Effect of Microfinance Banks' Self-Sufficiency and Religiosity on Financial Inclusion: Empirical Evidence from Kano State Government's Microfinance Banks

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ABSTRACT

This study examines the effect of microfinance banks' financial self-sufficiency (FSS), operational self-sufficiency (OSS) and religiosity (RLT) on financial inclusion within the context of the Kano State Government's microfinance banks. The research aims to determine how these factors influence the reach of financial services to vulnerable and unserved populations in Northern Nigeria. The study adopted a positivist research philosophy and a cross-sectional survey design, the study conducted a census of 222 management staff across 37 Kano State Government's microfinance banks in Kano State. Data were collected via structured questionnaires and analysed using Partial Least Square Structural Equation Modelling (PLS-SEM) to test the hypothesized relationships between the variables.The empirical results reveal that all three independent variables are significant positive drivers of financial inclusion: Financial Self-Sufficiency ($\beta=0.355$, $p<0.01$) and Operational Self-Sufficiency ($\beta=0.345$, $p<0.01$) significantly enhance the capacity of banks to provide inclusive services. Also, Religiosity ($\beta=0.167$, $p<0.05$) also exerts a significant positive influence, highlighting the importance of cultural and religious alignment in financial intermediation.The model explained 62.2% of the variance in financial inclusion, representing a substantial explanatory power. Consequently,the study concludes that the success of state-led microfinance initiatives depends on financially self-sufficient and politically insulated financial institutions. Thereligiosity of the populace serves as an important factor in determining financial inclusion radius. It recommends that the Central Bank of Nigeria (CBN) mandate the development of financial products that

address religious and cultural diversity to mitigate exclusion. Furthermore, state governments' policy to establish and nurture microfinance banks should be anchored on Public-Private Partnerships (PPP) at inception to ensure long-term sustainability and a clear exit strategy for the government.

Keywords: Financial Inclusion; Microfinance Banks; Operational Self-Sufficiency; Financial Self-Sufficiency; Religiosity; Kano State.

1. INTRODUCTION

Financial inclusion is making the financial system serve all – the rich and the poor, urban and rural, women and youths, physically challenged, and other vulnerable groups in society. It is making all groups, businesses, and individuals have access to financial services and products irrespective of their level of income, age, gender, geographical location, or social status.

The experience of developed countries with financial inclusion provides classic examples of how fostering access to finance could lead to equitable economic growth and development, and remains one of the most important policy and academic discourses today. The United Kingdom was among the developed nations to accord financial inclusion the attention it deserves by publishing its "Promoting Financial Inclusion" strategy alongside the 2004 Pre-Budget Report. In Germany, the Bankers Association came up with a Voluntary Code in 1996 to implement 'everyman' banking transactions by simplifying products and services designs for access by all. The right to open accounts legislations were enacted in Belgium, Sweden and France. In the United States, through legislation, regulatory authorities rate banks based on their efforts to serve rural low-income communities. In 2003, Canada enacted the 'Access to Banking Services Regulation' directing banks to open accounts with minimal requirements. In OECD countries, India, Malaysia, and Brazil, access to financial services is a fundamental human right. In the Middle East and North Africa (MENA), the major obstacles to financial inclusion were deficiencies in financial infrastructure with only 21.3% of adults having a loan account, and about 20% had access to deposit accounts. Many countries, in response to this challenge, came up with various policy options, including the development of financial inclusion strategies (CBN, 2013).

Lack of access to financial services for inclusive growth and development is dire in developing countries, especially in Sub-Saharan Africa. Since independence, and especially from the 1970s, successive administrations in Nigeria had to grapple with the teasing challenge of reducing the excluded portion of the populace's access to financial services. Conventional banking sector, due to perceived high risks and a lack of technical know-howtends to shy away from engaging the poor. Microfinance Institutions (MFIs) emerged to bridge this gap with robust technical know-how of designing financial instruments and products that suit the lifestyle of the poor. Most microfinance institutions, however, are grant-dependent due to operational problems; cultural

bottlenecks; low levels of financial literacy, and government policy that hinder mobilization of capital to extend outreach on a sustainable basis.

In 2005, the Federal Government of Nigeria, through the Central Bank, in partnership with development partners, came up with the National Policy on Microfinance development. The policy acknowledges that access to factors of production, especially credit for robust economic growth will not be possibleunless well-focusedprogrammesare put in place to reduce poverty and unemployment. The policy further acknowledged that only about 35% of the economically active population was served by the formal financial system. The remaining 65% was being served by non-bank institutions like NGOs, Microfinance institutions; and money lenders, friends, relatives and credit unions. The policy was designed to recognize the existence of the informal institutions and provide regulatory framework for financial stability and access to finance by small businesses. The policy was also expected to streamline past Governments' micro/rural credit programmes for the poor that were supply-led at concessionary interest rate; and were short-lived due to the unsustainable nature of design and delivery mechanisms.

Lack of adequate financial infrastructure is dire in the North West region of Nigeria, and more so in Kano State, with the largest portion of the population excluded from formal financial services. The private sector due to perceived risks was reluctant to extend outreach to the deprived communities, especially rural areas where the majority live. Faced wit unprecedented high poverty level, youths unemployment and restiveness, Kano State Government in 2012 decided to establish 37 Microfinance Banks in the State to foster financial inclusion in the unserved communities. According to the Executive Council resolution of 28th May 2012, the Kano State Government, as a policy, decided to establish the 37 Microfinance Banks as "a means to empower the teeming unemployed youths to be self-reliant and regain their pride of Kano State as a leading commercial and agricultural productive State."Neither the private sector, nor development partners or communities were consulted for partnership and ideas on how to establish the banks on sound financial and economic path for sustainable financial inclusion. To establish 37 microfinance banks within two years that are politically insulated and operationally/financially self-sufficient by a sub-national government in a federal set-up like Nigeria is a daunting and challenging task indeed.

There is paucity of studies on the effect of microfinance banks self-sufficiency and religiosity on financial inclusion of government sector-led and owned institutions. This is the focus of this research

1.1 Research Questions

This study will answer the following questions:

- **i.** To what extent does the financial self-sufficiency of microfinance banks affect financialinclusion?
- **ii.** To what extent does operational self-sufficiency of microfinance banks affect financialinclusion?

iii. To what extent does the religiosity of target communities affect financial inclusion?

1.2 *Objectives of the Study*

The broad objective of the study is to examine the effectMicrofinance Banks' Self-sufficiency and Religiosity on Financial Inclusion.

The specific objectives of the study include the followings:

i. To investigate the extent to which financial self-sufficiency of microfinance banks affects financial inclusion.

ii. To examine the extent to which operational self-sufficiency of microfinance banks affects financial inclusion.

iii. To determine the extent to which religiosity of target communities affects financial inclusion

1.3 Research Hypotheses

Ho1: Financial self-sufficiency of microfinance banks does not significantly affect financial inclusion

Ho2: Operational self-sufficiency of microfinance banks does not significantly affect financial inclusion.

Ho3: Religiosity of target communities has no significant effect on financial inclusion.

1.4 CONEPTUAL AND OPERATIONAL DEFINITIONS OF CONCEPTS

1.4.1 *Financial Inclusion*

Measuring the above independent variables will provide indicators that will determine what happened to financial inclusion - the dependent variable. Proxies to measure changes or progress in financial inclusion deepening include the number of bank accounts opened,the number of bank branches established, total loans advanced, and insurance and other financial services provided to the communities. In addition to access, the issue of usage of financial services provided by the banks matters in understanding the overall dimension of financial inclusion. Questionnaires to be filled by the management and the financial management consultants will provide data with which to measure the financial inclusion contributions of the microfinance banks in Kano State.

1.4.2 *Operational Self-sufficiency of Microfinance Institutions*

To become operationally self-sufficient, microfinance institutions must have a good governance structure with well-trained management staff experienced in financial intermediation and working knowledge of how the poor managetheir money. There is also a need for Board members with a focus on making the institution capable of attaining sustainable growth and development. In particular, there is a need for a visionary Managing Director who is innovative

in designing affordable and poverty-friendly instruments and products; economic in cost control and recovery with strong leadership qualities to stir the bank to reach the operational self-sufficiency stage. There is also a need for experienced managers with a similar mindset and experience toinstill efficiency as the main operational guiding principle. Such a team is a necessary condition for a microfinance institution to successfully move towards operational self-sufficiency.The other side of the coin is a set of Board members who have the target communities at heart and are willing to exercise restraint for personal or political considerations. They are ready to sacrifice personal or political gains to help, and where necessary, checkmate management actions to pilot the banks towards operational self-sufficiency. There must be a shared vision between management and Board members to create an institution that will stand the test of time. This is a sufficient condition for the microfinance institution to move towards operational self-sufficiency.

Educational qualifications and experience of the management staff as well as passion for creating sustainable institutions are some of the attributes to pay attention to in assessing how the banks were managedover time. The composition of the Board members and attitudes towards efficiency and costs recovery as well as desire for creating a strong and sustainable institution are other components that could determine how the banks were governed.

1.4.3 *Financial Self-sufficiency of Microfinance Institutions*

It is worth noting that operational self-sufficiency is a necessary condition for microfinance institutions to move towards the profitability stage. All the indicators of measuring operational self-sufficiency matter in assessing financial self-sufficiency. In addition, the ability of the banks to mobilize more savings, access external commercial funding in the form of equity and or loans will form part of the measures to assess the banks' efforts to attain financial self-sufficiency. These latter indicators could be influenced by Central Bank guidelines and State Governments' directives. Questionnaires to be filled by the management of the banks and interviews with Government officials will provide insights into the measures of financial self-sufficiency of the banks.

1.4.4 *Religiosity*

This variable hinges on the Islamic injunction that forbids the use of interest-dependent financial instruments and products. There are questions in the questionnaire for the management on whether the banks have interest-free products and services, and customer perception and belief on interest. They will provide the basis for gauging community interest perception as it affects the financial inclusion efforts of the banks.

2. REVIEW OF RELATED LITERATURE

2.1 *Concept of Financial Inclusion*

The literal meaning of financial inclusion is access to financial services by all. Financial inclusion policy is a deliberate effort to reach those excluded by the conventional banking sector with simple, affordable and sustainable financial services. The goal of financial inclusion is easy access to banking services by all that will ensure poverty reduction, reduce unemployment, increase the size of the gross domestic product and enhance financial system policy (Shen, et al., 2026; Wang& Zhang, 2025). The negative shades of financial exclusion began to receive attention globally in 1993, with many studies conducted, and discussions centered on the constraints that prevent the vulnerable groups in society access to and use of financial services. These studies and discussions gave birth to the concept of financial inclusion. It is the availability and affordability of financial products and services for transactions, payments, savings, and credit, as well as insurance for the disadvantaged segment of a country's population (The World Bank: 2025). Fostering financial inclusion is an important inclusive development policy tool available to public policy makers the world over. Its focus is on creating a more diverse financial market with affordable, robust, and diversified products by different, adaptive, and responsive institutions to meet the ever-growing demand for financial services as economies move towards the future. The key principle is creating competitive markets with diverse players, products, and clients working to stimulate innovation and productivity for growth and development. Towards this end, since 2010, over 60 countries have designed and implemented National Financial Inclusion Strategies by unifying various stakeholders' efforts in regulation, telecommunication, competition, agriculture, environment, planning, and education.

According to CBN (2013), financial inclusion refers to the provision of financial services to the vulnerable groups by a wide range of providersespecially private sector-ledto foster access to productive assets that could promote growth and development. The development of an inclusive financial system that ensures equitable participation of all in economic activities that increase income and reduce poverty is the overall objective. In recent times, financial inclusion has become an important inclusive policy imperative for Governments the world over, especially in developing countries to foster economic and social development. In spite of the general consensus on the significance of financial inclusion as a development policy tool, globally, 54% of adults have no access to financial services. The CBN report further asserts that some developing countries had over 70% financial exclusion levels. One of the goals of the National Policy on Microfinance development in Nigeria is the development of self-sufficient institutions that could foster financial inclusion for growth and development.

2.2 *Concept of Microfinance Institutions*

Microfinance Institutions (MFIs) are institutions whose business is the provision of financial and non-financial services to the poor. The poor areindividuals and operators of micro and small businesses operating mainly in rural, urban, and semi-urban, as well as isolated regions of most

developing countries in the world. Microfinance institutions are set up in response to ever growing demand for financial services to the poor over the past decades, to help alleviate poverty, maximize shareholder funds, and help channel investments into priority sectors thereby complementing Government's economic development intervention strategies. They may sometimes emerge in response to overall donor development support in developing countries to accentuate Government's inclusive development agenda. These institutions differ in size, mode of operation, financing options and regulatory environment. They differ from traditional microfinance service providers like commercial "(village money lenders, pawnshops, and informal transfer systems)and from large, perhaps Government-sponsored schemes like national savings schemes or post office savings banks" (Adams, *et al.;* 2002).

There are different types of microfinance institutions based on business model, ownership or legal structure. On business model, there are conventional microfinance institutions and Islamic Sharia business institutional model, with the former based on interest rate principle, and the latter on mutharaba (total absence of interests in financial transactions) tenets. Microfinance institutions can be distinguished based on ownership structure, like those created and managed by local communities; private individuals operated institutions; Government funded; Non-Governmental Organizations initiatives, and MFIs owned and operated by foreign entities. In Latin America and the Caribbean, microfinance institutions are mainly owned by Non-Governmental Organizations; some are for-profit institutions like community development financial institutions (CDFIs, and institutions subject to prudential control like microfinance banks.

2.3 *Concept of Operational Self-sufficiency of Microfinance Institutions*

According to Schäfer and Fukasawa (2011) and Chaudhury *et al.,* (2022), operational self-sufficiency (OSS) of microfinance institutions can be referred to as their ability to recover costs of operations from operating income. The OSS provides the basis to understand how well the microfinance institutionsare governed (experience, skills, efficiency and cost recovery efforts, adaptability, and innovative traits of the management). An MFI that attains the operational self-sufficiency stage has reached an important milestone to wean itself from dependence on subsidy, and continue to serve its clients for a long time to come. Factors that determine operational self-sufficiency of microfinance institutions include revenue, credit risk, and cost management. The ability of a microfinance institution to increase its revenue over time has the potential to make it sustainable. In addition, a microfinance institution that lowers its credit risksand employs effective and efficient cost management could attain operational self-sufficiency (Yayehyirad, 2023; Hussain *et al.,* 2020).Some scholars do argue that profitability is another attribute of operational self-sufficiency. However, this study contends that where a microfinance institution reaches the breakeven point (costs equal revenues), it can be said to have attained operational self-sufficiency. There is no doubt; attaining operational self-sufficiency by a financial institution (in this study, Microfinance Bank) is a precondition for attaining financial sustainability.

2.4 *Concept of Financial Self-Sufficiency of Microfinance Institutions*

In the case of effect of financial self-sufficiency on financial inclusion there are perceptions on the concept in the literature, but some of the related studies include the following: Kartawinata*et al.,* (2021), Yayehyirad (2023), Hussain *et al.,* (2020), Tafesse (2014) amongst others.Some of the factors that affect the financial sustainability of microfinance institutions include loan portfolio, operating expenses, capital/asset ratio, portfolio at risk, loan default rate, loan portfolio management, and over-indebtedness (Yayehyirad, 2023). Strategies to attain financial self-sufficiency by willing microfinance institutions include: improving loan portfolio management; diversifying investment; increasing supervision and monitoring; sensitizing members on loan repayment efforts; mobilizing deposits, and designing suitable loan products (See, for example, Beg, 2016; Khan *et al.,* 2017; Gibbons & Meehan, 1999).

2.5 *Concept of Religiosity*

According to Bergan and McConatha (2004), religiosity refers to various dimensions associated with religious beliefs and involvement. The Concise Oxford Dictionary (1993) defines "involve" as "to participate or share the experience or effect, include or affect in its operations". They have identified two dimensions associated with religiosity, namely, religious beliefs and involvement. Bergan and McConatha (2000) further state that reliance on religious attendance as a sole measure of religiosity may be insufficient and may lead to incorrect conclusions. Bergan and McConatha (2004). Religiosity refers to the various dimensions associated with religious beliefs and involvement.

However, Sedikides and Green (2009) defined religiosity as an orientation, behavioural set and lifestyle considered important by the large majority of people worldwide that cannot be neglected by social and personality psychology any longer. The statement "by the large majority of people worldwide" is not acceptable. There can be a religion that a small number of people believe in. They also have religiosity. Also, Williamson *et al.,* (2010) state that religiosity is also known as religiousness. They define religiosity as the strength of one's connection to or conviction for their religion. "One's connection" is like a bond to the religion. "Conviction for their religion" means belief in their religion. The Pocket Oxford English Dictionary (2007) defines "religious" as relating to or believing in a religion. However, Sedikides and Green (2009) perceived it as an orientation, behavioural set and lifestyle considered important by the large majority of people worldwide.

2.6 *Operational Self-Sufficiency and Financial Inclusion*

To become operationally self-sufficient microfinance institutions must have good governance structure with well-trained management staff experienced in financial intermediation and working knowledge on how the poor manages his money. There is also the need for Board members with focus on making the institution capable to attain sustainable growth and development. In particular, there is need for a visionary Managing Director who is innovative in designing affordable and poor friendly instruments and products; economic in costs control and

recovery with strong leadership qualities to stir the bank to reach operational self-sufficiency stage. There is also need for experienced managers with similar mindset and experience to instill efficiency as the main operational guiding principle. Such a team is a necessary condition for a microfinance institution to successfully match towards operational self-sufficiency.

Also, there are inadequate studies that investigated the effect of operational self-sufficiency on financial inclusion. However, efforts have been reported in the literature by the following little studies, amongst which include the following: Remer and Kattilakoski (2021), Schäfer and Fukasawa (2011), Chaudhury *et al.,* (2022), Yayehyirad (2023), Hussain *et al.,* (2020), Yaron and Manos (2010), Hailu and Venkateswarlu (2015) and Tafesse (2014).

2.7*Financial Self-Sufficiency and Financial Inclusion*

It is worth noting that operational self-sufficiency is a necessary condition for microfinance institutions to match towards profitability stage. In the case of effect of financial self-sufficiency on financial inclusion there are scanty literature, but some of the related studies include the following: Kartawinata*et al.,* (2021), Yayehyirad (2023), Hussain*et al.,* (2020), Tafesse (2014), Beg (2016), Khan *et al.,* (2017) and Gibbons and Meehan (1999). Hence, the need to investigate the effect of financial self-sufficiency on financial inclusion as proposed by the current study.Kartawinata*et al.,* (2021) argued that financial self-efficacy is an individual's belief in managing finances, using financial services and beliefs about their personal ability to achieve major financial goals. Their study aimed to determine the role of financial self-efficacy as a mediator between financial literacy and financial inclusion. The population of this study includes all active Telkom University students, totaling 32,358 people. This research uses quantitative methods with descriptive and causal research types. Sampling was done by using non-probability purposive sampling type, with the number of respondents as many as 100 people. The data wereanalysedusing structural equation modeling with an alternative method of partial least squares to test the effect of the exogenous constructs on financial inclusion. Based on the descriptive analysis results, the Financial Inclusion; and financial self-efficacy; overall is good. And based on the results of partial least square analysis, it proves that financial self-efficacy is able to mediate the effect of financial literacy and financial inclusion.

2.8 *Religiosity and Financial Inclusion*

Religiosity variable hinges on Islamic injunction that forbids the use of interest-dependent financial instruments and products. Some members of the target communities was interviewed on how this variable affects financial products and instruments choices since Islamic intermediation practices were not on the menu of the microfinance banks. For the studies that investigated the relationship between religiosity and financial inclusion, see for example: Ilfta (2021), Salisu *et al.,* (2024), Amin *et al.,* (2023), Hafiz and Kitri (2019), Narayana and Shagishna (2021) and Istina*et al.,* (2024) and their likes.In the study of Istina*et al.,* (2024) they investigated the impact of religiosity and inclusion on the decision to save at Islamic banks among vocational school students majoring in Islamic Banking in Yogyakarta, with religiosity as the moderating variable. This study adopted quantitative research where questionnaires were

used to collect data, with a sample as large as the number of respondents. The data are analyzed using the Test for Moderated Regression Analysis and SPSS 25. The results aim to reveal how these factors influence the decision to save at Islamic banks and their impact on Islamic financial education. The research results show that Islamic financial literacy and inclusion partially influence the savings decisions of vocational school students majoring in Islamic Banking at Islamic banks. Furthermore, the moderated regression analysis test shows that religiosity can moderate Islamic financial literacy and inclusion in the decisions of vocational school students majoring in Islamic Banking at Islamic banks.

3. METHODOLOGY

Positivists' research philosophy guided this study. The justification for choosing this research paradigm was that the study used a quantitative research approach to measure the variables, and establish the relationship between them. Specifically, cross-sectional survey research design was adopted. This is due to the fact that the information about the independent variables and dependent variable represent what happened within a short time period. The population of this study comprised all the management staff (6 per bank) of the 37 microfinance banks, which is 37x6 = 222. The 37 microfinance banks constitute the financial infrastructure necessary for fostering financial inclusion located in 37 Local Government areas both urban and rural.Given the population size of 222, the study adopts census sampling. Thus, working population of this study was 222.The data used for the study was collected using a well-structured questionnaire. The statistical package for social sciences (SPSS) and SmartPLS, Partial Lead Square Structural Equation Modelling (PLS-SEM) are the statistical tools that were used to perform the analysis of this study. The significance of the use of PLS-SEM as a tool of analysis in this study is its robustness with three steps process - data screening or cleansing and preliminary tests is the first stage to ensure that multivariate assumptions are not violated. "The second stage involves assessing the measurement model to identify the underlying structure of the variables involved; and the third stage assesses the structural model" (Othman, *et al.,* 2024).

The researchers conducted both construct and face validity assessments for the research instruments. To establish construct validity, the questionnaire was reviewed by four faculty members (at Professor, Associate Professor/Senior Lecturer level) specialising in finance, from Ahmadu Bello University and Practitioners. The experts provided several recommendations, including modifications to demographic questions, removal of double-barreled and irrelevant questions, and elimination of certain sections from the study. They also suggested rephrasing some questions related to the main constructs. After incorporating these expert suggestions and retrieving the finalised questionnaires, the researcher confirmed the instrument's validity. This rigorous validation process enabled the researcher to proceed with data collection for the pilot study.

The model specification adheres to the established conceptual framework. The model comprises of the dependent variables of the research model that needs to be estimated. Operational self-sufficiency, financial self-sufficiency and religiosity are the independent variables. While the dependent variable being financial inclusion:

4. RESULTS AND DISCUSSION

The present study adopted a two-step process to evaluate and report the results of PLS-SEM path, as suggested by Henseler, Ringle and Sinkovics (2009). This two-step process adopted in the present study comprises the measurement model and the structural model (Hair et al., 2014; Hair et al., 2012; Henseler et al., 2009)**.** Furthermore, having subjected the data to the screening and cleansing, the stage was set for path modelling. SmartPLS 4.0.9.9 was employed to assess the measurement model and structural model for model fit and test of hypotheses respectively.

4.1 Measurement Model (outer model)

Analysis of the PLS-SEM measurement model involves determining individual item reliability, internal consistency reliability, convergent validity and discriminant validity (Hair et al., 2014; Hair et al., 2011; Henseler et al., 2009). The figure 4.1 and Table 4.1 present the measurement model of the study.

4.1.1 Reliability and Convergent Validity

Table 4.1 and figure 4.1 present the result of internal consistency reliability and convergent validity of this study.

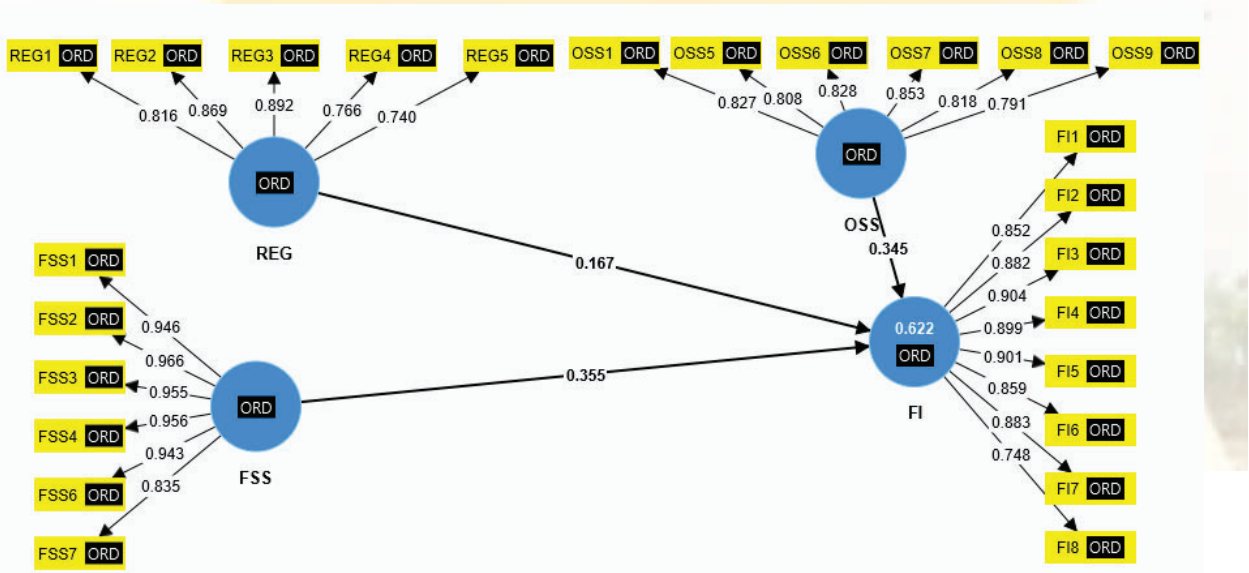

Figure 4.1: PLS Algorithm

Figure 4.1 depicts the measurement model of this study showing the individual items of each construct that met the benchmark of reliability. As can be seen, items presented here all met reliability threshold of 0.7 as suggested by Hair etal. (2013). Furthermore, the figure revealed an R^2 value of 0.622 signifying variance of the dependent variable due to corresponding change in the independent variables. The detail of the report of the model is presented in Table 4.1 below:

Table 4.1: Item Loadings, Construct Reliability and Convergent Validity

Constructs	Items	Loadings	CA	CR	AVE
Financial Inclusion	FI1	0.852	0.952	0.960	0.752
	FI2	0.882			
	FI3	0.904			
	FI4	0.899			
	FI5	0.901			
	FI6	0.859			
	FI7	0.883			
	FI8	0.748			
Financial Self-Sufficiency	FSS1	0.946	0.970	0.976	0.873
	FSS2	0.966			
	FSS3	0.955			
	FSS4	0.956			
	FSS6	0.943			
	FSS7	0.835			
Operational Self-Sufficiency	OSS1	0.827	0.903	0.925	0.674
	OSS5	0.808			
	OSS6	0.828			
	OSS7	0.853			
	OSS8	0.818			

	OSS9	0.791			
Religiosity	REG1	0.816	0.876	0.910	0.670
	REG2	0.869			
	REG3	0.892			
	REG4	0.766			
	REG5	0.740			

Note: CA= Cronbach Alpha, CR=Composite Reliability and AVE = Average Variance Extracted

From Table 4.1, loadings of items measuring individual construct were greater than 0.7 which is a minimum recommended value as contained in Hair etal. (2013). Items that failed this benchmark were deleted. Similarly, all the constructs in the study met the composite reliability benchmark of 0.7 and average variance extracted of 0.5. As shown in Table 4.1, the composite reliability coefficient of each constructs ranged from 0.805 to 0.900, with each exceeding the minimum acceptable level of .70, suggesting adequate internal consistency reliability of the measures used in this study (Bagozzi & Yi, 1988; Hair et al., 2011).

In addition, convergent validity was assessed by examining the Average Variance Extracted (AVE) of each construct, as suggested by Fornell and Larcker (1981). To achieve adequate convergent validity, Chin (1998) recommended that the AVE of each latent construct should be .50 or more. Following Chin (1998), the AVE values (see Table 4.1) exhibited high loadings (> .50) on their respective constructs, indicating adequate convergent validity.

4.1.2 Discriminant Validity

To achieve adequate discriminant validity of the constructs used in this study, Heterotrait Momentrait (HTMT) approach was used. HTMT refers to ratio of correlations within the constructs to correlations between the constructs. The approach is an estimate of what the true correlation between two constructs would be if they are perfectly measured. Kline (2011) recommended HTMT standard of 0.85 or less. However, Goldetal (2001) suggested that the value must not be greater than 0.90. The result is presented in Table 4.2.

Table 4.2: Heterotrait-Monotrait Ratio (HTMT) – Matrix

	FI	FSS	OSS	REG
FI				
FSS	0.742			
OSS	0.758	0.707		
REG	0.785	0.702	0.815	

The result of HTMT in Table 4.2 revealed that the cross loadings of all the constructs used in this study satisfy the condition of Kline (2011) as the coefficient of the intercorelations are less than 0.85. Thus, this further confirmed the validity of the measures employed in the study.

4.1.3 Goodness of Fit of the Measure

Henseler, Hubona, and Ray (2016) mentioned that "the overall goodness–of-fit (GoF) of the model should be the starting point of model assessment. If the model does not fit the data, obtained estimates may be meaningless, and conclusions drawn from the research become questionable. This study adopted the standardized root mean square residual (SRMR) to assess the fitness of the model of the study. Hu & Bentler (1999) recommended a threshold of <0.08.

Table 4.3: Model Fit

	Saturated model	Estimated model
SRMR	0.074	0.074
d_ULS	1.781	1.781
d_G	0.676	0.676
Chi-square	1554.030	1554.030
NFI	0.868	0.868

The result of Table 4.3 reported an SRMR coefficient of 0.074(7.4%) which is less than the acceptable bench mark of 0.08 (8%) recommended by Hu and Bentler (1999). This implied that the model employed in this study fit the data set.

4.2 Structural Model (Inner model)

The second part of the model is the structural model or inner model which Hair et' al. (2013) identified key criteria for assessing the structural model in PLS-SEM. These criteria include assessments of significance of the path coefficients, coefficient of determination (R^2) and the effect size (f^2). However, to ascertain the effect of independent variables on the dependent variable, it is important to carry out a bootstrapping analysis. Bootstrapping was done by using 5000 subsamples. Figure 4.2 presented the structural model of the effects.

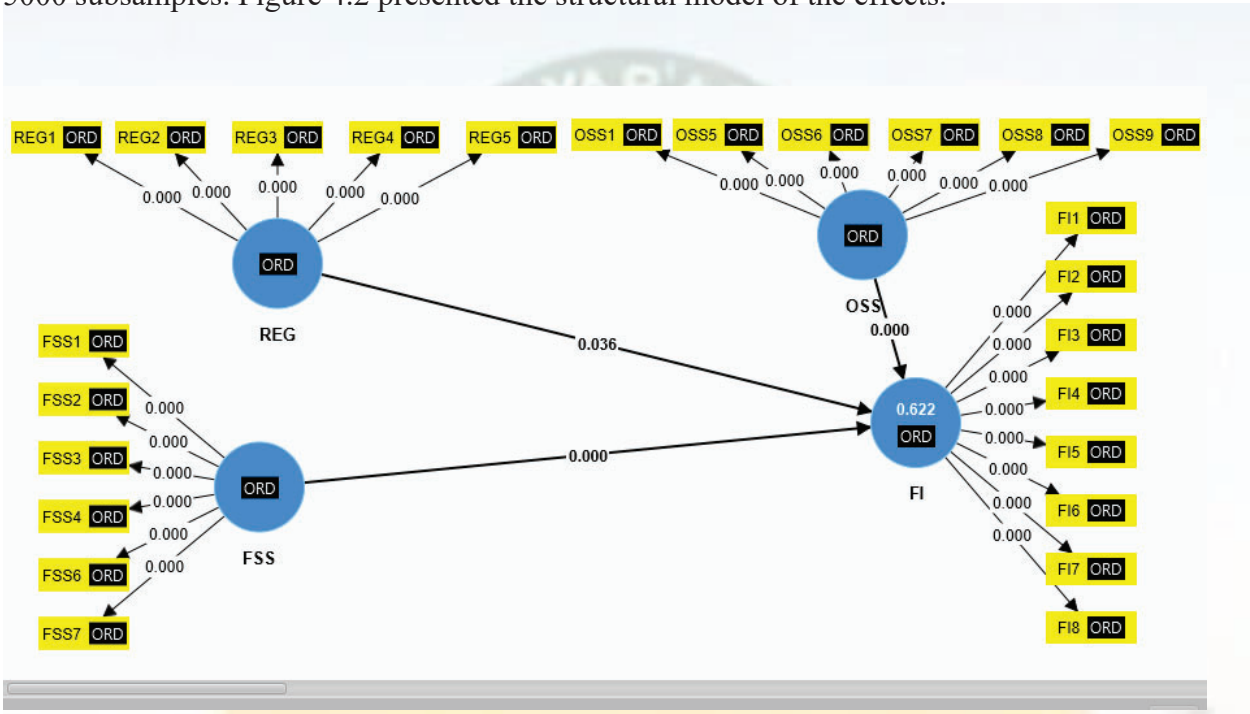

Figure 4.2: *Structural model*

Figure 4.2 presents the structural model of this study which indicates that H1 (p=0.000), H2 (p=0.005) and H3 (p=0.003) are statistically significant. The figure also revealed an R^2 value of 0.622 signifying variance in the dependent variable due to corresponding change in the independent variables.The details of the reports of the model are presented in Table 4.4 and Table 4.5

4.2.1 Path Coefficient

The path coefficient was examined to test the hypotheses of the study. The analysis presents the result of the effect of the microfinance banks on financial inclusion. Table 4.4 presents the results of the path coefficient of the structural model.

Table 4.8: Path coefficient of the structural model

Relationship	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
FSS -> FI	0.355	0.353	0.067	5.323	0.000
OSS -> FI	0.345	0.345	0.054	6.413	0.000
REG -> FI	0.167	0.169	0.080	2.097	0.036

*****p<0.01, **p<0.05, *p<0.1**

From Table 4.4, it can be seen that financial self-sufficiency hassignificant positive effect on financial inclusion of microfinance banks (β=0.535; STD=0.067; t = 5.323; p = 0.000). Hence, hypothesis that states that financial self-sufficiency has no significant effect on financial inclusion of microfinance banks is rejected and the hypothesis that states that financial self-sufficiency has significant effect on financial inclusion of microfinance banks is accepted. This implies that efforts to make financial institutions financially self-sufficient can improve financial inclusion in Nigeria.

Furthermore, operational self-sufficiency has positive and significant effect on financial inclusion of microfinance banks (β = 0.345, STD=0.054, t-value = 6.413, p-value= 0.000). Hence, hypothesis that states that operational self-sufficiency has no significant effect on financial inclusion of microfinance banks is rejected while the hypothesis that states that operational self-sufficiency has significant effect on financial inclusion of microfinance banks is accepted. Impliedly, operational self-sufficiency can enhance financial inclusion of microfinance banks.

Lastly, religiosity accounted for asignificant positive relationship with financial inclusion of microfinance banks (β = 0.169, STD=0.080, t-value = 2.097, p-value= 0.036). This implied that religiosity can improve financial inclusion of microfinance banks up to 16.9% (beta= 0.169). Thus, the study rejected the hypothesis that states that religiosity has no significant effect on financial inclusion of microfinance banks and accepted the hypothesis that states that religiosity has significant effect on financial inclusion of microfinance banks.

4.2.2 Coefficient of Determinant

In assessing the coefficient of determinant (R^2 value), Chin (1998) suggested that R^2 values of 0.67, 0.33, and 0.19 when using PLS-SEM path modeling should be classified as substantial, moderate, and weak, respectively. Table 4.4 presents the result of R^2.

Table 4.5: Coefficient of Determinant (R Squared)

Table 4.5: Coefficient of Determinant (R Squared)

	R-square	R-square adjusted	Assessment criterion by Chin, (1998)
FI	0.622	0.620	Substantial

Table 4.5 and Figure 4.2 displayed the variance explained of the first model (measurement model). Based on the criterion for assessing R^2 (Chin, 1998), all the independent variables explained 62.2% variance in financial inclusion. Thus, suggesting that all the microfinance institutions proxies employed in this study explained a substantial variance in financial inclusion of microfinance banks.

4.2.3 Effect size

To assess the effect size, F^2 values of 0.35, 0.15, and 0.02 recommended by Chin (1998) are considered large, medium, and small, respectively. Table 4.6 presents the result of effect size of the constructs used in this study.

Table 4.6: Effect Size of the Constructs

Relationship	f-square
FSS -> FI	0.098
OSS -> FI	0.132
REG -> FI	0.216

From Table 4.6, financial self-sufficiency has a small effect size of 9.8% on financial inclusion of microfinance banks. Additionally, operational self-sufficiency has small effect size of 13.2% on financial inclusion of microfinance banks. Lastly, religiosity has medium effect size of 21.6% on financial inclusion of microfinance banks. It can be concluded from this analysis that all the exogenous constructs indicated an effect size on the endogenous variable.

4.3 Discussion

This section discussed the results of the test of hypotheses formulated in chapter one of this study. The study examined the effect of microfinance institutions on financial inclusion of microfinance banks. The results are discussed as follows:

4.3.1 Financial Self-Sufficiency and Financial Inclusion

In the same vein, financial self-sufficiency has positive and significant effect on financial inclusion of microfinance banks. This implies that financial self-sufficiency can influence financial inclusion efforts of microfinance banks. This finding is consistent with the findings of previous studies (Kartawinata*et al.,* 2021; Yayehyirad, 2023; Hussain *et al.,* 2020), who also documented significant and positive relationship between financial self-sufficiency and financial inclusion. They opined that financial self-sufficiency (IFS) is necessary for a microfinance institution (MFI) to obtain the large amount of funds required to reach and benefit truly large numbers of the poor and poorest households.

4.3.2 Operational Self-Sufficiency and Financial Inclusion

The result of this study confirmed that operational self-sufficiency has positive and significant effect on financial inclusion of microfinance banks. This implies that Operational self-sufficiency can increase financial inclusion efforts of microfinance banks. This finding is consistent with the findings of previous studies by Chaudhury *et al.,* (2022), Yayehyirad (2023), Hussain *et al.,* (2020) who affirmed that it has a significant effect on the general performance of firms. Operational self-sufficiency stimulates creativity and innovation, fostering a sense of ownership and commitment among members to promote the inclusion of financially excluded individuals in the society.

4.3.3 Religiosity and Financial Inclusion

Religiosity has positive and significant effect on financial inclusion of microfinance banks. For Muslim communities like in Kano State, the availability of interest free financial products and services could determine access to and use of services provided by the microfinance banks. Religiositytherefore can significantly contribute in promoting financial inclusion efforts of microfinance banks. This finding is consistent with the findings of previous studies such as Ilfta (2021), Salisu*et al.,* (2024), Amin *et al.,* (2023), Hafiz and Kitri (2019), Narayana and Shagishna (2021) and Istina*et al.,* (2024) who affirmed that it has a significant effect on financial inclusion.

5. CONCLUSION AND RECOMMENDATIONS

From the findings of this study, operational self-sufficiency, financial self-sufficiency and religiosity proved to be significant drivers of financial inclusion. While the findings are relevant in achieving meaningful financial inclusion, the success of state-led microfinance initiatives depends on building politically insulated, well-governed institutions that bridge the chasm between high-level policy and practical execution through a hybrid model of state support and private-sector discipline.The findings of this study have provided empirical evidence and support for operational self-sufficiency, financial self-sufficiency, and religiosity as determinants of the development of sustainable microfinance banks to foster financial inclusion. Thus, State

Governments wishing to replicate the Kano State Microfinance Banks Initiative should consider the following recommendations as basis for their financial inclusion strategy:

I. Seek the professional advice of development partners and the Central Bank of Nigeria on how to insulate the banks from political interference to ensure that the banks are operated to reach self-sufficient stage preparatory to being grant independent
II. Public- Private-Partnership should be consummated at the inception stage of the initiative with clear government exit strategy which will instill sound financial management practices for the institutions to attain financial self-sufficiency for an enduring financial inclusion efforts
III. The CBN should articulate a policy mandating all banking institutions including microfinance banks to have financial products and services that will address cultural diversity and religious exclusion.

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