

DIGITALIZATION, BANKING COMPETITION, AND CREDIT RISK AS ANTECEDENTS OF BANK STABILITY MEDIATED BY PROFITABILITY

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Abstract (TNR11)

This study aims to analyze the effects of digitalization, banking competition, and credit risk on bank stability, with profitability as a mediating variable in conventional banking in Indonesia. This study employs a quantitative research design using hypothesis testing to examine the relationships between independent and dependent variables. The sample is selected using purposive sampling, consisting of conventional banks, including state-owned banks, private banks, regional development banks, and foreign banks. The observation period covers quarterly data from the first quarter of 2019 to the second quarter of 2025. Using panel data, a total of 2,366 observations are obtained. The analytical method applied is panel regression. The results indicate that digitalization does not have a direct effect on bank stability, but it has a positive effect on profitability. Profitability is found to have a positive effect on bank stability and mediates the relationship between digitalization and stability. Banking competition positively affects bank stability but does not significantly influence profitability. Profitability does not mediate the relationship between competition and stability. Credit risk does not directly affect bank stability and does not significantly influence overall profitability. However, when examined through individual profitability measures, credit risk shows a positive effect on profitability. Furthermore, profitability does not mediate the relationship between credit risk and bank stability when measured in aggregate, but partial mediation is observed through specific profitability indicators. The findings suggest that digitalization should be positioned as a strategic tool to enhance profitability, which in turn strengthens bank stability. Banking competition needs to be effectively managed to maintain systemic stability, while credit risk remains a critical instrument in supporting profitability and ensuring long-term sustainability in the banking industry. Digitalization, Banking Competition, Profitability, Credit Risk, Bank Stability

Keywords: Banking Competition, Bank Stability, Credit Risk, Digitalization, Profitability

1. INTRODUCTION

Banks play a central role in economic systems by performing financial intermediation functions that mobilize savings and allocate credit to productive sectors, thereby facilitating investment and consumption. Beyond traditional intermediation, modern banking systems contribute to long-term economic stability by mitigating credit market failures and expanding access to finance, particularly through financial inclusion initiatives that broaden the depositor base and enhance systemic resilience (Gil-Jardón et al., 2024; Nugrohowati & Shidiqie, 2025).

In recent years, digitalization has emerged as a structural transformation reshaping banking operations, competition, and value creation. The integration of digital technologies such as mobile banking, artificial intelligence, big data analytics, and automated systems has significantly enhanced operational efficiency, reduced transaction costs, and enabled 24/7 service delivery without geographical constraints (Ikmanila & Djastuti, 2025; Alsobai & Aassouli, 2025). More critically, digitalization has expanded financial inclusion by enabling access to formal financial services for previously unbanked populations, particularly in developing economies. This

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transformation is reflected in the rapid growth of digital banking transactions in Indonesia, which have increased substantially over the 2020–2024 period, indicating accelerated adoption of digital financial services and structural shifts in banking behavior.

From a theoretical perspective, banking competition plays a dual role in shaping financial stability. On one hand, increased competition enhances efficiency, reduces operational costs, and promotes prudent risk management, thereby strengthening stability. On the other hand, market power reflected in banks' ability to control pricing and expand market share can influence profitability through economies of scale, cost efficiency, and risk management strategies (Mateev et al., 2023). Empirical studies consistently document a positive relationship between banking competition and both profitability and stability (Shahrir et al., 2022; Ayagre et al., 2024; Ozili, 2025; Lee, 2025; Afzal et al., 2025; Chand et al., 2025; Yudaruddin et al., 2023).

Digitalization further reinforces these dynamics by improving cost efficiency, diversifying income streams, and enhancing operational scalability, which ultimately contributes to higher profitability, as measured by indicators such as return on assets (ROA), return on equity (ROE), and net profit margin (NPM) (Anabel & Hidayat, 2025; Ren et al., 2024; Citterio et al., 2024; Nguyen et al., 2023). However, the relationship between profitability and financial stability is mediated by risk exposure, particularly credit risk. Elevated non-performing loans (NPLs) reduce interest income, increase loan loss provisions, and impose additional operational costs, thereby eroding profitability and weakening bank resilience (IMF, 2023; Raddatz et al., 2024).

Profitability, in turn, functions as a critical transmission mechanism linking operational performance to financial stability. Profitable banks accumulate retained earnings that strengthen capital buffers, enhance liquidity, and increase market confidence, thereby reducing the likelihood of bank failure and systemic risk. Conversely, profitability derived from high-risk activities may generate short-term gains but increase long-term instability if risk exposure is not adequately managed (Xu et al., 2019). This dual role highlights the importance of examining profitability not merely as an outcome variable but as an intervening mechanism that transmits the effects of digitalization, competition, and credit risk to banking stability.

Despite the growing body of literature on banking stability, competition, and digital transformation, significant gaps remain. Bibliometric analysis using VOSviewer indicates that existing studies are predominantly clustered around bank risk, financial stability, and market structure, while digitalization has only recently emerged as a focal theme, particularly in the context of developing economies. Recent trends highlight increasing attention to digital banking, credit risk (NPLs), and profitability indicators such as ROA, especially in post-pandemic settings. However, prior studies largely examine these variables in isolation or in limited pairwise relationships, neglecting the integrated mechanism through which digitalization, competition, and credit risk jointly influence banking stability.

Accordingly, this study addresses this gap by developing a comprehensive analytical framework that integrates digitalization, banking competition, and credit risk as key determinants of banking stability, with profitability positioned as a mediating variable. This approach advances the literature by providing a unified model that captures both direct and indirect effects, thereby offering a more nuanced understanding of the transmission channels underlying bank stability in the digital era.

Theoretically, this study contributes to the banking stability literature by extending existing models through the incorporation of profitability as a mediating construct that links structural transformation (digitalization), market dynamics (competition), and risk exposure (credit risk) to financial stability. Empirically, the study provides evidence from a developing economy context, where digital transformation and financial inclusion are rapidly evolving. Practically, the findings offer strategic insights for bank management and policymakers in designing digital transformation strategies that enhance profitability while maintaining financial stability under increasing competitive pressure and risk exposure.

2. LITERATURE REVIEW

2.1. Theoretical Foundation

The banking system operates as a core component of financial intermediation, transforming savings into productive investments while facilitating liquidity provision, payment services, and risk allocation (Freixas & Rochet, 2008; Mishkin, 2021). Contemporary banking theory conceptualizes banks not only as deposit-taking and lending institutions but also as entities performing asset transformation functions, including maturity transformation, liquidity provision, and risk diversification. These functions enable banks to bridge informational asymmetries, reduce transaction costs, and enhance capital allocation efficiency within the economy.

Financial intermediation theory provides a foundational lens to understand the role of banks in economic development. By channeling funds from surplus to deficit units, financial intermediaries reduce information asymmetry, pool risks, and improve investment efficiency, thereby fostering economic growth (Schumpeter, 1934; Levine et al., 2000; Konstantakopoulou, 2023). In this context, the effectiveness of intermediation is closely linked to bank performance and systemic stability.

Financial stability reflects the resilience of the banking system to absorb shocks while maintaining core financial functions. It is commonly proxied by indicators such as the Z-score, capital adequacy, and liquidity measures, which collectively capture solvency, risk exposure, and the probability of bank failure (Cihák et al., 2021). A stable banking system ensures confidence among stakeholders, minimizes systemic risk, and supports sustainable economic growth.

Profitability represents a bank's capacity to generate earnings from its assets and equity base, typically measured using return on assets (ROA), return on equity (ROE), and net interest margin (NIM). Beyond performance measurement, profitability serves as an internal capital generation mechanism that strengthens resilience through retained earnings, enhances liquidity buffers, and supports long-term sustainability (Hristov et al., 2023; Mousa et al., 2025).

Credit risk, defined as the likelihood of borrower default, remains a primary determinant of banking performance and stability. It is commonly proxied by non-performing loans (NPLs), which reflect asset quality deterioration and directly impact earnings through reduced interest income and increased provisioning costs (Mousa et al., 2025). Persistent credit risk weakens solvency and undermines financial stability.

Market structure theory, particularly the Structure–Conduct–Performance (SCP) paradigm, explains how competition and market concentration influence bank behavior and performance. Higher market concentration enhances market power, enabling banks to set prices and potentially increase profitability. Conversely, competitive pressure can improve efficiency but may also

compress margins and induce risk-taking behavior, creating ambiguous effects on stability (Sousa & Almeida, 2025).

2.2. Hypothesis Development

2.2.1. Digitalization and Bank Stability

Digitalization enhances operational efficiency, risk monitoring, and service delivery, thereby strengthening banking resilience. Empirical evidence generally supports a positive association between digital transformation and financial stability, although some studies highlight potential risks associated with technological complexity and systemic exposure (Afzal et al., 2025; Yudaruddin et al., 2023; Haj-Salem, 2025).

H1: Digitalization positively affects bank stability.

2.2.2. Digitalization and Profitability

Digital transformation reduces operational costs, expands fee-based income, and improves scalability, leading to enhanced profitability. While initial investment costs may exert short-term pressure, long-term effects are predominantly positive (Citterio et al., 2024; Nguyen et al., 2023).

H2: Digitalization positively affects profitability.

H2a: Digitalization positively affects ROA.

H2b: Digitalization positively affects ROE.

H2c: Digitalization positively affects NIM.

2.2.3. Profitability and Bank Stability

Profitability strengthens capital buffers, enhances liquidity, and reduces insolvency risk. However, excessive profit driven by high-risk activities may undermine stability. Empirical findings predominantly support a positive relationship (Chowdhury et al., 2024; Shahriar et al., 2023), with some exceptions indicating nonlinear effects (Pessarossi et al., 2020).

H3: Profitability positively affects bank stability.

H3a: ROA positively affects bank stability.

H3b: ROE positively affects bank stability.

H3c: NIM positively affects bank stability.

2.2.4. The Mediating Role of Profitability in Digitalization–Stability Nexus

Digitalization improves efficiency and revenue diversification, which enhances profitability and, in turn, strengthens financial stability through increased capital buffers and risk absorption capacity. This establishes profitability as a transmission channel linking digital transformation to stability outcomes.

H4: Profitability mediates the relationship between digitalization and bank stability.

H4a: ROA mediates the relationship between digitalization and bank stability.

H4b: ROE mediates the relationship between digitalization and bank stability.

H4c: NIM mediates the relationship between digitalization and bank stability.

2.2.5. Bank Competition and Stability

Competition improves efficiency and risk management, contributing to stability. However, excessive competition may induce risk-taking behavior. Empirical evidence largely supports a positive relationship between competition and stability (Nguyen et al., 2024; Ul-Huq et al., 2023), though conflicting findings persist.

H5: Bank competition positively affects bank stability.

2.2.6. Bank Competition and Profitability

Under the SCP framework, higher market concentration increases market power, enabling banks to enhance margins and profitability. Empirical findings remain mixed, reflecting differences in market conditions and regulatory environments.

H6: Bank competition positively affects profitability.

H6a: Bank competition positively affects ROA.

H6b: Bank competition positively affects ROE.

H6c: Bank competition positively affects NIM.

2.2.7. The Mediating Role of Profitability in Competition–Stability Relationship

Competition influences profitability through efficiency and pricing power, which subsequently affects stability via capital accumulation and risk absorption capacity.

H7: Profitability mediates the relationship between bank competition and stability.

H7a: ROA mediates the relationship between bank competition and stability.

H7b: ROE mediates the relationship between bank competition and stability.

H7c: NIM mediates the relationship between bank competition and stability.

2.2.8. Credit Risk and Bank Stability

Credit risk deteriorates asset quality, reduces income, and increases vulnerability to financial distress. Empirical evidence consistently shows a negative relationship between NPLs and stability, although effective risk management may mitigate adverse effects.

H8: Credit risk negatively affects bank stability.

2.2.9. Credit Risk and Profitability

Higher credit risk reduces interest income and increases provisioning costs, thereby weakening profitability. Most empirical studies support a negative relationship, although some findings suggest context-dependent effects.

H9: Credit risk negatively affects profitability.

H9a: Credit risk negatively affects ROA.

H9b: Credit risk negatively affects ROE.

H9c: Credit risk negatively affects NIM.

2.2.10. The Mediating Role of Profitability in Credit Risk–Stability Relationship

Credit risk reduces profitability through increased losses and provisioning, which weakens capital buffers and ultimately reduces stability. Profitability thus acts as a key transmission mechanism linking risk exposure to systemic resilience.

H10: Profitability mediates the relationship between credit risk and bank stability.

H10a: ROA mediates the relationship between credit risk and bank stability.

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H10b: ROE mediates the relationship between credit risk and bank stability.

H10c: NIM mediates the relationship between credit risk and bank stability.

3. METHODS

3.1 Research Design

This study adopts a quantitative research approach with a correlational design to investigate the relationships among digitalization, market competition, credit risk, profitability, and bank stability in the Indonesian banking sector. The study emphasizes both direct and indirect effects, positioning profitability as a mediating variable.

An empirical strategy based on panel data analysis is employed to capture both cross-sectional and time-series variations. In addition, a path analysis framework is integrated to assess mediation effects within the structural relationships. To enhance analytical depth and identify potential heterogeneity, the analysis is further extended across four bank categories: state-owned banks, regional development banks, private banks, and foreign banks operating in Indonesia.

The data are sourced from the Otoritas Jasa Keuangan and cover quarterly observations from the first quarter of 2019 to the second quarter of 2025.

3.2 Variables and Measurement

This study consists of independent variables (digitalization, market competition, and credit risk), a mediating variable (profitability), and a dependent variable (bank stability).

Digitalization is conceptualized as the extent to which banks adopt and utilize digital technologies in their operations. It is measured using proxy indicators that reflect digital intensity, including the proportion of intangible assets and the contribution of fee-based income. These indicators are standardized and aggregated into a composite index using an entropy-based weighting approach to capture their relative informational contribution.

Market competition is measured using the Herfindahl-Hirschman Index, which reflects the degree of concentration in the banking industry. This index captures how market share is distributed across banks, indicating whether the market structure is competitive or concentrated.

Credit risk represents the potential losses arising from borrowers' failure to meet their financial obligations. It is proxied by three key indicators: non-performing loans, loan loss provisions, and the loan-to-deposit ratio. These indicators are normalized and combined into a composite index using an entropy weighting method to ensure an objective representation of credit risk exposure.

Profitability, as the mediating variable, reflects the bank's ability to generate earnings from its operations. It is measured using return on assets, return on equity, and net interest margin. These indicators are integrated into a composite profitability index through a weighted aggregation approach based on their statistical contribution.

Bank stability, as the dependent variable, is measured using a Z-score approach, which captures the bank's distance from insolvency. This measure incorporates profitability, capitalization, and earnings volatility to reflect the overall resilience of banks against financial shocks.

3.3 Population and Sample

The population consists of all conventional banks registered under the Otoritas Jasa Keuangan. The sampling technique used is purposive sampling based on data availability and consistency criteria.

Banks included in the sample must have complete quarterly financial data over the observation period from Q1 2019 to Q2 2025. Based on these criteria, the final sample consists of 91 banks, generating a total of 2,366 observations. The sample is distributed across four categories: state-owned banks, regional development banks, private banks, and foreign banks.

3.4 Model Specification

The empirical model is structured into two main relationships. First, profitability is modeled as a function of digitalization, market competition, and credit risk. Second, bank stability is modeled as a function of profitability. The mediation framework allows digitalization, competition, and credit risk to influence bank stability indirectly through profitability. This approach enables a more comprehensive understanding of the transmission mechanisms within the banking system.

3.5 Panel Data Estimation Technique

The study employs panel data regression techniques to estimate the proposed relationships. Three alternative estimation models are considered:

- Common Effect Model, which assumes homogeneity across entities and time
- Fixed Effect Model, which accounts for unobserved heterogeneity across banks
- Random Effect Model, which treats individual effects as stochastic components

Model selection is conducted through a sequence of statistical tests, including the Chow test, Hausman test, and Lagrange Multiplier test, to determine the most appropriate specification.

3.6 Hypothesis Testing

The evaluation of the empirical model is based on several statistical criteria. The coefficient of determination is used to assess the explanatory power of the model. The F-test evaluates the joint significance of the independent variables, while the t-test examines the significance of individual coefficients. All statistical inferences are conducted at a 5% significance level to ensure robustness and reliability of the results.

4. RESULTS AND DISCUSSION

4.1. General Overview of Empirical Findings

The analysis of the conventional banking industry in Indonesia reveals substantial heterogeneity in terms of stability, profitability, digitalization levels, competitive intensity, and credit risk. This variation reflects differences in institutional capacity, business models, and technological readiness across bank groups. Banks with stronger capital structures and more mature organizational systems tend to exhibit higher levels of stability and profitability compared to other groups.

Digitalization within the banking sector remains uneven. While some banks demonstrate advanced technological adoption, others are still in the early stages of digital transformation.

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Meanwhile, the structure of the Indonesian banking market indicates a relatively intense level of competition within a controlled concentration framework. Credit risk remains a critical factor reflecting asset quality and the resilience of banks to economic shocks.

4.2. Digitalization and Bank Stability

The findings indicate that digitalization does not directly enhance bank stability. This pattern suggests a non-linear relationship in which the benefits of digitalization do not materialize immediately but emerge through a complex transition process. In the early stages, digitalization may increase risk exposure due to high initial investment costs, greater operational complexity, and underdeveloped digital risk management systems.

Furthermore, the impact of digitalization is contingent upon internal bank characteristics. Institutions with strong technological capabilities, governance structures, and human capital are more likely to convert digitalization into strategic advantages. In contrast, banks with limited capacity may face additional pressures. Thus, the relationship between digitalization and stability is conditional rather than universal.

4.3. Digitalization and Profitability

In contrast to stability, digitalization demonstrates a consistent positive relationship with profitability. Digital transformation enhances operational efficiency through process automation, cost reduction, and optimized asset utilization. Additionally, digitalization facilitates revenue diversification through technology-based financial services, expanding income streams beyond traditional intermediation.

However, the impact of digitalization on profitability is not uniform across all performance indicators. It tends to exert a stronger effect on asset and capital efficiency than on net profit margins. This is due to the trade-off between increased revenues and the substantial upfront costs associated with technological investments during the early stages of implementation.

4.4. Profitability and Bank Stability

Profitability emerges as a key determinant of bank stability. Banks that consistently generate profits possess greater capacity to build internal reserves, strengthen capital structures, and absorb external shocks. Profitability also reflects operational efficiency and managerial quality, both of which contribute to institutional resilience. Different dimensions of profitability such as asset efficiency, capital effectiveness, and intermediation margins play significant roles in enhancing stability. This finding underscores that bank stability is not solely driven by external conditions but is strongly rooted in internal financial fundamentals.

4.5. The Mediating Role of Profitability in the Digitalization–Stability Relationship

The analysis demonstrates that profitability serves as the primary transmission mechanism linking digitalization to bank stability. Digitalization does not directly improve stability; instead, it enhances financial performance, which subsequently strengthens stability. This finding aligns with the resource-based view, where digital technology is treated as a strategic resource that must be transformed into organizational capabilities before yielding sustainable performance outcomes.

Profitability, therefore, functions as a critical channel through which digital transformation translates into financial resilience.

4.6. Banking Competition and Stability

Banking competition exhibits a positive relationship with stability. Competitive pressure compels banks to improve efficiency, enhance service quality, and strengthen risk management discipline. In this context, competition acts as a market discipline mechanism that drives institutional performance improvements. However, the relationship between competition and profitability is less consistent. Competitive intensity may compress profit margins, particularly when banks engage in price-based competition or incur higher service-related costs. Consequently, competition appears to play a more significant role in enhancing efficiency than in directly increasing profitability.

4.7. Credit Risk in the Context of Stability and Profitability

Credit risk does not demonstrate a direct significant effect on either stability or profitability within the model framework. This suggests that the impact of credit risk is complex and often mediated or moderated by other factors such as risk management practices, macroeconomic conditions, and portfolio structure. Nevertheless, from a theoretical standpoint, credit risk remains a fundamental determinant of banking resilience. Elevated credit risk can deteriorate asset quality, reduce earnings, and undermine market confidence. Therefore, the absence of a direct effect in the empirical model does not diminish its structural importance in the banking system.

4.8. Theoretical Synthesis

Overall, the findings point to a multidimensional and indirect relationship structure. Digitalization functions as an enabling factor, profitability acts as the primary mediator, and stability represents the long-term outcome. Competition serves as an external disciplinary mechanism, while credit risk operates as a foundational factor that can either reinforce or weaken systemic structure.

This configuration indicates that bank stability cannot be adequately explained through simple linear relationships but must be understood as the result of complex interactions among technological transformation, financial performance, market structure, and risk management dynamics.

5. CONCLUSION

This study examines the relationship between digitalization, banking competition, and credit risk on bank stability, with profitability acting as a mediating mechanism. The findings lead to several key conclusions.

First, digitalization does not exert a direct positive effect on bank stability in the Indonesian banking context. Instead, its impact is indirect and operates through internal performance channels. Second, digitalization has a significant positive effect on profitability, both in composite measures and across key profitability dimensions, indicating its role in enhancing operational efficiency and revenue generation capacity.

Third, profitability consistently demonstrates a strong positive effect on bank stability. This confirms that financial performance is a central pillar in strengthening institutional resilience.

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Fourth, profitability serves as a significant mediating variable in the relationship between digitalization and bank stability, reinforcing the notion that technological transformation contributes to stability through improved financial outcomes rather than direct structural effects.

Fifth, banking competition is found to positively influence bank stability, suggesting that competitive pressure enhances efficiency and risk discipline. However, competition does not consistently improve profitability, except in specific dimensions related to intermediation margins. Sixth, profitability does not generally mediate the relationship between competition and stability, except under specific conditions where certain profitability components play a role.

Seventh, credit risk does not exhibit a direct positive effect on either bank stability or overall profitability. Nonetheless, it influences specific dimensions of financial performance, which indirectly affect stability. Finally, profitability does not consistently mediate the relationship between credit risk and stability when measured in aggregate, but partial mediation is observed when disaggregated profitability indicators are considered.

5.1. Managerial Implications

5.1.1. The findings provide several strategic implications for banking practitioners.

Digitalization should be positioned as an indirect instrument for achieving bank stability. Since its impact operates through profitability, banks must prioritize digital initiatives that enhance operational efficiency and revenue generation rather than treating digital transformation as an end goal.

Strategic focus should be placed on profitability-driven digital transformation. This includes the development of digital lending systems, data-driven credit assessment, and digital payment platforms that directly contribute to financial performance. Without a clear linkage to profitability, digital investments risk becoming inefficient and potentially destabilizing in the long term.

Profitability must be treated as the primary foundation of bank stability. This implies that risk management frameworks should be aligned with profitability objectives, emphasizing sustainable earnings generation rather than solely focusing on capital adequacy or liquidity expansion.

Banking competition should be managed within a balanced regulatory framework. While competition enhances stability through efficiency gains, excessive price-based competition may erode profitability. Therefore, maintaining a contestable yet stable market structure is essential.

Credit risk management remains critical despite the absence of a direct statistical effect. Banks should integrate credit risk strategies with profitability considerations, emphasizing risk-adjusted returns rather than focusing exclusively on reducing non-performing loans.

5.2. Theoretical Implications

5.2.1. This study contributes to the banking and financial stability literature in several ways.

First, it reinforces the mediating role of profitability in explaining bank stability, shifting the analytical focus from direct-effect models to transmission-based frameworks. Second, it challenges the conventional assumption that digitalization inherently strengthens bank stability,

supporting a contingency-based perspective in which outcomes depend on internal financial performance.

Third, the findings provide empirical support for the competition–stability hypothesis, demonstrating that competitive dynamics can enhance systemic resilience. Fourth, the study differentiates the roles of various profitability dimensions, highlighting that profitability is not a homogeneous construct but consists of multiple components with distinct transmission mechanisms.

5.3. Limitations

The study does not fully capture non-financial mechanisms through which digitalization may influence stability, such as governance quality, risk management sophistication, and operational resilience. The measurement of digitalization is aggregated, limiting the ability to distinguish the effects of different forms of technological adoption.

The analysis focuses primarily on credit risk, excluding other relevant risk dimensions such as liquidity, market, and operational risks. Additionally, the differential roles of profitability components are not explored in depth from a structural perspective.

Finally, the study is context-specific to the Indonesian banking sector, which may limit the generalizability of the findings to other financial systems with different regulatory environments and levels of digital maturity.

5.4. Future Research Directions

Future research should extend the analytical framework by incorporating moderating variables such as bank size, ownership structure, and governance quality, as well as exploring multiple mediation mechanisms involving efficiency and risk dimensions.

More granular measures of digitalization should be employed to distinguish between different technological innovations and their respective impacts. Expanding the analysis to include broader categories of banking risk would provide a more comprehensive understanding of stability dynamics.

Given the potential non-linear relationships observed, future studies should adopt dynamic and non-linear modeling approaches to identify threshold effects and optimal levels of digitalization and competition.

Finally, comparative studies across countries, banking systems, and institutional settings are necessary to enhance external validity and deepen the understanding of how contextual factors shape the relationship between digitalization, profitability, and bank stability.

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