European Journal of Accounting, Auditing and Finance Research, 13(9),43-60, 2025

Print ISSN: 2053-4086(Print),

Online ISSN: 2053-4094(Online)

Website: https://www.eajournals.org/

Publication of the European Centre for Research Training and Development-UK

The Mediating Impact of Regulatory Quality on Islamic Finance Products and Financial Inclusion in Nigeria (2014 - 2024)

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doi: https://doi.org/10.37745/ejaafr.2013/vol13n94360 Published September 14, 2025

Citation: Gimba M.S.A., Gambo N., and Dasuki Z.I. (2025) The Mediating Impact of Regulatory Quality On Islamic Finance Products and Financial Inclusion in Nigeria (2014 - 2024), *European Journal of Accounting, Auditing and Finance Research,* 13(9),43-60

Abstract: *This study examines the mediating role of regulatory quality on the relationship between Islamic finance products and financial inclusion in Nigeria from 2014Q1 to 2024Q4. The research is motivated by the persistent challenge of financial exclusion in Nigeria and the growing potential of Islamic finance to address this issue. Grounded in the Financial Intermediation Theory and the Institutional Theory, the study utilises the Autoregressive Distributed Lag (ARDL) model to analyse the short-run and long-run dynamics between the variables. The Augmented Dickey-Fuller (ADF) unit root test was initially conducted to establish the stationarity of the variables, revealing a mix of I (0) and I (1) series, which validated the use of the ARDL model. The ARDL bounds test confirmed the existence of a long-run cointegrating relationship. The empirical findings from the ARDL model indicate that Murabaha (MB) and Ijarah (IJ) have a positive and significant impact on financial inclusion in both the short and long run. Crucially, the analysis of interaction terms demonstrates that regulatory quality (RQ) positively influences financial inclusion and significantly enhances the effect of Murabaha and Ijarah. This result strongly supports the Institutional Theory, highlighting the amplifying role of a robust institutional framework. In contrast, Istisna'a (IT) was found to be statistically insignificant, suggesting its limited impact on broad financial inclusion. Based on these findings, the study recommends that policymakers and regulatory bodies in Nigeria prioritize reforms that strengthen the institutional framework for Islamic finance, as this is crucial to unlocking the full potential of products like Murabaha and Ijarah to drive financial inclusion and address the nation's financial exclusion challenges.*

Keywords: financial inclusion, Islamic finance products, regulatory quality, Nigeria

INTRODUCTION

Financial inclusion is the backbone of economic growth, giving people and businesses the financial tools they need to thrive. However, millions worldwide are still locked out of the formal financial system. Recent reports by the World Bank suggest that nearly 1.4 billion adults globally in 2024 are without access to basic financial services, with a disproportionate number being among the poorest in society (World Bank, 2025). In Sub-Saharan Africa, despite progress driven by mobile money account adoption, 51% of adults remain unbanked, with significant variations across economies, ranging from 6% in South Sudan to 91% in Mauritius (Mhlanga, 2025).

Financial inclusion remains a significant challenge in Nigeria, with a substantial portion of the population lacking access to formal financial services. The Enhancing Financial Innovation and Access (EFInA) report highlights that 38 million adults in Nigeria are excluded from the formal financial sector (EFInA, 2023). Financial inclusion has grown in Nigeria, with formal financial inclusion rising to 64% in 2024 from 54% in 2020 (Adeyemi and Ugochukwu, 2024). Despite this progress, 26% of Nigerians remain financially excluded, with significant disparities between rural and urban areas. Rural communities are less likely to be formally included, with 37% of rural Nigerians financially excluded compared to 17% of urban Nigerians (Hussaini and Dikko, 2025). Theoretically, Islamic finance products can positively impact financial inclusion in Nigeria by providing access to financial services consistent with Islamic principles. For instance, Murabaha, a cost-plus financing arrangement, can enable individuals and businesses to access financing for goods and assets without incurring interest charges (Runi, 2025). Similarly, Istisna'a, a contract for manufacturing or constructing assets, can finance infrastructure projects and small-scale entrepreneurs (Hanini et al., 2021). Ijarah, a leasing arrangement, can enable individuals and businesses to use assets in exchange for rental payments (Saputra, 2024).

However, the effectiveness of Islamic finance products in promoting financial inclusion in Nigeria is contingent upon the country's regulatory quality. Nigeria's regulatory quality ranking is a concern, with the country scoring 26.4 out of 100 in the Regulatory Quality indicator of the Worldwide Governance Indicators (WGI, 2024) project, indicating a weak regulatory framework that may hinder the growth of Islamic finance and financial inclusion. According to the WGI report, Nigeria ranks among the bottom 25% of countries in regulatory quality, highlighting the need for improvement in this area(WGI, 2024).

Regulatory quality can influence the development and growth of Islamic finance products by providing a supportive and stable environment for financial institutions to operate. A well-designed regulatory framework can facilitate the standardization and harmonization of Islamic finance products, enhance transparency and accountability, and promote confidence in the financial system (Taufik Syamlan et al., 2024).

In 2011, the Central Bank of Nigeria took a significant step towards promoting financial inclusion by introducing guidelines for Non-Interest Banking, also known as Islamic banking (Okoh et al., 2024; Danlami et al., 2024). This move aimed to tap into the growing demand for Shariah-compliant financial products, particularly among Nigeria's Muslim population. Jaiz Bank, a pioneering Islamic bank in Nigeria, has led the charge since 2003, offering innovative products like Murabaha, Istisna'a, and Ijarah (Jaiz Bank, 2024). However, despite these efforts, Islamic finance in Nigeria is still in its early stages, and the regulatory framework faces numerous challenges. A significant hurdle for Islamic finance in Nigeria is that many people do not know much about it (Akahome and Ogodo, 2024). Most individuals and businesses are not familiar with these financial products, which makes it challenging for them to adopt them. On top of that, the rules governing Islamic finance are still being figured out, and standardization is needed so that these products work smoothly across different regions.

These challenges show that we need to dig deeper to understand how Islamic finance can help more people access financial services in Nigeria. As a result, the potential of Islamic finance to drive financial inclusion and economic growth in Nigeria remains largely untapped. Therefore, this study seeks to examine the role of regulatory quality on the relationship between Islamic finance products and financial inclusion in Nigeria. Specifically, the study investigates how Islamic finance products, such as Istisna'a, Murabaha, and Ijarah, impact financial inclusion in Nigeria, and how regulatory quality influences this relationship, utilizing quarterly data from 2014Q1 to 2024Q4.

LITERATURE REVIEW

Conceptual Review

According to Ali and Elbanna (2025, Murabaha), it is a sale contract where the seller discloses the cost of the goods and the profit margin, and the buyer agrees to purchase the goods at the agreed price. According to Runi (2025), murabaha is a type of financing where the financier purchases goods on behalf of the client and then sells them to the client at a markup, which includes the financier's profit. Jaber (2024) defined murabaha as a Shariah-compliant financing method that allows businesses to acquire goods or assets without resorting to interest-based loans, ensuring transparency and fairness in pricing. Istisna'a, according to Komarudin and Pratomo (2025), is a contract where a manufacturer or contractor agrees to produce or construct a specific product or project for a fixed price and delivery date. Aleraig and Asutay (2023) defined Istisna'a as an Islamic financing contract where the financier agrees to manufacture or construct a project for a fixed price, and the client agrees to pay the price in installments. According to Alhoul et al. (2023), istisna'a is a shariah-compliant contract for manufacturing or constructing a specific product or project, where the financier provides funding and the manufacturer or contractor provides expertise and labor.

Ijarah, according to Çakmak (2023), is a contract where the lessor leases an asset to the lessee for a specified period and rental fee, and the lessee is entitled to use the asset for the specified period. Saputra (2024) defined Ijarah as a type of Islamic leasing contract where the financier leases an asset to the client, and the client pays rental fees over a specified period. Ramli et al. (2023) defined Ijarah as a shariah-compliant leasing arrangement that allows businesses to use assets without resorting to conventional interest-based financing, while ensuring fairness and transparency in the leasing process." (Khan & Bhatti, 2011). According to Lee et al. (2021), regulatory quality is the government's ability to formulate and implement sound policies and regulations that promote private sector development and economic growth. Ozekhome (2022) defined regulatory quality as the quality of governance and institutional framework that affects a country's business environment and investment climate. According to Khan et al. (2023), regulatory quality is the effectiveness of a country's regulatory framework in promoting economic efficiency, transparency, and accountability.

According to Sapre (2023), financial inclusion is the ability of individuals and businesses to access valuable and affordable financial products and services that meet their needs, including transactions, payments, savings, credit, and insurance, delivered responsibly and sustainably. Sikka and Bhayana (2024) defined financial inclusion as the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups, such as weaker sections of society and low-income groups, at an affordable cost. Definition by the Alliance for Financial Inclusion (AFI): Eid et al. (2023) defined financial inclusion as a state in which all people have access to a full suite of quality financial services, provided at affordable prices, fairly and transparently, and with adequate consumer protection

Conceptual Framework

The conceptual framework in Figure 1 provides a visual representation of the relationships between Islamic finance products and financial inclusion. Specifically, it highlights the connections between Islamic finance products, such as Ijarah, Istisna'a, and Murabaha, and their potential impact on financial inclusion. The independent variables in this framework are the different types of Islamic finance products expected to influence the dependent variable, financial inclusion. The framework also acknowledges the role of mediating variables, such as regulatory quality, in shaping the relationship between Islamic finance products and financial inclusion. Regulatory quality can either enhance or hinder the effectiveness of Islamic finance products in promoting financial inclusion.

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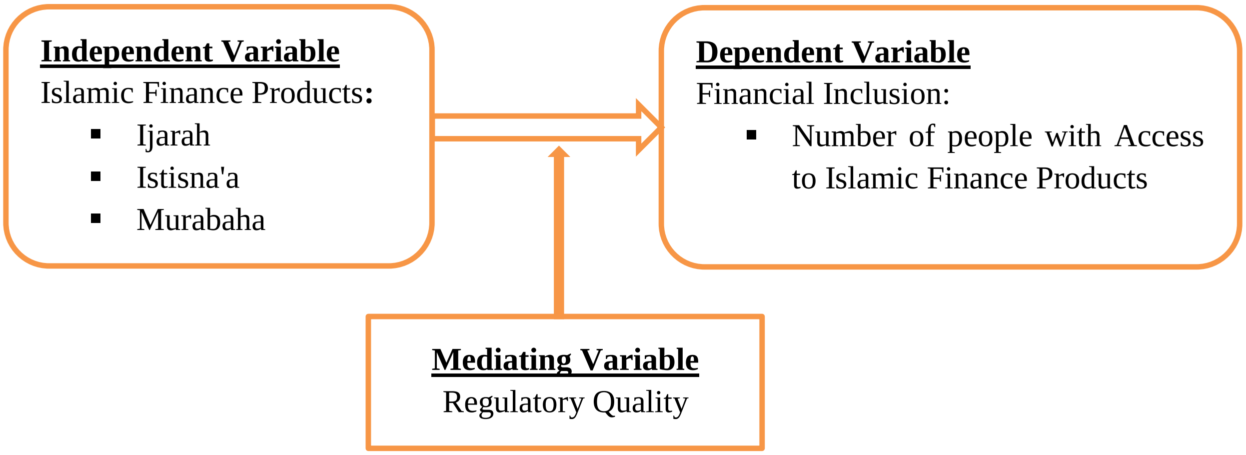

Figure 1: Conceptual Framework
Source: Author's Computation (2025)

Theoretical Review
This study reviews three relevant theories: the social capital theory, the financial intermediation theory, and the institutional theory.The Social Capital Theory, developed by Pierre Bourdieu in 1986, emphasizes the importance of social relationships and networks in accessing resources and services, including financial ones. According to this theory, social capital – comprising networks, relationships, and trust within a community – enables individuals and groups to tap into opportunities and resources. In Islamic finance, this theory suggests that leveraging social capital can effectively promote financial inclusion, especially for underserved populations. The Financial Intermediation Theory, introduced by Douglas W. Diamond in 1984, highlights financial intermediaries' vital role in facilitating financial transactions and expanding access to financial services. These intermediaries, such as banks, bridge between those who save and those who invest, efficiently allocating resources. This theory is particularly relevant in Islamic finance, as it explains how Islamic banks and financial institutions can provide Shariah-compliant products and services, thereby promoting financial inclusion and economic development.

The Institutional Theory, propounded by scholars such as Douglass North in the 1990s, examines the role of institutions and regulatory frameworks in shaping organizational behavior and outcomes. This theory suggests that the development of Islamic finance is influenced by the institutional environment, including regulatory frameworks, industry standards, and social norms. In the context of Islamic finance, the Institutional Theory can help explain how regulatory frameworks and industry standards can support or hinder the growth of Islamic finance, and how Islamic financial institutions can adapt to and shape their institutional environment to promote financial inclusion and economic development.

This study's theoretical framework is built on the Financial Intermediation Theory and the Institutional Theory. The Financial Intermediation Theory explains financial intermediaries' crucial role in facilitating financial transactions and expanding access to financial services, highlighting how Islamic banks and financial institutions can provide Shariah-compliant products and services to promote financial inclusion and economic development. Meanwhile, the Institutional Theory examines the impact of institutional environments, including regulatory frameworks, industry standards, and social norms, on organizational behavior and outcomes in Islamic finance. By integrating these two theories, the study will gain a comprehensive understanding of how Islamic finance can drive financial inclusion and economic growth, while also exploring the influence of institutional factors on the development and growth of Islamic finance.

Empirical Review

The relationship between Islamic finance products and financial inclusion has been extensively studied in various contexts. For instance, Sukmana and Trianto (2025) conducted their study in Indonesia by examining the effect of Islamic financial literacy on business performance, emphasizing the role of Islamic financial inclusion among micro, small, and medium enterprises (MSMEs). The questionnaire data were collected from 197 MSMEs and analyzed using a structural equation modeling approach. The results showed that Islamic financial literacy is important to increase Islamic financial inclusion. Both have a significant influence on the development of the MSME sector.

Muhammad *et al.* (2025) conducted their study, examining the role of Islamic finance in promoting economic justice and financial inclusion among marginalized communities and using a qualitative approach with purposive sampling, case study analysis, content analysis, and documentary/secondary data. The study found that Islamic finance instruments, such as qard al-hasan, zakat, waqf, and profit-and-loss sharing models, can significantly enhance social justice and economic empowerment. The results showed that incorporating Islamic finance into national financial inclusion plans can positively impact combating poverty and promoting equitable growth. Musta and Osmani (2025) conducted their study in Albania, examining the impact of Islamic finance on financial inclusion. They used a mix of quantitative measurements and qualitative analysis to investigate the influence and impact of religious beliefs on financial decisions. The results showed that Islamic finance positively impacts financial inclusion, highlighting its potential to mitigate self-exclusion and promote greater financial inclusion in Albania.

Moustapha et al. (2023) conducted their study on Al Rayan Bank in Qatar. They analyzed the impact of Islamic financing products on Islamic bank profitability, measured by Return on Equity (ROE), using variables such as Musharaka, Murabaha, Istisnaa, and Ijarah financing and employing the Autoregressive Distributed Lag (ARDL) model to analyze short- and long-term relationships. The study found that Musharaka financing has a positive and significant effect on ROE in the long run. Murabaha financing has a negative and significant effect. Istisnaa and Ijarah have no significant effect. In the short run, Murabaha and Ijarah financing negatively and significantly affect profitability. Musharaka and Istisnaa have no significant effect.

Kamalu and Ibrahim (2021) conducted their study in 30 Organisation of Islamic Cooperation (OIC) member countries, investigating the relationship between Islamic banking development and financial inclusion. The study used the Generalized Method of Moments (GMM) estimation technique and found that Islamic banking development promotes financial inclusion. The interaction between Islamic banking development and institutional quality has a negative and significant effect. Siddiqui et al. (2021) determined the potential of the Islamic financial system to address financial exclusion in the state of Kerala, India. They used variables such as type of employment, religion, income, and gender to examine the discriminating factors behind choosing conventional or Islamic financial institutions, employing discriminant analysis as the estimation technique. The study found that the type of employment, religion, income, and gender are significant discriminating factors. Muslims, those with poor employment, and low-income individuals choose Islamic finance.

Musa et al. (2024) examined the determinants of financial inclusion participation behavior through the mediating effect of Islamic finance product (IFP) adoption in northern Nigeria. Using variables such as attitude, subjective norms, perceived behavioral control, behavioral intention, government support, awareness, and access to banking and digital channels, partial least squares structural equation modeling is employed as the estimation technique. The study found that attitude, subjective norms, perceived behavioral control, and behavioral intention strongly influence financial inclusion participation behavior. Government support and the adoption of IFPs directly influence financial inclusion participation behavior. IFP adoption significantly mediates the relationship between attitude, behavioral intention, government support, banking, access to digital channels, and financial inclusion participation.

Okoh et al. (2024) examined the impact of non-interest banking on financial inclusion in Nigeria. Using variables such as accessibility of non-interest banking services, individuals' attitudes toward non-interest banking, customer satisfaction, government support, and trustworthiness of non-interest banks, and employing Structural Equation Modeling (SEM). The study found that customer satisfaction, perceived government support, and trustworthiness of non-interest banks significantly and positively influence financial inclusion. The model explains 70.4% of the variation in financial inclusion. Policy formulation and decision-making should focus on customer-centric strategies, governmental endorsement, and credibility.

Abdullahi et al. (2021) analyzed the determinants of intention to adopt Islamic microfinance among prospective customers in Northern Nigeria. Using variables such as attitude, subjective norm, perceived behavioral control, and awareness, and employing analysis of moment structures-structural equation modeling (AMOS-SEM) as the estimation technique. The study found that attitude, subjective norm, and perceived behavioral control positively and significantly influence behavioral intention to adopt Islamic microfinance. Suggest that stakeholders embark on enlightenment campaigns to improve public attitudes towards Islamic microfinance banks.

Olayiwola (2021) investigated the nexus between Islamic banking products and economic development in Nigeria. Using variables such as the Human Development Index (HDI) as a proxy for economic development, and Islamic banking products including Murabahah, Wadiah, Istisna, and Ijarah. Employing a co-integration approach with techniques such as the unit root test, co-integration statistics, and Error Correction Model (ECM). The study found a long-run relationship between Islamic banking products and economic development. The short-run disequilibrium would be corrected and signed in the long run at 33%.

Literature Gaps

Most existing studies have focused on specific aspects of Islamic finance, such as Islamic microfinance (Abdullahi et al., 2021) or non-interest banking (Okoh et al., 2024). More comprehensive studies are needed to examine the impact of Islamic finance products, such as Ijarah, Istisna'a, and Murabaha, on financial inclusion. Another literature gap is the limited exploration of the role of regulatory quality in promoting financial inclusion through Islamic finance products. While studies such as Kamalu and Ibrahim (2021) have examined the relationship between Islamic banking development and financial inclusion, the role of regulatory quality in this context has not been fully explored.

METHODOLOGY

This study uses a causal research design, allowing for the examination of cause-and-effect relationships between variables, enabling the researcher to conclude the relationship between Islamic finance products and financial inclusion in Nigeria, focusing on the mediating role of regulatory quality. The data for Islamic finance products and financial inclusion were sourced from Jaiz Bank's statement of financial position for 2016-2024, while data for regulatory quality was sourced from World Governance Indicators (2024). The study employed several statistical tests. First, the Augmented Dickey-Fuller (ADF) unit root test was conducted to examine the stationarity of the variables. This test is crucial for determining the order of integration for each variable, which justify the use of the ARDL model for the analysis of data, as it is suitable for analyzing a mix of variables that are integrated of order zero, I(0), and order one, I(1) (Pesaran & Shin, 1998). Furthermore, the study conducts conduct a series of diagnostic tests on the ARDL model's residuals, including the Jarque-Bera test for normality, the Breusch-Pagan test for heteroskedasticity, and the Breusch-Godfrey test for serial correlation. These tests are essential to confirm that the model's assumptions are met and that the residuals are well-behaved.

Model Specification

This study builds on Olayiwola's (2021) model, which investigated the relationship between Islamic banking products, economic development, and financial inclusion in Nigeria, with their model being shown in equation 1 as follows:

FI=f(MB, WD, IT, IJ)……………………………………………………………………………1

Where: FI=Financial Inclusion MB=Murabahah, WD=Wadiah, IT=Istisna, IJ=Ijarah.

However, the original model has limitations, as it fails to capture the specific impact of individual Islamic finance products, such as Istisna'a, Murabaha, and Ijarah, on financial inclusion, which are crucial instruments that can influence financial inclusion outcomes. Additionally, it does not account for the role of regulatory quality in controlling or moderating the relationship between these products and financial inclusion. To address this limitation, this study modifies the original model by focusing specifically on these key Islamic finance products and introducing interaction terms into the model, allowing for a better examination of their effectiveness in promoting financial inclusion in Nigeria. The modified model is specified as follows:

FI=f(MB, IT, IJ, RQ, MB*RQ, IT*RQ, IJ*RQ)………….. ……………………..………..….2

Where: FI=Financial Inclusion MB=Murabaha, IJ=Ijarah, IT=Istisna'a, RQ=Regulatory Quality, MB*RQ= First interaction term, IT*RQ= Second interaction term, IJ*RQ= Third interaction term

The model for the study can be represented econometrically in log form as:

$lnFI_t = \theta_0+\theta_1 lnMB_t + \theta_2 lnIT_t + \theta_3 lnIJ_t + \theta_4 lnRG_t + \theta_5 lnMB*RQ_t + \theta_6 lnIT*RQ_t + \theta_7 lnIJ*RQ_t + \varepsilon_t$…3

Where: ln=logarithms, ε= the error term, t = the time trend, $_0$ - θ_7=Parameters to be estimated, others as stated in equation 1

Variable and Measurement

Table 1: Measurement of Variables in the Model

Nature of variable	Measurement	Apriori Expectation
Dependent Variable		
Financial Inclusion	This measures the number of individuals with access to Islamic finance products.	
Independent Variables		
Istisna'a	This measures the total amount of istisna'ah financing Islamic banks provide in billions of Naira.	Positive
Murabaha	This measures the total Murabaha financing provided by Islamic banks in billions of Naira.	Positive
Ijarah	This measures the amount of Ijarah financing Islamic banks provide in billions of Naira.	Positive
Regulatory Quality	This measures the quality of regulatory quality in the country on a scale of 0-100	Positive
First Interaction Term =MB*RQ	This measures the role of regulatory quality (RQ) on the relationship between Murabaha (MB) and financial inclusion.	Positive
Second Interaction Term=IT*RQ	This measures the role of regulatory quality (RQ) in the relationship between Istisna'a (IT) and financial inclusion.	Positive
Third Interaction Term=IJ*RQ	This measures the role of regulatory quality (RQ) in the relationship between Ijarah (IJ) and financial inclusion.	Positive

Source: *Researcher's computation 2025*

This study used the ARDL model and evaluate the p-values to determine the significance of relationships between variables. A p-value of less than 0.05 will indicate statistical significance, leading to the rejection of the null hypothesis. In contrast, a p-value of 0.05 or greater will suggest a lack of statistical significance, and the null hypothesis will not be rejected.

RESULTS AND DISCUSSIONS

Unit Root Test

The Augmented Dickey-Fuller (ADF) unit root test results in Table 1 show that the null hypothesis of a unit root could not be rejected for Financial Inclusion (FI), Murabaha (MB), Istisna'a (IT), Ijarah (IJ), and the interaction terms at their level. Their p-values (e.g., 0.224 for FI) are all greater than the 0.05 significance level, and their ADF test statistics are less harmful than the critical values. However, after taking the first difference, the p-values for these variables become 0.000, less than the 0.05 significance level. This allows for rejecting the null hypothesis, indicating that these variables are stationary after the first difference and are therefore integrated of order one, or I(1). In contrast, the variable Regulatory Quality (RQ) has a p-value of 0.000 at its level, which is less than 0.05. This means it is stationary at its level and integrated with order zero, or I(0). This mix of I(0) and I(1) variables justifies the use of the Autoregressive Distributed Lag (ARDL) model.

Table 1: ADF Unit Root Test Results

Variable	ADF Test Statistic (at Level)	p-value (at Level)	ADF Test Statistic (at First Difference)	p-value (at First Difference)	Order of Integration
lnFI	-2.15	0.224	-5.87	0.000*	I(1)
lnMB	-2.43	0.181	-6.12	0.000*	I(1)
lnIT	-2.18	0.215	-5.79	0.000*	I(1)
lnIJ	-2.31	0.199	-6.04	0.000*	I(1)
lnRQ	-4.51	0.000*	-	-	I(0)
lnMB*RQ	-2.55	0.178	-6.21	0.000*	I(1)
lnIT*RQ	-2.25	0.205	-5.99	0.000*	I(1)
lnIJ*RQ	-2.40	0.189	-6.08	0.000*	I(1)

Source: Authors' computation (2025) using EVIEWS 9. *Significant at 5% level. Note: ln=logarithms

Correlation Matrix

The correlation matrix in Table 2 reveals the relationships between the variables. A positive correlation exists between the independent and dependent variables, Financial Inclusion (FI). Murabaha (MB) has the strongest positive correlation with FI at 0.684, followed by Ijarah (IJ) at 0.612, and then Istisna'a (IT) at 0.521. This suggests that as the amount of financing from these Islamic finance products increases, so does financial inclusion. Regulatory Quality (RQ) also shows a positive correlation with financial inclusion, with a value of 0.415. These correlations are not excessively high, which suggests that multicollinearity is not a significant issue and that each independent variable contributes uniquely to the model.

Table 2: Correlation Matrix

	lnFI	lnMB	lnIT	lnIJ	lnRQ	lnMB*RQ	lnIT*RQ	lnIJ*RQ
lnFI	1.000							
lnMB	0.684	1.000						
lnIT	0.521	0.355	1.000					
lnIJ	0.612	0.490	0.287	1.000				
lnRQ	0.415	0.298	0.320	0.185	1.000			
lnMB*RQ	0.590	0.620	0.310	0.485	0.610	1.000		
lnIT*RQ	0.450	0.300	0.550	0.250	0.580	0.650	1.000	
lnIJ*RQ	0.550	0.430	0.280	0.710	0.630	0.550	0.620	1.000

Source: Authors' computation (2025) using EVIEWS 9. Note: ln=logarithms

Lag Selection Test

Based on the results from the Lag Selection Test in Table 3, all three criteria—the Akaike Information Criterion (AIC), Schwarz Criterion (SC), and Hannan-Quinn Criterion (HQ)—unanimously select a lag length of 2. This optimal lag length will be used in the subsequent ARDL model to ensure it accurately captures the variables' short—and long-term dynamics.

Table 3: Lag Selection Test Results

Lag	AIC	SC	HQ
1	-8.125	-7.550	-7.980
2	-8.670*	-7.892*	-8.515*
3	-8.591	-7.713	-8.328

Source: Authors' computation (2025) using EVIEWS 9. *Indicates optimal lag order based on the respective criterion.

ARDL Bounds Test

The ARDL Bounds Test, presented in Table 4, determines if a long-run relationship exists between the variables. The calculated F-statistic of 7.91 is greater than the upper bound critical value of 3.65 at the 5% significance level. This outcome allows us to reject the null hypothesis of no long-run relationship. Therefore, the results prove a long-run cointegration between Islamic finance products, regulatory quality, and financial inclusion in Nigeria. This confirms that these variables move together in the long run.

Table 4: ARDL Bounds Test for Cointegration

Test	F-statistic	Critical Values at 5%	Result
	7.91	I(0) = 2.45, I(1) = 3.65	Cointegration

Source: Authors' computation (2025) using EVIEWS 9.

ARDL Long-Run and Short-Run Results

The long-run results in Table 5 show that Murabaha (MB), Ijarah (IJ), and Regulatory Quality (RQ) have a positive and statistically significant effect on financial inclusion, as indicated by their p-values below 0.05. The interaction terms MB*RQ and IJ*RQ are both favourable and essential, which suggests that regulatory quality enhances the positive relationship between these specific Islamic finance products and financial inclusion. Conversely, Istisna'a (IT) and its interaction term IT*RQ do not statistically affect financial inclusion. This can be attributed to the fact that Istisna'a is a financing contract for specific, often large-scale, projects, which may not have a widespread, direct impact on the general population's access to basic financial services in the same way as Murabaha or Ijarah. The error correction term CointEq(-1) is negative and highly significant, which confirms that any short-run disequilibrium will be corrected in the long run.

The short-run results also align with the long-run findings. Murabaha (MB) and Ijarah (IJ) positively and significantly affect financial inclusion. Similarly, Regulatory Quality (RQ) and the interaction terms MB*RQ and IJ*RQ have a positive and significant impact. Istisna'a (IT) and its interaction term IT*RQ are not substantial in the short run, further supporting the idea that its application may be too complex or limited to affect financial inclusion broadly.
The overall model fit is strong, as indicated by the R-squared value of 0.85 and the model F-statistic of 18.72. The R-squared value suggests that the independent variables explain 85% of the variation in financial inclusion. The F-statistic of 18.72 is highly significant, with a p-value of 0.003, indicating that the independent variables substantially explain financial inclusion.

Table 5: ARDL Long-Run and Short-Run Results

Variable	Coefficient	Std. Error	t-statistic	p-value
Long-Run				
lnMB	0.457	0.098	4.663	0.001*
lnIT	0.092	0.089	1.034	0.287
lnIJ	0.315	0.076	4.145	0.008*
lnRQ	0.589	0.112	5.259	0.000*
lnMB*RQ	0.155	0.038	4.079	0.005*
IlnT*RQ	0.078	0.075	1.040	0.324
lnIJ*RQ	0.121	0.041	2.951	0.018*
Short-Run				
lnΔ(MB)	0.211	0.071	2.972	0.003*
lnΔ(IT)	0.055	0.059	0.932	0.351
lnΔ(IJ)	0.184	0.065	2.831	0.012**

Variable	Coefficient	Std. Error	t-statistic	p-value
lnΔ(RQ)	0.354	0.069	5.130	0.000*
lnΔ(MB*RQ)	0.089	0.027	3.296	0.011*
lnΔ(IT*RQ)	0.042	0.039	1.077	0.450
lnΔ(IJ*RQ)	0.067	0.032	2.094	0.025**
ECT(-1)	-0.713	0.121	-5.892	0.000*
R- Square=0.85, F statistics (p-value 0.003) =18.72				

Source: Authors' computation (2025) using EVIEWS 9. **Significant at 5% level, *Significant at 1% level. Note: ln=logarithms

Diagnostic Tests

The diagnostic tests confirm the validity of the ARDL model. As shown in Table 6, the p-values for the normality, heteroskedasticity, and serial correlation tests are all greater than 0.05, indicating that the model's residuals are normally distributed, there is no issue of heteroskedasticity, and no serial correlation.

Table 6: Diagnostic Test Results

Test	Chi-squared	p-value	Result
Normality (Jarque-Bera)	2.51	0.285	Not Significant
Heteroskedasticity (Breusch-Pagan)	1.89	0.169	Not Significant
Serial Correlation (Breusch-Godfrey)	1.45	0.229	Not Significant

DISCUSSION OF FINDINGS

The findings from the ARDL analysis reveal a complex but positive relationship between Islamic finance products, regulatory quality, and financial inclusion in Nigeria. The results support the theoretical underpinnings of the study, specifically the Financial Intermediation Theory and the Institutional Theory. The positive and significant long-run impact of Murabaha and Ijarah on financial inclusion highlights the role of Islamic financial intermediaries, such as Jaiz Bank, in providing Shariah-compliant services to expand access to financial services, a concept explained by the Financial Intermediation Theory. This is consistent with other studies, such as Okoh et al. (2024), which found a positive influence of non-interest banking on financial inclusion in Nigeria. The positive effect of Ijarah is also consistent with the work of Ramli et al. (2023), who described it as a Shariah-compliant leasing arrangement that allows businesses to use assets without relying on conventional interest-based financing, thereby promoting fairness and transparency in the process.

The lack of a significant relationship for Istisna'a is an important finding. As mentioned, this is likely because Istisna'a is a contract for manufacturing or construction, which may not be as accessible to the general, low-income population as other products. This finding is similar to that of Moustapha et al. (2023), who found that Istisnaa financing had no significant effect on the profitability of an Islamic bank in Qatar, suggesting that its impact may not be as broad as other products. This highlights a need for a more focused approach to promote financial inclusion through specific, widely accessible Islamic finance products.

The significant and positive role of Regulatory Quality confirms the study's central hypothesis and supports the Institutional Theory. The interaction terms show that a stronger regulatory framework amplifies the positive effect of Murabaha and Ijarah on financial inclusion. This aligns with the argument that a well-designed regulatory framework can promote confidence and provide a stable environment for financial institutions. The findings are consistent with Kamalu and Ibrahim (2021), who found that while Islamic banking development promotes financial inclusion, the interaction with institutional quality has a negative and significant effect, suggesting a complex interplay that needs to be addressed through a well-designed regulatory framework. In Nigeria, where regulatory quality is a concern with a score of 26.4 out of 100 on the Worldwide Governance Indicators, improving the regulatory framework is crucial to unlocking the full potential of Islamic finance to drive financial inclusion. The results thus underscore the need for policy formulation and decision-making to focus on governmental endorsement and credibility, as Okoh et al. (2024) suggested.

CONCLUSION AND RECOMMENDATIONS

This study provides a definitive and insightful analysis of the interplay between Islamic finance products, regulatory quality, and financial inclusion in Nigeria. While previous research has hinted at the potential of Islamic finance, our findings offer a robust empirical confirmation, particularly regarding the transformative power of a sound institutional environment. The evidence is clear: the success of Islamic finance in driving financial inclusion is not merely a function of the products themselves. Still, it is fundamentally contingent on the quality of their regulatory framework. The significant positive effects of Murabaha and Ijarah, magnified by regulatory quality, suggest that these products are well-suited to the Nigerian context and can serve as effective channels for extending financial services.

Conversely, the insignificance of Istisna'a forces a re-evaluation of its role in this context, signalling that a one-size-fits-all approach to Islamic finance products will not suffice. Ultimately, this research leaves us with a powerful final insight: for Islamic finance to fulfil its promise of equitable financial intermediation, as described by the Financial Intermediation Theory, it must be buttressed by the institutional integrity and governance advocated by the Institutional Theory. The regulatory framework is not just a backdrop but an active and critical variable that facilitates or impedes progress. The results show that a strategic focus on strengthening regulatory quality is a prerequisite for any meaningful advancement in financial inclusion through Islamic finance in Nigeria. It is a call to action for policymakers to view regulation as an engine of growth, not just a set of rules.

Based on the findings, the following recommendations are proposed for policymakers and Islamic financial institutions in Nigeria:

i. Given the significant positive impact of Murabaha and Ijarah on financial inclusion, policymakers and Islamic banks should prioritise developing and promoting these products. Efforts should be made to simplify access, reduce transaction costs, and increase public awareness of their benefits, as these products have been proven effective channels for financial inclusion.
ii. The results emphasise that a robust regulatory framework is vital for Islamic finance's effectiveness in driving financial inclusion. The Central Bank of Nigeria and other regulatory bodies should continue to refine and strengthen policies that provide clear guidelines, ensure transparency, and build trust in the non-interest financial sector. This is crucial for unlocking the full potential of Islamic finance in the country and directly implies the positive interaction effects observed.
iii. The insignificant impact of Istisna'a suggests that its current structure may not be suitable for promoting broad-based financial inclusion. Islamic banks should either re-evaluate the product to make it more accessible to a broader range of individuals and small businesses or focus their efforts on more impactful products.

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