large-scale banks also have greater public trust, making them more approachable to depositors (Khan, 2022). Consequently, the larger the bank's scale, the greater the potential to boost the bank's income and performance. Empirical evidence has been presented in several prior research by Yao et al. (2018), and Karadžić and Đalović (2021) that demonstrate the significant impact of bank size on profitability. Al-Harbi (2019), on the other hand, draws a contrary result, stating that the profitability of banks functioning under Islamic cooperative organizations is unaffected by bank size.

Profitability is a key performance indicator that is frequently used to evaluate how well a company is being managed by its management. Although there are other profitability metrics, return on assets (ROA), or the rate of return on assets utilized for bank operations, is the one employed in this study to gauge bank performance. Numerous scholars, such as Adel Necib (2021), Nurhayati et al. (2021), employ ROA as a gauge of bank performance. CSR has been linked to higher ROA, according to several earlier studies on the subject by Lachuer and Jabeur (2022); Putri et al. (2022) corroborates these findings. Bangun (2019) found that bank size had little bearing on ROA in another study. In contrast to Bangun's (2019) findings, S. and H. My (2022) discovered that bank size positively affects ROA.

3. Aims and hypotheses

This study aims to investigate the impact of specific bank characteristics on bank performance, with corporate social responsibility acting as a moderating variable. Based on the literature review and the objectives of this research.

According to Khan (2022), the size of bank as a specific characteristic, can influence its overall performance. Therefore, larger banks may benefit from economies of scale, allowing them to reduce costs and improve profitability. However, they may also face challenges such as bureaucratic inefficiencies. This leads to the following hypothesis:

H1: Bank size affects positively the performance of Tunisian banks.

Non-performing loans are loans that are in default or close to being in default (Liu, 2016). High levels of NPLs can indicate poor credit management and can negatively affect a bank's profitability and stability. Thus, we propose:

H2: Non-performing loans negatively affect the performance of Tunisian banks

The loan-to-deposit ratio measures a bank's liquidity by comparing its total loans to its total deposits. S high ratio may indicate a potential liquidity issue, while a low ratio may suggest underutilization of resources (Khan, 2022). Therefore, we hypothesize:

H3: The loan-to-deposit ratio enhances the performance of banks.

Rinawiyanti et al. (2022) suggest that CSR activities enhance a bank's reputation and customer loyalty, potentially leading to better performance. We examine CSR as a moderating factor in the relationship between the bank characteristics and performance

H4a: The attainment of bank performance is largely predicted by corporate social responsibility

H4b: CSR moderates the link between non-performing loans and bank performance.

H4c: CSR moderates the link between the loan-to-deposit ratio and bank performance.

These hypotheses aim to provide a comprehensive understanding of how bank-specific characteristics and CSR influence the bank performance.

4. Methodology

The sample consists of 13 Tunisian banks during the period from 2018 to 2022, Obtaining from several sources, based on the manually collected data from bank websites and BVMT website, yielding 65 observations.

To measure the bank performance, we use the return on assets ratio (ROA) as our dependent variable. For our independent variables we employ the CSR practices, non-performing loans, loan to deposit ratio and bank size.

Theoretical and empirical studies on the impact of the spare variables on bank performance are relatively well known (Gangi et al. (2018), Sianturi and Rahadian (2020), Nurhayati et al. (2021), Putri et al. (2022), Muhtadin et al. (2022), and S. My and H. My (2022)).

ohh steady employ the global reporting initiatives GL I guidelines version 3.1 G 3 and versions 3-4 point zero G4 to develop corporate social responsibility index

The computation of the disclosure index is to gauge the degree of corporate CSR dis- closure. Since there are many differences between the GRI G3.1 and GRI G4.0, the CSR disclosure score for each aspect is calculated and then divided by the total number of aspects in both GRI G3.1 and GRI G4.0.

The following formula is used to calculate the CSR index:

$$CSRI = \text{Total } CSR_{aj} / aj \qquad (1)$$

Where:

$CSRI_j$ = Corporate CSR Disclosure Index.

CSR_{aj} = Score aspects of corporate CSR disclosure.

aj = Number of aspects of GRI disclosure.

The description of the research variables is shown in Table 1.

Table 1. Description of variables

Variables	Symbol	Definition
Dependent Variable		
Bank Performance	BP	Profit after tax, to total assets
Independent Variables		
Non-performing Loan	NPL	(Non-performing loan, to total loans) · 100%
Loan to Deposit Ratio	LDR	Total loans, to total deposit
Control Variable		
Bank Size	BS	Natural logarithm of total assets
Moderating Variable		
Corporate Social Responsibility	CSR	Total CSRaj/aj

Previous researchers also utilized the Estimation Ordinary Least Square (OLS) to examine the association between loan-to-deposit ratio, non-performing loans, corporate social responsibility, bank size, and bank performance.

$$BP_{i,t} = b_0 + \square_i\, LDR_t + \square_i NPL_{i,t} + \square_1 CSR_t + \square_2 BSt + \square_{i,t}\,, \qquad (2)$$

$$\square_{i,t} \square \square_i \square \square_t \square v_{i,t}\,,$$

$$i \square 1 \ldots N,\ t \square 1 \ldots T.$$

This model is a multiple linear regression model, and the equation is formulated as follows.

$$BP_{i,t} = \beta_0 + \beta_1 LDR + \beta_2 NPL + \beta_3 CSR + \beta_4 BS + \beta_5 LDR \times CSR + \beta_6 NPL \times CSR + \varepsilon, \quad (3)$$

Where β_0 is a constant, while β_1, β_2, β_3, β_4, β_5 and β_6 are regression coefficients, $BP_{i,t}$ is a bank's performance for bank I at time t, which is the dependent variable and is proxied by return on assets (ROA).

The loan-to-deposit ratio (LDR), non-performance loans (NPLs), corporate social responsibility (CSR), and bank size (BS; defined as the normal logarithm to total assets) are the variables that affect bank wealth. Additionally, the interaction between LDR and CSR is known as LDR*CSR, while the interaction between NPL and CSR is known as NPL*CSR.

5. Main results

The findings of our analysis are sequentially descriptive and explained with the statistical descriptive in Table 2.

Table 2. Summary statistical description

Variables	N	Mean	St-Dev	Min	Max
Bank Performance - ROA	65	1.9204	1.07847	0.030	4.935
NPL	65	2.4956	1.0855	0.000	6.425
LDR	65	89.7584	26.7847	14.980	174.145
CSR	65	0.6347	0.3365	0.221	0.936
Bank Size	65	80.2546	99.7472	33.479	433.114
NPL*CSR	65	1.4987	0.9824	0.000	4.876
LDR*CSR	65	57.6879	26.3675	4.365	121.050
Valid N	65	-	-	-	-

With a standard deviation of 1.7% and a mean of 1.92%, the banking performance indicator suggests that there aren't many variations in the performance of the many banks in the Tunisian banking sector. There is one bank whose NPL is more than 5%. The average NPL is 2.49%, with a minimum NPL of 0.00% and a maximum of 6.425%. The average loan-to-value ratio (LDR) is 89.75%. The average CSR is 0.63 and the average bank size is 80.25%, with corresponding standard deviations of 99.74% and 0.33%.

To determine if our model is statistical practice, model validation tests are used in the Table 3 and 4.

Table 3: Determination coefficient

Model	R	R-square	Adjusted R-square	St. Error of the Estimate
1	0.643	0.348	0.296	0.9345

Note: Dependent variable: Bank performance (ROA); Predic- tors: (Constant): NPL, LDR, CSR, Bank Size, LDR · CSR, NPL · CSR.

The model's predictive accuracy is 29.00%, as indicated by the adjusted R-Square value of 0.296, meaning that external factors account for 73% of the remaining prediction error.

Table 4. ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	32.148	8	5.378	6.524	0.000***
Residual	67.599	84	0.816	-	-
Total	99.747	92	-	-	-

Note: *** Significance less than 1%.

Table 5: Regression results

Model	Unstandardized	Coefficients	t-value	Sig-t
	B	Std. error		
(Constant)	-3.215	1.487	-2.318	0.021
NPL	-0.330	0.374	-1.011	0.375
LDR	0.077	0.022	4.226	0.000***
CSR	12.987	2.718	4.635	0.000***
SIZE	5.000E-005	0.002	0.052	0.974
NPL*CSR	-0.162	0.604	-0.342	0.736
LDR*CSR	-0.108	0.036	-4.115	0.000***

Note: * Significance level at 10%, ** significance level at 5%, and *** significance level at 1%.

Table 6: Expected and actual hypotheses

Variables	Bank performance	
	Expected results	Actual results
NPL	-	-
LDR	+	+
CSR	+	+
SIZE	+	+
NPL*CSR	+	-
LDR*CSR	+	-

Table 4 shows that the significance level of F = 6.524 is F (Sig-F) = 0.000, or less than 1%. Because of this, the regression equation meets the goodness of fit requirements given by the OLS, allowing it to be used as an estimate.

The regression analysis's findings are displayed in Table 5 and include the regression coefficient, t-value, and t significance (sig-t).

Empirical data, as presented in Table 5, indicates that bank performance is positively impacted by LDR and CSR but not by NPL or bank size. As a result, while hypotheses 2 and 3 are confirmed, hypotheses 1 and 4a are rejected.

While the link between loan to deposit ratio and CSR practices has a significant impact on bank performance, the results of examining the relationship between NPL and CSR (NPL · CSR) have no influence on bank performance. As a result, hypotheses 4b and 4c are disproved. In Table 6, hypothetical choices are displayed.

6. Discussion

Our findings demonstrate significantly the positive link between improved performance and reduced non-performing loans, nevertheless our second hypothesis is not confirmed (P value equal to 0.375> 0.05). Despite some significance to the contrary, non-performing loans less likely affect bank performance therefore our empirical results supported by relevant studies as Sianturi and Rahadian (2020) and Muhtadin et al. (2022). The study conducted in 2022 by Putri et al. revealed different results, indicating a detrimental impact.

However, we support the positive impact of loan to deposit ratio on bank performance that confirmed the third hypothesis H3. Then, we conclude that the principal source of bank revenue is the bank interest income. This study's findings are consistent with those of Gangi et al. (2018), but they differ from those of research by Putri et al. (2022), and Faozi et al. (2022) and Taswan et al. (2023), which found no effect at all.

The influence of corporate social responsibility on improving bank performance is significant (sig-t = 0.000), indicating the acceptance of hypothesis 3. A company's CSR efforts were well-received by the community, which raised public confidence in banks. This, in turn, led to an increase in community business activities through banking, which in turn had an impact on the bank's performance and revenue. The study's findings corroborate those of Gangi et al. (2018), Putri et al. (2022), and Gao and Zhang (2015). This finding lends credence to Barko et al.'s (2021) assertion that banks can make more money via CSR than from non-engagement. This is corroborated by Kieu et al. (2022), who also claimed that requiring CSR boosts corporate productivity, as well as by Hang and Nghi (2022), who claim that CSR fosters a favorable impression of benefits for companies. However, contrasting results that showed a detrimental effect were presented in the study by S. My and H. My (2022). Because sig-t is 0.962, bank size does not statistically significantly affect bank performance, even though the regression results show a positive tendency. Therefore, even though large banks are more likely to earn higher interest income on the theory of economies of scale, a bank's performance is not determined by the size of its business. This circumstance indicates that huge banks are not able to capitalize on these chances because of unfavorable business conditions brought on by the COVID-19 epidemic and the global economic crisis.

The findings of Bangun (2019) found a favorable effect and a negative effect, respectively, while Taswan et al. (2023) supports the conclusions of this study. Moreover, the interaction between non-performing loans and CSR practices haven't is significant impact on bank performance (0.936 > 0.05). Consequently, corporate social responsibility does not act as a moderator in the relationship between NPL and bank performance, nor does it serve to strengthen it. In the meantime, at the less than 1% significance level, the interaction between loan to deposit ratio and CSR practices negatively and significantly affect the bank performance. Consequently, although it contributes to a decline in bank performance, corporate social responsibility is important in regulating the link between Loan to deposit ratio and bank performance.

7. Conclusion

Using a data from Tunisian bank during the period 2018 to 2022, the bank determinants have a significant impact on the bank performance. Our findings provide that CSR practices and bank determinants affect bank performance. More specifically, CSR practices and loan to deposit ratio are positively related to bank performance. The bank size and the non-performing loans have a negative effect on bank performance. In addition, our findings indicate that CSR mitigates the link between bank performance and loan to deposit ratio based to Sobel test results.

However, the CSR practices haven't been shown to have a moderating impact on non-performing loans nevertheless it suggested that managers should focus on ratio to loan to deposit and CSR practices as a key determinant of bank performance when formulating policy.

Even through our research has demonstrated the effect of bank determinates and the moderating effect of CSR on bank performance for Tunisian evidence. there are still a few shortcomings that need to be addressed by further research. The study's sample size, consisting of 13 banks that met the criteria throughout a 5-year period, is too small, which presents a problem. Second, just 29% of the explanatory factors can adequately describe the response variable, indicating that the modified R-squared value of 29.00 % falls into the low value category. To obtain additional results and conclusions, it is advised that future research investigate the possibility of adding macroeconomic variables to the model, such as interest rates, inflation, and economic growth, as well as increasing the size of the sample and lengthening the research period.

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