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Financial Inclusion, Competition and Financial Stability: New Evidence from Developing Economies

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Abstract
The aim of this study is to examine the effect of competition and financial inclusion on financial stability for 3 emerging economies of South Asia, i.e., Pakistan, India, and Bangladesh, during 2015-2023. The contribution of this study to the existing literature is to include testing for non-linear effects of FI on financial stability as well as exploring the interaction between FI and financial stability. The results of this study will provide insights to policymakers for making financial stability more robust by incorporating financial inclusion. The results of this analysis conclude that financial inclusion negatively affects financial stability for these emerging economies of South Asia. On the other hand, financial stability is positively affected by financial inclusion. The report highlights financial development as one of the most crucial aspects to allow financial inclusion to positively influence financial stability. The non-linear effect is achieved by incorporating the square of financial inclusion. The results of this analysis conclude that financial inclusion can improve financial stability for these emerging economies of South Asia. Therefore, financial inclusion should be at the top of policymakers' priorities for developing countries to improve financial stability. The results of this analysis can provide valuable insights to policymakers to design financial stability more robustly by incorporating financial inclusion. The policymakers can design a more robust financial landscape for developing countries by incorporating financial inclusion.

Keywords: *Financial Inclusion; Competition; Financial Stability; Pakistan; India; Bangladesh*

1. Introduction

The objectives of Financial Inclusion should not be overlooked by financial authorities, who must instead focus on financial system stability (J. Kumar & Ahuja, 2025; Ozili, 2021). The relationship between Financial Inclusion (FI) Financial Stability (FS) is not yet clearly defined, especially in terms of theory and practice, especially in region of South Asian emerging economies, even though its relevance in financial system stability has been increasing. The role of FI in financial system stability is increasing, with specialists in financial system development often emphasizing financial system integrity. Because of international standard-setters, however, financial stability, integrity, and security, and FIs have become important objectives in financial systems, emphasizing their role in achieving financial system stability (Vuong, Barky, & Nguyen, 2025). The global financial system has undergone considerable revision and strengthening in the 10-year post-2008 global financial crisis (Antwi, Kong, & Gyimah, 2024). Despite previous government and administration initiatives, it seems impossible to achieve a new system in which stricter capital and liquidity rules will be enforced on large financial institutions, as well as complete financial system supervision. FIs, in general,

are in top priorities in terms of enhancing financial system resilience, while its role in financial system stability remains unknown, especially in terms of theory and practice, especially in region of South Asian emerging economies.

Many nations are shifting to "shadow banking" or non-bank funding due to reduced financial services offered by commercial banks following the global financial crisis (Kebede, Selvanathan, & Naranpanawa, 2025). International banks are also de-risking their commercial relationships by cutting off or reducing connections with higher-risk customers, such as money transfer companies and remittance providers (Cicchiello, Kazemikhasragh, Monferrá, & Girón, 2021). Financial institutions mainly supported by deposits and insurance, which may enhance FS. World bank and IMF warn that un-regulated loans and advances expansion through financial institutions could cause systematic risk concern (Sebai, Talbi, & Guerchi-Mehri, 2025). The changes to risk management, regulatory systems, and enforcement environments are resulting in unintended outcomes, underscoring the threat posed by multinational banks' withdrawal from a particular market or economic segment (Irum & Abbas, 2025). The risk affects the FI system of emerging and developing countries and the stability and integrity of the global financial system (J. Kumar & Ahuja, 2025). The Alliance for FI (AFI) has also sounded a note of alarm on FS and states that risk-proportionate regulation can address the risk of financial exclusion (Antwi, Kong, & Gyimah, 2024; Čihák, Mare, & Melecky, 2021). The use of digital financial services can result in a decrease in retail banking costs and bridge the formal banking system with the unbanked population (Mhella & Mhella, 2021).

This can lead to a cohesive strategy which can help create an inclusive and resilient financial structure, encouraging economic growth and stability, which is now being realized as a mutual process, as per (Jungo, Madaleno, & Botelho, 2024b). Establishing global Standard-Setting Bodies (SSBs) is an initiative toward integrating FI into the world's financial systems. Organizations such as the Financial Action Task Force (FATF) and the Basel Committee on Banking Supervision (BCBS) have made substantial progress in achieving a balance of stability and FI, as per Alexander (2021), which can lead to a successful implementation of a risk-based approach, as per Ofoeda, Amoah, Anarfo, & Abor (2024). However, according to a report by The World Bank and IMF, there is a concern over the interrelation of FI and stability, which can lead to instability if there is an increase in the growth of loans, but stability can be boosted by increasing FI through electronic payments, deposit instruments, or insurance, as per Antwi et al. (2024); Khan, Zaidi, & Ali (2025).

The need for an in-depth understanding of the relationship between FS and FI has also been emphasized by the World Bank, excluding emerging markets (Damane & Ho, 2024; Naili, Jabbouri, & Helmi, 2023). This is important from a policymaker’s perspective, as it can lead to costly crises or financial marginalization in the country. FI is an important policy objective for developed nations, but it has little impact on FS in developing nations due to their busy agendas and lack of funding (Hasan & Lu, 2023; Pal & Bandyopadhyay, 2022; Sanderson, Mutandwa, & Le Roux, 2018). Developing nations with unstable economic systems can face issues with setting norms aimed at addressing systemic risks in advanced economic systems. Research is needed to comprehend the relationship between financial instability and financial stability in emerging markets (J. Kumar & Ahuja, 2025).

The study attempts to bridge the research void in understanding the interrelation of financial stability and FI in emerging nations. This study considers the socioeconomic factors of 3 south Asian emerging markets. It attempts to fill the research void in the literature, as most research is done on developed nations. This study analyzes socioeconomic factors and is useful for financial practitioners and policy-makers facing financial industry and regulation challenges. It uses a multi-dimensional proxy for financial stability, as it is difficult to understand the financial sector in terms of single variables. It also attempts to understand the mediating effect of financial development in the interrelation of financial stability and FI, providing an insight into the basic mechanisms of financial dynamics.

2. Literature review

2.1 FI and FS linkage

Emerging countries are focusing on FI to integrate the unbanked into the financial system (Alexander, 2021). Limited access to financial development negatively impacts economic progress and poverty reduction. Informal financial development is expensive and unreliable. Theoretically, FI is aim to strengthen FS by boosting risk sharing, diversifying bank`s deposits and decreasing dependence on unofficial funding. As informal financial sector services replace formal ones, income and wellbeing of those living in poverty will rise (Boussaidi & Hakimi, 2025). However, the World Bank notes a lack of reliable data on FI, leading to a lack of empirical research on the relationship between FI and FS. The financial crisis has highlighted the need for more study.

According to Aziz & Ahmad (2025), a larger share of SME lending in bank credit portfolios contributes to financial stability by reducing the likelihood of institutional defaults. Using data for three low-income countries and three emerging economies, Alexander's paper published in 2021 analyzes this finance-stability nexus. It finds that "an increase in credit access may be accompanied by a rise in non-performing credit." This suggests that there are potential synergies between different types of financial stability. Using data for deposit withdrawals during the financial crisis of 2007-2010, it is found that "the strongest deposit withdrawal during this financial crisis is negatively associated with a share of formal savers." This suggests a non-linear relationship between financial development and financial stability.

Adrian, Covitz, and Liang, in a study conducted in 2015, concluded that a country's banking system, if diverse, is likely to benefit from stability-imparting effects of diversification. The study, conducted over a panel data set from 2001 to 2013, concluded that FI has a significant positive influence on FS (Mhella & Mhella, 2021).

As per a study conducted by Khan, Zaidi, & Ali, 2025, a database of 2600 banks across 86 different economies, covering a period of 2004 to 2012, concluded that FI has a positive influence on FS, where FS is a function of bank Z-score and return volatility, thereby advocating the need for FI.

In addition, Antwi, Kong, and Gyimah (2024) studied FI's impact on economic growth among 63 developed and developing countries. Their research found that more diverse banking structures lead to economic stability. Higher inclusion is associated with lower Z-scores and less stable banking structures, especially among poor supervising

countries (Vuong, Barky, & Nguyen, 2025). Studies show that FI has an inverted relation with stability, where credit inclusion can undermine stability. FI's scope has to be set up on a large scale to ensure stability and inclusiveness. FI can contribute to serving a large number of people, especially when technology is employed, regulations are put in place, and infrastructure is acquired (Khan et al., 2025). FI, on one side, can undermine bank stability. V. Kumar, Thrikawala, and Acharya's research found that FI's penetration into an economy can lead to risk-taking and leverage, especially when regulations and supervision are poor. The analysis, from the mixed data, has shown that FI can contribute to improving FS, but not in a linear/non-linear fashion.

H1: *In emerging economies, FI is linked to FS, although this relationship varies depending on the degree of FI and FS changes.*

2.2 Competition and FS linkage

The competition-fragility view and the competition-stability view are two perspectives on how competition and stability relate in the banking sector (Kaur & Kaur, 2025). The traditional perspective suggests that banks become more susceptible as financial systems grow more competitive, while the competition-fragility perspective blames the market system for this vulnerability. Studies in MENA, East Asian, Sub-Saharan African, and BRICS countries support the "competition-fragility" viewpoint, stating that competition encourages banks to take on more risk, making them more fragile (López-Penabad, Iglesias-Casal, & Neto, 2021). Mostly studies now a days , proposing non-linear relationship based on divergent opinions.

Competition and FS have a non-linear connection, with the likelihood of bankruptcy rising and falling with greater competition (BAGSIC, 2022; Ozili, 2024). When competition is above optimal, the "competition—fragility" theory is accepted, but the "competition—stability" theory is true (Antwi, Kong, & Gyimah, 2024). Inverted U-shaped relationships are also found in studies conducted in America, MENA, Spain, and Latin America. The relationship between bank stability and competitiveness is not nonlinear in the East African Community or the European market (Ali, Haroon, Rizvi, & Azmi, 2021). According to the competition-fragility argument, banks that face more competition are more likely to take on credit risk, which reduces their profitability. However, the 2015 stock market fall increased nonperforming loans but had no discernible effect on banks' Z-scores. According to the competition-stability theory, financial systems that are less regulated and more competitive are more stable (Antwi et al., 2024). The argument is that during bankruptcy, regulators tend to favor big banks, thus increasing financial stability while preventing the spread of bad practices (Ariyibi, Agbatogun, & Soyemi, 2024). When it comes to competition, it has a positive impact on banks' FS in terms of efficiency (Adrian, Covitz, & Liang, 2015; Feghali, Mora,

Studies by Antwi et al. (2024) proved that reduced competition in banks enhances FS and boosts economic growth in European economies from 2001-2017. Moreover, there was a positive correlation in market power with ROA and Z-index, indicating market power is a necessity in the banking industry for more FS. – Jungo, Madaleno, & Botelho, 2024a.In nutshell, while there is a nonlinear relationship between stability and competitiveness, more competition results in better stability (Ariyibi, Agbatogun, & Soyemi, 2024; Irum & Abbas, 2025; Morgan & Pontines, 2018). Governments and regulators should guarantee competition in the banking industry to encourage

improved financial soundness (Kebede et al., 2025). Banks can improve FS by increasing loan-to-asset ratios and implementing cost-cutting initiatives. It's interesting to examine if bank competition fosters FS.

H2: *In developing emerging economies, Competition increases FS.*

The existing literature on the relationship between FS and FI is limited, with contradictory findings from previous studies. This study fills this gap by examining the relationship between FS and FI in developing nations. There is limited empirical research available that simultaneously addressed these variables i.e FI, Fs, competition as well as financial development within a single framework while taking non-linear dynamics into account.

By emphasizing on three South Asian emerging economies i.e Pakistan , India and Bangladesh, this study focuses on the multifaceted nature of FS, examining the mediating function of financial development in the connection between stability and FI. It considers a wider range of variables, such as bank credit and Z-scores, and uses the International Monetary Fund's measure for financial development and a multidimensional proxy for FI (Ofoeda, Amoah, Anarfo, & Abor, 2024). The research fills a gap in literature by providing crucial information for decision-makers to support a robust and inclusive financial system for long-term economic growth.

Table 1. Variable Notation, Measurement and Data Sources.

Variable	Notations	Measurement	Source of Data
FS index	FSI	Three main sub-indices were used to quantify FS: capital, credit risk, and liquidity. Bank Z-score and Capital to Total Assets access were used to measure capital, NPLS and LLP were used to measure credit risk, and Liquid Assets to Deposits and Short-Term Funding and Bank Credit to Bank Deposit were used to measure liquidity. The composite indicator is calculated using PCA. A higher score indicates greater FS.	Global Financial Development Database of World Bank
Financial Inclusion	FI	Represented by Financial Institutions Access (Dept, Access and Efficiency indexes)	International Monetary Fund
Competition	COM	Boone Indicator	Global Financial Development Database of World Bank
Gross Domestic Product Per Capita	GRO	Measured in Percentage	World Development Indicators, World Bank
Population	POP	Measured as the total number of populations	World Development Indicators, World Bank
Financial Development	FD	Measured as domestic credit to the private sector by banks as a percentage of GDP	World Development Indicators, World Bank

3. Data, Model, And Methods

3.1 Data

This study uses a balanced panel of 3 emerging economies of South Aisa i.e. Pakistan, India and Bangladesh between 2015 and 2023. The composite ratio of capital, credit risk, and liquidity is the primary FSI variable employed in the study and acts as the dependent variable (see Table 1). The study's two primary components, FI and competitiveness, are reflected in the Financial Institutions Access data that was obtained from the IMF. The moderator's study made use of financial development statistics from the World Bank Database (Pandey, 2023). To reduce the possibility of bias from missing variables and to take into consideration how macroeconomic volatility affects FS, we use covariates for control factors such population density and gross domestic product per capita (Antwi et al., 2024; Irum & Abbas, 2025). Table 1 displays the definitions, data sources, and variable notations. The list of nations that made up the study's sample may be found in Appendix 1.

3.2 Model

This study investigates the inter-relationship between financial stability (FS), competition (COM), and financial inclusion (FI) in emerging economies. Based on the competition–stability and FI–stability theories, this study develops a theoretical understanding of the inter-relationship between these factors, emphasizing the role of structural changes in the financial services industry and the macroeconomic environment in influencing financial stability, with a focus on the drivers and impediments to financial instability. In terms of the empirical analysis, the study employs a baseline model specification, which accounts for economic growth, population growth, and financial development to estimate the coefficients measuring the inter-relationship between FI, COM, and FS in developing countries, as presented in Antwi et al. (2024) and Bozic & Bozic (2025). Subsequently, the dynamic panel regression model will be used to estimate the model, which will inform the study how these factors will be utilized to mitigate the effects of financial instability.

Consequently, the dynamic panel regression model will take the form:

$$FSI_{it} = \beta_0 FSI_{it-1} + \beta_1 FI_{it} + \beta_2 COM_{it} + \beta_3 Z_{it} + \varepsilon_{it} \quad (1)$$

The study examines the impact of FI and competition (COM) on FS (FSI) in countries. It uses a composite index of FSI, FI, and COM, with control variables of financial development (FD), population growth (POP), and economic growth (GRO). The FSIit-1 evaluates the initial FS of countries, with positive coefficients supporting FS. The study also investigates whether a nation's FD standard affects how FI and competition affect FSI, and provides a list of phrases that interact in this way, resulting in a positive and significant equation for conservative values.

$$FSI_{it} = \beta_0 FSI_{it—1} + \beta_1 FI_{it} + \beta_2 COM_{it} + \beta_3 Z_{it} + (\beta_4 FD_{it} * FI_{it}) + (\beta_5 FD_{it} * COM_{it}) + \varepsilon_{it} \quad (2)$$

$$\varepsilon it = \psi + vt + \mu_t$$

where vt is a time-related effect, εit is the characteristic random term, and ψ is the nation fixed effect, which is unobservable. Equation 2's β_4 and β_5 represent the coefficient of the multiplicative interaction term, which is thought to provide insight into the relationship

between financial development and the FI, competition, and stability nexus. All variables stay the same, and the interaction terms of FD*FI and FD*COM are β_4 and β_5. To assess any possible nonlinear effects of FI on FS, we add a square term of FI to equation 1, as seen in equation 3 below:

$$FSI_{it} = \beta_0 FSI_{it-1} + \beta_1 FI_{it} + \varphi_1 FI_{it}^2 + \beta_2 COM_{it} + \beta_3 Z_{it} + (\beta_4 FD_{it} * FI_{it}) + (\beta_5 FD_{it} * COM_{it}) + \varepsilon_{it} \quad (3)$$

where FI^2 is equal to FI squared. In particular, if elasticity coefficients β_1 and φ_1 are statistically significant and have different signs, the relationship between FI and FSI is nonlinear. If φ_1 is less than zero and β_1 is greater than zero, an inverted U-shaped relationship is found. Conversely, if φ_1 is greater than zero and β_1 is smaller than zero, a U-shaped link is formed.

3.3 Panel Estimator

The study examines the influence of competition, moderating factors, and financial development on the FI/FS link through its application of a dynamic panel estimator, namely the two-step System Generalized Method of Moments (GMM). The GMM is a development and extension of the traditional Method of Moments estimator, which is based on the assumption that the unknown parameters' true values are located around zero, and it permits the number of moment conditions to exceed the number of parameters to be estimated (Gebrehiwot and Makina, 2015). The GMM estimator was chosen on the basis of a number of considerations: first and foremost, it is well-suited to panel data from a number of countries, unlike other methods which either ignore or remove heterogeneity; secondly, it is appropriate to the current study since it is typical to have N > T, where N is the number of cross-country units and T is the number of time periods; this is certainly the case in this study, where N=3 and T=9.

Moreover, the system-GMM approach can assist in mitigating biases related to issues of endogeneity, unit-specific, and time-specific effects, including the possible over-identification of models, especially where the lagged dependent variable is used in the regression models. Thus, it is normally used to correct issues of omitted variables, simultaneity, and reverse causality, among others, in regression models, such as dynamic panel-GMM models, as indicated by Vo, Nguyen, & Van, (2021). The use of lagged values of the dependent variable, including the independent variables where appropriate, is a way of utilizing internal instruments that assist in enhancing the reliability of the magnitudes of the regression coefficient signs.

If the disturbance term does not have serial correlation and the included explanatory terms are weakly exogenous, then lagged values can act as instruments. The model is designed for levels and first differences, with an appropriate covariance pattern for the error term. The model is particularly well-suited for data with significant cross-section variation and less variation over time. (Daumas, 2024)

In the levels equation, the lagged differences of the included regressing variables are included as instruments, as well as any additional included covariates. Additional time restrictions are included as necessary for instrument validity. For model diagnostics, the study employs tests specific to the estimation of a system-GMM model. Tests of instrument validity, such as the Hansen J statistic, and serial correlation in first differences, such as the Arellano–Bond tests of first- and second-order serial correlation, are conducted. Subsequent to the estimation of the model's robust

parameters, the Dumitrescu–Hurlin panel causality test is conducted in order to determine the direction of causality. Inference is made by using both the W statistic and Z-bar critical values. If the null hypothesis is rejected, causality is established, while failure to reject the null implies a lack of causality.

4. Results and discussions

In this section, the data is examined and descriptive statistics are calculated (refer to Table 2). Based on 27 observations, the mean for FS is -1.241, with a range of -5.215 to 4.625; the mean for FI is.0.321, with a range of 0.074 to 0.612; and the mean for competition is -0.068, with a range of -3.652 to 2.012. The average fraction of finance (FD) is 41.658, with a range of 5.258 to 81.267; the average GRO is 2.412, with a range of -14.253 to 31.265; and the average POP is 141.425, with a range of 1.256 to 215.256.

Table 2. Descriptive Statistics

	Mean	Std. Dev.	Min	Max
FSI	-1.241	1.001	-5.215	4.625
FI	0.321	0.142	0.074	0.612
COM	-0.068	0.331	-3.652	2.012
GRO	2.412	2.987	-14.253	31.265
POP	141.425	174.256	1.256	215.256
FD	*41.658*	*27.141*	*5.258*	*81.267*

FSI is Financial Stability Index; FI is Financial Inclusion; COM is Competition; GRO is Economic Growth; POP is Population Growth; and FD is Financial Development

Moreover, based on the results for bivariate correlations presented in Table 3 below, most of the covariates correlate negatively with the financial stability index (FSI). The only exceptions to this pattern are financial inclusion (FI) and competitiveness (COM), which correlate positively with financial stability. Moreover, financial inclusion and financial system soundness do not correlate with one another. In other words, they may capture different aspects of financial systems. In line with this pattern of results, no multicollinearity problems among explanatory variables can be inferred from the correlation matrix. On the basis of these initial associations, it is hypothesized that FSI would be positively correlated to both competition and financial inclusion measures (COM & FI). However, it is also noteworthy that all negative correlations between FSI and macroeconomic variables, including economic growth, population density, and financial development, call for further analysis to ascertain their magnitude.

Table 3. Correlation Matrix

	FSI	FI	COM	GRO	POP	FD
FSI	1					
FI	0.054**	1				
COM	0.015	0.045	1			
GRO	-0.547	-0.574**	-0.874***	1		
POP	-0.578*	0.178***	-0.574	0.023**	1	
FD	-0.087***	0.589**	0.698	-0.578	0.245***	1

***, **, * signifies 1,5,10 % significance level respectively.

FSI=Financial Stability Index; FI=Financial Inclusion; COM=Competition; GRO=Economic Growth; POP=Population Growth; and FD=Financial Development

This section begins by discussing how FI affects FS. Table 4 (model 1) illustrates how COM and FI affect FS. The results suggest that FS is negatively impacted by the measure of FI, which has a strong negative influence on it. For further details, the regression coefficient for FI is 0.025 (significant at the 5% level), meaning that for every unit increase in FI, the FS decreases by 0.025. This implies that some FI related policies, such interest rate caps and loan quotas, are unstable under specific conditions in the economies (Hassouba, 2025). These happen when regulations distort the incentives for lenders and borrowers, reducing the quality of assets and deterring new banks from joining the market (Irum & Abbas, 2025). Unplanned and careless FI may be to blame for this effect. It has led to a spike in defaults, which in turn has increased non-performing loans, decrease bank profitability and serving as a deterrent to expanding financial access (Felix, 2022; Kebede et al., 2025; Kumar & Ahuja, 2025; Naili, Jabbouri, & Helmi, 2023). Therefore, we suggest that increased use and accessibility to financial services results in noticeably improved resilience during "bank run" crises (Elkhaldi & Mongi, 2025).

Table 4. GMM Regression

	Model 1	Model 2	Model 3
L1. FSI	0.789 (7.51)***	0.222 (7.42)***	0.766 (9.26)***
FI	-0.025 (-2.45)**	-1.161 (-2.42)**	-1.404 (-2.02)**
COM	0.035 (1.25)***	-0.442 (-2.16)**	-0.124 (-1.77)*
GRO	0.154 (3.14)**	0.621 (1.77)*	0.297 (1.76)*
POP	-0.045 (-1.74)*	-0.018 (-1.82)*	-0.028 (-1.84)*
FD	0.625 (2.26)**	0.492 (2.12)**	0.448 (1.89)*
FII*FD	–	0.477 (2.22)**	0.277 (2.24)**
COM*FD	–	0.076 (2.04)**	0.024 (2.06)**
FI^2	–	–	0.454 (4.19)***
Cons	0.892 (0.75)	0.112 (1.26)	0.242 (1.00)
AR1	0.002	0.01	0.011
AR2	0.565	0.579	0.595
Sargan	0	0	0
Hansen	0.125	0.165	0.214
No. of Instruments	27	31	39
No. of Groups	3	3	3

***, **, * signifies 1,5,10 % significance level respectively. Values in parenthesis are t. values.
FSI=Financial Stability Index; FI=Financial Inclusion; COM=Competition; GRO=Economic Growth; POP=Population Growth; and FD=Financial Development

In emerging nations, FS is also significantly influenced by the degree of competition among financial institutions (Antwi et al., 2024). Intense competition between financial institutions improves FS by fostering efficiency and the provision of financial services (Feghali, Mora, & Nassif, 2021). Conversely, increased competition can reduce financial institutions' profits (Carlson, Correia, & Luck, 2022). This inability to grow, therefore, jeopardizes their FS. The amount of competition is gauged by utilizing the Boone indicator, which is computed by calculating the profit's elasticity in relation to marginal costs, i.e., profit elasticity relative to marginal costs, denoted by BAGSIC, 2022. The research has discovered a positive correlation that is significant at a statistical level, linking FSI and competitiveness, as presented in the table above. The FS indicator increases by 0.035 points if the competition indicator

increases by one unit, as presented by the positive coefficient of the competition in model (1) of table 4 above. The implication of the result is that FS is enhanced by high levels of competition, thus linking well with the "competitiveness stability" theory that argues that an increase in banking industry competition is expected to decrease the value of a company's "franchise" and, therefore, force banking firms to increase risk exposure, thus increasing overall risk (Fuior, Bejenari, & Maxim, 2016; Kebede et al., 2025). Banking firms that demand high rates of loans, therefore, are those that have a high "franchise" value, thus a high riskier portfolio of loans, given that they have a high level of market power, thus a high "franchise" value.

In this current research, we aim to investigate the impact that financial development has on financial inclusion (FI) and competition, and financial stability (FS). The research findings, according to model 2, show that an increase in competition has a positive but later becomes negative effect on financial stability, while FI's effect also becomes less significant. This is because, while FI's effect is consistently negative, competition's effect becomes less significant, resulting in financial stability. Regarding finance's mediating function in the inclusion-competition-stability relationship, the study shows a positive and significant coefficient of the interaction terms (Agarwal et al., 2020). We draw the conclusion that as finance advances, the detrimental effects of FI and competition on FS diminish, given the positive coefficient of the interaction variables linked to financial growth and its positive influence. The results show that strong FS is the outcome of a successful fusion of financial development, FI, and competitiveness (Kumar & Ahuja, 2025). Stability will increase by 0.006 and 0.076 for every unit increase in the interaction terms, demonstrating a direct correlation. Although this is the case, there are concerns that unchecked competition and FI could jeopardize FS (Kebede et al., 2025; Pal & Bandyopadhyay, 2022).

Increased and easier access to financial goods, for instance, could provide as the foundation for greater FI (Irum & Abbas, 2025). Antwi et al. (2024) asserts that expanding loan availability enhances both immediate and long-term FS. Jungo, Madaleno, and Botelho (2024) suggest a tiered banking system in which various bank types (such as deposit banks) provide a restricted set of services to simultaneously encourage stability and accessibility. Damane and Ho (2024) states that more FI in savings enhances local investment finance by decreasing dependency on foreign funding, leading to greater stability. to the extent that the government encourages institutions to get funding to improve their competitiveness. Therefore, beyond a certain point, excessive and unrestricted money and competition may be detrimental to the financial sector (Khan, Zaidi, & Ali, 2025; Vo, Nguyen, & Van, 2021).

We investigated the nonlinear impacts of FI by adding a square term of FI to the equation for FS. The findings are shown in Column 3. The results support earlier evidence of a connection between FI and FS, showing that the coefficient of the level effect of FI continues to have a negative and significant influence. In contrast, the square term of FI has a positive coefficient. The difference in signs of the level and nonlinear effects suggests that there is a U-shaped relationship between FS and FI. The findings indicate that FI has a detrimental impact on FS when the FI index falls below a particular threshold.

Nonetheless, 0.454 percent increase in the FI index raises FS, according to the size of the coefficient of the square terms. This suggests that, at the 1% level of significance, FI significantly improves FS when the FI index rises above a particular threshold

(Damane & Ho, 2024). Our baseline findings are supported by studies such as Antwi et al. (2024); Feghali et al. (2021); Khan et al. (2025). The positive and significant coefficient of the treatment variable indicates that the right-wing party has a significant impact on FI (Hassouba, 2025; Widyastuti, Respati, Dewi, & Soma, 2024). The study shows that financial development and growth have a favorable and marginally significant influence at 10% when compared to our controls (Kumar & Ahuja, 2025). This effect remains regardless of the regression (see columns 1 to 3).

FS is thus enhanced by more funding and expansion. One basic implication is that when the economy expands, businesses and individuals are more likely to desire financial services (Vuong, Barky, & Nguyen, 2025). The study shows that FS is significantly predicted by the population and its coefficients were highly significant and negative (Antwi et al., 2024; Khan et al., 2025). The results indicated that the decline in FS is accelerated by population expansion. It wouldn't be unreasonable to assume that they serve as a buffer and reflect the soundness of the financial institutions (Pal & Bandyopadhyay, 2022). The results of previous studies such as Ariyibi et al. (2024); Kaur and Kaur (2025); Vo et al. (2021) supported the population ratio has a detrimental effect on the stability of the banking industry. As the population grows, people become more risk averse, which raises expected risk premiums, according to the life-cycle risk aversion hypothesis (Armanious, 2024).

The outcomes of DH causality are shown in Table 5. FI, COM, GDPPC, POP, FD, FI*FD, COM*FD, FI2, and FS were found to be causally related in both directions. However, there was a one-way causal link found between economic expansion and environmental damage. These results are consistent with the regression's findings.

Table 5. Causality Test Results

Test	Z-bar Tilde	P-Value	Direction
FSI≠FI	9.3837	0.0000***	—
FI≠FSI	6.4919	0.0000***	
FSI≠COM	8.1102	0.0000***	—
COM≠FSI	4.1618	0.0000***	
FSI≠GDPPC	3.7034	0.1295	→
GDPPC≠FSI	2.8448	0.0043***	
FSI≠POP	33.4044	0.0000***	—
POP≠FSI	47.2036	0.0000***	
FSI≠FD	8.3499	0.0000***	—
FD≠FSI	6.9069	0.0000***	
FSI≠FI*FD	7.1043	0.0000***	—
FI*FD≠FSI	8.8314	0.0000***	
FSI≠COM*FD	4.3812	0.0000***	—
COM*FD≠FSI	6.3487	0.0000***	
FSI≠FI^2	8.9649	0.0000***	—
FI^2≠FSI	8.6838	0.0000***	

***, **, * signifies 1,5,10 % significance level. (→, ↔ represents single and dual causality).

5. Conclusion

This paper presents new evidence on the relationship between inclusion and stability in 3 emerging nations i.e. Pakistan, India and Bangladesh from 2015 to 2023, with the

aim of examining the effects of both competition and FI on FS. We reexamine the relationship between inclusiveness and stability by introducing competition into the relationship. Using the system GMM estimation, we found that FI and competition had differing effects on the degree of stability in emerging nations, with competition playing a more significant and positive role and inclusion having a negative one (Kumar & Ahuja, 2025).

According to the empirical results, there is a linear U-shaped relationship between stability and FI in these nations (Antwi et al., 2024). This implies that a high level of FI improves FS in developing nations as they progress through their developmental stages (Vuong et al., 2025). Progress can only be maintained up to a certain point, though, because there is a limit to how far the inclusion–stability relationship can improve. The importance of financial development cannot be overstated, although both interaction terms have a positive relationship with FS (Antwi et al., 2024). The result implies that financial development will have more positive implications for FS. The results indicate that the theory of stability when faced with more banking rivalry regarding expansion activities will influence the results of stability when faced with more rivalry, which is theoretically relevant (Elkhaldi & Mongi, 2025). The results indicate that attempts to improve FS will be hindered by higher FI but can promote stability at a later stage of financial development. The U-shaped curve implies that higher FI will result in higher FS (Chowdhury & Chowdhury, 2023; Ozili, 2023).

The policy implications of the findings are significant. The policies that promote inclusiveness include making appropriate institutional, legal, and regulatory arrangements and improving the information environment. It is recommended that an environment be created that fosters healthy competition in the middle of it all. Developing countries' policymakers are advised to balance the trade-offs between additional enhancements of FS and support for FI, competition, and growth. However, promoting FI and maintaining FS can be done simultaneously. The findings of the study can also be useful in improving policy on the financial sector by showing how promoting the use of banking services can impact FS directly. To check if there are differences, future research can also consider including geographical groups as subjects. Again, more countries can be incorporated with a longer time horizon.

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