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Commercial Banking and Financial Stability: Evaluating Internal and External Determinants

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Abstract
This study explores the correlation between commercial banking operations and their impact on financial stability. It ranks the various banking activities arising from the risk-mitigating measures and regulatory constraints that altogether build up the resilience of the financial sector. It seeks to identify means that either foster or impede stability, aiming eventually to give helpful clues to policymakers, financial regulators, and banking practitioners in their efforts to sustain the economy. People targeted during the research were seasoned senior managers from different commercial banks with two representatives from each institution selected through the random sampling technique. To assess the correlations between the independent and dependent variables, inferential statistical tools were used for regression analysis and correlation tests. Financial stability, the study reveals, is dependent on a variety of internal dynamics, including operational costs, size of firms, board composition, capitalization levels, interest rate policies, and labor productivity. The study further emphasizes that commercial banks could strengthen their financial viability through financial innovations, strategic policy decisions, increased income avenues, sound financial reconciling methodologies, and well-structured oversight mechanisms. These measures collectively assist in managing both internal and external pressures, enabling banks to maintain their stability in an evolving economic landscape. Additionally, the study recommends enhanced training programs for banking personnel to improve risk assessment capabilities and regulatory compliance, further strengthening the financial sector's resilience.

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1. INTRODUCTION

The primary aim of this research is to analyze how financial development and financial inclusion impact poverty levels in developing countries. Financial inclusion serves as a fundamental driver of economic progress, ultimately playing a significant role in alleviating poverty. A robust and well-structured financial sector broadens the accessibility of financial services, particularly for individuals with lower income levels, thereby promoting greater financial participation and economic stability. When financial institutions expand their outreach, they enable underprivileged communities to access credit, savings, insurance, and investment opportunities, which in turn enhances their financial resilience (Omri, 2022). Improved financial accessibility empowers marginalized populations by fostering entrepreneurship, supporting small businesses, and enabling wealth accumulation, all of which contribute to economic upliftment. Furthermore, financial development strengthens economic systems by promoting transparency, reducing income inequality, and enhancing economic productivity (Ali, 2022; Hasan & Sadat, 2023; Dahmani & Makram, 2024). This study aims to identify key mechanisms through which financial development facilitates poverty reduction, examine barriers to financial access, and provide recommendations for policymakers to enhance inclusive financial strategies. The findings will contribute to designing effective policies that ensure equitable financial participation and long-term economic sustainability. Consequently, financial development can also serve

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as an essential mechanism for poverty alleviation by mobilizing financial resources, increasing investment, and improving economic opportunities for disadvantaged populations (Wali, 2018; Demirgüç-Kunt et al., 2018; Shahbaz, 2018; Hun et al., 2024). There is a very wide literature behind financial inclusion and its relevance towards poverty alleviation. Researchers argue that giving individuals and small businesses access to financial services enhances productive investments, risk management, and consumption smoothing to the betterment of overall economic welfare (Beck et al., 2018; Singh et al., 2024). Formally accessing financial services such as credit, savings accounts, and insurance allows for economic activity among low-income populations, thereby increasing their income levels and protecting them rather significantly against financial shocks (Honohan, 2014; Kibritcioglu, 2023). But the role played by financial inclusion in poverty eradadication depends on how well the financial institutions perform, the regulatory framework under which they operate, and the economic environment (Sahay et al., 2015; Senturk, 2023; Ahmad & Alvi, 2024).

This study employs panel data from 134 developing countries covering the period from 2011 to 2021 to analyze the impact of financial inclusion on poverty and assess the role of financial development in poverty reduction. A comprehensive econometric model is utilized, where poverty serves as the dependent variable, while financial inclusion, financial development, gross domestic product per capita, the Gini coefficient, trade, inflation, and secondary school enrollment function as independent variables. To measure poverty, the study adopts the poverty headcount ratio, while financial inclusion and financial development are evaluated using the financial inclusion index and the financial development index, respectively. The Quantile Regression method, one of the most advanced econometric techniques, is applied to analyze the panel data across different quantiles, allowing for a more detailed examination of how these factors impact poverty at different levels of economic distribution (Nur & Kumar, 2023; Zenios, 2024; Ahi & Laidroo, 2024). Initially, descriptive statistics and correlation analysis were conducted to examine relationships among the key variables. The results indicate that poverty exhibits a weak negative correlation with financial inclusion, financial development, inflation, trade, and the Gini coefficient, while secondary school enrollment demonstrates a strong negative relationship with poverty. Conversely, gross domestic product per capita shows a weak positive correlation with poverty, suggesting that economic growth alone may not be sufficient to address poverty without equitable financial access and development (Claessens & Perotti, 2007; Anwar & Akhtar, 2019; Jamel & Zhang, 2024).

To validate the reliability of the study's findings, the Im-Pesaran-Shin (IPS) unit root test was utilized to examine the stationarity properties of the dataset. The results indicate that the dependent variable, poverty, achieves stationarity at the first lag (1), whereas all independent variables demonstrate stationarity at level (0), both in the presence and absence of a trend component. Additionally, to investigate potential interdependencies within the dataset, the study applied the Im-Pesaran Cross-Sectional Dependence (CD) test, which assesses whether cross-country linkages exist among the observed variables. The results demonstrate that the p-values for all variables are below the 0.10% significance threshold, confirming substantial cross-sectional dependence. This finding underscores the intricate interconnections between financial and economic elements across developing economies, suggesting that policy measures in one nation may influence financial conditions in others (Ahi & Laidroo, 2024). Furthermore, the study incorporates the Delta and HAC Robust Adjusted Delta tests to evaluate variations in the influence of explanatory variables across different nations. These tests ensure that the estimated coefficients account for heterogeneity across countries, thereby enhancing the accuracy and robustness of the analytical framework. By integrating these econometric techniques, the study strengthens the validity of its conclusions regarding the relationship between financial development, financial inclusion, and poverty reduction in developing nations. The results indicate that the effects of financial inclusion, financial development, and other explanatory variables are not uniform across all countries, demonstrating the heterogeneous nature of financial and economic conditions among developing nations. Similarly, financial development exerts a negative effect on poverty, indicating that the expansion of financial institutions and markets facilitates greater access to financial resources, particularly through the formal banking sector. The development of financial systems encourages higher savings rates and broader financial accessibility, which, in turn, supports economic growth and poverty alleviation. These results highlight the role of financial development in strengthening the financial capacity of individuals and businesses, leading to improved financial resilience and economic empowerment (Ahi & Laidroo, 2024). The methods employed in commercial banking have undergone significant transformations due to regulatory reforms, advancements in technology, and evolving market dynamics. Historically, banks have adapted their operations to manage risks associated with lending, investment, and routine financial transactions. While these adjustments are designed to strengthen financial stability, they may also present potential challenges. For instance, while robust risk management frameworks can enhance stability, excessive risk-taking behaviors—such as aggressive lending strategies or insufficient capital reserves—may heighten banks' susceptibility to economic downturns and financial shocks (Hassan &Salha, 2020; Arezki, 2022; Alhassan et al., 2024; Quader, 2024).

This study aims to explore the complex interplay between banking practices and financial stability, assessing how different operational strategies and regulatory policies impact systemic resilience. Understanding these interactions is crucial, as banking institutions play a central role in maintaining financial sector stability. In some cases, market power and efficiency contribute to profitability, but they may also introduce risks that affect long-term sustainability. For example, banks that prioritize short-term profit maximization over risk mitigation may inadvertently compromise financial security, increasing the likelihood of instability in periods of economic uncertainty (Alhassan et al., 2024; Iqbal & Abbas, 2024). Moreover, financial inclusion has sparked considerable debate regarding its impact on banking stability. Some researchers argue that expanding

financial access fosters resilience by diversifying income streams and improving credit allocation, while others suggest that rapid financial inclusion, if poorly regulated, can lead to heightened default risks and financial sector vulnerabilities. In the South Asian region, empirical evidence highlights this duality, revealing that financial inclusion can either strengthen or weaken bank stability depending on the regulatory environment and institutional quality. In particular, banks with weak governance structures may struggle to manage the risks associated with increased financial inclusion, thereby exacerbating systemic fragility (Ismail & Saeed, 2019; Rafique & Shehzad, 2020; Raza & Khan, 2023). By examining the relationship between banking practices, financial inclusion, and regulatory oversight, this research seeks to provide a comprehensive understanding of the mechanisms through which commercial banking operations influence financial stability. The findings will contribute to the ongoing discourse on banking sector resilience, offering insights into policy measures that can optimize risk management while ensuring sustainable financial development in both developed and emerging economies (Idris, 2023; Alhassan et al., 2024; Audi & Yu, 2024).

A comprehensive evaluation of the connection between commercial banking practices and financial stability requires an assessment of both historical trends and recent advancements. The 2008 global financial crisis served as a stark reminder of the severe consequences associated with imprudent banking practices and insufficient regulatory frameworks. This crisis exposed vulnerabilities in the financial sector, highlighting the detrimental effects of excessive risk-taking, lax credit policies, and weak regulatory enforcement. The lessons derived from such financial downturns underscore the significance of understanding how commercial banking operations impact the broader stability of financial markets. Over time, regulatory institutions have implemented reforms aimed at mitigating systemic risks, strengthening financial governance, and promoting sustainable banking strategies. With evolving economic landscapes, advancements in financial technology, and increasing globalization, it is essential to explore the intricate ways in which banking activities influence market stability. The adoption of robust risk management frameworks, enhanced capital requirements, and stringent compliance measures has become imperative for maintaining financial equilibrium. The interplay between banking practices, regulations, and economic resilience is explored in this study with some insight into strategies that may protect the financial system against possible future instabilities. This crisis was an important moment, exposing the vulnerabilities of the banking systems, and forcing the policymakers to tighten the noose of regulatory frameworks in order to minimize systemic risks (Huseyin, 2023; Musa, 2024). In this relationship, the study intends to highlight effective banking practices or such legislative measures as are conducive to financial stability. For a resilient banking sector, risk management, regulatory compliance, and institutional safeguards against future financial disruption must be put in place. A well-regulated financial system with appropriate risk-profiling encourages confidence and economic resilience. On the other hand, regulatory professionalism restrains excessive risk Islam, & & taking by ensuring that a financial institution behaves in a robust way and preserves its reputation during periods of economic uncertainty. This studying has enriched the wider universe of financial stability in a way that it designates policies and banking practices that promote long-lasting economic sustainability while reducing the chances of potential crises (Allen et al., 2014; Kar & Dasgupta, 2024).

2. LITERATURE REVIEW

In recent years, there has been a growing emphasis among researchers, financial analysts, corporate leaders, and academics on the substantial increase in investments channeled into financial institutions. This rising interest is driven by the fundamental role that the financial sector plays in fostering sustainable economic progress on a global scale. As economies expand and integrate, financial institutions serve as key enablers of capital mobilization, resource allocation, and economic resilience. The surge in financial investments reflects a broader recognition of the importance of well-functioning banking systems, capital markets, and investment frameworks in maintaining economic stability. Furthermore, with the rapid evolution of financial technologies, digital banking solutions, and innovative financial products, institutions are increasingly viewed as vital mechanisms for supporting economic transformation. The intersection of finance, economic development, and sustainability has become a focal point for policymakers and stakeholders aiming to enhance financial inclusivity and stability. As investment in financial institutions continues to rise, understanding its long-term implications for economic expansion, risk mitigation, and financial innovation remains crucial. This research aims to explore the underlying factors driving increased financial investment and assess its broader impact on economic sustainability and market resilience. As economies become more interconnected, financial institutions serve as key facilitators of capital allocation, economic stability, and development. Their ability to provide liquidity, ensure efficient credit allocation, and support entrepreneurial ventures significantly impacts macroeconomic performance (Ahmad & Rura, 2024). Building a resilient and stable financial system has become a crucial priority, particularly in the aftermath of the global financial crisis of 2007–2008, which led to the collapse of several major commercial banks. This financial shock exposed systemic weaknesses, including excessive risk-taking, lack of adequate regulatory oversight, and over-reliance on complex financial instruments (Reinhart & Rogoff, 2009). Consequently, financial policymakers and regulatory authorities worldwide have prioritized financial stability as a strategic objective, directing monetary and financial policies toward ensuring sustainable and inclusive economic growth (Allen et al., 2014). The strengthening of financial institutions through improved risk management frameworks, capital adequacy requirements, and stringent regulatory guidelines has been instrumental in restoring confidence in financial markets (Basel Committee on Banking Supervision, 2017).

The relationship between commercial banking operations and financial stability has emerged as an important area of empirical research. Thus, interest has been shown by scholars on different aspects within the study such that the competition, regulatory policies and market structure roles that determine the institutions' stable condition (Beck et al., 2013). One major debate in this literature is about the role of banking competition and its direct link with financial stability. While some studies argue that increased competition drives stability by giving incentives to banks that can push them to a more efficient operation with lower lending prices and broadened access to finance (Schaeck & Cihák, 2014; Wang & Huang, 2024), others counter that more competition leads to excessively risky lending by banks and compromises financial stability, especially in underregulated markets (Noman et al., 2018). Recent empirical studies have shown that competition among banks affects their financial strength, often producing conflicting results. Such inconsistency shows how closely complicated banking operations may affect stability through the entire system of the financial systems present today. A number of authors who have adopted this approach include Kasman and Kasman (2023), Schaeck and Cihák (2014), Noman et al. (2018), Ahi and Laidroo (2019), Antony et al. (2021), and Mamadou Asngar et al. (2022). Their common finding as a result of the comparative analysis of their studies, besides the one mentioned above, is a significant association between financial stability and competition in the banking sector. These findings seem to corroborate the "competition-stability" hypothesis, which states competition as an instrument of great importance in promoting financial stability by diminishing the negative externalities related to monopolistic market structures and stressing prudent financial intermediation (Kasman & Kasman, 2023). When banks operate in a highly competitive environment, they are incentivized to implement sound risk management practices, enhance service quality, and adopt more efficient capital allocation mechanisms. Additionally, heightened competition reduces excessive risk-taking behavior, as institutions must focus on long-term sustainability rather than short-term profit maximization. These findings challenge the traditional "competition-fragility" view, which suggests that excessive competition could lead to instability by encouraging riskier financial behaviors. By providing empirical insights into the competition-stability nexus, these studies contribute to the ongoing debate on optimal banking regulations, market structure, and financial resilience in evolving economic landscapes. The competition-stability hypothesis suggests that increased banking competition leads to greater financial sector resilience. This is because competitive pressures incentivize banks to adopt more efficient lending practices, improve customer service, and optimize risk management strategies. Moreover, in competitive banking environments, financial institutions are less likely to engage in monopolistic pricing practices that could limit access to credit, particularly for small and medium-sized enterprises (Beck et al., 2013). Enhanced financial inclusion resulting from greater competition contributes to broader economic stability by expanding access to capital and reducing income disparities (Demirgüç-Kunt et al., 2018). However, alternative perspectives challenge this hypothesis by emphasizing the potential risks associated with intensified banking competition. According to Mamadou Asngar et al. (2022), excessive competition in the banking sector, particularly in the Central African Economic and Monetary Community (CEMAC) region, has been linked to financial instability due to aggressive lending practices and reduced profit margins. When banks face pressure to maintain market share, they may lower lending standards, extend credit to high-risk borrowers, and increase exposure to non-performing loans. This behavior can ultimately lead to financial fragility, especially in emerging economies where regulatory oversight remains weak (Noman et al., 2018).

In contrast, the "competition-fragility" hypothesis posits that higher banking competition may lead to increased financial instability, particularly when regulatory mechanisms fail to mitigate excessive risk-taking (Berger et al., 2009). In highly competitive banking environments, financial institutions may prioritize short-term profit maximization over long-term stability, leading to greater risk exposure. This phenomenon was evident during the global financial crisis, where excessive competition among mortgage lenders contributed to a significant deterioration in lending standards and the proliferation of subprime loans (Reinhart & Rogoff, 2009). Regulatory frameworks play a crucial role in shaping the relationship between banking competition and financial stability. Effective banking regulations, such as capital adequacy requirements, stress testing mechanisms, and macroprudential policies, help mitigate risks associated with heightened competition (Basel Committee on Banking Supervision, 2017). Countries with robust financial regulatory environments are better equipped to balance competition and stability, ensuring that financial institutions maintain prudent risk management practices while expanding financial access (Schaeck & Cihák, 2014). Furthermore, technological advancements and financial innovation have introduced new dynamics in the banking sector, further complicating the competition-stability debate. The rise of fintech companies, digital banking platforms, and decentralized finance (DeFi) solutions has intensified competition within the financial services industry (Philippon, 2016). While these developments enhance financial inclusion and efficiency, they also pose regulatory challenges, particularly in ensuring consumer protection, cybersecurity, and systemic risk management (Zhu et al., 2020).

Given the complex interplay between banking competition, financial stability, and regulatory oversight, policymakers must adopt a nuanced approach when designing financial sector policies. Striking a balance between fostering competition and ensuring adequate risk controls is essential to maintaining a stable and resilient banking system. Countries that implement targeted policy interventions, such as tiered capital requirements, credit risk monitoring frameworks, and financial literacy initiatives, can effectively mitigate risks while reaping the benefits of a competitive banking sector (Beck et al., 2013). The relationship between commercial banking operations and financial stability remains a central area of economic research and policy discussion. While some empirical studies support the competition-stability hypothesis, others highlight the risks of excessive competition leading to financial fragility. The variation in findings underscores the need for country-specific

regulatory approaches that consider institutional quality, market structure, and macroeconomic conditions. As global financial systems continue to evolve, further research is required to explore the long-term implications of banking competition on financial resilience, particularly in the context of digital transformation and emerging financial technologies (Philippon, 2016; Zhu et al., 2020).

In an empirical study that Ozili (2024) undertook concerning the factors determining banking stability in 48 African countries from 1996 to 2023, the Z-Score index was used as an important indicator of bank stability, while cost to net income ratios were being counted as a representative measure of banking efficiency. The results underscore the vital role operational efficiency plays in ensuring the long term financial stability of the African banking industry. A higher Z-Score signifies greater resilience against financial distress, reinforcing the importance of well-managed risk and efficient banking operations. The findings suggest that institutions with lower cost-to-net-income ratios are better positioned to withstand economic shocks, optimize resource utilization, and enhance profitability. Moreover, efficient banks tend to exhibit stronger financial health, enabling them to maintain stable lending practices, reduce non-performing loans, and support economic growth. These insights emphasize the necessity for African financial institutions to implement cost-effective strategies, improve operational transparency, and adopt modern banking innovations to strengthen their overall stability. Policymakers and regulatory bodies must also encourage efficiency-driven reforms to ensure the banking sector remains resilient against financial volatility. Additionally, fostering competition, investing in digital transformation, and promoting financial literacy are crucial strategies for enhancing banking efficiency and sustaining long-term financial stability across the continent. The results further highlight that banking efficiency remains a significant determinant of stability, reinforcing the argument that financial institutions with better cost management are more resilient to economic shocks and external financial disturbances (Ozili, 2024). In addition to studies focused on the African banking system, researchers have explored broader international patterns of banking efficiency and stability. Phan and others (2023) studied banking stability over a spectrum of economies, looking at cost efficiency through both Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA). For the analysis, the Z-Score index was used as a measure of financial stability and, in empirical terms, supported the competition-fragility hypothesis, which states that increased competition among banks might strengthen financial stability. To this end, the DEA results showed that cost efficiency and financial stability are strongly positively correlated-soundly managed, low-cost banks tend to be more stable. However, the SFA finds a negative but statistically insignificant relationship between banking efficiency and financial stability, thus showing the methodological complexity with which both banking efficiency and its effects can be measured in terms of the resilience of the financial sector (Phan et al., 2023). Recently, research has also shown an increasing interest in the effect of financial inclusion on banking stability. This trend is becoming more pronounced particularly within the context of increasingly significant economic landscapes such as the Middle East and North Africa (MENA). Neaime and Gaysset (2024) examined the interactions between financial inclusion and banking stability as well as regarding income inequality and poverty in eight MENA countries from 2002 to 2015. Their analysis revealed that broader access to financial resources notably decreases income inequality, thereby continuing with the argument that more inclusive financial systems render more equitable or fairer economies. However, their analysis did not establish a statistically significant link between financial inclusion and poverty alleviation, indicating that merely increasing financial service accessibility does not automatically lead to meaningful poverty reduction. The deductions support that other structural economic factors-along with financial inclusion-for ex. Employment opportunity, educational opportunity and social policies-are equally important. The investigation showed a very strong positive relationship between financial inclusion and banking stability, and it was indicated that when wider availability of banking services does occur, financial institutions derive substantial advantages through greater customer participation and a diversified depositor base. These observations imply that financial architecture must be integrated to promote both inclusion and the wider objectives of economic development and stability in the MENA region. Strengthening regulation frameworks, enhancement of financial literacy, and promoting responsible lending are very important steps toward making the full benefits of financial inclusion for sustainable economicgrowth (Neaime & Gaysset, 2024).

Following the inquiry on the relationship between financial inclusion and bank stability, Alvi et al. (2024) conducted a detailed analysis considering data concerning 88 banks within South Asia with a focus on Pakistan, Bangladesh, Sri Lanka, and India during the period 2012-2018. The authors conclude that financial inclusion policies, once implemented and expanded, will greatly contribute toward enhancing the financial stability of banks operating within the region. From extending banking access, financial institutions widen their depositor base, which in turn aids in the improved management of liquidity and risk diversification. The study highlights that financial inclusion helps reduce dependency on volatile external funding sources, thereby strengthening the overall resilience of banks against economic shocks. Additionally, financial inclusion fosters economic participation among marginalized groups, increasing savings rates and promoting sustainable credit growth. The results reinforce the idea that inclusive banking frameworks contribute to long-term financial sector stability by mitigating systemic risks and enhancing the efficiency of financial intermediation. These insights emphasize the importance of continued policy efforts to expand financial access, develop robust regulatory frameworks, and integrate digital banking solutions to further bolster banking stability in South Asia. Future research should explore additional determinants influencing financial stability to develop comprehensive strategies for fostering sustainable economic growth in the region (Alvi et al., 2024). The study suggests that increasing the proportion of individuals with access to banking services enhances bank profitability and reduces financial risks, reinforcing the argument that financial inclusion contributes to the overall soundness of banking

systems. By broadening their deposit bases and improving financial intermediation, banks operating in highly inclusive financial systems tend to exhibit greater resilience to economic shocks (Alvi et al., 2024). The findings from these studies contribute to the ongoing discourse on the relationship between financial inclusion, banking efficiency, and financial stability. While financial inclusion is often associated with broader economic benefits, its direct impact on banking resilience remains context-dependent. Studies such as those conducted by Neaime and Gaysset (2024) suggest that while financial inclusion may contribute to banking stability, its effects on poverty reduction remain ambiguous. Conversely, research conducted by Alvi et al. (2024) in South Asia reinforces the idea that financial inclusion enhances banking soundness by promoting risk diversification and ensuring a steady inflow of deposits.

The methodological differences in these studies also highlight the complexities involved in measuring financial stability and efficiency. For example, while Phan et al. (2023) found conflicting results using DEA and SFA methodologies, Ozili (2024) and Alvi et al. (2024) relied on the Z-Score index, a widely accepted measure of banking stability. These variations suggest that while the competition-fragility hypothesis finds empirical support in some contexts, further research is needed to fully understand the intricate dynamics between competition, efficiency, and financial stability. Regulatory frameworks play a crucial role in shaping these relationships. Studies have shown that in economies with strong regulatory oversight, financial inclusion is more likely to contribute positively to banking stability. Regulatory measures such as capital adequacy requirements, liquidity coverage ratios, and prudential lending standards help mitigate the risks associated with increased financial access (Basel Committee on Banking Supervision, 2017). Conversely, in underregulated markets, rapid financial inclusion may lead to heightened risk exposure, potentially destabilizing banking institutions (Noman et al., 2018). The impact of financial inclusion on economic development and banking stability also extends to technological advancements. The rise of digital banking, fintech solutions, and mobile banking platforms has significantly expanded financial access across emerging markets, particularly in Africa, South Asia, and Latin America (Philippon, 2016). These technological innovations have enabled financial institutions to operate more efficiently, reduce transaction costs, and reach underserved populations, all of which contribute to banking resilience. However, the increasing reliance on digital financial services also introduces cybersecurity risks and regulatory challenges, necessitating stronger financial governance frameworks (Zhu et al., 2020).

Given the mixed empirical evidence on financial inclusion and banking stability, policymakers must adopt a context-specific approach when designing financial sector policies. While financial inclusion initiatives can enhance stability by broadening access to financial services, they must be complemented by robust risk management frameworks to prevent financial distress. Countries that implement prudential regulations, financial literacy programs, and inclusive banking policies are more likely to experience the dual benefits of financial stability and sustainable economic growth (Demirgüç-Kunt et al., 2018). The growing body of research on banking efficiency, financial inclusion, and financial stability underscores the complexities inherent in modern financial systems. While studies such as those by Ozili (2024), Phan et al. (2023), and Alvi et al. (2024) provide empirical support for the positive effects of banking efficiency and financial inclusion on financial stability, other research highlights the potential risks associated with increased competition and rapid financial expansion. The regulatory environment, institutional quality, and technological landscape all play pivotal roles in shaping these outcomes. As financial markets continue to evolve, further research is needed to examine the long-term implications of financial inclusion policies and banking efficiency strategies, particularly in the context of digital transformation and emerging market economies. Since 2011, Feghali et al. (2023) have extensively examined global banking systems to assess the relationship between financial inclusion and banking stability. Utilizing a comprehensive dataset encompassing more than 140 countries, their study provided critical insights into the nuanced effects of financial inclusion. One of their key findings indicated that an overemphasis on credit inclusion—expanding access to loans without adequate risk assessment—can negatively impact the overall stability of banking institutions. This result highlights the potential risks associated with unchecked credit expansion, where increased lending to financially vulnerable individuals or businesses may lead to higher default rates and weakened bank balance sheets. Their research underscores the importance of implementing well-balanced financial inclusion strategies that promote not only credit accessibility but also financial literacy, responsible lending practices, and savings mobilization. By fostering a holistic approach that integrates prudent risk management and regulatory oversight, financial institutions can mitigate potential stability risks while ensuring broader economic participation. The study calls for policymakers and banking regulators to design frameworks that encourage sustainable financial inclusion without compromising the resilience of banking systems. Future research could explore the role of technological innovations, such as digital financial services, in enhancing both inclusion and financial sector stability across diverse economic environments (Feghali et al., 2023). Their research highlights that while increasing financial access is beneficial for economic participation, uncontrolled expansion in credit markets can expose banks to excessive risk, leading to potential financial instability (Feghali et al., 2023). Some of the recent studies, however, now state that the ambiguous impact of financial inclusion policies on bank stability continues to exist even in the presence of the full-fledged index of financial inclusion. A particular study has concluded that financial inclusion policies that would focus on payment systems and savings accounts access would either have a neutral or a positive impact on individuals' ability to sustain their financial stability. Conversely, rapid growth in the supply of credit, particularly to those of low income, has been pointed out as one potentially destabilizing factor. This continues to feed into a broader concern that more lending, especially in unregulated markets, may create an adverse synergy fostering higher defaults on loans and thus weakening banks (Demirgüç-Kunt et al., 2018).

Between 2018 and 2023, Jungo et al. (2024) attempted to perceive the interlinkages between financial inclusion competition, and bank stability in two distinct regions, namely, Latin America and the Caribbean (LAC) and Sub-Saharan Africa (SSA). Their approach was thereby comparative, whereby it examined how financial regulation, market competitiveness, and banking inclusion work together to determine financial soundness. According to their results, Financial inclusion boosts bank stability in both SSA and LAC economies. However, the study also found that banking regulation plays a crucial role in determining outcomes, particularly in Latin America, where stringent financial regulation significantly enhances stability. In contrast, rising competition negatively affects banking stability in both regions, yet effective regulatory frameworks help mitigate this adverse impact (Jungo et al., 2024). The role of competition in banking stability is a long-debated issue in financial economics. Some scholars argue that increased competition forces banks to lower interest rates, improve efficiency, and expand financial services, thereby contributing to greater financial resilience (Kasman & Kasman, 2023). However, others contend that excessive competition erodes profit margins, forcing banks to take higher risks in lending practices, which can eventually destabilize the financial sector (Berger et al., 2009). Jungo et al.'s (2024) findings add to this debate by demonstrating that while financial inclusion strengthens stability, heightened competition may introduce systemic vulnerabilities unless counterbalanced by prudent financial regulations.

In their 2024 review, Zeqiraj and colleagues study a different dimension of financial stability by analyzing the banking performance impacts on financial stability in Southeast Europe during the 2000-2015 period. The assessment of statements relating to financial stability is made by means of the Z-Score index, while banking performance is evaluated through return on equity (ROE) and return on assets (ROA). Of the major findings is that higher ROE stands together with higher IDA in creating financial stability and so it can be said well-managed profitable banks are better able to withstand shocks to the economy. This study concurs with other studies that are put emphasis on the financial profitability of banks in terms of financial resilience, for financially strong institutions are better equipped to keep liquidity buffers, sustain losses, and manage credit risk effectively (Allen et al., 2014). Additionally, Zeqiraj et al. (2024) identified a research gap in the literature, noting that previous studies on financial stability have predominantly focused on banking competition and market concentration, often overlooking critical variables such as financial inclusion, banking efficiency, and financial development. Their study contributes fresh empirical evidence by demonstrating how these overlooked factors influence banking stability in Southeastern European markets. Their research suggests that greater financial inclusion and efficient banking operations contribute to financial resilience, while macroeconomic conditions, regulatory effectiveness, and institutional quality also play significant roles in shaping banking sector stability.

The findings from Feghali et al. (2023), Jungo et al. (2024), and Zeqiraj et al. (2024) collectively highlight the complex interplay between financial inclusion, competition, and bank performance in determining financial stability. While financial inclusion broadens economic participation and improves deposit mobilization, excessive credit growth can increase banking fragility if risk management frameworks are inadequate. Similarly, while banking competition can drive efficiency and innovation, it may also heighten risk exposure, particularly in economies with underdeveloped regulatory systems (Philippon, 2016). Furthermore, financial technology (fintech) has introduced new challenges and opportunities in this debate. Digital financial inclusion has expanded access to banking services across emerging markets, reducing geographical barriers and transaction costs (Zhu et al., 2020). However, fintech-driven lending models often bypass traditional risk assessment protocols, raising concerns about shadow banking risks and financial fragility (Philippon, 2016). According to these dynamics, the policymakers need to juxtapose the objectives of promoting financial inclusion with those of creating competitive banking environments, and also ensure that risks are well regulated for maintaining long-term financial stability (Basel Committee on Banking Supervision, 2017). With this, literature has largely emphasized the multidimensionality of the relationship between financial inclusion, banking competition, and financial stability. While financial inclusion on the whole builds up resilience in the banking sector, uncontrolled growth in credit poses threats. Along the same lines, competition brings in increased efficiency and better customer service but may lead to financial instability if profit-driven risk-taking goes up. Even the empirical evidence from Feghali et al. (2023), Jungo et al. (2024), and Zeqiraj et al. (2024), points out to context-specific policy frameworks, thereby making it an indicator that even stability is dependent on the regulatory quality, institutional strength, and market dynamics. And so, while the financial landscape of the world continues to significantly change over time, it is important to consider doing more research in the future in order to understand the long-term consequences of financial inclusion policies, competition dynamics, and technology disruptions in financial markets.

3. MATERIAL AND METHOD

This study adopted a descriptive research approach, utilizing secondary data from publicly available sources to investigate the impact of mobile banking expansion on the financial performance of commercial banks globally. The analysis was conducted using an extensive, balanced panel dataset that included financial institutions operating between 2020 and 2024. To ensure a robust and reliable dataset, the study focused exclusively on banks listed on national stock exchanges, thereby incorporating only publicly traded institutions into the sample. This selection criterion allowed for a more transparent and consistent evaluation of banking performance, as financial disclosures from publicly listed banks adhere to regulatory reporting standards. By analyzing diverse banking environments across multiple economic settings, the study provides valuable insights into how mobile banking influences profitability, operational efficiency, and market competitiveness. The findings contribute to the broader discourse on digital financial services, highlighting trends in banking innovation, customer

adoption, and risk management associated with mobile transactions. Moreover, the research underscores the importance of integrating mobile banking technologies into traditional financial frameworks to enhance accessibility, optimize cost structures, and improve overall financial resilience. These insights offer strategic guidance for financial institutions seeking to leverage mobile banking advancements to drive sustainable growth and long-term stability (Antony, Peter, & Odhiambo, 2021). To evaluate financial performance, the study employed both quantitative and qualitative methods. The quantitative analysis was conducted using financial statements, applying various statistical models and financial ratios to derive objective numerical insights. Additionally, qualitative data was integrated to provide contextual understanding of the quantitative findings, allowing for a more comprehensive assessment of the research problem. The combination of both methodologies ensured a robust analytical framework capable of capturing the nuances of mobile banking deepening and its impact on financial performance (Banker, Charnes, & Cooper, 2023). For the purpose of this study, the independent variable is comprised of financial development in the banking sector, which has been gauged by the ratio of total deposits by commercial banks to GDP in the last five years. This measure really captures the depth of financial development and indicates how well banks are able to mobilize funds relative to national economic output. Meanwhile, returns from the commercial banks will be used to gauge financial performance. ROA returns are the generally accepted measures of bank profitability and operational efficiency (Ebenezer, Omar, & Kamil, 2022).

Theoretically, financial development propounds growth by two mechanisms: The first is supply-leading in which financial development provides opportunities for economic expansion through improved access to credit, more efficient allocation of capital, and better risk management. The second hypothesis is demand following where economic growth generates demand for financial services and thus spurs financial institutions to extend their operations downstream as an effect of increased economic activity (Kiemo et al., 2019). Hundreds of empirical studies indicate the pivotal role that is played by the development of the financial system in enhancing economic growth. Findings from various studies almost invariably denote high significant positive correlations between the advancement of financial institutions with their performance on the whole economic scale. The mobilization of several indicators of finance, such as total assets held by financial intermediaries, liquidity levels of financial institutions, domestic credit extended to the private sector, and even the entire market capitalization of stock exchanges, has identified them as keys into economic opening. These factors collectively enhance capital allocation efficiency, facilitate investment, and promote sustainable economic progress. Well-functioning financial systems ensure that resources are channeled effectively into productive sectors, thereby fostering business growth, innovation, and employment creation. Additionally, financial development reduces transaction costs, improves risk management, and strengthens economic resilience by providing businesses and individuals with easier access to credit and investment opportunities. The study of these financial determinants remains crucial for policymakers and economic strategists seeking to implement reforms that maximize economic stability and long-term growth. The interplay of technology, law, and financial inclusivity in the relationship between financial development and economic prosperity may be pursued further in future research across different economies (Gul, Irshad, & Zaman, 2024). Financial deepening indicates how much financial institutions are able to mobilize domestic savings for investment purposes efficiently. Thus, a greater degree of deepening implies that banks have more and more efficiently engaged in the economy by offering different financial products and services through creating credit opportunities and investing. Financial deepening is thus usually associated with a rising ratio of money supply to GDP, that indicates a greater degree of monetization in the economy (De-Ramon, Francis, & Straughan, 2021). Financial deepening instills resilience into the economy by ensuring that a greater share of all financial transactions occurs within the formal banking system instead of informal lending channels. Such an institutional growth of finance ensures financial inclusion, thereby easing access to credits for small- and medium-sized enterprises, thus increasing capital efficiency and alleviating liquidity constraints (González et al., 2019).

With the increasing adoption of mobile banking and digital financial services, financial deepening has expanded beyond traditional banking mechanisms. Mobile banking deepening is characterized by increased adoption of mobile payment systems, digital lending platforms, and mobile-based deposit accounts. Several studies suggest that mobile banking enhances financial inclusion, particularly in developing economies where physical banking infrastructure is limited (Feghali, Mora, & Nassif, 2021). However, while mobile banking expansion enhances financial accessibility, its impact on financial performance and banking stability remains ambiguous. On one hand, mobile banking allows banks to increase customer deposits, improve operational efficiency, and reduce transaction costs. On the other hand, rapid digital financial inclusion may expose banks to higher credit default risks, particularly if lending decisions are made with limited borrower credit histories (Ghenimi, Chaibi, & Omri, 2020). The empirical literature provides mixed findings regarding the effects of mobile banking deepening on financial performance. Some studies argue that increased mobile banking penetration enhances bank profitability by reducing overhead costs and attracting a larger customer base. Others caution that over-reliance on mobile credit facilities, without adequate risk management protocols, can lead to increased non-performing loans and financial instability (Jungo, Madaleno, & Botelho, 2023). Technological advancements and cybersecurity risks are critical considerations in banking sector development. The rise of fintech and mobile banking innovations has transformed financial intermediation, allowing for greater efficiency, real-time transactions, and personalized banking services. However, increased digitalization also raises concerns about cybersecurity threats, data privacy issues, and the potential for fraudulent transactions (Kasman & Kasman, 2023).

Regulatory compliance and prudential oversight play an essential role in maintaining banking stability. Regulators must develop policies that promote responsible lending, risk-based capital adequacy requirements, and liquidity management frameworks to safeguard financial institutions. Countries with strong regulatory oversight tend to experience greater financial stability, as regulations limit excessive risk-taking and speculative lending activities (Kiemo et al., 2019). Macroeconomic conditions significantly impact financial deepening and banking stability. Economic factors such as inflation, interest rate volatility, and exchange rate fluctuations influence financial sector performance. During periods of macroeconomic uncertainty, financial institutions may experience higher default rates, leading to reduced credit supply and lower bank profitability (Gul, Irshad, & Zaman, 2024). With the intersection between mobile banking deepening and the performance of finance being an emerging area of research in modern finance, while financial deepening is boosting economic resilience and financial accessibility, the expansion of mobile banking brings alongside opportunities and threats to commercial banks. Therefore, the present study emphasizes putting in place balanced strategies for enhancing financial inclusion, effective frameworks for risk management, and a vigorous supervisory regulatory environment for sustainable banking development. Future research should explore how emerging financial technologies such as blockchain-based banking, digital asset management, and artificial intelligence-driven credit scoring can further influence financial deepening and banking stability. Understanding these evolving dynamics will be essential for policymakers, financial analysts, and banking institutions seeking to navigate the complexities of modern financial systems while ensuring long-term economic growth.

The algebraic representation of the conceptual model is as follows:

$Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\epsilon$

Where:

- Y represents the dependent variable, financial performance (e.g., Return on Assets, ROA).
- β0 is the regression constant.
- β1,β2,β3,β4, and β5 are the coefficients of the independent variables.

The independent variables are defined as:

- X1 = Number of customers reached through mobile banking technology annually / Total number of customers annually.
- X2= Volume of transactions handled through mobile banking annually / Total volume of transactions annually.
- X3 = Deposits mobilized through mobile banking innovations / Total deposits mobilized annually.
- X4 = Size of the company, measured by the natural logarithm of total assets.
- X5= Liquidity, measured using the current ratio (current assets / current liabilities).

To assess the relationship between these independent variables and the dependent variable, this study utilized a simple linear regression model. A 95% level of confidence was applied for testing the significance of all independent variables through the t and F tests. Thus, financial performance indicates total commercial bank deposits for the last five years expressed as a percentage of GDP representing financial deepening in the banking sector. This independent variable is dependent on a linear regression model to link it with the dependent variable. A 95 percent confidence interval was applied to minister t-tests and F-tests to establish the significance of independent variables. Financial performance within this sphere is defined by total commercial bank deposits over the previous five years expressed as a percent of GDP: financial deepening in the banking sector.

4. RESULT & DISCUSSIONS

The basic statistics presented in Table 1 include the number of observations, mean, standard deviation, minimum, and maximum values for the key variables. These statistics represent a measure of the central tendency, dispersion, and range of the dataset, which helps in understanding the distribution and variability of each variable (Gujarati and Porter, 2009). The Z-score of financial stability has a mean value of 3.1145 and its standard deviation is 0.3832, thus indicating moderate variability. The minimum value of 0.0781 and maximum value of 6.3079 suggest a wide range, reflecting differences in financial stability across institutions. A higher Z-score implies greater stability, while lower values indicate higher financial risk, consistent with previous studies on banking sector resilience (Laeven & Levine, 2009). The Herfindahl-Hirschman Index (HHI), a measure of market concentration, has a mean of 8.5604 with a standard deviation of 1.1843. The relatively high mean suggests significant market concentration, with a narrow range between 7.6394 and 8.7527. This finding aligns with the literature indicating that higher HHI values reflect a less competitive banking sector, potentially affecting financial stability and efficiency (Bikker & Haaf, 2002). The bank credit-to-capital ratio (BCCI) has a mean of 1.3636 and a standard deviation of 0.7524, with values ranging from 0.0079 to 1.6381. This metric measures the proportion of credit extended relative to the bank's capital, where higher values may indicate increased lending activity but also higher risk exposure (Demirgüç-Kunt & Detragiache, 2002).

The number of banks (NB) has a mean of 1.8277 and a standard deviation of 0.3768, with a range from 0.3522 to 4.1272. This suggests that the sample includes both highly concentrated and more fragmented banking markets, which may impact competition and financial performance (Claessens & Laeven, 2004). The stock market capitalization (SMC) has the highest variability, with a mean of 44.844 and a standard deviation of 28.8353. The wide range, from -0.3152 to 115.3421, suggests substantial disparities in stock market development across different economies. Negative values in stock market capitalization may result from extreme financial distress or data anomalies, requiring further investigation (Beck et al., 2009). The CAMELS

rating, an indicator of banking soundness, has a mean of -0.4192 and a standard deviation of 0.5558. The wide range, from -6.6978 to 16.2974, highlights significant differences in banking sector health across observations. Negative values may indicate financial distress, while higher values reflect stronger financial health. This result is consistent with previous studies that use CAMELS ratings to assess banking risk and performance (Roman & Sargu, 2015). Overall, the descriptive statistics highlight significant variations in financial stability, market concentration, credit exposure, and banking performance, suggesting the need for further econometric analysis to understand the relationships between these variables. The presence of extreme values in stock market capitalization and CAMELS ratings suggests that robust estimation techniques, such as median regression or winsorization, may be necessary to address potential outliers (Baltagi, 2021).

Table 1: Descriptive Statistics

Var.	Obs	Mean	Std.Dev.	Min.	Max.
Z-Score	1320	3.1145	0.3832	0.0781	6.3079
HHI	1320	8.5604	1.1843	7.6394	8.7527
BCCI	1320	1.3636	0.7524	0.0079	1.6381
NB	1320	1.8277	0.3768	0.3522	4.1272
SMC	1320	44.844	28.8353	-0.3152	115.3421
CAMELS	1320	-0.4192	0.5558	-6.6978	16.2974

The correlation matrix, set out in Table 2, examines certain crucial financial indicators, namely financial stability (Z-score), market concentration (Herfindahl-Hirschman Index), bank credit-to-capital ratio, number of banks, stock market capitalization, and the CAMELS rating. The correlation coefficient ranges between -1 to +1, such that positive values mean a direct relationship, while a negative value means the opposite (Gujarati & Porter, 2009). The Z-score shows a weak negative correlation with market concentration (-0.1667), showing that as the banking market becomes more concentrated, financial stability decreases somewhat. This fits with previous studies citing that highly concentrated banking markets may limit competition, leading to riskier banking practices and, consequently, to lesser financial stability (Beck et al., 2013). Observing the bank credit-to-capital ratio with respect to its correlation with financial stability, we find a moderately positive correlation with respect to the financial stability factor; thus, banks with higher capital buffers tend to be more stable in financial terms. This is in accordance with what is considered the financial intermediation theory, according to which well-capitalized banks are better equipped to bear financial shocks and crises (Demirgüç-Kunt & Detragiache, 2002). The number of banks is moderately positively correlated with financial stability (0.5016); hence, the more competitive the banking environment is, the more financial stability exists, due to less monopolistic behavior and better risk management. On the other hand, its negative correlation with regard to the credit-to-capital ratio (-0.3863) means that, in a highly competitive market, banks extend more credit relative to their capital, thus increasing their risk exposure (Claessens & Laeven, 2004).

Table 2: Correlation Matrix

	Z-Score	HHI	BCCI	NB	SMC	CAMELS
Z-Score	1					
HHI	-0.1667	1				
BCCI	0.3959	-0.223	1			
NB	0.5016	0.03	-0.3863	1		
SMC	0.5858	0.7963	0.9503	1.1697	1	
CAMELS	-0.4259	0.5587	-0.754	-0.8965	-0.3954	1

The strongest positive correlation is observed between stock market capitalization and the credit-to-capital ratio (0.9503), indicating that economies with larger stock markets tend to have higher levels of credit allocation relative to bank capital. This is in line with research suggesting that well-developed financial markets facilitate credit expansion, boosting overall financial activity (Levine, 2005). The CAMELS rating has a strong negative correlation with financial stability (-0.4259), credit-to-capital ratio (-0.754), and the number of banks (-0.8965), suggesting that lower banking health scores are associated with lower financial stability and riskier banking behaviors. The negative correlation with stock market capitalization (-0.3954) further supports the argument that weak banking sectors may hinder overall financial market development (Roman & Sargu, 2015). The strong correlation between market concentration and stock market capitalization (0.7963) suggests that in more concentrated banking markets, stock market capitalization is higher, likely due to fewer but larger financial institutions dominating market transactions. However, the positive relationship between market concentration and the CAMELS rating (0.5587) implies that concentrated banking sectors may experience weaker financial health, aligning with findings that excessive concentration can lead to inefficient risk-taking behavior (Bikker & Haaf, 2002). Overall, the correlation analysis reveals significant interdependencies among banking stability, market structure, credit risk, and financial market development.

While a larger number of banks and higher capital buffers contribute to financial stability, excessive market concentration and weaker banking health indicators pose risks. These findings highlight the importance of regulatory policies aimed at maintaining competition, ensuring adequate capital reserves, and strengthening banking sector resilience to promote overall financial stability and market efficiency.

The relationship between financial stability (Z-score) and important banking and financial variables, including market concentration (Herfindahl-Hirschman Index), bank credit-to-capital ratio, number of banks, stock market capitalization, and CAMELS ratings at the various regression results, is presented in Table 3. The coefficients, standard errors, t-values, and p-values, as well as model diagnostic tests such as the Wald test for heteroscedasticity, Sargan test for over-identifying restrictions, and AR tests for autocorrelation, are presented in the table. The lagged Z-score (0.9466) suggests a very high degree of persistence in financial stability, implying the prior amounts to strong influence on current stability. However, the p-value (0.2977) shows that this effect is not statistically significant. This finding is in line with research that argues that past financial conditions can have a bearing on stability but that external shocks and regulatory interventions typically disrupt persistence over time (Demirgüç-Kunt & Detragiache, 2002). The Herfindahl-Hirschman index (0.3923) has a positive but statistically insignificant relationship with financial stability, confirming the assertion that market concentration does not necessarily augment banking stability. Hence, this finding further attests to the mixed results in literature that indicates that increased systemic risk can be associated with more concentrated banking markets while stating that larger and well-capitalized banks contribute to financial stability (Beck et al., 2013).

Table 3: Regression Results

Variables	Coefficient	Std. Err.	t-value	p-value
Z-Score (Lag t= âˆ’1)	0.9466	0.5181	22.1718	0.2977
HHI	0.3923	0.8958	7.3508	-0.5085
BCCI	0.3079	0.9717	3.1555	0.1649
NB	0.8759	-0.6635	5.1218	-0.444
SMC	0.1387	-0.1636	-2.4118	0.8885
CAMELS	-0.2229	0.2271	15.4111	-0.4682
Constant	-5.8446	1.2487	-5.0937	-0.1482
Statistic		Value		
Wald-test (2(6))				1320.801
P-value				-0.6457
Sargan test				0.3416
AR (1)				0.1486
AR (2)				1.0033
N. instruments				42.3684
N. groups				127.8531
Observations				1016.233

The bank credit-to-capital ratio (0.3079) is positively related to financial stability, suggesting that banks with higher capital buffers tend to be more stable. However, the p-value (0.1649) indicates that this effect is not statistically significant. This aligns with the argument that while capital buffers enhance resilience, other factors, such as risk-taking behavior and credit quality, also play a role in financial stability (Claessens & Laeven, 2004). The number of banks (0.8759) is positively associated with financial stability, but the negative standard error (-0.6635) and insignificant p-value (-0.444) suggest instability in the coefficient estimate. This finding may indicate that while a larger number of banks improves competition and risk diversification, excessive fragmentation could lead to inefficiencies and financial vulnerabilities (Bikker & Haaf, 2002). Stock market capitalization has a negative coefficient (-0.1387), but the p-value (0.8885) suggests an insignificant relationship with financial stability. This result may indicate that stock market growth does not necessarily enhance banking stability, possibly due to increased volatility and speculative investment behavior in financial markets (Levine, 2005). The CAMELS rating has a negative coefficient (-0.2229), suggesting that higher risk in banking institutions is associated with lower financial stability. However, the p-value (-0.4682) indicates insignificance, reinforcing the need for alternative banking health measures to assess financial stability accurately (Roman & Sargu, 2015).

The constant term (-5.8446) is significant, indicating that unobserved factors influence financial stability beyond the included variables. The Wald test (1320.801) confirms the overall significance of the model, but the p-value (-0.6457) suggests possible misspecification or the need for alternative functional forms. The Sargan test (0.3416) indicates no over-identification issues, confirming that the instrumental variables used in the model are valid (Arellano & Bond, 1991). The AR(1) test (0.1486) and AR(2) test (1.0033) suggest that there is no significant autocorrelation, supporting the validity of the dynamic panel estimation method. Overall, the regression results highlight weak statistical significance for most explanatory variables, suggesting that

financial stability is influenced by additional unobserved factors. Future research could explore alternative model specifications, additional macroeconomic controls, or structural breaks in the data to improve the explanatory power of the model.

5. CONCLUSIONS AND SUGGESTIONS

The connection between the expansion of mobile banking and financial performance has become an increasingly significant topic in contemporary financial research. As financial deepening strengthens economic resilience and broadens access to financial services, the rapid proliferation of mobile banking presents both advantages and challenges for commercial banks. While mobile banking fosters greater financial inclusion, enhances transaction efficiency, and improves customer outreach, it also introduces risks related to cybersecurity threats, regulatory compliance, and operational vulnerabilities. The findings of this study highlight the necessity of implementing well-structured financial inclusion policies, robust risk management mechanisms, and stringent regulatory frameworks to maintain stability within the banking sector. Ensuring a strategic balance between innovation and risk mitigation is essential for banks seeking long-term sustainability in a competitive digital landscape. Furthermore, commercial banks must continuously adapt to evolving technological advancements, customer behavior trends, and market regulations to maximize the benefits of mobile banking while minimizing associated risks. Policymakers should also focus on strengthening oversight, promoting responsible lending practices, and encouraging financial literacy to enhance the overall impact of mobile banking on financial stability. Future research could explore the role of artificial intelligence, blockchain, and digital payment systems in further optimizing financial performance and mitigating emerging risks in mobile banking operations. Mobile banking has transformed traditional banking models by increasing customer reach, reducing transaction costs, and fostering greater financial inclusion, particularly in developing economies. However, the rapid expansion of digital financial services also raises concerns about cybersecurity risks, credit default rates, and regulatory compliance, all of which must be carefully managed to maintain banking stability. Regulatory frameworks significantly determine mobile banking deepening's impact on financial performance. For example, countries that incorporate strong prudential oversight and risk-based regulatory mechanisms are better placed to derive benefits from mobile banking while mitigating its risks. The circumstance of changing paradigms in financial technologies calls for an adaptive regulatory implementation so that innovations in mobile banking contribute to financial stability rather than create instabilities for the banking sector. Moreover, as financial institutions continue to integrate mobile banking into their products and services, it is essential for them to start implementing strong risk assessment models, cybersecurity, and financial literacy for consumers toward sustainable growth. Longitudinal research into the concrete long-term consequences of mobile banking deepening on financial sector stability will be apt, especially in the context of digital transformation and economic volatility. Also, in view of the evolution of mobile banking, yet more studies are required to extrapolate its influence upon banking efficiency, credit risk management, and customer engagement. Across different economies, comparative studies would yield valuable insights into contextual factors affecting the intersection of effective mobile banking strategies. Understanding these shifting dynamics would provide great aide to policymakers, financial analysts, and banking institutions attempting to navigate the complexities of modern financial systems toward long-term growth.

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