



The Effects of Capital Structure, Liquidity, Asset Quality, and Esg Scores on Profitability: A Study of Banking Companies Listed on The Indonesia Stock Exchange (IDX) from 2021 to 2025

Irham Mudin^{1*}, Lutfi Alhazami²

¹⁻² Universitas Dian Nusantara Jakarta, Indonesia

email: 111221270@mahasiswa.undira.ac.id¹

Article Info :

Received:

25-07-2026

Revised:

05-08-2026

Accepted:

13-08-2026

Abstract

This study examines the effects of capital structure, liquidity, asset quality, and Environmental, Social, and Governance (ESG) scores on the profitability of banking companies listed on the Indonesia Stock Exchange during 2021–2025. A quantitative causal-explanatory design was employed using secondary data from annual reports and ESG disclosures. Purposive sampling selected 10 banks from a population of 48 companies, producing 50 firm-year observations. Profitability was measured by Return on Assets, while capital structure, liquidity, and asset quality were represented by DAR, LDR, and NPL, respectively. Data were analyzed using descriptive statistics, classical assumption tests, multiple linear regression, partial t-tests, an F-test, and the coefficient of determination with SPSS 26. The results show that capital structure, liquidity, and ESG scores do not significantly affect profitability, whereas asset quality has a positive and significant effect. Simultaneously, the four independent variables significantly influence profitability, with an R-square of 0.216. These findings indicate that asset quality remains the most important internal determinant of profitability, while other financial and sustainability factors contribute collectively to banking performance and should therefore be managed within an integrated strategic framework.

Keywords: Capital Structure, Liquidity, Asset Quality, ESG Score, Profitability.



©2026 Authors.. This work is licensed under a Creative Commons Attribution-Non Commercial 4.0 International License.
(<https://creativecommons.org/licenses/by-nc/4.0/>)

INTRODUCTION

Indonesia's banking industry occupies a strategic position in maintaining financial intermediation and supporting the continuity of national economic activities. As intermediary institutions, banks mobilize funds from surplus economic units and redistribute them to households and businesses that require financing for consumption, investment, and productive activities. Increasing economic uncertainty, changes in monetary conditions, inflationary pressures, and intensified competition have consequently encouraged banking institutions to strengthen their financial resilience and operational performance (Badan Pusat Statistik, 2026; Wulandari & Anis, 2026). In this environment, sustainable profitability has become an important indicator of a bank's ability to maintain business continuity, absorb financial risks, and contribute effectively to economic development (Anggraeni & Giranti, 2023; Poernomo & Haryati, 2023).

Profitability reflects an institution's capacity to generate earnings through the effective utilization of its financial resources and assets. In the banking sector, profitability is particularly important because it reflects not only managerial efficiency but also the institution's ability to maintain financial stability while performing its intermediary function (Andriansyah et al., 2025; Panjaitan et al., 2025). Financial management literature suggests that profitability may be influenced by various internal financial characteristics, including financing decisions, liquidity management, asset performance, and corporate sustainability practices (Brigham & Houston, 2021; Winarno & Atiningsih, 2025). Therefore, examining the determinants of bank profitability requires an integrated perspective capable of explaining how conventional financial indicators and contemporary sustainability-related factors interact within banking operations.

Capital structure represents an important financial decision because it determines the composition of funding used by firms to finance assets and business activities. Financial management theory emphasizes that an appropriate combination of debt and equity is necessary to balance

financing costs, financial risk, and the expected return generated from corporate resources (Brigham & Houston, 2021). Previous studies have investigated the relationship between capital structure and profitability in banking as well as other corporate sectors, indicating continued scholarly interest in the financial consequences of financing decisions (Kabichi & Bwana, 2024; Wu & Indraswari, 2024; Irwan et al., 2026). Nevertheless, the distinctive characteristics of banking institutions, including high financial leverage and extensive dependence on third-party funds, make the relationship between capital structure and profitability particularly relevant for further examination within the Indonesian banking sector (Ghenimi et al., 2025; Winarno & Atiningsih, 2025).

Liquidity is another fundamental aspect of banking performance because banks must maintain sufficient funds to meet withdrawal requests, financing commitments, and other short-term financial obligations. Effective liquidity management requires a balance between maintaining adequate liquid resources and allocating funds to productive assets capable of generating income, since excessively idle liquidity may reduce earnings opportunities while inadequate liquidity may increase financial vulnerability (Andriansyah et al., 2024; Suryana & Manda, 2022). The relationship between liquidity and profitability has been widely examined across banking and non-banking sectors, demonstrating its continuing relevance to financial performance research (Sumarni et al., 2023; Tamtama & Riantisari, 2023; Zurriah & Prayogi, 2023). Within listed banking companies, liquidity therefore needs to be evaluated together with other internal financial indicators because profitability is unlikely to be determined by liquidity conditions alone (Panjaitan et al., 2025; Poernomo & Haryati, 2023).

Asset quality is equally important because banking profitability depends substantially on the ability of financial institutions to manage earning assets and control credit-related deterioration. In banking analysis, asset quality is closely associated with the effectiveness of credit allocation and the capacity of banks to minimize problematic assets that may generate additional costs and reduce income-generating capacity (Anggraeni & Giranti, 2023; Subyanto & Mildawati, 2022). Previous studies have incorporated asset quality into models explaining bank profitability, either independently or together with liquidity, capital structure, and operational efficiency (Andriansyah et al., 2025; Karimah & Mahroji, 2023; Poernomo & Haryati, 2023). Accordingly, investigating asset quality during the 2021–2025 period is important for understanding whether differences in the management of bank assets are associated with variations in profitability among banking companies listed on the Indonesia Stock Exchange.

Beyond conventional financial determinants, environmental, social, and governance (ESG) practices have increasingly become an important consideration in contemporary corporate performance assessment. ESG reflects the extent to which corporations integrate environmental responsibility, social considerations, and governance quality into their strategic and operational activities, thereby broadening performance evaluation beyond purely financial outcomes (Cahyaningtya et al., 2024; Manulang & Soeratin, 2025). Research attention to ESG and profitability has expanded across banking, energy, technology, and other listed companies, demonstrating the growing importance of sustainability-related indicators in financial research (Gharchia & Mindosa, 2023; Loong et al., 2025; Mulya et al., 2025; Wulandari & Anis, 2026). However, the diversity of industries and analytical settings used in earlier research suggests the importance of evaluating ESG scores specifically within banking companies and alongside traditional indicators of financial condition (Hartono et al., 2025; Kaya & Ertugrul, 2025).

Although previous studies provide important insights into profitability determinants, the existing literature remains relatively fragmented because capital structure, liquidity, asset quality, and ESG are frequently investigated in different industrial contexts or through partially different explanatory models. Studies concerning capital structure and liquidity have been conducted in banking, retail, automotive, mining, pharmaceutical, and other industries, indicating that the influence of these financial characteristics may need to be interpreted according to sectoral characteristics (Kurniantoyo & Kurnia, 2022; Sipayung et al., 2023; Tamtama & Riantisari, 2023; Irwan et al., 2026). Similarly, ESG-oriented studies have covered banking as well as energy, technology, and broader listed-company samples, while research combining sustainability indicators with asset quality and financing variables remains comparatively limited within a single banking framework (Cahyaningtya et al., 2024; Hidayah et al., 2023; Mulya et al., 2025). This fragmentation establishes a research gap for an integrated empirical assessment that simultaneously incorporates capital structure, liquidity, asset quality, and ESG score as determinants of profitability in Indonesian listed banks.

Against this background, this study investigates the effects of capital structure, liquidity, asset quality, and ESG scores on the profitability of banking companies listed on the Indonesia Stock Exchange during the 2021–2025 period. The selection of these variables enables the study to integrate traditional financial dimensions concerning funding, liquidity, and asset management with the increasingly relevant sustainability dimension represented by ESG performance (Hidayah et al., 2023; Hartono et al., 2025). By examining these determinants simultaneously within the same banking sample and observation period, the study seeks to provide a more comprehensive explanation of profitability variation than approaches that consider individual financial or sustainability factors separately (Wu & Indraswari, 2024; Cahyaningtya et al., 2024). The findings are expected to enrich the empirical literature on Indonesian banking performance while providing relevant insights for bank management, investors, and other stakeholders in evaluating financial strategies, asset management, liquidity conditions, and ESG implementation as components associated with sustainable profitability.

RESEARCH METHODS

This study employed a quantitative approach with a causal-explanatory research design to examine the effects of capital structure, liquidity, asset quality, and Environmental, Social, and Governance (ESG) scores on the profitability of banking companies listed on the Indonesia Stock Exchange (IDX). The study used secondary data obtained from annual financial reports and ESG-related disclosures of banking companies during the 2021–2025 period. The population consisted of 48 banking companies listed on the IDX, while the sample was selected using purposive sampling based on predetermined criteria, including continuous listing during the observation period, availability of complete annual reports, and completeness of data for capital structure, liquidity, asset quality, ESG scores, and profitability. Based on these criteria, 10 banking companies were selected and observed over five years, resulting in 50 firm-year observations. Capital structure was measured using the Debt to Asset Ratio (DAR), liquidity was represented by the Loan to Deposit Ratio (LDR), asset quality was measured using the Non-Performing Loan (NPL) ratio, ESG performance was represented by the ESG score, and profitability was measured using Return on Assets (ROA).

The data were analyzed using descriptive statistics and multiple linear regression with IBM SPSS Version 26 to determine the individual and simultaneous effects of the independent variables on profitability. Descriptive analysis was performed to summarize the characteristics of the research variables through minimum, maximum, mean, and standard deviation values, while classical assumption tests were conducted to ensure the appropriateness of the regression model. These diagnostic procedures included the normality test using the Normal P–P Plot and Kolmogorov–Smirnov test, the multicollinearity test using tolerance and Variance Inflation Factor (VIF) values, and the heteroscedasticity test using the scatterplot and Glejser approaches. Hypothesis testing was subsequently conducted using the partial *t*-test to assess the effect of each independent variable, the simultaneous *F*-test to evaluate their joint effect on profitability, and the coefficient of determination (R^2) to measure the explanatory power of the regression model at a 5% significance level.

RESULTS AND DISCUSSION

Descriptive Statistics of Research Variables

The descriptive statistical analysis provides an initial empirical overview of the financial and sustainability characteristics of the banking companies included in the research sample. The study covers 50 firm-year observations derived from 10 banking companies listed on the Indonesia Stock Exchange over the 2021–2025 period, allowing the distribution of capital structure, liquidity, asset quality, ESG scores, and profitability to be evaluated consistently across the observation period. Descriptive statistics are important because variations in minimum, maximum, mean, and standard deviation values may indicate differences in financial strategies and operational conditions among banking institutions before inferential relationships are examined (Sugiyono, 2022; Ghozali, 2022). This preliminary evaluation is particularly relevant in banking studies because profitability is shaped by a combination of financing policies, liquidity positions, credit quality, operational efficiency, and broader sustainability practices (Andriansyah et al., 2025; Winarno & Atiningsih, 2025).

Capital structure exhibits substantial variation across the observed banking firms, indicating differences in the extent to which institutions rely on liabilities relative to their asset base. Such heterogeneity is theoretically reasonable because each bank may adopt different financing strategies

depending on its size, risk profile, funding structure, and capacity to generate internal capital. Brigham and Houston (2021) explain that capital structure decisions reflect a trade-off between financing costs, financial risk, and expected returns, while Wu and Indraswari (2024) demonstrate that capital structure remains an important issue in examining profitability within Indonesia's dual banking environment. International evidence similarly shows that the profitability implications of bank capital structures may differ according to institutional characteristics and diversification strategies, reinforcing the importance of evaluating this variable empirically rather than assuming a uniform relationship (Kabichi & Bwana, 2024; Ghenimi et al., 2025).

Liquidity also shows meaningful variation across the sample, reflecting differences in banks' capacity to manage available funds and meet their financial obligations while maintaining productive lending activities. In banking operations, maintaining liquidity is essential because insufficient liquidity can increase financial vulnerability, whereas excessive liquidity may reduce potential earnings when funds are not allocated effectively to income-generating assets. Previous empirical findings have shown that the relationship between liquidity and profitability is not always consistent, particularly because liquidity management is influenced by lending intensity, deposit structures, and broader financial conditions (Andriansyah et al., 2024; Suryana & Manda, 2022). Similar evidence from Indonesian banking companies suggests that liquidity must be examined together with other financial determinants because its profitability effect may depend on the interaction between financing, credit, and operational conditions (Sumarni et al., 2023; Panjaitan et al., 2025).

Asset quality represents another important dimension of the descriptive profile because it captures the extent of differences in credit performance among the sampled banks. Higher levels of problematic assets can generate provisioning costs, limit productive asset utilization, and ultimately affect the ability of a bank to generate sustainable returns, whereas better asset management may strengthen earning capacity. Empirical banking research has consistently emphasized the relevance of asset quality in explaining profitability differences, particularly when it is examined together with liquidity and operational efficiency (Poernomo & Haryati, 2023; Subyanto & Mildawati, 2022). Anggraeni and Giranti (2023) likewise indicate that asset quality constitutes an important financial dimension in evaluating profitability, suggesting that variation in this indicator may reveal meaningful differences in the effectiveness of risk and credit management among banking institutions.

The ESG score displays the broadest conceptual dimension among the variables because it reflects environmental, social, and governance performance rather than a conventional accounting ratio alone. Increasing ESG disclosure among Indonesian listed companies indicates that sustainability performance has become an important consideration for investors, regulators, and corporate stakeholders when evaluating long-term organizational quality (Cahyaningtya et al., 2024; Manulang & Soeratin, 2025). Nevertheless, differences in ESG scores across banks may reflect unequal levels of sustainability integration, disclosure maturity, governance practices, and institutional commitment to environmental and social responsibilities. Previous research has shown that the profitability implications of ESG performance may vary across sectors and levels of ESG implementation, making the descriptive dispersion of ESG scores an important basis for subsequent empirical interpretation (Gharchia & Mindosa, 2023; Loong et al., 2025).

Tabel 2 Hasil Uji Deskriptif

	N	Minimum	Maximum	Mean	Std. Deviation
Struktur Modal	50	12	88	.6756	.26839
Likuiditas	50	38	1.45	.8438	.16580
Kualitas Aset	50	04	3.75	1.9100	1.03520
Skor ESG	50	22.60	95.30	67.7796	17.43192
Profitabilitas	50	10	93	.3162	.21525
Valid N (listwise)	50				

Sumber: Olah Data SPSS Versi 26, 2026

As reported in Table 2, capital structure has a minimum value of 12, a maximum value of 88, a mean of .6756, and a standard deviation of .26839 across the 50 observations. These figures indicate that the sampled banks are characterized by heterogeneous financing structures, although the mean suggests a relatively concentrated central tendency compared with the range between the minimum and maximum observations. Differences in financing composition may emerge from variations in debt dependence, internal funding capacity, business expansion strategies, and risk tolerance among banking institutions. Earlier studies also report that capital structure can generate different profitability outcomes across sectors and institutional settings, supporting the importance of interpreting the variable within the specific context of Indonesian listed banks (Kurniadiantoyo & Kurnia, 2022; Pangau et al., 2024; Wu & Indraswari, 2024).

Liquidity records a minimum value of 38, a maximum value of 1.45, a mean value of .8438, and a standard deviation of .16580, demonstrating differences in the liquidity positions maintained by the banking firms during the observation period. The variation suggests that individual banks may have pursued different approaches in balancing liquid resources with loan allocation and other productive financial activities. Previous studies demonstrate that liquidity does not necessarily produce the same profitability effect across firms because both excessive and inadequate liquidity can create different economic consequences depending on corporate conditions (Sipayung et al., 2023; Tamtama & Riantisari, 2023). Evidence from studies of Indonesian listed firms further shows that liquidity should be interpreted alongside capital structure and firm-specific financial characteristics rather than as an isolated determinant of profitability (Wijaya et al., 2021; Zurriah & Prayogi, 2023).

Asset quality has a minimum value of 04, a maximum value of 3.75, a mean of 1.9100, and a standard deviation of 1.03520, indicating a relatively substantial dispersion across the sample. This dispersion implies that banks experienced different levels of asset-quality conditions, which may reflect differences in credit screening, borrower quality, loan monitoring, and risk-management effectiveness. Banking institutions with better asset-quality management are generally better positioned to reduce deterioration in earning assets and minimize costs associated with problematic credit exposures. The importance of asset quality for profitability has also been identified in studies that jointly assess liquidity, financing structure, and bank-specific performance determinants, thereby providing a strong empirical basis for its inclusion in the present model (Karimah & Mahroji, 2023; Andriansyah et al., 2025; Poernomo & Haryati, 2023).

The ESG score ranges from 22.60 to 95.30, with an average value of 67.7796 and a standard deviation of 17.43192, demonstrating a considerable level of heterogeneity in sustainability performance among the sampled banks. The relatively wide range suggests that ESG integration was not uniform across Indonesian listed banking companies during 2021–2025, possibly reflecting differences in corporate governance maturity, sustainability strategies, disclosure intensity, and stakeholder orientation. Studies examining ESG and profitability have produced diverse empirical outcomes, suggesting that the financial benefits of ESG may depend on implementation quality, industry characteristics, and the level at which sustainability practices reach economically meaningful thresholds (Hartono et al., 2025; Kaya & Ertugrul, 2025; Mulya et al., 2025). Consequently, the substantial dispersion in ESG scores observed in this study provides an important empirical foundation for testing whether sustainability performance is associated with variations in bank profitability.

Profitability ranges from 10 to 93, with a mean value of .3162 and a standard deviation of .21525, showing that financial performance differs considerably across the 50 observations included in the study. Such variation is consistent with the multidimensional nature of banking profitability, which can be influenced by funding decisions, liquidity management, asset quality, operational efficiency, economic conditions, and sustainability-related strategies rather than by a single financial factor. Previous studies have similarly demonstrated that profitability across banking and other industries responds differently to liquidity, capital structure, solvency, efficiency, and ESG-related characteristics (Purwanti et al., 2022; Yuniarti & Budiyo, 2021; Zainati & Zahra, 2024; Wulandari & Anis, 2026). Overall, the descriptive evidence demonstrates sufficient cross-sectional and temporal variation in the research variables to support subsequent regression and hypothesis testing concerning the effects of capital structure, liquidity, asset quality, and ESG scores on the profitability of Indonesian banking companies.

Classical Assumption Tests and Regression Model Diagnostics

The reliability of multiple linear regression depends on the extent to which the model satisfies the underlying statistical assumptions required for unbiased and interpretable estimation. Accordingly, this study evaluates residual normality, multicollinearity, and heteroscedasticity before interpreting the regression coefficients and testing the proposed hypotheses. Diagnostic testing is essential because violations of regression assumptions may affect coefficient stability, standard errors, and the validity of statistical inference (Ghozali, 2022). The use of diagnostic procedures is therefore particularly relevant for banking profitability models that simultaneously incorporate financial structure, liquidity, asset quality, and ESG indicators with potentially different distributions and measurement characteristics.

Residual normality was initially assessed through the Normal P–P Plot presented in Figure 1 of the original analysis. The plotted residual points are distributed around the diagonal line and generally follow its direction, indicating that the residual distribution does not substantially deviate from the expected normal pattern. This graphical evidence provides an initial indication that the regression residuals are sufficiently compatible with the normality assumption required for subsequent parametric testing (Ghozali, 2022). The graphical evaluation is also consistent with the broader use of quantitative financial-performance models in which residual diagnostics are conducted before interpreting relationships among financial variables (Cahyaningrum & Ahmadi, 2024; Astri et al., 2026).

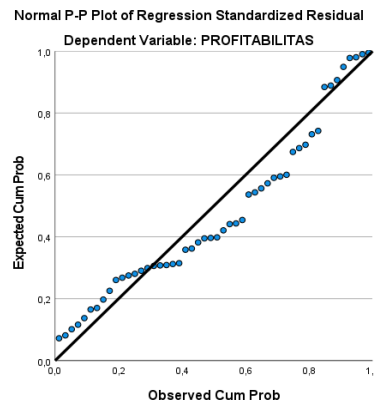


Figure 1. Normality Test Results Using the Normal P–P Plot

Source: SPSS Version 26 Data Processing, 2026

The graphical assessment was subsequently supported by the One-Sample Kolmogorov–Smirnov test to provide a statistical evaluation of residual normality. The test generated a Kolmogorov–Smirnov statistic of 0.148 and an Asymp. Sig. (2-tailed) value of 0.118, which is higher than the 0.05 significance threshold. Based on these results, the null assumption of residual normality is not rejected, indicating that the regression residuals are normally distributed within the analytical criteria applied in this study. This finding strengthens the suitability of continuing to inferential analysis because normally distributed residuals support more reliable interpretation of the estimated regression model (Ghozali, 2022; Bergh et al., 2022).

The normality result is particularly relevant because the model contains explanatory variables that represent different dimensions of bank characteristics, ranging from financing and liquidity conditions to asset quality and sustainability performance. Previous studies have demonstrated that profitability can be associated with multiple financial indicators whose distributions and effects vary across industries and institutional settings (Hidayah et al., 2023; Mocarro et al., 2025). Consequently, ensuring that model residuals exhibit an acceptable distribution reduces concern that extreme residual behavior could distort subsequent significance tests. In this study, the agreement between the graphical and statistical normality assessments provides complementary evidence that the residual structure is appropriate for multiple linear regression analysis.

The next diagnostic procedure examines multicollinearity, which arises when independent variables are excessively correlated and consequently make individual regression coefficients difficult

to estimate reliably. Multicollinearity is evaluated using tolerance and Variance Inflation Factor (VIF) values, where sufficiently high tolerance values and VIF values below the conventional critical threshold indicate that the explanatory variables do not exhibit problematic linear dependence (Ghozali, 2022). This issue is important because capital structure, liquidity, asset quality, and ESG performance may theoretically be associated with broader dimensions of corporate financial condition and management quality. Empirical studies that simultaneously incorporate financial structure and performance variables similarly emphasize the need to distinguish the independent contribution of each explanatory factor within multivariate models (Pangau et al., 2024; Karimah & Mahroji, 2023).

Tabel 4. Hasil Uji Multikolinearitas

Model	Collinearity	Statistics
	Tolerance	VIF
(Constant)		
Struktur Modal	.669	1.495
Likuiditas	.997	1.003
Kualitas Aset	.934	1.071
Skor ESG	.637	1.569

a. Dependent Variable: Profitabilitas

Source: SPSS Version 26 Data Processing, 2026

As shown in Table 4, all explanatory variables demonstrate tolerance values above 0.10 and VIF values substantially below 10. Capital structure records a tolerance value of .669 and a VIF of 1.495, while liquidity records .997 and 1.003, respectively. Asset quality has a tolerance value of .934 and a VIF of 1.071, whereas the ESG score records a tolerance value of .637 and a VIF of 1.569. These values indicate that the independent variables do not exhibit problematic multicollinearity and can therefore be incorporated simultaneously into the regression model without substantial concern regarding excessive inter-variable linear dependence.

The absence of problematic multicollinearity has substantive implications for the interpretation of the regression model because it indicates that capital structure, liquidity, asset quality, and ESG scores retain distinguishable statistical information. Although these variables collectively describe aspects of organizational performance and financial condition, the diagnostic results suggest that none of them is merely a linear duplication of another variable included in the model. This is important in banking research because profitability may simultaneously respond to financing decisions, lending conditions, credit risk, and increasingly relevant sustainability considerations (Astri et al., 2026; Hidayah et al., 2023). Similarly, Pangentas and Prasetyo (2023) and Cahyaningtya et al. (2024) show that ESG-related indicators can be examined alongside conventional financial performance measures, supporting their inclusion as a distinct explanatory dimension.

Heteroscedasticity was subsequently assessed using the scatterplot approach and the Glejser test, in which the absolute residual values were evaluated against the independent variables. The Glejser results show significance values of 0.140 for capital structure, 0.492 for liquidity, 0.233 for asset quality, and 0.113 for ESG score, all of which exceed the 0.05 significance level. These findings indicate that the regression model does not exhibit statistically detectable heteroscedasticity according to the criteria applied in the study, implying that residual variance is sufficiently stable across the independent variables. The result increases confidence in the estimated standard errors and provides stronger support for the subsequent use of partial and simultaneous hypothesis tests (Ghozali, 2022).

The absence of heteroscedasticity is also important from an economic perspective because the sample contains banking firms with varying financial characteristics and ESG performance levels. If residual variance were systematically associated with particular values of the explanatory variables, statistical inference concerning profitability could become less reliable despite the presence of meaningful economic relationships. Previous research demonstrates that corporate profitability models frequently incorporate variables with different levels of scale and volatility, including liquidity, capital structure, solvency, efficiency, and sustainability indicators (Purwanti et al., 2022; Irwan et al., 2026; Mulya et al., 2025). The present diagnostic results therefore indicate that these

differences do not generate detectable variance instability that would invalidate the regression specification used in this study.

The normality, multicollinearity, and heteroscedasticity tests demonstrate that the regression model satisfies the principal diagnostic requirements evaluated in this research. Residuals are normally distributed according to both graphical and Kolmogorov–Smirnov evidence, the independent variables do not exhibit problematic multicollinearity, and the Glejser test provides no indication of heteroscedasticity. These results establish an adequate statistical foundation for interpreting the multiple linear regression coefficients and evaluating whether capital structure, liquidity, asset quality, and ESG scores significantly explain variations in banking profitability. Accordingly, the next stage of the analysis can focus on the direction, magnitude, statistical significance, and joint explanatory contribution of the four independent variables to profitability while maintaining the original SPSS results without modification.

Regression Results, Hypothesis Testing, and Determinants of Bank Profitability

The multiple linear regression analysis was conducted to evaluate the direction and magnitude of the effects of capital structure, liquidity, asset quality, and ESG scores on banking profitability. Based on the estimated model, the regression constant is 0.186, while the coefficients for capital structure, liquidity, asset quality, and ESG score are -0.013, 0.189, 0.091, and -0.003, respectively. These coefficients demonstrate that the explanatory variables do not influence profitability in the same direction, suggesting that each factor reflects a different dimension of financial and sustainability performance. Such heterogeneous effects are consistent with the banking literature, which shows that profitability is determined by the interaction of financing structure, liquidity management, asset quality, operational conditions, and broader corporate strategies rather than by a single determinant (Brigham & Houston, 2021; Andriansyah et al., 2025; Winarno & Atiningsih, 2025).

Capital structure has a regression coefficient of -0.013, a *t*-statistic of -0.100, and a significance value of 0.921, indicating that capital structure does not have a statistically significant effect on profitability. This finding suggests that differences in the financing composition of listed banks during the study period were not sufficient to generate systematic changes in Return on Assets. The result may be explained by the distinctive financial structure of banking institutions, where liabilities, particularly third-party funds, constitute an inherent component of the intermediation business model and therefore cannot be interpreted in the same way as corporate debt in non-financial industries. Previous studies have similarly reported heterogeneous capital structure effects across banking and other sectors, indicating that the profitability implications of leverage depend strongly on institutional characteristics, funding efficiency, and the ability to transform external funds into productive assets (Kabichi & Bwana, 2024; Wu & Indraswari, 2024; Kurniantoyo & Kurnia, 2022; Pangau et al., 2024).

Liquidity records a positive regression coefficient of 0.189, but the corresponding *t*-statistic of 1.101 and significance value of 0.277 indicate that its effect on profitability is statistically insignificant. The positive coefficient indicates that higher liquidity is directionally associated with higher profitability, although the empirical evidence is insufficient to establish a statistically reliable relationship within the sample. This result implies that maintaining liquidity alone does not automatically increase bank profitability because the earnings effect depends on how effectively available funds are allocated to productive lending activities and other income-generating assets. Similar inconsistencies have been reported in previous research, where liquidity effects vary depending on the sector, financial structure, firm size, and operational context (Andriansyah et al., 2024; Sumarni et al., 2023; Sipayung et al., 2023; Tamtama & Riantisari, 2023; Zurriah & Prayogi, 2023).

Asset quality produces the strongest statistically significant result in the model, with a regression coefficient of 0.091, a *t*-statistic of 3.200, and a significance value of 0.003. This result demonstrates that asset quality has a positive and significant effect on profitability within the statistical specification applied in this study. The finding highlights the importance of effective asset and credit management because improvements in asset conditions can strengthen earning capacity, reduce the financial burden associated with problematic credit exposure, and support more efficient utilization of productive resources. This evidence is consistent with studies emphasizing the central

role of asset quality in explaining banking profitability, particularly when examined together with liquidity, efficiency, and other financial indicators (Anggraeni & Giranti, 2023; Poernomo & Haryati, 2023; Subyanto & Mildawati, 2022; Karimah & Mahroji, 2023).

The ESG score has a regression coefficient of -0.003, with a *t*-statistic of -1.400 and a significance value of 0.168, indicating that ESG performance does not exert a statistically significant effect on profitability. Although the coefficient is negative, the non-significant result implies that the observed relationship cannot be interpreted as a systematic profitability effect across the sampled banks. ESG implementation may require a relatively long period before its economic benefits are reflected in financial performance because sustainability initiatives can initially involve compliance costs, organizational investments, reporting systems, and governance adjustments. Previous studies have also demonstrated mixed ESG–profitability relationships, suggesting that the economic consequences of sustainability performance may depend on implementation maturity, sectoral characteristics, stakeholder responses, and possible threshold effects (Gharchia & Mindosa, 2023; Cahyaningtya et al., 2024; Loong et al., 2025; Kaya & Ertugrul, 2025).

Tabel 7. Hasil Uji Parsial (Uji t)

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	.186	.182		1.021	.313
Struktur Modal	-.013	.129	-.016	-.100	.921
Likuiditas	.189	.172	.146	1.101	.277
Kualitas Aset	.091	.028	.437	3.200	.003
Skor ESG	-.003	.002	-.232	-	.168
				1.400	

a. Dependent Variable: Profitabilitas

Sumber: Olah Data SPSS Versi 26, 2026

The partial test results presented in Table 7 confirm that asset quality is the only independent variable with a statistically significant individual effect on profitability at the 5% significance level. Capital structure, liquidity, and ESG scores have significance values above 0.05, whereas asset quality records a significance value of 0.003. The standardized coefficient for asset quality is also the largest in absolute positive terms at 0.437, suggesting that this variable provides the strongest positive contribution among the four explanatory factors included in the model. This result reinforces the argument that banking profitability is closely related to the quality of earning assets and credit-risk management, while the financial effects of capital structure and liquidity may be more conditional and sustainability-related benefits may require a longer realization horizon (Panjaitan et al., 2025; Astri et al., 2026; Hidayah et al., 2023).

At the simultaneous level, the regression model produces an *F*-statistic of 3.092, which is higher than the reported *F*-table value of 2.58, with a significance value of 0.025 that is below the 0.05 threshold. This result demonstrates that capital structure, liquidity, asset quality, and ESG scores collectively exert a statistically significant effect on profitability, even though only asset quality is individually significant in the partial test. The finding illustrates the multidimensional nature of profitability because variables that are individually insignificant may still provide explanatory information when combined within a broader financial-performance model. This interpretation is consistent with studies showing that profitability emerges from interconnected corporate conditions involving funding structure, liquidity, asset utilization, operating efficiency, risk, and sustainability characteristics (Purwanti et al., 2022; Mocarro et al., 2025; Yuniarti & Budiyo, 2021; Zainati & Zahra, 2024).

The coefficient of determination further indicates that the regression model has an R-square value of 0.216, meaning that capital structure, liquidity, asset quality, and ESG score collectively explain 21.6% of the variation in profitability. The remaining 78.4% is attributable to factors outside the model, indicating that bank profitability remains influenced by a broad range of internal and external determinants that were not incorporated into the present specification. These additional

factors may include operational efficiency, credit risk, bank size, interest-rate conditions, macroeconomic growth, inflation, managerial quality, market competition, and other firm-specific characteristics. The relatively moderate explanatory power is therefore consistent with the complexity of financial-performance determination observed in previous studies (Suryana & Manda, 2022; Wijaya et al., 2021; Cahyaningrum & Ahmadi, 2024; Irwan et al., 2026).

From a broader empirical perspective, the results indicate that traditional banking fundamentals remain highly relevant even as sustainability indicators receive greater attention in corporate performance evaluation. ESG scores did not demonstrate a significant profitability effect in the observed period, whereas asset quality emerged as the only statistically significant individual determinant, suggesting that effective management of core banking assets continues to be central to short- and medium-term profitability. Nevertheless, the insignificant ESG effect should not be interpreted as evidence that sustainability practices are economically irrelevant, because ESG may create value through reputational enhancement, risk reduction, investor confidence, regulatory preparedness, and long-term institutional resilience that are not immediately reflected in ROA (Manulang & Soeratin, 2025; Mulya et al., 2025; Hartono et al., 2025). The increasing availability of ESG information in Indonesia's capital market also indicates that sustainability considerations are becoming progressively embedded in corporate evaluation and investment decision-making (Bursa Efek Indonesia, 2026; Pangentas & Prasetyo, 2023).

The empirical findings demonstrate that the profitability of Indonesian listed banks during 2021–2025 is influenced more directly by asset quality than by capital structure, liquidity, or ESG scores when each variable is assessed independently. At the same time, the significant simultaneous test indicates that these four variables collectively contribute to explaining banking profitability, supporting the use of an integrated financial and sustainability framework rather than relying on a single explanatory factor. These findings extend previous research by combining conventional banking fundamentals with ESG performance within one empirical model and thereby provide a more comprehensive perspective on profitability determinants in the Indonesian banking sector (Ghenimi et al., 2025; Cahyaningtya et al., 2024; Wulandari & Anis, 2026). From a managerial perspective, the results imply that strengthening asset quality and credit management should remain a priority, while capital structure, liquidity, and ESG strategies should be managed as complementary dimensions supporting sustainable financial performance rather than as isolated mechanisms for increasing profitability.

CONCLUSION

This study concludes that the profitability of banking companies listed on the Indonesia Stock Exchange during the 2021–2025 period is influenced differently by capital structure, liquidity, asset quality, and ESG scores. The partial hypothesis tests show that capital structure has no significant effect on profitability, with a significance value of 0.921, while liquidity also has no significant effect, with a significance value of 0.277. ESG scores similarly do not significantly affect profitability, as indicated by a significance value of 0.168. In contrast, asset quality has a positive and significant effect on profitability, with a regression coefficient of 0.091 and a significance value of 0.003, indicating that effective asset and credit management plays an important role in strengthening bank profitability.

Simultaneously, capital structure, liquidity, asset quality, and ESG scores significantly affect profitability, as demonstrated by an F-statistic of 3.092 and a significance value of 0.025. The coefficient of determination shows an R-square value of 0.216, indicating that the four independent variables explain 21.6% of the variation in profitability, while the remaining 78.4% is explained by other factors outside the research model. These findings emphasize that asset quality should remain a central managerial priority, while capital structure, liquidity, and ESG strategies should be managed as complementary dimensions within an integrated banking-performance framework. Future studies are therefore encouraged to incorporate additional variables such as operational efficiency, credit risk, bank size, macroeconomic conditions, and governance characteristics to provide a broader explanation of profitability in the banking industry.

REFERENCES

- Andriansyah, M., Saputra, D. G., & Surya, R. K. (2025). Pengaruh kinerja keuangan bank dalam kualitas aset, dan efisiensi operasional terhadap profitabilitas. *RIGGS: Journal of Artificial Intelligence and Digital Business*, 4(2), 1332–1341. DOI: <https://doi.org/10.31004/riggs.v4i2.651>
- Andriansyah, R., Fauzi, R. A., & Leon, F. M. (2024). Dampak risiko likuiditas terhadap profitabilitas yang terdaftar di Bank Indonesia. *Accounting and Management Journal*, 8(2), 97–108. <https://doi.org/10.33086/amj.v8i2.6633>
- Anggraeni, A., & Giranti, O. (2023). Pengaruh good corporate governance (GCG), kualitas aset dan efisiensi terhadap profitabilitas pada bank syariah di Indonesia. *Jurnal Ilmiah Akuntansi dan Keuangan (JIAKU)*, 2(3), 210–223. DOI: <https://doi.org/10.24034/jiaku.v2i3.6018>
- Astri, M. H. N., Sonbay, Y. Y., Manafe, H. A., Man, S., & Seran, P. (2026). Pengaruh kecukupan modal, risiko likuiditas, risiko kredit dan efisiensi operasional terhadap profitabilitas pada bank umum swasta nasional yang terdaftar di Bursa Efek Indonesia periode 2020–2024. *Jurnal Manajemen Digital*, 4(6), 70–82. <https://ejournals.com/ojs/index.php/jken/article/view/4623>
- Badan Pusat Statistik. (2026). *Pertumbuhan ekonomi Indonesia*. <https://www.bps.go.id>
- Bergh, D. D., Boyd, B. K., Byron, K., Gove, S., & J, D. (2022). Company management and financial report. *Journal International of Advances in Social Sciences and Humanities*, 20(10), 278–391.
- Brigham, E. F., & Houston, J. F. (2021). *Fundamentals of financial management* (16th ed.). Cengage Learning.
- Bursa Efek Indonesia. (2026). *Data perdagangan saham*. <https://www.idx.co.id>
- Cahyaningrum, A. J., & Ahmadi, M. A. (2024). Analisis pengaruh struktur modal, profitabilitas, dan kinerja keuangan terhadap nilai perusahaan (systematic literature review). *Jurnal Ilmiah Ekonomi & Bisnis*, 2(4), 214–222. <https://doi.org/10.60023/4ynr9k78>
- Cahyaningtya, N., Okta, L. D., Fikri, M., & Ali, A. (2024). Environmental, social, and governance (ESG) disclosure and company performance: Empirical evidence in Indonesian banking. *Jurnal Ekonomi Akuntansi dan Manajemen*, 23(62), 134–154. DOI: [10.19184/jeam.v23i2.47084](https://doi.org/10.19184/jeam.v23i2.47084)
- Gharchia, S. E. De, & Mindosa, B. (2023). Pengaruh environmental, social, dan governance terhadap profitabilitas pada perusahaan terdaftar di BEI 2021. *Jurnal Manajemen*, 12(2), 68–86. <https://doi.org/10.46806/jm.v12i2.1092>
- Ghenimi, A., Chaibi, H., & Omri, M. A. (2025). How capital structure affects Islamic and conventional bank profitability: The role of diversification. *Asian Journal of Accounting Research*, 12(6), 1–17. <https://doi.org/10.1108/AJAR-02-2025-0050>
- Ghozali, I. (2022). *Aplikasi analisis multivariate dengan program IBM SPSS 27* (10th ed.). Badan Penerbit Universitas Diponegoro.
- Hartono, A., Marzuki, I., & Saputra, W. (2025). Pengaruh skor ESG komposit terhadap profitabilitas perbankan di Asia Tenggara dimoderasi pertumbuhan PDB. *Jurnal Bisnis dan Teknologi*, 9(11), 222–232. <https://dinastirev.org/JEMSI/article/view/6932>
- Hidayah, A. N., Hermuningsih, S., & Maulida, A. (2023). Pengaruh struktur modal, likuiditas, kualitas aset, skor ESG dan pertumbuhan penjualan terhadap profitabilitas pada perusahaan sub sektor makanan dan minuman terdaftar di Bursa Efek Indonesia (BEI). *J-MAS (Jurnal Manajemen dan Sains)*, 8(1), 21–29. <https://dinastirev.org/JEMSI/article/view/6932>
- Irwan, S. N., Ruma, Z., Budiyan, H., Ramli, A., & Nurman, N. (2026). Pengaruh likuiditas dan struktur modal terhadap profitabilitas pada perusahaan sektor pertambangan. *RIGGS: Journal of Artificial Intelligence and Digital Business*, 5(1), 712–719. DOI: <https://doi.org/10.31004/riggs.v5i1.6184>
- Kabichi, R., & Bwana, K. M. (2024). Impact of capital structure on profitability of commercial banks in Tanzania. *Journal of European Economy*, 23(4), 599–614. DOI:10.59857/IJABS1606
- Karimah, I. M., & Mahroji, M. (2023). Pengaruh struktur modal, likuiditas kualitas aset dan ukuran perusahaan terhadap profitabilitas pada perusahaan perbankan yang terdaftar di Bursa Efek Indonesia tahun 2019–2023. *Journal of Advances in Digital Business and Entrepreneurship*, 2(02), 33–50.

- Kaya, M. V., & Ertugrul, S. Y. (2025). Non-linear dynamics of ESG integration and credit default swap on bank profitability: Evidence from the bank in Turkiye. *Journal of Risk and Financial Management*, 12(9), 695–712. <https://doi.org/10.3390/jrfm18120695>
- Kurniadiantoyo, G. M., & Kurnia, K. (2022). Pengaruh struktur modal, leverage, dan profitabilitas terhadap nilai perusahaan (studi kasus pada perusahaan retail yang terdaftar di Bursa Efek Indonesia). *Jurnal Ilmu dan Riset Akuntansi (JIRA)*, 11(10), 510–521. DOI: <https://doi.org/10.69714/rhbym055>
- Loong, L. C., Ming, K. L. Y., & Yee, L. C. (2025). ESG: Its threshold effect on Asian energy company profitability. *International Journal of Energy Economics and Policy*, 15(3), 230–242. DOI: <https://doi.org/10.32479/ijeep.18430>
- Manulang, N., & Soeratin, H. Z. (2025). Peran environmental, social, and governance dalam menarik investor milenial dan Gen Z. *Integrative Perspectives of Social and Science Journal (IPSSJ)*, 2(1), 418–427. <https://ipssj.com/index.php/ojs/article/view/80>
- Mocarro, I. M. A., Nicolle, K., Rubio, D., Vara, F. E. O., & Castillo, C. A. P. (2025). Impact of liquidity and business efficiency on the profitability of industrial companies of the superinThe graphical assessment was subsequently supported by the One-Sample Kolmogorov–Smirnov test...The graphical assessment was subsequently supported by the One-Sample Kolmogorov–Smirnov test...The graphical assessment was subsequently supported by the One-Sample Kolmogorov–Smirnov test...tendency of the stock market. *Journal of European Economy*, 17(10), 1220–1235. DOI: <https://doi.org/10.32479/ijeep.18430>
- Mulya, M., Wahyudi, I., & Olimsar, F. (2025). Analisis hubungan penerapan environmental, social, and governance (ESG) reporting dengan profitabilitas perusahaan (studi empiris pada perusahaan sektor energi yang terdaftar di BEI periode 2021–2023). *Innovative: Journal of Social Science Research*, 5(3), 5309–5323. DOI: <https://doi.org/10.31004/innovative.v5i3.19750>
- Pangau, A. C., Dewi, V. I., & Maratno, S. F. E. (2024). Pengaruh struktur modal, ukuran perusahaan, total asset turnover, likuiditas dan inflasi terhadap profitabilitas pada perusahaan. *INOBIS: Jurnal Inovasi Bisnis dan Manajemen Indonesia*, 8(1), 69–81. DOI:10.31842/jurnalinobis.v8i1.353
- Pangentas, V. D., & Prasetyo, A. B. (2023). Pengaruh environment, social, governance (ESG) terhadap profitabilitas (studi pada perusahaan yang terdaftar dalam Index Kompas. *Diponegoro Journal of Accounting*, 12(4), 213–232. <https://ejournal3.undip.ac.id/index.php/accounting/article/view/41596>
- Panjaitan, I. F., Siallagan, H., & Sijabat, J. (2025). Pengaruh kecukupan modal, risiko kredit, likuiditas terhadap profitabilitas perusahaan sektor perbankan yang terdaftar di Bursa Efek Indonesia periode 2021–2023. *Jurnal Lentera Bisnis*, 14(1), 880–895.
- Poernomo, M. G. P., & Haryati, S. (2023). Pengaruh likuiditas, kualitas aset, sensitivitas, efisiensi terhadap profitabilitas pada bank umum devisa KBMI IV. *Jurnal Cakrawala Repositori IMWI*, 6(4), 656–668.
- Purwanti, E., Ririantini, S. N., & Indrawati, A. F. (2022). Analisis efisiensi modal kerja, likuiditas, solvabilitas terhadap profitabilitas perusahaan kosmetik Bursa Efek Indonesia. *Owner*, 6(3), 1499–1506. <https://doi.org/10.33395/owner.v6i3.995>
- Sipayung, T., Zulfikar, M. K., & Tarigan, W. J. (2023). Pengaruh likuiditas dan struktur modal terhadap profitabilitas (studi kasus perusahaan pabrik semen yang terdaftar di Bursa Efek Indonesia periode 2018–2022). *Jurnal Ilmiah Accusi*, 5(2), 146–155.
- Subyanto, J. M., & Mildawati, T. (2022). Pengaruh likuiditas, kualitas aset, dan sensitivitas terhadap profitabilitas bank umum swasta nasional (BUSN) devisa go public. *Jurnal Ilmu dan Riset Akuntansi (JIRA)*, 11(6), 700–716.
- Sugiyono. (2022). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.
- Sumarni, R., Gustina, I., & Nurfiriani. (2023). Pengaruh likuiditas dan struktur modal terhadap profitabilitas pada perusahaan perbankan yang terdaftar di Bursa Efek Indonesia periode 2019–2021. *Jurnal Akuntansi dan Keuangan*, 12(1), 42–48. DOI: <https://doi.org/10.32520/jak.v12i1.2742>

- Suryana, I., & Manda, G. (2022). Pengaruh risiko kredit dan risiko likuiditas terhadap profitabilitas (ROA) pada perusahaan milik negara. *Jurnal Ekonomi dan Bisnis*, 21(1), 150–161.
- Tamtama, N. N., & Riantisari, R. (2023). Pengaruh struktur modal dan likuiditas terhadap profitabilitas perusahaan otomotif dan komponen terdaftar BEI periode 2019–2022. *Jurnal Riset Manajemen Sekolah Tinggi Ilmu Ekonomi Widya Wiwaha Program Magister Manajemen*, 10(2), 41–52. DOI: <https://doi.org/10.32477/jrm.v10i2.706>
- Wijaya, A., Aurellia, S., Ivana, M., & Sipahutar, T. T. U. (2021). Pengaruh ukuran perusahaan, struktur modal dan likuiditas terhadap profitabilitas dan implikasinya terhadap nilai perusahaan perbankan di BEI. *Jurnal Warta Dharmawangsa*, 15(1), 60–76. DOI: <https://doi.org/10.46576/wdw.v15i1.1050>
- Winarno, H., & Atiningsih, S. (2025). Pengaruh risiko keuangan, struktur modal dan risiko likuiditas terhadap profitabilitas bank, dengan efisiensi operasional sebagai variabel mediasi. *Mandiri: Jurnal Akuntansi dan Keuangan*, 4(2), 110–127. DOI: <https://doi.org/10.59086/jak.v4i2.1025>
- Wu, C. N., & Indraswari, C. R. (2024). Pengaruh struktur modal terhadap profitabilitas bank pada dual banking system di Indonesia. *Journal Contemporary Studies in Economic, Finance and Banking*, 3(2), 279–293.
- Wulandari, S., & Anis, I. (2026). Pengaruh praktik ESG terhadap profitabilitas perusahaan teknologi yang terdaftar di BEI. *Jurnal Ekonomi Kreatif dan Teknologi*, 15(7), 451–462. DOI: <https://doi.org/10.55837/ed.v5i2.201>
- Yuniarti, & Budiyanto, A. (2021). Pengaruh likuiditas, solvabilitas dan aktivitas terhadap profitabilitas pada perusahaan farmasi yang terdaftar di BEI. *Jurnal Ilmu dan Riset Manajemen*, 5(3), 99–115. DOI:10.52300/jmso.v3i3.5400
- Zainati, & Zahra. (2024). Pengaruh likuiditas dan solvabilitas terhadap profitabilitas pada perusahaan sub sektor otomotif yang terdaftar di BEI. *Jurnal Minfo Polgan*, 13(1), 647–656. <https://doi.org/10.33395/jmp.v13i1.13771>
- Zurriah, R., & Prayogi, M. A. (2023). Pengaruh likuiditas terhadap profitabilitas dengan ukuran perusahaan sebagai variabel moderasi. *Jurnal Ekonomi Bisnis, Manajemen dan Akuntansi (JEBMA)*, 3(3), 899–910. <https://doi.org/10.47709/jebma.v3i3.3141>