



Full length article

# An Investigation into the Regional Disparities in Financial Inclusion among MSME Owners in North Central Nigeria

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## ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) are widely recognized as vital engines of economic growth, employment generation, and poverty alleviation, particularly in developing countries like Nigeria. In the North Central region of Nigeria, MSMEs contribute significantly to local economies and livelihoods, yet many of these enterprises remain financially excluded. However, the financial exclusion of MSMEs owners has been attributed to characteristics of MSMEs owners and unattractiveness of financial service. These discourage MSME owners from seeking financial services and engaged with financial institutions. Additionally, there is dearth of comprehensive studies on this issue, particularly in North Central Nigeria, where the problem is reportedly endemic, highlighting the need for further study. Against this backdrop, it is essential to investigate the degree of difference of financial inclusion of MSMEs owners in the North Central, Nigeria. The specific objectives of the study were to; determine the degree of difference of financial inclusion of MSMEs owners in terms of (size of business, level of education, risk preference, financial literacy and social network, proximity to financial institutions, government financial support and financial service quality) in the North Central, Nigeria. The study employed survey research design method. The population of the study consists of 11,607 MSMEs owners in North central; Nigeria while both stratified and random sampling technique were employed. The sample size of 435 was determined via Krejcie & Morgan (1970) sample size formula. The data was analyzed using ANOVA. The findings of the study revealed that: (i) there is significant difference in the level of financial inclusion among MSME owners in the North Central, Nigeria. The study concludes that financial inclusion of MSMEs owners differs across the state in the North Central, Nigeria. Therefore, the study recommended that government and financial institutions should design region-specific programs that address the unique barriers faced by MSME owners in less financially

included areas. This could include mobile banking initiatives, financial literacy training, and simplified loan application processes.

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## 1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are widely recognized as vital engines of economic growth, employment generation, and poverty alleviation, particularly in developing countries like Nigeria. In the North Central region of Nigeria, MSMEs contribute significantly to local economies and livelihoods, yet many of these MSMEs owners remain financially excluded. Financial inclusion is the ability to access and effectively use affordable financial products and services which is essential for the growth and sustainability of MSMEs. It enables MSMEs owners to access credit, savings, insurance, and payment systems, all of which are critical for scaling operations and managing risks. At the G20 Seoul Summit in 2020, financial inclusion was acknowledged as a critical component of the global development agenda. This agenda emphasized the role of financial inclusion of MSMEs owners in promoting inclusive economic growth, reducing poverty, and enhancing financial stability. Despite this global recognition, financial exclusion remains a persistent issue among MSME owners in Nigeria. Factors contributing to this include the characteristics of MSME owners, such as low levels of education or financial literacy, and the perceived unattractiveness or inaccessibility of formal financial services. These barriers discourage many MSMEs from engaging with financial institutions, thereby limiting their business growth and resilience.

The G20 recognized that digital financial services can accelerate economic participation, lower transaction costs, and expand financial access to rural and low-income populations. Women are disproportionately excluded from formal financial systems. Promoting financial inclusion helps women gain economic independence, start businesses, and improve their families' well-being, leading to broader social and economic benefits. Small and medium-sized enterprises (SMEs) are crucial for economic development and job creation. However, many MSMEs struggle to access financing. Financial inclusion policies help bridge this gap, allowing SMEs to expand, innovate, and contribute to economic dynamism. Therefore, by prioritizing financial inclusion at the 2020 G20 Seoul Summit, Heads of nation recognized its transformative impact on economies and societies. Since then, financial inclusion has remained a central theme in global economic policies, with ongoing initiatives to leverage technology, improve financial literacy, and ensure that financial services are accessible, affordable, and sustainable for all.

In North Central Nigeria, disparities in infrastructure, access to financial institutions, and socio-economic conditions across states further exacerbate the uneven levels of financial inclusion among MSMEs owners. While some areas may benefit from improved banking services and digital financial platforms, others remain underserved, leading to regional imbalances. These disparities can have serious implications for equitable economic development and the overall financial health of the region. Given this context, it becomes essential to investigate the degree of regional disparities in financial inclusion among MSME owners in North Central Nigeria. Such a study can help identify the specific barriers faced by different communities and guide policymakers, financial institutions, and development agencies in designing targeted interventions to close the inclusion gap and promote inclusive economic growth. Drawing from the above established research problems, the study attempts to provide answers to the following research questions: What is the extent of variation in financial inclusion among MSME owners in North Central Nigeria?

## 2. LITERATURE REVIEW

This section focuses on the meaning of the various key variables raised in the research questions in the preceding paragraph, purposely to delineate boundary for their operationalization and measurement in the subsequent sections. They are broadly subdivided into financial inclusion and push-pull factors. These variables were discussed as follows; for instance, Mantri (2016) conceptualized financial inclusion as the process of ensuring access to financial products and services needed by vulnerable groups at an affordable cost in a transparent manner. Sharma and Kukreja (2014) defined financial inclusion as a state of the market in which individuals and businesses can access, use and benefit from a diverse range of financial services. Extant literature has identified three major dimensions of financial inclusion to include access, usage and quality of financial services (Sarma and Pais, 2019). These measures of financial inclusion should be able to monitor the levels of financial inclusion and deepen the understanding of the factors that determine the levels of financial inclusion.

Financial access constitutes the first dimension of financial inclusion, refers to the ability of individuals or businesses to obtain financial services such as credit, deposits, payments, and insurance. It is important to differentiate between access and actual use, as some people voluntarily choose not to use financial services, while others are involuntarily excluded due to factors like low income, lack of education, strict collateral demands, or high service costs (Sarma and Pais, 2019). Financial access also involves the physical presence of financial services and the range of available products. Rural areas often face limited access compared to urban centers. To better understand and address financial access, key indicators such as the number of bank accounts per 1,000 adults, bank branch density, and the percentage of businesses with credit access are commonly used (Abdulmumeen, 2017).

The second dimension of financial inclusion is financial usage. This refers to the consistent and meaningful use of financial services (Sarma and Pais, 2019). Similarly, Camara and Tuesta, (2018) reported that despite access, many people still underutilize banking services due to barriers like limited outlets and strict conditions. Sarma (2019) also argues that having a bank account alone does not guarantee inclusion. Naftaly and John (2021) reported that the key indicators of financial usage include loans from various financial institutions and the frequency of e-banking transactions such as payments, transfers, and remittances.

The third dimension of financial inclusion, financial quality, assesses how well financial products meet consumers' daily needs (Sarma and Pais, 2019). It includes factors like performance, reliability, and perceived quality. Previous researchers such as Hannig and Jansen (2018), Camara, Peña, and Tuesta (2017), Demirgüç-Kunt and Klapper (2019) have used these criteria to evaluate financial inclusion from the consumer's perspective. By incorporating access, usage, and quality, the study adopts a comprehensive approach to understanding financial inclusion, using the framework developed by Sarma and Pais (2019).

Several studies have examined the determinants of financial inclusion, particularly among MSMEs owners. For instance, Okafor, Ejelonua, and Onyekwere (2022) used using multiple linear regression analysis to investigate the effect of financial inclusion on MSMEs development in Nigeria. The finding found a positive link between financial inclusion and MSME development in Nigeria. However, the study lacked clarity on how critical barriers like distance, infrastructure, and access points were measured which raise concerns about the robustness of the findings. Similarly, Griorian and Manole (2016) used structural equation modeling and multivariate analysis to

investigate the determinants of financial inclusion among the selected European countries. The findings show that financial infrastructure such as (bank accounts, ATMs, bank branches, and POS machines) positively influences financial inclusion in England, Portugal, and France. However, their study focused solely on supply-side factors. Demirguc-Kunt's widely cited works (2016 and 2019) used diverse analytical tools and global survey data to assess financial inclusion, identifying factors such as account ownership, savings, borrowing interest rates, and smartphone use as key determinants of financial inclusion. Nonetheless, the main limitation of this study is its cross-sectional nature, which limits longitudinal comparisons.

Pineyro (2016) used principal component analysis to review financial inclusion index: Proposed multi-dimensional measure for United States. The study revealed that more United States municipalities possess a high level of financial inclusion. Despite the fact that, the study provides valuable insights into the determinants of financial inclusion in United States, its reliance on PCA, give rise to potential data biases, and lack of causal interpretation also limit its ability to fully inform policy decisions. Similarly, Demirguc-Kunt and Detragiache (2016) used logit model to investigate the determinants of financial exclusion in developing and developed countries. The study reported that low GDP, high interest rate and inflation were the major determinants of financial exclusion in both developed and developing countries. However, the use of logit model treats financial exclusion as a binary outcome (included/excluded), potentially oversimplifying the complexities of financial access. Financial inclusion exists on a spectrum, with varying degrees of access and usage. Moreover, Griorian and Manole (2016) employed multi-variance analysis to assess the determinants of financial inclusion in transition: An application of data evolution analysis. The study revealed that Number of commercial bank branches, availability of ATM machines, government policy and market conditions are the major determinants of financial inclusion. However, the findings focused on the number of commercial bank branches and availability of ATMs as key determinants of financial inclusion. While these indicators were important in the past, they may not be as relevant today, especially in transition economies where digital financial services (mobile banking, mobile money and digital wallets) are rapidly expanding.

Jishajoseph and Vargese (2016) examined the role of financial inclusion in the development of the Canadian economy. The study used Simple percentages and multiple regressions to analyze the primary data. The study reported that the use of credit cards has a significant positive impact on financial inclusion. Nevertheless, using simple percentages to analyze primary data can oversimplify complex relationships. Percentages are useful for summarizing data but do not provide a nuanced understanding of the underlying factors driving financial inclusion. Similarly, Collard (2017) used panel regression analysis to investigate the level of financial inclusion in the United Kingdom during 2016-2017 under the perspective of digitalization. The study reported that United Kingdom is making progress toward becoming a cashless economy, and the circumstance of being financially excluded is becoming more serious with the introduction of mobile banking. Nonetheless, the introduction of mobile banking and other digital financial services requires a certain level of digital literacy and financial literacy. The study fails to account for the financial literacy gap in certain populations, especially among the elderly or low-income groups, which could be a contributing factor to exclusion.

Paramasivan and Ganeshkumar (2017) used multiple regression to assess the effect of personal characteristics such as education, financial literacy, income levels, number of family members, gender, age, level of expenditure and personal experience on financial inclusion. The findings revealed that there is positive and significant relationship between personal characteristics and financial inclusion in Ottawa. The study uses cross-sectional

data, which provides a snapshot of financial inclusion at a specific point in time. However, financial inclusion is a dynamic process that evolves over time. Weise (2018) investigates the effect of geographical factors such as area of residence, community size, ownership of land and ownership of house on financial inclusion in Brussels. The study employs primary data using questionnaires and analyzes it using ordinary least square regression. The findings reported that residence and community size exert a significant positive influence on financial inclusion while ownership of lands and ownership of houses have negative and insignificant relationship with financial inclusion in Brussels. However, as the study focuses on Brussels, the findings may not be easily generalized to other regions or cities, particularly in countries with different financial systems or geographical conditions. The geographical factors that affect financial inclusion in Brussels may not be the same as less developed areas, or in other countries.

Fareeha and Abdul Jalil (2019) investigate the determinants of financial inclusion among the Pakistan Banking Sector using Supply-Side Analysis. Data was analyzed using econometric technique of autoregressive distributive lag (ARDL) and time series. The empirical findings reported that geographic and demographic outreach of the banks has significant and positive impact on financial inclusion in Pakistan. However, the study focuses solely on supply-side factors, such as bank outreach, branch availability, and banking infrastructure, to assess financial inclusion, financial inclusion is not only influenced by banking outreach, but also demand-side barriers, such as financial literacy, levels of income and cultural and religious beliefs.

Sapana and Thakur (2019) investigate the determinants of financial inclusion in Gwalior city. The study employed primary data and analyzed using ordinary least square regression. The findings reported that mobile banking plays a significant positive effect on financial inclusion in Gwalior city. The study focuses only on Gwalior city, making its findings highly localized and not generalizable. Kostov (2019) utilized logistic regression to analyze access to financial services in South Africa. The study used 2017 FinScope dataset. The findings reported that financial literacy was a key determinant of financial inclusion in South Africa. Similarly, Zins and Weill (2019) employed probit regression on the World Bank's Global Findex database, covering 37 African countries, to explore the link between socio-economic characteristics and financial inclusion. The study revealed that a being male, wealthy, older, and more educated increased the likelihood of financial inclusion in these African countries. The theoretical framework of this study is based on the Public Good Theory of Financial Inclusion, as adapted by Demirgüç-Kunt and Klapper (2008), Sarma and Pais (2011), and Hannig and Jansen (2019). This theory posits that formal financial services should be treated as a public good non-excludable and non-rivalrous meaning that access should be unrestricted and universally available. Under this framework, all individuals and businesses should be able to open formal bank accounts, receive free debit cards, and perform transactions through ATMs without incurring fees. Financial institutions bear these service costs as a sunk cost of doing business, while governments may provide subsidies to ease the financial burden. However, the theory promotes the idea that all members of society can and should be integrated into the formal financial system, but it raises questions about long-term sustainability and structural barriers such as government subsidies, treating financial services as low-cost or free may lead to unsustainable delivery models, especially if the pricing is undercut and reliant on ongoing public funding.

### **3. METHODOLOGY**

The study adopted a one-time cross-sectional research design, which involves collecting data from multiple units at a single point in time. This design was chosen for its suitability in using standardized, quantitative data

collection methods and for being cost-effective, time-efficient, and useful in generating and refining hypotheses (Samuel, 2017). The study focused on registered MSME owners affiliated with the Nigerian Association of Chambers of Commerce, Industry, Mines, and Agriculture (NACCIMA) across six North Central Nigerian states: Kwara, Niger, Kogi, Nasarawa, Benue, and Plateau. As of December 2023, the total membership across these state chambers amounted to 11,607. Only registered MSME owners were included, as business registration is essential for accessing formal credit, and NACCIMA membership requires compliance with CAC and SMEDAN standards. The selected North Central states in Nigeria were reported by NACCIMA (2023) to face ongoing challenges in accessing formal financial services. Given the large and diverse population of MSME owners, the study used a sample of 375 respondents, determined using Krejcie and Morgan's (1970) sample size table. A stratified probability sampling method was employed, grouping MSME owners by state (Kwara, Niger, Nasarawa, Benue, Plateau, and Kogi), with samples drawn proportionally from each group to ensure representative coverage.

Table 1. Sampling selection based on proportion of each stratum's share of the population

State	Population size from each State	Proportion of the sample size	Sample
<b>Kwara State</b>	1,558	$(1,558 \times 375) \div 11,607$	50
<b>Niger State</b>	2,333	$(2,333 \times 375) \div 11,607$	75
<b>Nasarawa State</b>	2,864	$(2,864 \times 375) \div 11,607$	93
<b>Benue State</b>	1,992	$(1,992 \times 375) \div 11,607$	64
<b>Kogi State</b>	1,129	$(1,129 \times 375) \div 11,607$	37
<b>Plateau State</b>	1,731	$(1,731 \times 375) \div 11,607$	56
<b>Total</b>	<b>11,607</b>		<b>375</b>

Source: Author's computation, 2026.

Frank and Israel (2013) reported that there is a need to give an allowance of about 20% non-response rate from the sample size, when the sample size is less than 400. Percentage increase in sample size is computed as  $(375 \times 20\% = 75)$ . Therefore, the total sample selection for the study is  $375 + 75 = 450$ .

The study employed two sets of structured questionnaires to collect data, following Jenkins and Dillman's (2020) guidelines. The instruments were adapted from previous studies, including Rachel et al. (2017), the AFI Survey (2020), and the OECD Financial Literacy Survey (2017). The first questionnaire assessed levels of financial inclusion among MSME owners in North Central Nigeria. The second, divided into Sections A and B, gathered demographic data and information on financial access and usage. Variables measured included push factors and pull factors. A five-point Likert scale was used to ensure clearer, more thoughtful responses and reduce bias, in line with Nielsen (2016).

The study used a multi-item approach with at least four items per construct to ensure comprehensive and reliable measurement, following Babin and Anderson (2015). Instructions were provided for each section of the questionnaire, and a pilot survey was conducted to test the instrument's validity and internal consistency. The research examined independent variables including push-pull factors while financial inclusion, defined by access and usage dimensions, served as the dependent variable. These constructs were adapted from validated scales used in prior studies such as (Demirgüç-Kunt et al., 2020; OECD, 2017) and aligned with relevant theories such as the Push-Pull Lee's Theory.

The study employed both descriptive and inferential statistics for data analysis. Descriptive methods, such as frequency tables, percentages, and measures of central tendency, were used to identify patterns and assess the level of financial inclusion. For hypothesis testing, Partial Least Squares Structural Equation Modeling (PLS-SEM) was conducted using SmartPLS 4.3, as it is suitable for analyzing complex models involving both latent and observed variables.

#### 4. RESULTS AND DISCUSSION OF FINDINGS

This section discusses the outcomes of statistical data analysis and the finding of this research. There are four sections in this chapter. The first section addresses respondents' background. The second section explains the results of the test performed by using Harman's single factor test. It is then followed by the measurement model which described the validity and reliability for the reflective model to assessed outer weights, VIF and t-values for the model. Lastly, this chapter explains the structural model used to validate the hypothesized model of the study.

Table 2: Descriptive Statistics of the Respondents Profile

<b>Demographics</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Male	197	45.3
Female	238	54.7
<b>Age Group</b>		
Less than 25 years	78	18.2
26-35years	160	36.4
36-45years	160	36.2
46years and above	37	9.1
<b>Academic</b>		
First School Leaving Certificate	38	9.1
WAEC /GCE/NECO/SSCE	119	27.1
NCE/OND/A'LEVELS	202	45.6
B Sc. Or it equivalent	38	9.1
Others	38	9.1
<b>Discipline</b>		
Management Sciences	161	36.4
Social Sciences	128	29.1
Pure and Applied Sciences	100	22.9
Art and Humanities	29	7.1
Engineering	17	4.5
<b>Professional Qualifications</b>		
ICAN	120	27.4
ANAN	161	36.4
CIMA	125	29.1
CFA	29	7.1
<b>Year of Operation</b>		

<b>1-2 years</b>	<b>199</b>	<b>45.4</b>
3-5years	195	44.4
Above 5years	41	10.2
<b>Staff</b>		
Less than 10 staff	159	36.4
Between 10 – 49 staff	240	54.4
Between 50 – 199 staff	36	9.1
<b>Assets</b>		
Less than #10million	36	9.1
#10million but less than #100million	281	63.6
#100million but less than #1billion	118	27.3

Source: Author’s Computation (2025).

The study sample shows a slight female majority (54.7%), highlighting women's key role in MSME ownership in North Central Nigeria. Most respondents are between ages 26–45 (over 72%), indicating a youthful, potentially tech-savvy demographic. Educationally, the majority have secondary or post-secondary qualifications (NCE/OND/ A ‘Levels – 45.6%, WAEC/SSCE – 27.1%), with fewer holding university degrees. Many studied Management (36.4%) or Social Sciences (29.1%), which may aid financial understanding. A notable number hold professional certifications like ANAN (36.4%), ICAN (27.4%), and CIMA (29.1%), reflecting financial literacy within the group. Most MSMEs are relatively young, with 89.8% operating for five years or less. The majority are small businesses (10–49 employees, 54.4%), with limited representation from medium enterprises. Asset-wise, 63.6% of businesses fall within the ₦10 million to ₦100 million ranges, indicating moderate financial capacity but possible challenges in meeting loan collateral requirements. These characteristics suggest a need for tailored financial inclusion strategies, especially for early-stage and small-scale businesses.

Table 3. Presents an ANOVA conducted to assess financial inclusion among MSME owners across six North Central Nigerian states such as Kwara, Niger, Nasarawa, Benue, Kogi, and Plateau by comparing variables such as financial literacy, social networks, risk preference, business size, education level, proximity to financial institutions, service quality, and government support, with detailed statistical measures reported for each. The table is presented as follows:

Table 3. An Analysis of Variance (ANOVA) on the extent of differences in financial inclusion among MSME owners in North Central Nigeria.

<b>Variables</b>	<b>Study Area</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error</b>	<b>Sum of Square</b>	<b>Mean Square</b>	<b>F-Statistics</b>	<b>Sig.</b>
<b>Financial Inclusion</b>	Kwara	60	3.0377	.72902	.05154	867.773	787.903	2043.563	.000
	Niger	90	2.3603	.44213	.06054	707.903	847.173		
	Nasarawa	97	4.1912	.73403	.04054	807.273	617.903		
	Benue	77	3.7806	.61903	.06084	593.173	507.643		
	Kogi	44	3.9615	.51906	.05084	897.973	897.973		
	Plateau	67	3.5104	.43923	.05184	696.273	467.473		

	<b>Total</b>	<b>435</b>	<b>2.9801</b>	<b>.70906</b>	<b>.03024</b>	<b>407.373</b>			
<b>Level of Education</b>	Kwara	60	6.3251	.53613	.06619	447.323	447.323	401.109	.000
	Niger	90	5.1620	.23633	.04319	427.323	897.323		
	Nasarawa	97	4.3751	.43653	.02119	307.300	413.302		
	Benue	77	5.3100	.83612	.00319	247.003	107.823		
	Kogi	44	4.3770	.73693	.01049	141.113	227.223		
	Plateau	67	3.3110	.13643	.06991	164.123	641.811		
	<b>Total</b>	<b>435</b>	<b>2.3220</b>	<b>.63605</b>	<b>.05019</b>	<b>307.303</b>			
<b>Financial Literacy</b>	Kwara	60	3.4811	1.27091	.05709	316.840	719.000	917.147	.000
	Niger	90	4.2300	1.17090	.01709	316.810	529.010		
	Nasarawa	97	5.1301	0.07290	.02769	306.240	409.000		
	Benue	77	4.3500	1.27091	.04810	212.940	529.110		
	Kogi	44	4.6302	0.37010	.03711	116.880	709.100		
	Plateau	67	4.5310	1.02040	.01712	216.840	629.000		
	<b>Total</b>	<b>435</b>	<b>2.3306</b>	<b>1.03010</b>	<b>.04219</b>	<b>226.410</b>			
<b>Social Network</b>	Kwara	60	4.1502	.82394	710.454	608.578	290.060	710.454	.000
	Niger	90	2.4510	.12304	.03508	628.578	310.060		
	Nasarawa	97	4.2301	.32114	.01518	308.128	290.143		
	Benue	77	5.9220	.42323	.03508	108.478	182.013		
	Kogi	44	3.9110	.22394	.02518	310.020	591.043		
	Plateau	67	4.1350	.32014	.04538	210.500	360.011		
	<b>Total</b>	<b>435</b>	<b>1.9130</b>	<b>.82494</b>	<b>.04878</b>	<b>118.125</b>			
<b>Risk Preference</b>	Kwara	60	3.5152	.68639	04854	342.250	342.250	298.123	.000
	Niger	90	4.5300	.60631	.02804	304.000	142.220		
	Nasarawa	97	3.5110	.58600	.04114	311.120	442.200		
	Benue	77	5.1150	.41239	.04934	342.290	312.330		
	Kogi	44	3.5220	.70139	.04854	242.210	542.201		
	Plateau	67	5.5370	.88109	.04854	142.660	489.200		
	<b>Total</b>	<b>435</b>	<b>5.5870</b>	<b>.65609</b>	<b>.04854</b>	<b>502.332</b>	<b>202.350</b>		
<b>Proximity to Financial institutions</b>	Kwara	60	2.9820	.64745	.04578	390.063	390.063	610.450	.000
	Niger	90	3.9320	.63045	.01348	190.063	310.043		
	Nasarawa	97	4.1100	.14125	.04071	691.073	491.063		
	Benue	77	1.6802	.44745	.02570	290.023	230.549		
	Kogi	44	2.9540	.74715	.07518	490.013	291.049		
	Plateau	67	1.0802	.24710	.06508	220.063	128.100		
	<b>Total</b>	<b>435</b>	<b>2.9800</b>	<b>.65915</b>	<b>.04578</b>	<b>390.063</b>			

<b>Size of Business</b>	Kwara	60	3.6450	1.45089	.09552	456.910	372.250	298.123	.000
	Niger	90	3.1250	1.25009	.02502	496.410	340.210		
	Nasarawa	97	3.3450	1.34081	.04511	366.210	212.150		
	Benue	77	3.9050	1.35010	.09002	256.810	311.290		
	Kogi	44	3.7150	1.85019	.06542	606.220	372.200		
	Plateau	67	3.5085	1.35049	.07559	351.310	302.350		
	<b>Total</b>	<b>435</b>	<b>2.6850</b>	<b>1.35459</b>	<b>.01452</b>	<b>456.910</b>			
<b>Financial Service Quality</b>	Kwara	60	5.6102	1.35089	.07076	128.311	83.214	165.278	.000
	Niger	90	4.4102	1.35012	.04071	28.011	73.384		
	Nasarawa	97	3.6122	1.55009	.07670	45.330	83.684		
	Benue	77	2.6108	1.35014	.07076	57.204	51.004		
	Kogi	44	3.6134	1.25089	.05016	49.184	33.894		
	Plateau	67	2.6156	1.85032	.03012	43.783	89.004		
	<b>Total</b>	<b>435</b>	<b>3.6127</b>	<b>1.35779</b>	<b>.07090</b>	<b>33.284</b>	<b>43.294</b>		
<b>Government Financial Support</b>	Kwara	60	3.6050	.82607	.05841	322.203	388.180	325.408	.000
	Niger	90	3.8100	.81002	.05940	422.273	458.100		
	Nasarawa	97	5.3052	.67807	.02343	202.903	218.164		
	Benue	77	4.8950	.22608	.09848	129.209	318.190		
	Kogi	44	3.6780	.82609	.05541	122.456	358.231		
	Plateau	67	3.9850	.72604	.05149	432.212	458.180		
	<b>Total</b>	<b>435</b>	<b>3.1250</b>	<b>.33607</b>	<b>.05841</b>	<b>272.203</b>			

Source: Author`s Computation, (2026).

The cross-tabulation results indicated significant differences of financial inclusion indicators among MSME owners across the North Central states of Nigeria ( $F=2043.563$ ;  $Sig. =0.000$ ). Notably, Nasarawa State showed higher levels of financial inclusion (Mean=4.1912) compared to other states (Mean=3.9615). Although the study's hypothesis  $H_1$  suggested that there is no significant difference in financial inclusion of MSME owners in the region, the findings supported the alternative hypothesis, confirming the existence of significant differences. Similarly, significant variations were observed in educational levels among states in the North Central region ( $F=401.109$ ;  $Sig. =0.000$ ), with Kwara State exhibiting high level of education (Mean=6.3251) compared to other states (Mean=5.3100). This also reinforced the alternative hypothesis, indicating significant differences in educational levels among MSME owners. Also, there are notable differences in the size of business among the MSMEs owners in the North Central states of Nigeria ( $F=298.123$ ;  $Sig. =0.000$ ). The size of business is larger in size in Benue State than the other State in the North Central, Nigeria as reported by (Mean=3.9050), followed by Kogi State with (Mean=3.7150). This indicates significant differences in the size of business among MSME owners in the North Central, Nigeria.

Similarly, there were significant differences in financial literacy among the MSMEs owners in the selected states ( $F=917.147$ ;  $Sig. =0.000$ ), with Nasarawa State reporting a higher level of financial literacy (Mean=5.1301) than the other states (Mean=4.6302). This further supported the alternative hypothesis, confirming significant differences in financial literacy among MSME owners in the North Central region of Nigeria. With reference to social network, there are significant differences ( $F=710.454$ ;  $Sig. =.000$ ) in social network connection among the MSMEs owners in the North Central, Nigeria. MSMEs owners were socially connected in Benue State (Mean=5.9220) compared to other State in the North Central, Nigeria (Mean=4.2301). The study hypothesized that  $H_1$ : There is no significance differences in social network among the MSMEs owners in the North Central, Nigeria. Based on the results, the alternative hypothesis was supported because the findings reported that there are significance differences in social network connection among MSMEs owners in the North Central, Nigeria. With regards to risk preference, there are significant differences ( $F=298.123$ ;  $Sig. =.000$ ) in risk preference among the MSMEs owners in the North Central, Nigeria, this is because the findings revealed that MSMEs owners in Plateau have appetite to take more risk (Mean=5.5370) compared to other State in the North Central, Nigeria (Mean=4.5300). The study hypothesized that  $H_1$ : There are no significant differences in the risk preference among the MSMEs owners in the North Central, Nigeria. Based on these results, the alternative hypothesis was supported, while rejecting the null hypothesis.

Moreover, with reference to the proximity to financial institutions there are significant differences ( $F=610.450$ ;  $Sig. =.000$ ) in proximity to financial institutions across the State in the North Central, Nigeria. MSMEs owners have more access to financial services in Nasarawa State (Mean=4.1100) compared to other State in the North Central, Nigeria (Mean=4.2301). The study hypothesized that  $H_1$ : There are no significant differences in proximity to financial institutions among the MSMEs owners in the North Central, Nigeria. Based on these results, alternative hypothesis was supported, while rejecting the null hypothesis. Moreover, regarding the financial services quality, significant differences were found ( $F=165.278$ ;  $Sig. =0.000$ ) across the states, with MSME owners in Kwara State enjoying higher service quality (Mean=5.6102) compared to those in other North Central states (Mean=4.4102). The study's hypothesis  $H_1$  proposed that there would be no significant differences in financial service quality among MSME owners in the North Central region, but the findings supported the alternative hypothesis, confirming that there are significant variations in the quality of financial services provided to MSME owners by financial institutions in the area.

In addition, significant differences were identified in government financial support among the North Central State in Nigeria, with MSME owners in Nasarawa State receiving more assistance (Mean=5.3052) compared to their counterparts in other North Central states (Mean=4.8950), as indicated by the results ( $F=325.408$ ;  $Sig.=0.000$ ). While the study's hypothesis  $H_1$  posited that there would be no significant differences in government financial support for MSME owners in the North Central region, the findings favored the alternative hypothesis, confirming notable differences in support across the states. In view of the reported findings, it can be concluded that there are significant disparities in financial inclusion of MSME owners in the study areas. This is supported by the statistical significance ( $p$ -values) in financial inclusion factors across the states in the North Central, Nigeria.

Table 4. Presents the aggregate analysis of variance (ANOVA) results for a regression model designed to predict the degree of difference in financial inclusion among MSMEs owners in the North Central, Nigeria. The analysis

aims to evaluate whether a set of independent variables (predictors) significantly explain the degree of variance in Financial inclusion among MSMEs owners in the study area.

**Table 4.** ANOVA<sup>a</sup>

Model	Sum of Squares	Df	Mean Square	F-value	Sig.
Regression	193.269	15	12.885	48.320	0.00 <sup>b</sup>
Residual	111.728	419	.267		
Total	<b>304.998</b>	<b>435</b>			

Source: Author`s Computation, 2025

- a. Dependent Various: FI
- b. Predictors: (Constant), SN<sub>1</sub>, SN<sub>2</sub>, SN<sub>3</sub>, SN<sub>4</sub>, LE<sub>1</sub>, LE<sub>2</sub>, LE<sub>3</sub>, LE<sub>4</sub>, FL<sub>1</sub>, FL<sub>2</sub>, FL<sub>3</sub>, FL<sub>4</sub>, RP<sub>1</sub>, RP<sub>2</sub>, RP<sub>3</sub>, RP<sub>4</sub>, PF<sub>1</sub>, PF<sub>2</sub>, PF<sub>3</sub>, PF<sub>4</sub>, GF<sub>1</sub>, GF<sub>2</sub>, GF<sub>3</sub>, GF<sub>4</sub>, FS<sub>1</sub>, FS<sub>2</sub>, FS<sub>3</sub>, FS<sub>4</sub>.

Table 4 reported a measurable difference in financial inclusion among MSME owners, and these differences were significantly determined by push-pull factors. F-value (48.320) and Sig. (p < 0.001) reported strong evidence of a statistically significant difference in the degree of financial inclusion among MSMEs owners in the North Central, Nigeria.

**Discussion of Findings**

This section discusses the main findings in relation to the study’s research objectives. It analyzes the tested hypotheses on the determinants of financial inclusion among MSME owners in North Central Nigeria, using insights from the predicted model and study results. The findings are also compared with existing literature and theoretical perspectives in the field of study. The discussion is organized according to the sequence of the research questions, as follows.

The study hypotheses were tested in the preceding sections. This subsection focuses on evaluating the findings in relation to each tested hypothesis. To achieve this, the discussion is structured around each research question, with an emphasis on the research variables. The fourth research question was used to investigate the fourth research objective, which assesses the degree of variation in financial inclusion among MSME owners in North Central Nigeria. The results in Table 4.3 show significant disparities in the level of financial inclusion among MSME owners in the region. In this study, comparing geographical areas was essential, as it included six distinct states representing North Central Nigeria. These states differ in various factors, including education levels, financial literacy, risk preference, business size, social networks, government financial support, proximity to financial institutions, and financial service quality. These variations determine the level of financial inclusion among MSME owners in the study areas.

The Africa Alliance for Financial Inclusion Survey (2017), which examined demographic and socio-economic barriers to financial inclusion, highlighted disparities in banking distribution and socio-economic factors across states within the North Central region. The survey found notable differences between states due to their political, social, and economic distinctions, aligning with the findings of this study. Significant differences (Sig. = .000) in financial inclusion were observed in the study areas. These results reject the null hypothesis and support the alternative hypothesis.

The study's findings also align with those of Novi, Bernhard, Joubert, and Maryam (2018) on regional disparities in banking services in Indonesia, where bank service coverage in Central Java was found to be 35% compared to 65% in Central Kalimantan. These findings reflect the distribution of banking services in many developing countries. Similarly, regarding regional differences in financial exclusion, studies by Grigorian and Manole (2016), Demirgüç-Kunt (2016), and Paramasivan and Ganeshkumar (2017) identified higher banking exclusion in areas lacking adequate banking services. Likewise, Weise and Samuel (2018), Akudugu (2023), and Joshua (2017) found that government financial support distribution is unequal due to socio-economic and geographic differences, suggesting that some MSME owners in certain areas have greater access to formal financial services than others. Regarding individual characteristics, Saurabh, Snehal, Radheshyam, and Pawan (2023) observed that personal attributes, such as financial literacy and risk tolerance, vary according to the environment and exposure of MSMEs. Similarly, Shem, Ouma, Teresa, and Odongo (2017) found that MSME owners' choices regarding financial institutions, products, and services are influenced by factors such as education level, business size, cultural values, and customs, which vary significantly across states in North Central Nigeria. These findings illustrate the diverse social dimensions that shape financial behaviors and, consequently, how MSME owners in different states perceive financial services.

While there is little to no existing empirical evidence on the degree of variation in financial inclusion within the literature, the findings highlight the need for a broader and more precise understanding of the complex nature of the study areas and the MSME owners residing in them. Furthermore, MSME owners across the states may share similar characteristics; their ability to effectively apply these characteristics to access and utilize financial services varies significantly when assessed independently. The findings reinforce the importance of participation in the financial system, regardless of the differences in MSMEs' financial inclusion. The results emphasize the reality of an uneven distribution of formal banking services, particularly in terms of access points and banking agents across the states, which also affects the ability of MSME owners to leverage their capabilities. Therefore, for more equitable progress, especially in deprived regions such as North Central Nigeria, it is essential to address banking needs by enhancing distribution through pull-factor strategies and mitigating push factors that inhibit financial inclusion. Thus, policymakers and financial institutions should focus on delivering specifically designed products and services that are easy to understand and culturally appropriate for those living in deprived areas, despite the challenges providers may face in reaching these regions. This finding is also in line with the prediction of the Everett Lee's Push-Pull Theory. The theory explains that push factors (financial literacy, size of business, risk preference, social network and level of education) and pull factors (financial service quality, proximity to financial institutions and government financial support) were the factors that account for differences in the level of financial inclusion in the study areas.

## **5. CONCLUSION AND RECOMMENDATIONS**

This study investigated the regional disparities in financial inclusion among MSMEs owners in North Central Nigeria. In view of the findings reported, the following major conclusions drawn from the study were in line with the research objectives stated in the preceding paragraph.

The results reported that there exists a high degree of differences of financial inclusion of MSMEs owners in the study areas resulting from disparities in financial literacy, size of business, risk preference, level of education, social network, proximity to financial institutions, financial service quality and government financial support.

Given the conclusion reach on the regional disparities in financial inclusion among MSMEs owners in North Central Nigeria. Governments should introduce policies that specifically support MSMEs owners in accessing financial resources, such as government-backed loans, grants, tax relief, or subsidies. Additionally, setting up an ecosystem where MSMEs owners can easily access both financial and non-financial support. By addressing these areas, financial inclusion of MSME owners may be significantly improved, helping them to overcome the disparities they face in accessing financial resources. This may encourage more equitable regional distribution of banking services among MSME owners in the study area. Essentially, this study is limited to Nigeria, however, other developing countries can adopt, advanced the study and its recommendations to suit their economy.

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