



Adamu Idi
Department of Economics,
Gombe State University
Gombe State-Nigeria
adamuidi85@gsu.edu.ng

FINANCIAL INCLUSION AND HOUSEHOLD FINANCIAL HEALTH IN NIGERIA: THE ROLE OF SOCIO-DEMOGRAPHIC FACTORS

ABSTRACT

This study investigates the socio-demographic determinants of financial inclusion and their impact on household financial health in Nigeria. Using data from the Enhanced Financial Inclusion and Innovation Survey (2023), logit regression models were employed to estimate the likelihood of households achieving financial health. The results reveal that financial inclusion has a negative and significant effect on household financial health, suggesting that access to financial services alone may expose households to debt burdens and financial stress when not accompanied by adequate literacy and support structures. Age exhibits a nonlinear effect, with younger and middle-aged households facing greater challenges, while older households regain stability through accumulated wealth and financial experience. Ethnic differences are evident: Hausa households are more likely to experience improved financial health compared to Igbo households, while Yoruba households show weak positive effects. Income and education emerge as the strongest positive drivers of financial health, whereas urban households are less likely to achieve financial stability compared to rural households, reflecting the pressures of higher living costs and debt exposure. The study contributes to debates on inclusive finance and development by highlighting the complex and sometimes counterintuitive relationship between financial inclusion and household well-being. Policy recommendations emphasize the need for inclusive financial strategies that integrate literacy programs, affordable financial products, and debt management support, alongside interventions that address age, ethnic, and regional disparities to strengthen household resilience and advance progress toward the Sustainable Development Goals (SDGs).

Keywords: *Financial inclusion; Household financial health; Nigeria; Logit regression; Socio-demographic factors*

JEL Codes: *G21, I32, O55, D14*

Introduction

Access to financial services has increasingly been recognized as a critical driver of socioeconomic stability, human dignity, and inclusive development. In developing economies, where poverty, inequality, unemployment, and sluggish growth remain persistent challenges, financial inclusion is viewed as a strategic pathway toward achieving the

***Corresponding Author:**
Adamu Idi
Department of Economics,
Gombe State University
Gombe State-Nigeria
adamuidi85@gsu.edu.ng

United Nations Sustainable Development Goals (SDGs) by 2030 (World Bank, 2023). Despite global progress in expanding banking penetration and mobile money platforms, many households continue to struggle to meet their basic financial needs, underscoring the gap between access and effective utilization. Household financial health refers to the overall state of financial well-being, encompassing stability, resilience, and preparedness to meet both present and future needs. It is not merely a function of income but reflects how households manage expenses, savings, debt, and investments (Koomson et al., 2020). Financially healthy households maintain emergency funds, manage debt responsibly, and plan for long-term goals such as education or retirement (Ghaffar et al., 2024; Addury, 2019; Jin et al., 2024; Gupta & Sidei, 2023). They also demonstrate the capacity to withstand unexpected shocks—such as medical emergencies or job loss—without falling into crisis (Li, 2025; Ibrahim & Aliero, 2020). In this sense, financial health enables households to cover daily living costs, prepare for emergencies, and pursue opportunities with confidence, thereby reducing stress and enhancing long-term security (Du et al., 2025; Ajefu et al., 2020; Wang et al., 2025).

Financial inclusion, defined as the availability and accessibility of affordable financial services such as savings, credit, insurance, and payment systems has emerged as a cornerstone of household financial well-being (World Bank, 2022; Abdu et al., 2015). It reduces financial vulnerability, enhances resilience, and promotes inclusive growth (Ajefu et al., 2020; Wang et al., 2025). In developing economies characterized by income inequality and high rates of exclusion, financial inclusion is increasingly seen as a tool for poverty reduction and household empowerment (CBN, 2013; Sakyi-Nyarko et al., 2022; Jiang & Liu, 2022). Empirical evidence suggests that access to financial services improves household financial health by enabling savings, microcredit, and insurance uptake. Households with access to such services are more likely to invest in education, healthcare, and small businesses, thereby reducing reliance on informal and often exploitative financial systems (Bakari et al., 2018; Sakyi-Nyarko et al., 2022; Jiang & Liu, 2022). Yet, despite progress in Nigeria, many households, particularly in rural areas remain excluded due to socioeconomic constraints such as low income, limited education, and geographic disparities (Abubakar, 2017; Ibrahim & Aliero, 2020). This exclusion perpetuates cycles of poverty and financial instability, limiting households' ability to save, access credit, or insure against risks.

Several studies have examined the relationship between financial inclusion and household financial health, though findings vary across economies, regions, and income groups. For instance, Koomson et al. (2020), Jiang & Liu (2022), Dawood et al. (2019), Dogan et al. (2021), and Hussen & Mohamed (2023) emphasize that financial inclusion fosters inclusive growth, which in turn supports household welfare and resilience. Similarly, Ghaffar et al. (2024), Addury (2019), Jin et al. (2024), Gupta & Sidei (2023), Li (2025), and Ibrahim & Aliero (2020) highlight the close link between financial health, income, and financial capacity, underscoring the role of financial services in enabling sustainable livelihoods. Against this backdrop, the present study investigates the impact of financial inclusion on household financial health in Nigeria. By situating the analysis within broader debates on inclusive finance and development, the study contributes to understanding how financial services can empower households, reduce vulnerability, and promote socioeconomic stability. The remainder of the paper is structured as follows: Section 2 reviews the

literature, Section 3 outlines the methodology, Section 4 presents results and discussion, and Section 5 concludes with policy recommendations.

Literature Review

Financial inclusion plays a pivotal role in shaping household financial health. Access to formal financial services enables households to save securely, reduces risks of theft or loss, and provides affordable credit for investment in education, healthcare, and small businesses. Insurance mechanisms further protect households against unforeseen shocks such as illness or crop failure. Empirical studies across diverse economies, regions, and income groups consistently demonstrate that financial inclusion positively influences multiple dimensions of household financial health, including income, consumption, resilience, poverty reduction, and overall well-being.

Evidence from China, Indonesia, Ghana, Turkey, and Ethiopia shows that financial inclusion significantly reduces household poverty and vulnerability. Using logit and probit regression models, Koomson et al. (2020), Jiang and Liu (2022), Dawood et al. (2019), Dogan et al. (2021), and Hussen and Mohamed (2023) report that households with greater access to financial services are less likely to be poor and more resilient to future poverty. The effects are particularly strong among rural, low-income, and female-headed households, highlighting the distributive potential of inclusive finance.

Studies also reveal that financial inclusion enhances household income and consumption expenditure. Access to formal financial services is positively associated with improved household welfare, with methodologies ranging from instrumental variable approaches to panel data analysis. Ghaffar et al. (2024), Addury (2018), Jin et al. (2024), Gupta and Sidei (2023), Li (2025), and Ibrahim and Aliero (2020) demonstrate that households with access to financial services are significantly more likely to achieve higher income levels and sustain consumption, thereby improving long-term well-being.

Financial inclusion strengthens household resilience to shocks. Sakyi-Nyarko et al. (2022), using logistic regression in Ghana, show that savings and formal account ownership yield the strongest resilience effects, while mobile money enhances coping capacity, particularly in rural areas. These findings underscore the role of financial inclusion in enabling households to withstand economic volatility and unexpected crises.

Beyond material outcomes, financial inclusion contributes to psychological well-being. Du et al. (2025), Ajefu et al. (2020), and Wang et al. (2025) find that greater financial inclusion reduces financial stress and improves mental health by enabling better risk management. Digital financial inclusion, in particular, is associated with reduced depressive symptoms among rural and low-income households, suggesting that inclusive finance has both economic and psychosocial benefits.

Several studies highlight indirect channels through which financial inclusion enhances household financial health. Du et al. (2025), Li (2025), Wang et al. (2025), and Gupta and Sidei (2023) argue that financial inclusion improves household well-being through increased financial participation, entrepreneurial activity, and better risk management. Digital financial inclusion further expands these benefits by

alleviating liquidity constraints and promoting economic participation. However, the magnitude of impact varies across countries, regions, types of financial services, and household income levels (Jin et al., 2024).

Emerging evidence also points to sectoral impacts. Du et al. (2022), Li (2025), and Wang and Fu (2021) show that digital financial inclusion enhances household energy consumption, though its effectiveness depends on digital literacy and infrastructure availability, this underscores the importance of complementary investments in technology and education to maximize the benefits of financial inclusion.

Overall, the empirical literature affirms that financial inclusion significantly improves household financial health, but its impact is heterogeneous. Variations across geography, income groups, and service types highlight the need for context-specific interventions. Digital financial inclusion emerges as a particularly promising tool, though its success hinges on addressing structural barriers such as infrastructure deficits and digital literacy gaps.

Methodology

Research Design

The study adopts a quantitative cross-sectional research design to examine the impact of financial inclusion on household financial health in Nigeria. This design is appropriate because it allows for the statistical analysis of impact of financial inclusion on household financial Health

Data and Source

Data for the study is secondary data specifically cross sectional data that were obtained from the Enhance Financial Inclusion and Innovation Survey Nigeria (2023), which provides comprehensive information on household access to financial services. The survey covered 11,686 households across Nigeria’s six geopolitical zones, ensuring representativeness and diversity in socio-economic characteristics.

To achieve the study objectives, a Logit Regression Model was employed to achieve the objective of examine the impact of financial inclusion on Household Financial Health in Nigeria. The structural form of the model is presented in Equation [1].

$$\begin{aligned} \text{Financial Health} = & \text{Financial_Inclusion, Age, Aqsquare, Ethnicity,} \\ & \text{Income_Level, Education_Level, Urban, Geopiltical Zone (1)} \end{aligned}$$

The econometrics form of Equation [1] is specified in model (2)

$$\begin{aligned} \text{Financial Health}_i & \\ & = \beta_0 + \beta_1 \text{Financial_Inclusion}_i + \beta_2 \text{Age}_i + \beta_3 \text{Aqsquare}_i + \beta_4 \text{Ethnicity}_i \\ & + \beta_5 \text{Income_Level}_i + \beta_6 \text{Education_Level}_i + \beta_7 \text{Urban}_i + \beta_8 \text{Geopolitical_Zone}_i \\ & + \mu_i \end{aligned} \tag{2}$$

Where β_0 is the intercept, β_i is the slop parameters to be estimated μ_i is the error term.

Since the dependent variable is dummy the model is transformed in its binary form as in equation [3]

$$\begin{aligned} & \left[\text{Log} \frac{\text{pr}(\text{Financial_Health})}{1 - \text{pr}(\text{Financial_Health})} \right] \\ & = \beta_0 + \beta_1 \text{Financial_Inclusion}_i + \beta_2 \text{Age}_i + \beta_3 \text{Agsqre}_i + \beta_4 \text{Ethnicity}_i \\ & + \beta_5 \text{Income_Level}_i + \beta_6 \text{Education_Level}_i + \beta_7 \text{Urban}_i + \beta_8 \text{Geopolitical_Zone}_i \\ & + \mu_i \end{aligned} \tag{3}$$

Where $\text{pr}(\text{Financial Health})$ is the probability of Household Financial Health while $1 - \text{pr}(\text{Financial Health})$ is the probability of Household not being Financially Healthy

Variables and Measurement

Variable	Description
Financial Health (dependent Variable)	Overall financial well-being of the household that measures household ability to meet financial obligations, resilience, it is a dummy that takes the value of 1 if yes and 0 if otherwise
Financial Inclusion (FI)	Household access to formal financial services such as bank accounts, credit, or mobile money, it is a dummy that takes the value of 1 if yes and 0 if otherwise
Age of Household Head	Age of the household head in numbers
Age Squared (Agsqre)	Squared term of household age to capture nonlinear effects of age
Ethnicity – Igbo	Household head identifies as Igbo, it is a dummy with 1 if Igbo and 0 if otherwise
Ethnicity – Yoruba	Household head identifies as Yoruba, it is a dummy that takes the value of 1 if yes and 0 if otherwise
Ethnicity – Hausa	Household head identifies as Hausa, it is a dummy that takes the value of 1 if yes and 0 if otherwise
Household Income Level	This is a measure of household income group, poor lower middle income, and upper middle income, rich and richest.
Education Level	This is the measure of Household Highest education level attained it is Ordinal (None, Primary, Secondary, Tertiary)
Urban	This is place of resident of the household, is a scale variable with 1 means the household reside in the urban area and 2 if otherwise
Geopolitical Zone	Region of residence , North East, South East, South-South, South West, North Central and North West, which Categorical

Method of Data Analysis

Data analysis was conducted using logit and probit regression techniques. Marginal effects were computed to provide intuitive interpretations of coefficients in terms of changes in probability. The choice of logit and probit regression models over the linear probability model (LPM) is justified by the binary

nature of the dependent variable. LPM suffers from heteroskedasticity, inefficient estimates, and the possibility of predicted probabilities lying outside the logical 0–1 range. Logit and probit models, by contrast, employ nonlinear transformations that constrain predicted probabilities within the 0–1 interval, ensuring methodological rigor and statistical efficiency. The logit model is widely used due to its interpretability in terms of odds ratios, while the probit model serves as a robustness check to confirm that results are not sensitive to functional form. Marginal effects were calculated to enhance policy relevance by translating coefficients into probability changes.

Results and Discussion

This section provides the results of the analysis and the discussion. As shown in table 4.1, the regression results are categorized into logit and probit results. In each case, two models have been estimated.

Table 4.1: Regression Results

Financial Health	Logit Regression Result		Probit Regression Result	
	Model 1	Model 2	Model 3	Model 4
Financial inclusion	-0.440 (5.70)**	-0.109 (0.02)**	-0.270 (5.72)**	-0.107 (0.02)**
age	-0.009 (6.18)**	-0.002 (0.00)**	-0.006 (6.21)**	-0.002 (0.00)**
agsqre	9.000 (6.51)**	2.400 (0.00)**	9.000 (6.54)**	2.390 (0.00)**
igbo	-0.175 (3.04)**	-0.044 (0.01)**	-0.109 (3.05)**	-0.044 (0.01)**
yoruba	0.080 (1.65)	0.020 (0.01)**	0.049 (1.64)	0.019 (0.01)
hausa	0.230 (4.46)**	0.057 (0.01)**	0.142 (4.45)**	0.057 (0.01)**
income_level	0.224 (13.85)**	0.056 (0.00)**	0.139 (13.93)**	0.056 (0.00)**
edu_level	0.033 (3.03)**	0.088 (0.00)**	0.021 (3.02)**	0.008 (0.00)**
urban	-0.081 (2.01)*	-0.0203 (0.01)**	-0.051 (2.02)*	-0.020 (0.01)**
geopolitical_zone	-0.039 (2.72)**	-0.010 (0.00)**	-0.024 (2.71)**	-0.010 (0.00)**
<i>N</i>	11,686		11,686	

Note* and ** indicate significance at 1 and 5 percent significance level respectively

Table 4.1 presents the results of four models: logit regression (Model 1), its marginal effects (Model 2), probit regression (Model 3), and probit marginal effects (Model 4). The probit specification was estimated as a robustness check, with interpretation focused on the logit regression and its marginal effects.

Contrary to expectations, financial inclusion exhibits a negative and significant relationship with household financial health. The logit coefficient (-0.440) indicates that financially included households are 44 percent

less likely to be financially healthy, with the marginal effect (-0.109) confirming a 10.9 percent reduction in likelihood. This counterintuitive result suggests that access to financial services may expose households to risks such as high transaction costs, indebtedness, or inadequate financial literacy. It aligns with Ajefu et al. (2020) and Wang et al. (2025), who argue that financial inclusion without supportive institutional structures can exacerbate vulnerability rather than enhance resilience.

Age of the household head is negatively associated with financial health (-0.009), with marginal effects (-0.002) confirming the decline. However, the squared age term is positive and significant, indicating a nonlinear (U-shaped) relationship. Younger and middle-aged households face greater financial challenges, while older households regain stability through accumulated wealth, pensions, or financial experience. This finding highlights the importance of life-course dynamics in financial health outcomes.

Ethnic differences reveal mixed effects. Igbo-headed households are significantly less likely to be financially healthy (-0.175), while Yoruba households show a small, weakly significant positive effect (0.080). Hausa-headed households demonstrate the strongest positive association (0.230), suggesting better financial health outcomes. These variations may reflect cultural practices, regional economic structures, or differential access to financial opportunities. The findings resonate with Li (2025) and Wang & Fu (2021), who emphasize the role of cultural and structural factors in shaping financial outcomes.

Income level emerges as a strong determinant of financial health. The logit coefficient (0.224) indicates that higher income households are 24.4 percent more likely to be financially healthy, with marginal effects (0.056) reinforcing the significance. This confirms that income remains central to financial well-being, consistent with Du et al. (2022), Li (2025), and Wang & Fu (2021).

Education also shows a positive and significant effect (0.033), with marginal effects (0.008) suggesting that higher educational attainment improves financial health. This likely reflects enhanced financial literacy, employability, and effective utilization of financial services. The result aligns with Dogan et al. (2021), underscoring education's role in strengthening household resilience.

Unexpectedly, urban residence is negatively associated with financial health (-0.081), with marginal effects (-0.020) confirming reduced likelihood. This suggests that households in urban areas face greater financial stress due to higher living costs, debt exposure, and competitive pressures, compared to rural households. The finding is consistent with Koomson et al. (2020) and Jiang & Liu (2022), who highlight the paradox of urbanization and financial vulnerability.

Geopolitical zone shows a negative and significant effect (-0.039), with marginal effects (-0.010) indicating that regional location reduces financial health. This reflects structural inequalities and uneven distribution of financial infrastructure across Nigeria. The result supports Gupta & Sidei (2023), who emphasize regional disparities as a critical barrier to inclusive finance.

The results reveal that household financial health in Nigeria is shaped by complex and sometimes counterintuitive dynamics. While income and education enhance financial well-being, financial inclusion itself may undermine it when households lack adequate literacy or face exploitative costs. Ethnic and

regional disparities highlight structural inequalities, while urban households face unique vulnerabilities despite proximity to financial institutions.

These findings underscore the need for context-sensitive financial inclusion policies that go beyond expanding access to services. Interventions must integrate financial literacy, consumer protection, and targeted support for vulnerable groups. Moreover, addressing regional disparities and cultural variations is essential for ensuring that financial inclusion translates into genuine improvements in household financial health.

Conclusion

The findings of this study reveal that household financial health in Nigeria is shaped by complex socio-demographic and structural factors. Income and education emerge as strong positive drivers, underscoring their critical role in enhancing resilience and long-term stability. However, financial inclusion—contrary to expectations—shows a negative and significant relationship with financial health. This suggests that access to financial services alone does not guarantee improved outcomes and may even exacerbate vulnerability when households face debt burdens, high transaction costs, or lack financial literacy.

Age effects demonstrate a nonlinear (U-shaped) relationship: younger and middle-aged households are more financially vulnerable, while older households regain stability through accumulated wealth and experience. Ethnic and regional disparities further highlight inequality in financial opportunities, with Hausa households showing stronger financial health outcomes compared to Igbo and Yoruba households. Urban households, surprisingly, appear more financially vulnerable than rural ones, reflecting the pressures of higher living costs and debt exposure. Regional differences across geopolitical zones reinforce structural inequalities in access to financial opportunities.

Policy Recommendations

The study recommends, based on the findings, the development of inclusive financial policies that go beyond access to services by integrating financial literacy programs, debt management support, and affordable financial products tailored to low-income households. Furthermore, interventions should consider ethnic and regional disparities, ensuring equitable access to financial opportunities across Nigeria's diverse groups and geopolitical zones. Strengthening income-generating opportunities and expanding educational access remain critical, as these are the most consistent drivers of financial health. Finally, urban-focused policies should prioritize affordable housing, debt relief mechanisms, and cost-of-living adjustments to mitigate financial stress in cities.

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