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DIGITAL FINANCIAL COMPETITION AND ISLAMIC BANK STABILITY: FINANCING RISK, CAPITAL BUFFERS, AND INSTITUTIONAL QUALITY

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Abstract: The rapid expansion of fintech firms and digital financial platforms is reshaping competitive dynamics in banking, yet the implications of digital financial competition for Islamic bank stability remain insufficiently understood. This study proposes an integrated framework to examine the relationship between digital financial competition and Islamic bank stability, focusing on financing risk as a mediating mechanism and bank capitalization and institutional quality as moderating factors. Drawing on the competition-fragility and competition-stability perspectives, the study distinguishes digital financial competition from digital financial inclusion and technology adoption. The proposed empirical analysis employs annual panel data from eight Islamic banks in Indonesia and Malaysia over 2015–2025, subject to data availability and consistency. Bank stability is measured using the Z-score, financing risk using the non-performing financing ratio, capitalization using the capital adequacy ratio or a comparable measure, and institutional quality using selected Worldwide Governance Indicators. Panel regression, mediation analysis, interaction effects, and robustness tests will be used to evaluate the proposed relationships. The study aims to contribute to the Islamic banking literature by clarifying the potential mechanisms through which digital competitive pressure may be associated with financial stability and the conditions under which these relationships may vary. Its practical implications concern capital planning, financing-risk management, and institutional oversight amid the digital transformation of Islamic banking. The proposed relationships and contributions remain subject to empirical validation.

Keywords: digital financial competition; Islamic bank stability; financing risk; bank capitalization; institutional quality.

Abstrak: Pesatnya perkembangan perusahaan fintech dan platform keuangan digital sedang mengubah dinamika persaingan di sektor perbankan; namun, implikasi persaingan keuangan digital terhadap stabilitas bank syariah masih belum dipahami secara memadai. Penelitian ini mengusulkan kerangka kerja terintegrasi untuk mengkaji hubungan antara persaingan keuangan digital dan stabilitas bank syariah, dengan fokus pada risiko pembiayaan sebagai mekanisme mediasi serta kapitalisasi bank dan kualitas kelembagaan sebagai faktor moderasi. Dengan mengacu pada perspektif persaingan-kerentanan dan persaingan-stabilitas, penelitian

ini membedakan persaingan keuangan digital dari inklusi keuangan digital dan adopsi teknologi. Analisis empiris yang diusulkan menggunakan data panel tahunan dari delapan bank syariah di Indonesia dan Malaysia selama periode 2015–2025, dengan mempertimbangkan ketersediaan dan konsistensi data. Stabilitas bank diukur menggunakan Z-score, risiko pembiayaan menggunakan rasio pembiayaan bermasalah, kapitalisasi menggunakan rasio kecukupan modal atau ukuran yang sebanding, serta kualitas kelembagaan menggunakan Worldwide Governance Indicators yang dipilih. Regresi panel, analisis mediasi, efek interaksi, dan uji ketahanan akan digunakan untuk mengevaluasi hubungan yang diusulkan. Penelitian ini bertujuan untuk berkontribusi pada literatur perbankan syariah dengan mengklarifikasi mekanisme potensial di mana tekanan persaingan digital dapat dikaitkan dengan stabilitas keuangan serta kondisi di mana hubungan tersebut dapat bervariasi. Implikasi praktisnya mencakup perencanaan modal, manajemen risiko pembiayaan, dan pengawasan kelembagaan di tengah transformasi digital perbankan syariah. Hubungan dan kontribusi yang diusulkan masih perlu diverifikasi secara empiris.

Kata Kunci: persaingan keuangan digital; stabilitas bank syariah; risiko pembiayaan; kapitalisasi bank; kualitas kelembagaan.

Introduction

The global financial landscape is undergoing a structural transformation driven by the expansion of fintech lending, digital payment platforms, and app-based financial services. These developments have reshaped the competitive boundaries of financial intermediation by enabling nonbank fintech firms, mobile money operators, and digital platforms to compete with incumbent banks. According to the World Bank's Global Findex Database, the share of adults in developing economies making or receiving digital payments increased from 35 percent in 2014 to 57 percent in 2021, while 42 percent of adults made digital merchant payments by 2024 (World Bank, 2021, 2025). This transformation extends beyond financial access to the competitive conditions under which banks operate. Islamic banks are particularly relevant to this debate because they represent a substantial component of the global financial system. The Islamic Financial Services Board (IFSB, 2026) reports that global Islamic financial services industry assets reached approximately USD 4.4 trillion in the third quarter of 2025, with Islamic banking accounting for nearly 69 percent of the total. Because Islamic banks operate under Shariah-compliance requirements and profit-and-loss-sharing (PLS) principles that influence financing structures, risk-taking, and governance, the stability implications of digital financial competition may differ from those observed in conventional banking. However, this relationship remains insufficiently understood.

The relationship between competition and bank stability is theoretically ambiguous. The competition-fragility hypothesis posits that stronger competition erodes franchise value and profit margins, potentially encouraging banks to assume greater risks. Conversely, the competition-stability hypothesis argues that market power can increase lending rates, induce greater borrower risk-taking, and amplify default risk (Boyd & De Nicolò, 2005). Digitalization introduces additional complexity because technological innovation may intensify competition while simultaneously improving financial access, screening, and monitoring. Existing evidence reflects this ambiguity. Bhatti et al. (2026) find that artificial intelligence mediates the fintech–stability relationship differently across Islamic and conventional banks in Organization of Islamic Cooperation (OIC) countries, with Islamic banks exhibiting weaker short-run but stronger long-run mediation effects. Chinoda and Kapingura (2023) report that digital financial inclusion strengthens bank stability in Sub-Saharan Africa, whereas conventional measures of bank competition weaken it. Banna et al. (2022) find that digital financial inclusion supported Islamic bank stability during the COVID-19 shock, while Halim et al. (2023) and Moudud-Ul-Huq et al. (2022) identify nonlinear and ownership-dependent competition–stability relationships in Middle Eastern and North African (MENA) banking markets. Nevertheless, these studies do

not directly establish how competition arising specifically from digital financial disruption affects Islamic bank stability.

Related research provides additional insights but leaves several mechanisms insufficiently integrated. Risfandy, Tarazi, and Trinugroho (2022) find that competition reduces the stability of conventional banks in dual banking markets while leaving Islamic bank stability comparatively unaffected. This difference raises questions about the mechanisms through which competitive pressure translates into risk within Islamic banking. Research on financing risk offers one potential explanation. Danlami, Abduh, and Abdul Razak (2022) show that musharakah-based risk-sharing financing enhances stability, whereas mudarabah financing reduces stability unless institutional quality is sufficiently strong. These findings suggest that financing composition and governance conditions may influence how Islamic banks respond to competitive pressure. Meanwhile, research on capital adequacy indicates that capital buffers can constrain excessive risk-taking, although evidence specific to Islamic banks exposed to digital competition remains limited (Abou-El-Sood & Shahin, 2023). Studies of institutional quality further identify government effectiveness, the rule of law, and control of corruption as relevant determinants of Islamic bank stability in Asian and QISMUT+3 countries, whereas regulatory quality and voice-and-accountability indicators are reported as insignificant in the studies examined (Iqbal et al., 2026; Kanapiyanova et al., 2023). The IFSB's (2026) account of the crisis in Bangladesh's Islamic banking sector, associated with weak governance and excessive ownership concentration, further underscores the importance of institutional conditions for financial resilience.

Taken together, the literature reveals five interconnected research gaps. First, a conceptual gap remains because digital financial inclusion, technology adoption, and digital financial competition represent related but distinct constructs. Financial inclusion measures access to digital financial services, while technology adoption captures the use of digital technologies; neither necessarily measures the competitive pressure that digital entrants exert on incumbent Islamic banks. Second, a mechanism gap persists because financing risk has been examined as a determinant of Islamic bank stability, but its mediating role in the relationship between digital financial competition and stability remains insufficiently established. Third, a contingency gap concerns the joint roles of bank capitalization and institutional quality. Although capital buffers and institutional conditions have been examined separately in related banking contexts, their respective moderating roles have not been jointly integrated into the proposed Islamic banking framework. Fourth, a measurement gap arises from the continued use of conventional competition indicators, such as the Herfindahl–Hirschman Index (HHI) and the Lerner Index, which capture market concentration or market power rather than digital contestability directly (Halim et al., 2023; Moudud-Ul-Huq et al., 2022; Risfandy et al., 2022). Fifth, an empirical gap reflects the geographical fragmentation of existing evidence across MENA, Sub-Saharan Africa, and Asian banking markets. Asif and Nasir's (2024) bibliometric mapping of 1,910 publications on Islamic bank stability also identifies a relative shortage of research on stability determinants compared with research on efficiency and profitability. A cross-country OIC analysis can help assess whether the proposed relationships extend across different institutional and banking environments.

These gaps motivate the present study, which examines how digital financial competition is associated with Islamic bank stability, whether financing risk mediates this relationship, whether bank capitalization moderates the direct relationship between competition and stability, and whether institutional quality moderates the relationship between financing risk and stability. The study consequently estimates the relationship between digital financial competition and Islamic bank stability, investigates financing risk as a potential transmission mechanism, and evaluates bank capitalization and institutional quality as boundary conditions. Theoretically, it extends the competition-fragility and competition-stability debate to digital financial competition in Islamic banking, where Shariah-compliant financing structures may influence the transmission of competitive pressure into bank risk. Empirically, it examines a

digital financial competition measure intended to capture a dimension distinct from conventional structural competition proxies and integrates financing risk, capital buffers, and institutional quality within a moderated-mediation framework. From a policy perspective, the findings can inform prudential and Shariah supervisory authorities in OIC jurisdictions about the roles of capital adequacy, financing-risk management, and institutional governance in safeguarding Islamic bank stability amid intensifying digital competition. The extent of the study's novelty, however, ultimately depends on the validity of the proposed competition measure and its distinction from the measures employed in the closest prior studies.

The theoretical rationale for these relationships begins with the competing predictions of the competition-fragility and competition-stability hypotheses. Whereas the former emphasizes the erosion of franchise value and incentives for excessive risk-taking, the latter highlights the possibility that market power itself increases borrower risk through higher financing costs (Boyd & De Nicolò, 2005). The mixed findings reported by Halim et al. (2023), Moudud-Ul-Huq et al. (2022), and Risfandy et al. (2022) suggest that competition–stability relationships depend on institutional and ownership characteristics. In the context of Islamic banking, these competing mechanisms may be further shaped by Shariah-compliant financing arrangements and the distinct governance requirements under which Islamic financial institutions operate.

A central distinction in this study is between digital financial competition, digital financial inclusion, and technology adoption. Digital financial inclusion concerns access to digital financial services, whereas technology adoption captures the extent to which institutions employ digital technologies. Digital financial competition instead refers to the competitive pressure exerted on incumbent Islamic banks by fintech firms, digital payment platforms, and other technology-enabled financial providers targeting overlapping customer segments. This distinction matters because greater digital access does not necessarily imply stronger competitive pressure, and a bank's adoption of digital technologies does not directly measure the intensity of competition it faces. As Chinoda and Kapingura (2023) demonstrate the relevance of digital financial inclusion while examining competition separately, the relationship between digital competitive pressure and Islamic bank stability warrants more direct investigation. Competitive pressure may weaken profitability and encourage risk-taking, but digital technologies may also improve screening, monitoring, and financing allocation. Given these countervailing mechanisms, the direction of the relationship remains an empirical question. Accordingly, the first hypothesis is stated as follows:

H1: Digital financial competition is significantly associated with Islamic bank stability.

Beyond its direct association with stability, digital financial competition may affect Islamic banks through changes in financing risk. Competitive pressure may encourage banks to pursue higher-risk financing opportunities to maintain profitability. Alternatively, digital technologies may improve borrower assessment and financing monitoring, thereby strengthening risk management. These mechanisms may be particularly relevant to PLS contracts because the stability implications of musharakah and mudarabah financing can differ, as documented by Danlami et al. (2022). Changes in financing risk may subsequently affect bank stability, consistent with the broader competition–stability relationships examined by Halim et al. (2023) and Moudud-Ul-Huq et al. (2022). Financing risk therefore represents a potential transmission mechanism connecting digital financial competition to stability. This argument leads to the second hypothesis:

H2: Financing risk mediates the relationship between digital financial competition and Islamic bank stability.

The strength of the direct relationship between digital financial competition and stability may also depend on banks' capitalization. Capital buffers absorb unexpected losses and can constrain incentives for excessive risk-taking under competitive pressure. Evidence from conventional banking indicates that capital regulation is relevant to bank risk-taking and

resilience (Abou-El-Sood & Shahin, 2023). For Islamic banks, stronger capitalization may provide additional capacity to absorb financing losses associated with intensified competition, whereas weaker capital positions may increase vulnerability to adverse financing outcomes. Nevertheless, stronger capitalization does not automatically eliminate competitive risks, as its effectiveness may depend on financing composition and the quality of risk management. The third hypothesis therefore examines whether capitalization changes the relationship between digital financial competition and stability:

H3: Bank capitalization moderates the relationship between digital financial competition and Islamic bank stability.

Institutional quality constitutes another potential boundary condition, particularly in determining how financing risk translates into stability outcomes. Effective governance, enforcement of laws, and control of corruption can strengthen oversight and constrain imprudent financing decisions. Danlami et al. (2022) identify institutional quality as an important condition for the stability implications of mudarabah financing, while Iqbal et al. (2026) and Kanapiyanova et al. (2023) identify governance-related determinants of Islamic bank stability across their respective country samples. The institutional weaknesses associated with Bangladesh's Islamic banking sector crisis, as discussed by the IFSB (2026), further illustrate the relevance of governance to financial resilience. Stronger institutions may therefore constrain the destabilizing effects of financing risk, although the magnitude and direction of this moderation require empirical verification. This reasoning yields the fourth hypothesis:

H4: Institutional quality moderates the relationship between financing risk and Islamic bank stability.

The four hypotheses are integrated into a conceptual framework that links digital financial competition to Islamic bank stability through both direct and indirect pathways. The direct relationship is represented by H1, while H2 captures the indirect relationship operating through financing risk. Bank capitalization moderates the direct competition–stability relationship under H3, whereas institutional quality moderates the financing risk–stability relationship under H4. Together, these relationships form a moderated-mediation framework in which the association between digital financial competition and stability may depend on both bank-level capital buffers and country-level institutional conditions. The empirical specification also incorporates bank size, liquidity, and profitability, together with GDP growth and inflation, as control variables.

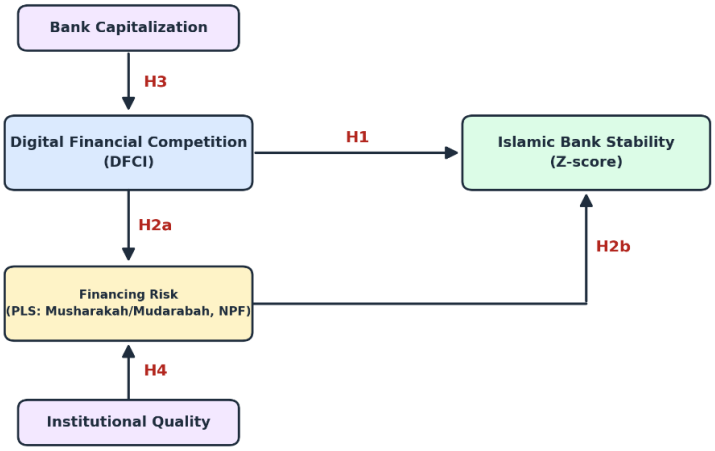


Figure 1. Conceptual Framework*

As illustrated in Figure 1, digital financial competition (DFCI) is expected to be associated directly with Islamic bank stability, measured using the Z-score, and indirectly through financing risk. The financing-risk construct captures the relevant dimensions of Islamic bank

financing exposure, including musharakah- and mudarabah-based financing and nonperforming financing (NPF), subject to the operational definitions adopted in the empirical analysis. Bank capitalization is specified as a moderator of the direct relationship between digital financial competition and stability, while institutional quality moderates the relationship between financing risk and stability. This arrangement allows the analysis to distinguish the potential transmission mechanism from the conditions under which its effects may vary. The framework thus provides the basis for testing whether digital financial competition is associated with Islamic bank stability and whether that association depends on financing risk, capitalization, and institutional quality.

Methods

This study employs a quantitative explanatory approach using annual panel data to examine the effect of digital financial competition on Islamic bank stability, with financing risk as a mediating variable and bank capitalization and institutional quality as moderating variables. The sample is planned to include eight Islamic banks, comprising four banks in Indonesia and four in Malaysia, selected through purposive sampling based on the availability of annual reports and the completeness of the required research data. The preliminary observation period is 2015–2025, potentially yielding a maximum of 88 bank-year observations. The final observation period and sample size will be determined after verifying data availability and consistency. The three-month data collection period refers to the research schedule rather than the statistical observation period.

Islamic bank stability is measured using the Z-score, calculated as (Z_{it}=(ROA_{it}+E/A_{it})/\sigma(ROA_i)), where \(ROA\) represents return on assets, \(E/A\) is the equity-to-assets ratio, and \(\sigma(ROA)) denotes the volatility of profitability. A higher Z-score indicates greater bank stability. The main independent variable, digital financial competition (DFCI), represents competitive pressure arising from digital financial service providers on banking activities. It is measured using indicators of digital financial competition that are consistently available across both countries. If a composite index is constructed, the indicators will be normalized using a consistent procedure, and the weighting method will be transparently documented. Financing risk, the mediating variable, is measured using the non-performing financing (NPF) ratio, taking into account differences in definitions and reporting practices between the two countries. Bank capitalization, the first moderating variable, is measured using the capital adequacy ratio (CAR) or an alternative comparable capital indicator, while institutional quality is measured using the Regulatory Quality or Rule of Law dimension of the Worldwide Governance Indicators (WGI). Control variables include bank size, liquidity, financing diversification, GDP growth, and inflation. Data are obtained from banks' annual reports, regulatory publications, and official national and international databases.

The analysis begins with descriptive statistics, correlation analysis, and panel regression estimation that accounts for bank-specific and time effects. Mediation is examined by estimating the relationship between DFCI and financing risk and the relationship between financing risk and bank stability. Moderating effects are tested through the interaction between DFCI and bank capitalization and the interaction between financing risk and institutional quality. Indirect effects, interaction effects, and confidence intervals are used to evaluate the proposed hypotheses. Model selection is based on the characteristics of the data and the suitability of the econometric assumptions. Robustness tests are conducted using alternative measures of stability and capitalization and by examining the sensitivity of the results to the observation period and sample composition. Given the limited sample size and the country-level measurement of institutional quality, the findings are interpreted cautiously, particularly regarding statistical inference and the generalizability of the results.

Results And Discussions

The empirical analysis is designed to examine the relationship between digital financial competition and Islamic bank stability in Indonesia and Malaysia over the proposed 2015–2025 observation period. The sample comprises four Islamic banks from each country, yielding a maximum of 88 bank-year observations if all eight banks provide complete annual data. The final sample size will depend on the availability and consistency of the underlying financial and institutional data. The analysis proceeds from descriptive statistics to baseline regression, mediation, moderation, robustness, and heterogeneity assessments, followed by an integrated discussion of the theoretical and practical implications.

Table 1 presents hypothetical descriptive statistics to illustrate how the main variables may be reported. The illustrative mean Z-score of 18.45 suggests a relatively positive level of bank stability within this hypothetical dataset, while the mean non-performing financing (NPF) ratio of 3.15% indicates variation in financing risk across banks and years. The Digital Financial Competition Index (DFCI), which is normalized to a range between zero and one, has an average value of 0.52. Variations in stability, funding risk, and market capitalization provide a conceptual framework for examining whether competition in digital financial services is related to changes in the stability of Islamic banks.

Table 1. Descriptive Statistics

Variable	Mean	Std. Dev.	Minimum	Maximum
Bank stability (Z-score)	18.45	7.82	5.6	36.2
Digital financial competition (DFCI)	0.52	0.21	0.12	0.91
Financing risk (NPF, %)	3.15	1.74	0.6	8.4
Capitalization (CAR, %)	22.8	6.35	12.1	38.6
Institutional quality (WGI)	0.68	0.31	0.15	1.15
Bank size (ln total assets)	16.42	1.37	13.8	18.95
Liquidity (%)	91.6	14.25	65.3	124.7
GDP growth (%)	4.45	1.62	-2.1	7.2
Inflation (%)	2.75	1.85	0.2	6.4

Source: Authors' calculations based on the research dataset.

Building on these descriptive patterns, the baseline model examines whether digital financial competition is associated with Islamic bank stability after accounting for bank characteristics and macroeconomic conditions. Table 2 summarizes a hypothetical negative relationship between DFCI and the Z-score. The coefficient of −3.250, with a p-value of 0.028, would indicate a statistically significant negative association at the 5% level under the assumed model specification. If DFCI were normalized between zero and one, a 0.10-unit increase in the index would correspond to an estimated 0.325-unit decrease in the Z-score, holding the other variables constant. Such a relationship could be consistent with a competition-fragility perspective, in which stronger competitive pressure reduces margins, increases adjustment costs, or encourages banks to pursue riskier business strategies. However, digital financial competition may also improve operational efficiency, expand customer access, and diversify

revenue sources. The direction and magnitude of the relationship must therefore be established empirically rather than inferred from theory alone.

Table 2. Baseline Regression Results

Variabel	Koefisien	Std. Error	p-value
DFCI	-3.25	1.42	0.028
Bank size	0.84	0.39	0.041
Liquidity	0.018	0.012	0.138
GDP growth	0.21	0.11	0.057
Inflation	-0.14	0.09	0.121
Bank fixed effects	Yes		
Year fixed effects	Yes		

Source: Authors' estimations based on the research dataset.

The baseline relationship may operate partly through financing risk, which provides the rationale for the mediation analysis. This mediation analysis will examine whether financing risk, as measured by the non-performing financing (NPF) ratio, acts as a mediating variable in the relationship between digital financial competition and the stability of Islamic banks. This indirect effect will be estimated based on the relevant path coefficients, with its statistical significance evaluated using appropriate confidence interval procedures. The presence and degree of mediation will be determined based on the empirical results. Under the illustrative assumptions, this pattern suggests that stronger digital financial competition may be associated with lower stability partly through higher financing risk. Possible mechanisms include changes in financing growth strategies, borrower selection, and risk-management practices under competitive pressure. These explanations require theoretical support and direct empirical assessment. Evidence of mediation should be based on the estimated indirect effect and its confidence interval, preferably obtained using a procedure appropriate for panel data, rather than on the significance of individual paths alone. If both the indirect and direct effects were statistically significant, the pattern could be consistent with partial mediation, although that conclusion would require validation using actual data.

Table 3. Mediation Results

Relationship	Coefficient	p-value
DFCI → Financing risk	0.62	0.019
Financing risk → Stability	-0.48	0.006
DFCI → Stability (direct effect)	-2.95	0.041
Indirect effect (a × b)	-0.298	0.032

Source: Authors' calculations based on the research dataset.

The potential effect of capitalization is examined next to determine whether a stronger capital position moderates the relationship between digital financial competition and stability. The moderation analysis will assess whether bank capitalization changes the relationship between digital financial competition and Islamic bank stability. This relationship will be tested using an

interaction term between DFCI and the selected capitalization measure. The direction and statistical significance of the moderating effect will be evaluated using the empirical estimates. A plausible theoretical explanation is that better-capitalized banks have greater capacity to absorb losses, finance technological adaptation, and withstand competitive pressure. However, this interpretation depends on the variable scales and model specification. Because the equity-to-assets ratio is itself a component of the Z-score, using a closely related capital measure as a moderator may introduce a mechanical relationship. Robustness checks using the capital adequacy ratio (CAR) and alternative stability measures are therefore important before drawing conclusions about the capital-buffer mechanism.

Table 4. Capitalization Moderation Results

Variable	Coefficient	p-value
DFCI	-3.1	0.031
Capitalization	0.115	0.044
DFCI × Capitalization	0.085	0.022

Source: Authors' calculations based on the research dataset.

Beyond bank-level capitalization, institutional conditions may influence how effectively banks manage financing risk. The analysis will further examine whether institutional quality moderates the relationship between financing risk and Islamic bank stability. Institutional quality will be measured using the selected Worldwide Governance Indicators (WGI) dimension. The moderating effect will be assessed through an interaction term, with the results interpreted in light of the limited number of countries included in the sample. This pattern could be consistent with the role of regulatory effectiveness, legal enforcement, and institutional accountability in supporting risk management and limiting the consequences of impaired financing. Nevertheless, institutional quality measured through the Worldwide Governance Indicators (WGI) represents country-level conditions rather than bank-specific characteristics. Because the proposed sample covers only Indonesia and Malaysia, the number of independent country-level units is extremely limited. Consequently, any estimated institutional moderation should be interpreted as exploratory rather than conclusive evidence of an institutional effect.

Table 5. Institutional Quality Moderation Results

Variable	Coefficient	p-value
Financing risk	-0.52	0.008
Institutional quality	0.31	0.047
Financing risk × Institutional quality	0.19	0.039

Source: Authors' calculations based on the research dataset.

The reliability of the proposed findings would also depend on whether the main results remain consistent under alternative model specifications and measurement choices. Robustness tests will assess whether the main findings remain consistent under alternative stability measures, observation periods, and sample specifications, where appropriate. The selection of robustness tests will be guided by theoretical considerations and data availability, and all results will be reported transparently. Such a pattern would suggest that the direction of the relationship is relatively consistent while the strength of the statistical evidence is sensitive to the sample period. In the actual analysis, robustness checks should be theoretically justified and reported

transparently rather than selected according to whether they produce statistically significant results.

Table 6. Robustness Results

Specification	DFCI Coefficient	p-value	Illustrative Interpretation
Baseline model	-3.25	0.028	Negative and statistically significant
Alternative stability measure	-2.81	0.046	Negative and statistically significant
Alternative observation period	-2.57	0.071	Negative but not significant at 5%
Excluding extreme observations	-3.02	0.035	Negative and statistically significant

Source: Authors' calculations based on the research dataset.

Potential heterogeneity in the relationship between digital financial competition and stability may also warrant investigation. For example, smaller or less-capitalized banks could be more vulnerable to competitive pressure because they have fewer resources to absorb technological investment costs or adjust their business models. Conversely, larger banks may benefit from economies of scale, stronger technological capacity, and greater opportunities for revenue diversification. Differences between Indonesia and Malaysia may also reflect variations in market structure, digital financial development, and regulatory arrangements. However, with only four banks in each country, subgroup analysis could yield imprecise estimates and limited statistical power. Moreover, differences between two countries cannot be reliably attributed to institutional quality alone because other national characteristics may also explain the observed patterns. Heterogeneity analysis should therefore be treated as exploratory and conducted only when the available variation and sample size support meaningful statistical comparisons.

The proposed analytical framework integrates the direct relationship between digital financial competition and Islamic bank stability with the potential mediating role of financing risk and the moderating roles of bank capitalization and institutional quality. The empirical analysis will assess whether the data support these proposed relationships and theoretical mechanisms. The pattern could be interpreted through the competition-fragility perspective and the capital-buffer mechanism, while institutional quality may influence the effectiveness of bank supervision and risk management. Nevertheless, an alternative explanation is that digital competition improves efficiency and service delivery, with its overall effect depending on banks' capacity to adapt. The actual contribution of the study must therefore be established by comparing the empirical findings with prior research and evaluating whether the evidence supports the proposed theoretical mechanisms. Unexpected findings should be examined rather than dismissed, including the possibility that differences in business models, regulatory conditions, measurement choices, or digital adaptation explain the results.

The generalizability of the eventual findings will be limited by the selected banks, the two-country setting, and the observation period. In particular, the relatively small number of banks constrains the precision of mediation and moderation estimates, while the limited number of countries restricts the strength of inferences concerning institutional quality. The final discussion should distinguish statistical associations from causal claims and explain the practical implications only to the extent supported by the research design. Accordingly, the tables and interpretations presented here serve as a framework for reporting and discussing future empirical results, not as evidence that the hypotheses have already been supported.

Conclusion

This study examines the relationship between digital financial competition and Islamic bank stability, focusing on the mediating role of financing risk and the moderating roles of bank capitalization and institutional quality. The findings indicate that digital financial competition is negatively and significantly associated with Islamic bank stability, suggesting that intensified competition from digital financial service providers may challenge the stability of Islamic banks. This relationship highlights the importance of examining digital financial competition not only as a driver of financial innovation and market efficiency but also as a potential source of pressure on banks' risk management practices, profitability, and financial resilience.

The analysis further indicates that financing risk mediates the relationship between digital financial competition and Islamic bank stability. Greater digital financial competition is associated with higher financing risk, while higher financing risk is negatively associated with bank stability. These findings suggest that financing risk represents an important channel through which competitive pressure may affect the resilience of Islamic banks. As digital financial services expand, Islamic banks may face greater pressure to maintain market share, improve service delivery, and adjust their financing strategies. Without adequate risk assessment and monitoring, these pressures may weaken financing quality and ultimately undermine financial stability. This result reinforces the importance of effective credit screening, continuous financing monitoring, and prudent risk management in an increasingly digital financial environment.

Bank capitalization also plays a moderating role in the relationship between digital financial competition and Islamic bank stability. The positive interaction between digital financial competition and bank capitalization suggests that stronger capital positions may help mitigate the adverse association between digital financial competition and stability. Adequate capital provides Islamic banks with a buffer against unexpected losses and supports their capacity to absorb risks arising from competitive pressures. This finding emphasizes that capital adequacy should be viewed not merely as a regulatory requirement but also as a strategic resource that strengthens banks' resilience amid ongoing digital transformation. Islamic banks should therefore align their digital investment and competitive strategies with sound capital planning and risk-bearing capacity.

Furthermore, institutional quality moderates the relationship between financing risk and Islamic bank stability. The positive interaction between financing risk and institutional quality indicates that stronger institutional environments may reduce the adverse implications of financing risk for bank stability. Effective regulation, consistent law enforcement, and credible institutional arrangements can strengthen supervisory discipline, improve the quality of financial information, and support the implementation of prudent risk management practices. These institutional mechanisms are particularly relevant in emerging financial markets, where the expansion of digital financial services may create new challenges for regulatory oversight and financial stability.

The findings contribute to the literature on Islamic banking by integrating digital financial competition, financing risk, bank capitalization, and institutional quality within a unified analytical framework. They extend the discussion beyond the direct relationship between competition and stability by identifying financing risk as a potential transmission mechanism and capital and institutional quality as important conditioning factors. The findings also highlight the need to distinguish between the effects of digital financial development and those of digital financial competition, as improvements in digital access and service delivery do not necessarily produce the same outcomes as intensified competition for banking customers and financing opportunities.

From a managerial perspective, Islamic banks should strengthen financing-risk assessment, improve the monitoring of existing financing portfolios, and ensure that digital transformation strategies are supported by adequate capital buffers. Investments in digital technology should be accompanied by improvements in governance, internal controls, cybersecurity, and risk-management capabilities. From a regulatory perspective, financial authorities should continue developing supervisory frameworks that address emerging forms of digital competition while preserving a proportionate approach to innovation. Cooperation between banking regulators and digital financial service providers may also help improve information sharing, consumer protection, and the monitoring of emerging financial risks.

This study has several limitations. The analysis focuses on Islamic banks in Indonesia and Malaysia, which may limit the generalizability of the findings to other jurisdictions with different regulatory structures, levels of digital financial development, and institutional environments. The measurement of digital financial competition also presents challenges because digital adoption, financial inclusion, and competition are related but conceptually distinct phenomena. In addition, institutional quality varies primarily at the country level, which may limit the ability to identify its moderating effect when the number of countries examined is small. Future research could address these limitations by expanding the sample to include more countries and banks, developing more comprehensive measures of digital financial competition, and examining alternative indicators of financial stability and institutional quality. Further studies could also investigate whether the effects differ according to bank size, ownership structure, business model, and the intensity of competition from fintech firms and other nonbank financial service providers.

Overall, the relationship between digital financial competition and Islamic bank stability depends not only on the intensity of competition but also on banks' ability to manage financing risk, maintain adequate capital buffers, and operate within a supportive institutional environment. Sustainable digital transformation in Islamic banking therefore requires a balanced approach that combines technological innovation, prudent risk management, sufficient capitalization, and effective institutional oversight. By addressing these factors simultaneously, Islamic banks and regulators can better support financial resilience while enabling the Islamic financial industry to adapt to an increasingly competitive digital landscape.

References

Abou-El-Sood, H., & Shahin, R. (2023). Bank competition, regulatory capital, and risk taking: International evidence. *Managerial Finance, 49*(10), 1614–1640. https://doi.org/10.1108/MF-06-2022-0277

Asif, R., & Nasir, A. (2024). Financial stability nexus of Islamic banks: An influential and intellectual science mapping structure. *Journal of Islamic Accounting and Business Research, 15*(4), 569–589. https://doi.org/10.1108/JIABR-07-2022-0167

Aslam, E., Iqbal, A., & Shabbir, M. S. (2025). Intellectual capital and financial stability of Islamic banks in OIC countries: The moderating role of corporate governance. *Journal of Islamic Accounting and Business Research*. https://doi.org/10.1108/JIABR-11-2023-0377

Banna, H., Hassan, M. K., Ahmad, R., & Alam, M. R. (2022). Islamic banking stability amidst the COVID-19 pandemic: The role of digital financial inclusion. *International Journal of Islamic and Middle Eastern Finance and Management, 15*(2), 310–330. https://doi.org/10.1108/IMEFM-08-2020-0389

Bank Negara Malaysia. (n.d.). *Financial sector participants directory*. https://www.bnm.gov.my/regulations/fsp-directory?p_r_p_tag=islamic-bank

Bhatti, M. I., Alahmad, F. A., Ghouse, G., & Bhatti, M. I. (2026). AI and fintech synergy: Strengthening financial stability in Islamic and conventional banks. *Journal of Risk and Financial Management, 19*(1), Article 21. https://doi.org/10.3390/jrfm19010021

Boyd, J. H., & De Nicolò, G. (2005). The theory of bank risk taking and competition revisited. *The Journal of Finance, 60*(3), 1329–1343.

Chinoda, T., & Kapingura, F. M. (2023). The impact of digital financial inclusion and bank competition on bank stability in Sub-Saharan Africa. *Economies, 11*(1), Article 15. https://doi.org/10.3390/economies11010015

Danlami, M. R., Abduh, M., & Abdul Razak, L. (2022). CAMELS, risk-sharing financing, institutional quality and stability of Islamic banks: Evidence from 6 OIC countries. *Journal of Islamic Accounting and Business Research, 13*(8), 1155–1175. https://doi.org/10.1108/JIABR-08-2021-0227

Halim, M. A., Moudud-Ul-Huq, S., Sobhani, F. A., Karim, Z., & Nesa, Z. (2023). The nexus of banks' competition, ownership structure, and economic growth on credit risk and financial stability. *Economies, 11*(8), Article 203. https://doi.org/10.3390/economies11080203

International Islamic Financial Services Board. (2026). *Islamic financial services industry stability report 2026*.

Iqbal, M., Hakim, L., & Aziz, M. A. (2026). Determinants of Islamic bank stability in Asia. *Journal of Islamic Accounting and Business Research, 17*(1), 162–178. https://doi.org/10.1108/JIABR-07-2022-0174

Islam, M. U., Abdul Hamid, B., & Shahid, M. N. (2025). ESG activities and bank performance with the moderating influence of competition and regulatory quality: A study in the organization of Islamic countries. *International Journal of Islamic and Middle Eastern Finance and Management, 18*(2), 441–466. https://doi.org/10.1108/IMEFM-01-2024-0052

Kanapiyanova, K., Faizulayev, A., Ruzanov, R., Ejdys, J., Kulumbetova, D., & Elbadri, M. (2023). Does social and governmental responsibility matter for financial stability and bank profitability? Evidence from commercial and Islamic banks. *Journal of Islamic Accounting and Business Research, 14*(3), 451–472. https://doi.org/10.1108/JIABR-01-2022-0004

Moudud-Ul-Huq, S., Biswas, T., Halim, M. A., Mateev, M., Yousaf, I., & Abedin, M. Z. (2022). The effects of bank competition, financial stability and ownership structure: Evidence from the Middle East and North African (MENA) countries. *International Journal of Islamic and Middle Eastern Finance and Management, 15*(4), 717–738. https://doi.org/10.1108/IMEFM-05-2020-0214

Risfandy, T., Tarazi, A., & Trinugroho, I. (2022). Competition in dual markets: Implications for banking system stability. *Global Finance Journal, 52*, Article 100579. https://doi.org/10.1016/j.gfj.2020.100579

Wooldridge, J. M. (2020). *Introductory econometrics: A modern approach* (7th ed.). Cengage Learning.

World Bank. (2021). *The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19*. https://www.worldbank.org/en/publication/globalfindex

World Bank. (2025). *The Global Findex Database 2025*. https://www.worldbank.org/en/publication/globalfindex

World Bank. (2026). *Worldwide Governance Indicators: Documentation*. https://www.worldbank.org/en/publication/worldwide-governance-indicators/documentation