

Socioeconomic Determinants of Access and Utilization of Formal Financial Services by Rice Farmers in Nasarawa State, Nigeria

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Abstract

The study assessed the socioeconomic determinants of access and utilization of formal financial services by rice farmers in Nasarawa State, Nigeria. A multistage sampling procedure was used to select 374 rice farmers, and data were collected with structured questionnaires. Descriptive statistics and ordinal logistic regression were employed for analysis. Results revealed that the majority of farmers were male (68.2%), with a mean age of 31 years, average household size of 4 persons, mean farm size of 2.9 hectares, and mean farming experience of 13.8 years. Most respondents (78.7%) had at least secondary education, while 62.8% belonged to cooperatives, and 66.6% had access to extension services. Annual rice income averaged ₦954,881. Findings further showed that banking transactions (96.3%), credit (80.0%), and insurance (70.3%) were the most utilized services, whereas project planning (41.4%) and training on product marketing (39.8%) were less patronized. Regression results indicated that education, income, and cooperative membership significantly influenced utilization of financial services. Major constraints identified were delays in loan disbursement, high collateral requirements, and inadequate financial literacy. The study recommended that financial institutions should simplify and digitize service delivery using mobile platforms to improve farmers' access to credit and reduce bureaucratic delays. Cooperative-based lending and land-sharing arrangements should be encouraged to overcome collateral challenges and promote economies of scale.

Keywords: Socio-economic, determinants, access, utilization, financial services.

Introduction: Agriculture remains the mainstay of Nigeria's economy and the foundation of livelihoods for millions of households in developing countries. Belay, Alemu, and Tadesse (2023) emphasized that agricultural production underpins the livelihood of most developing nations. According to Onyiriuba, Okeke, and Eze (2020), the World Bank (2018) reported that about 500 million smallholder-farming households globally representing 2.5 billion people depend on agriculture for survival. Institutional financial services constitute the resources, assets, and activities required for sustaining livelihoods (Onyekwere and Nworgu, 2020). Livelihood itself encompasses activities and assets that determine an individual's or household's means of living, while livelihood diversification is the construction of diverse activities and social support systems to improve living standards (Olutegbe, 2021). Poverty reduction remains a key indicator of improved livelihood (Alao, Akinbode, and Olaniyan, 2020); Nyong *et al* (2022). Livelihood spans agricultural and non-agricultural activities (Nwaogwugwu and Matthews-Njoku, 2015) and is defined by human, natural, social, financial, and physical assets (Sadiq and Sani, 2022). Gautam and Jha (2022) further expanded these components to include food, economic, health, educational, social, institutional, and infrastructural security. In rural Nigeria, rice production plays a major role in household livelihood. Rice (*Oryza sativa*), regarded as the "staple of staples," is central to Nigeria's agricultural and economic development. It provides food security and serves as a livelihood source for millions of smallholder farmers and processors (Obianefo, Eze, and Nwankwo, 2023; Ademiluyi, Olayemi, and Bello, 2021; Gbenga, Umeh, and Danjuma, 2020). Nigeria is both the largest producer and consumer of rice in West Africa (Ali, Musa, and Umar, 2020), reflecting its importance for food and income. Onyeneke, Emenekwe, and Ibekwe (2021) further noted that rice is among the most important cereals globally,

supplying significant calories to households in sub-Saharan Africa. Despite its importance, Nigeria's annual rice production of 3.3 million mt falls short of demand, estimated at 5.2 million mt (Ali *et al.*, 2020). This deficit drives costly rice imports, with the Food and Agriculture Organization estimating that between 2000 and 2021, Nigeria lost about \$17.26 million in foreign exchange. Scholars attribute this deficit to low productivity (Biam and Adejo, 2017; Ayuba, Sule, and Bala, 2020; Abiola, Iroko, and Adekunle, 2021). Such deficits undermine farmer livelihoods, particularly for low- and middle-income groups. Addressing the financing gap has therefore become critical, as financial constraints are widely recognized as a major barrier to productivity (Ameh and Lee, 2022; Chukwujekwu, Nwosu, and Eze, 2022); Nyong *et al* (2022). Formal financial institutions provide diverse services to agriculture, including credit, savings, insurance, and financial literacy programmes (Jima and Makoni, 2023; Koroma, 2016; Onwe, 2013). These services enable farmers to invest in technology, expand production, and increase efficiency (Guei and Choga, 2022). Institutions such as banks, credit unions, and cooperatives mediate these services, channeling resources to individuals and businesses (Ndem, Akpan, and Okoro, 2023; Raimi and Uzodinma, 2020); Nyong *et al* (2022). Nasarawa State, located in the North Central region—the "food basket of the nation" (Abiola *et al.*, 2021) is strategically positioned near the Federal Capital Territory, where financial institutions and agricultural programmes are concentrated. An effective financial services policy for rice farmers in the state therefore has both local and national significance. This study thus examines the influence of financial services on the livelihoods of rice farmers in Nasarawa State.

Rice production in Nigeria has failed to keep pace with population growth, resulting in persistent supply deficits. Despite numerous government and donor programmes, productivity remains low. This

threatens the livelihood of rice farmers and their dependents, discouraging future participation and exacerbating food insecurity. Globally, smallholder farmers are among the poorest, with limited capacity to finance production through savings. Poverty constrains their ability to meet both investment and consumption needs, reflecting poor livelihood outcomes. Rural areas also face limited access to financial services, weak infrastructure, poor market access, and inadequate social amenities Nyong *et al* (2022); (Koroma, 2016). These challenges intensify farmers' vulnerability and reduce their ability to sustain production. Empirical studies (Nolon and Rael, 2021; Yusuf, Abdullahi, and Musa, 2022; Dare, Oladipo, and Okonkwo, 2017; Georgina, Bello, and Sodi, 2020) have reported substantial income gains among farmers with improved financial access. However, limited evidence exists for Nasarawa State, where institutional factors may uniquely affect rice farmers' livelihoods. Examining these effects is crucial, as financial services directly influence income, food security, and quality of life. Nigeria has implemented several financial interventions, including the Anchor Borrowers' Programme (Ayinde, Adebayo, and Sanni, 2018; CBN, 2016; Coker, Afolabi, and Adeyemi, 2018), Agricultural Credit Guarantee Fund (Confidence and Ekine, 2016; Ojo and Oluwaseun, 2015), and Commercial Agriculture Credit Scheme Nyong *et al* (2022); (Azubugwu and Osuafor, 2019; CBN, 2018). Yet, rice production remains inadequate and rural poverty persists, suggesting ineffectiveness of these schemes. Moreover, many rice farmers still struggle with access to institutional services due to location, awareness, and financial literacy barriers. This study therefore seeks to assess the socioeconomic determinants of access and utilization of formal financial services by rice farmers in Nasarawa State, with particular focus on their implications for livelihood outcomes.

Materials And Methods: Study Area: Nasarawa State is located in North Central Nigeria and serves as a geographical crossroads. It is bordered to the north by Kaduna State, to the west by the Federal Capital Territory (Abuja), to the south by Kogi and Benue States, and to the east by Taraba and Plateau States. The state had a projected population of 2,886,000 in 2022. Nasarawa lies between latitudes 7° and 9°N and longitudes 8° and 32°E, covering a land area of about 27,117 km² (Wikipedia, 2022). The climate is typical of the tropical zone, with mean monthly temperatures ranging from 25°C in October to about 36°C in March. Annual rainfall varies between 137.3 cm and 145 cm. The state is divided into three agricultural zones: Southern, Central, and Western zones. Major crops grown include maize, yam, groundnut, rice, sesame, sorghum, millet, and cowpea, as well as cassava, melon, sweet potato, okra,

Ordinal Logistic Regression Analysis: The ordinal logit model is specified as:

$$\text{Log} \frac{P(Y \leq j)}{P(Y > j)} = \theta_j - (\beta_1 \text{Age} + \beta_2 \text{Gender} + \beta_3 \text{Farm size} + \beta_4 \text{Education} + \beta_5 \text{Farming Experience} + \beta_6 \text{Household size} + \beta_7 \text{Income})$$

Where:

Y is the dependent variable (Level of Utilization)

j = 1 for Low vs Medium/High, 2 for "Low/Medium vs High

Independent Variables (X):

X₁ = Age of farmer (years)

X₂ = Gender (dummy: 0 = Female, 1 = Male)

X₃ = Farm size (hectares)

X₄ = Level of education (years of formal schooling)

X₅ = Rice production experience (years)

X₆ = Household size (number of household members)

X₇ = Annual farm income (₦)

θ_j = threshold (intercepts)

β₁ – β₇ = are the coefficients to be estimated

Results and Discussion: Socio-economic Characteristics of Respondents in the Study Area

Table 1 presents the socioeconomic characteristics of rice farmers in Nasarawa State. The study revealed that rice farming is male-dominated, with 68.2% of respondents being male and 31.8% female. This gender imbalance indicates persistent disparities in

and tree crops such as mango, cashew, and shea butter. The major ethnic groups include Eggon, Afo, Egbira, Mada, Nyankpa, Gwandara, Rindre, and Hausa, among others (Ademiluyi, Umeh, Abu and Asogwa, 2021; Salau, Luka and Umar (2013). The target population for this study comprised all rice farmers in Nasarawa State who have accessed formal financial services at least once. A multistage sampling technique was employed in selecting the respondents. In the first stage, one Local Government Area (LGA) was purposively selected from each of the three agricultural zones based on the concentration of registered rice farmers. This gave a total of three LGAs for the study: Karu LGA representing the Western zone, Akwanga LGA representing the Central zone, and Awe LGA representing the Southern zone. In the second stage, from a population of 5,670 registered rice farmers across the three LGAs, a sample size of 374 respondents was determined using Taro Yamane's formula at a 5% precision level. The sample was proportionally allocated across the three LGAs using Bowley's proportional allocation formula to ensure fair representation. In the third stage, respondents were randomly selected from lists of registered farmers obtained from the Rice Farmers Association of Nigeria (RIFAN). Officials of RIFAN assisted in identifying and training enumerators, who subsequently administered the questionnaires.

Analytical Technique: The data obtained were analysed using both descriptive and inferential statistics. Descriptive statistics such as percentage, frequency and mean were used to analyse the socio-economic characteristics of the respondents and the types of financial services access by respondents. The level of utilization of formal financial services by the respondents was measured by categorizing usage into three levels: low utilization (1–39%), moderate utilization (40–69%), and high utilization (70% and above), expressed as percentages. A five-point Likert type scale was used to measure the constraints faced by respondents in the study area. Respondents were asked to specify the degree of the constraints faced in accessing the financial services on the statements using a five-point likert scale of very serious constraint (VSC) = 5, serious constraint (SC) = 4, no effect constraint (NEC) = 3, not very serious constraint (NVSC) = 2 and not serious constraint (NSC) = 1. Weight of 5, 4, 3, 2, and 1 were allocated to each response. A weighted mean of ≥ 3.0 meant serious constraint, while any weighted mean of < 3.0 meant not a serious constraint. Ordinal Logistic Regression was used to examine the effects of socioeconomic characteristics of the respondents on their level of utilization of formal financial services

access to productive resources, though the growing female participation suggests potential for financial inclusion (Ajah *et al.*, 2017). The average age of respondents was 31 years, showing that rice farming is mainly practiced by young, active individuals open to innovations and risk-taking—similar to Nyong *et al* (2022) Nkwi *et al.* (2022), who found the mean age of farmers in Jigawa State to

Socioeconomic Determinants of Access and Utilization of Formal Financial Services by Rice Farmers in Nasarawa State, Nigeria

be within the productive range. Most respondents (93.3%) were married, implying greater household and financial responsibilities, consistent with Ibitoye *et al.* (2014), who found a majority of married rice processors in Kogi State. The average household size was four persons, aligning with Nkwi *et al.* (2022), who reported an average of five per household in Jigawa State. In terms of education, 44.7% had secondary education, 34.0% tertiary, and 21.3% primary, indicating high literacy levels that enhance understanding and use of financial services similar to Nkwi *et al.* (2022), who found nearly all farmers had formal education. Most respondents (63.6%) cultivated family land, with only 20.1% owning purchased land, which may limit credit access due to lack of collateral. The average farm size was 2.9 hectares, showing predominance of smallholders, consistent with Nyong *et al.* (2022), Abdullahi *et al.* (2019), who found most rice farmers in Bauchi State had 1–2 hectares. Average farming experience was 13.8 years, implying that most respondents were seasoned farmers, a finding that agrees with Nkwi *et al.* (2022). About 62.8% belonged to cooperative societies, which serve as key channels for accessing credit and extension support, similar to Muhammad (2020), who found 73% of rice farmers belonged to associations. Extension contact was relatively high (66.6%), reflecting farmers' exposure to innovations and financial schemes. Annual income distribution showed that 56.4% earned ₦1,000–₦1,000,000, with a mean income of ₦954,881.02, higher than the ₦372,375 reported by Ajah *et al.* (2017) for Cross River rice farmers.

Types of Formal Financial Institutions Available in the Study Area: Table 2 highlights the availability and accessibility of formal financial institutions to rice farmers in Nasarawa State. The most accessible institutions were cooperative societies (93.3%), non-governmental organizations (NGOs) (92.7%), and commercial banks (89.6%), while the Bank of Agriculture (56.1%) and the Central Bank (53.7%) were less frequently accessed. These findings indicate that farmers had relatively high access to formal financial services, which can positively impact agricultural productivity and livelihoods (Sakiru, 2013; Victor *et al.*, 2020; Mbutor *et al.*, 2013). Cooperative societies play a critical role by offering low-interest credit, group savings, and input procurement services tailored to smallholder farmers, thus reducing credit constraints and promoting investments in improved rice farming practices. NGOs complement these institutions by providing financial literacy, training, and support services, while commercial banks, though more risk-averse, contribute to agricultural finance, particularly when supported by government guarantees. Specialized institutions like the Bank of Agriculture and the Central Bank implement government-backed credit programs and subsidies, enabling farmers to benefit from national schemes such as the Anchor Borrowers' Programme, which aims to enhance rice production in Nigeria. These findings are consistent with previous studies: Sakiru (2013) found that 62% of respondents accessed microfinance banks, 50% cooperative societies, and 43% community banks; Victor *et al.* (2020) reported 100% access to commercial banks and cooperatives; while Mbutor *et al.* (2013) noted 90% access to commercial banks and 65% to microfinance banks.

Level of Utilisation of Formal Financial Service by Respondents in the Study Area: Table 3 shows that rice farmers in Nasarawa State utilize a variety of formal financial services, with banking transactions such as deposits, withdrawals, and money transfers being the most widely used, reported by 96.3% of respondents. This reflects growing integration into the formal financial system, consistent with Ilavbarhe (2007), who found that 70% of farmers in Benin Metropolis engaged in banking transactions, with 76.67% accessing loans and 62.1% using insurance services. Loan or credit services were the second most utilized, with 80% of respondents accessing credit to finance key rice production activities such as land preparation, input purchase, and labor hiring, highlighting the

dependence of smallholder farmers on institutional finance. Insurance services were utilized by 70.3% of respondents, helping mitigate risks associated with crop failure, pests, diseases, and market fluctuations. Wealth management services were accessed by 66.6% of respondents, indicating growing awareness of savings, investments, and financial planning, which aligns with Nyong *et al.* (2022); Akinwunmi *et al.* (2020) who reported 67.8% uptake among Nigerian farmers and emphasized the role of financial education in enhancing income management. Project planning and product marketing training were utilized by 41.4% and 39.8% of respondents, respectively, suggesting that some institutions offer advisory and capacity-building services. Yusuf and Shehu (2022) similarly found that integrating project planning into rural finance supports sustainable agriculture, with 72% of farmers accessing such services. The least utilized service was the storage of valuables, at 31.6%, likely due to cultural preferences, trust issues, or limited awareness of security benefits. Overall, farmers heavily utilize banking, credit, and insurance, while services like training, project planning, and storage remain underutilized, indicating opportunities for financial institutions and policymakers to expand and tailor services to farmers' broader livelihood needs.

Effects of Socio-economic Characteristics of the Respondents on Level of Utilisation of Formal Financial Services: Table 4 presents the effects of respondents' socio-economic characteristics on their utilization of formal financial services using ordinal logistic regression. The model demonstrated a good fit, with a -2 Log Likelihood value of 284.841 ($p = 0.000$) significantly lower than the intercept-only model and a Nagelkerke R^2 of 0.839, indicating that about 83.9% of the variability in farmers' utilization of formal financial services was explained by the independent variables. This highlights the strong relevance of the selected socio-economic factors in determining the extent to which rice farmers engage with formal financial institutions. Income was a significant predictor. Farmers earning less than ₦100,000 and those earning ₦100,000–₦500,000 had positive and significant coefficients (2.102 and 2.363, $p = 0.036$ and 0.015 , respectively), suggesting that lower-income farmers are more likely to utilize formal financial services, such as loans, savings, and insurance, to support agricultural operations and household needs. This contrasts with Nyong *et al.* (2022), Ajah *et al.* (2017), who reported that higher annual income significantly influenced credit access among rice farmers in Cross River State. Education also had a significant effect. Farmers with primary and secondary education had very high and significant positive coefficients (9.592 and 5.506, both $p = 0.000$), indicating that literacy and numeracy enable farmers to understand, access, and effectively use formal financial services. Danso-Abbeam *et al.* (2021) similarly found that education significantly increased farmers' access to loans in Ghana's Bole District. Threshold values for transitioning between low, medium, and high utilization were significant, with the high-utilization threshold at -4.947 ($p = 0.000$), suggesting that moving to higher levels of utilization requires overcoming barriers such as access, trust, or eligibility. The significance of income and education highlights key areas where targeted policies could improve farmers' engagement with formal financial services.

Constraints to Effective Utilisation of Formal Financial Services by the Respondents : Table 5 shows the results on the constraints to effective use of formal financial services among respondents. The major constraints identified include untimely credit disbursement ($\bar{x} = 4.61$), delayed access to credit information ($\bar{x} = 4.53$), insufficient collateral ($\bar{x} = 4.50$), and the absence of designated bank accounts ($\bar{x} = 4.24$). Additional significant barriers reported were limited farmland ($\bar{x} = 4.12$), high input costs ($\bar{x} = 4.10$), poor road infrastructure ($\bar{x} = 3.99$), bureaucratic procedures in accessing institutional credit ($\bar{x} = 3.98$), low financial literacy ($\bar{x} = 3.96$), and high interest rates ($\bar{x} = 3.91$). Other notable issues included insufficient loan amounts ($\bar{x} = 3.85$), lack of guarantors ($\bar{x} = 3.64$), and small loan sizes ($\bar{x} = 3.01$). These findings suggest that such

constraints significantly limit rice farmers' ability to fully utilize formal financial services, which in turn negatively impacts their agricultural productivity and overall livelihoods.

Conclusion: The findings of this study show that rice farming in Nasarawa State is dominated by young and active males with relatively small household sizes, modest farm holdings, and significant cooperative participation. Access to formal financial institutions was fairly high, yet actual utilization of key services beyond basic transactions remained limited. The socioeconomic profile of farmers particularly education, income, and cooperative membership emerged as strong determinants of access and utilization, while gender, farm size, and farming experience played less significant roles. Constraints such as collateral requirements, disbursement delays, and low financial literacy continue to hinder farmers' effective engagement with formal financial systems. These outcomes suggest that addressing socioeconomic disparities

alongside institutional bottlenecks is necessary for improving rice farmers' productivity and livelihood outcomes.

Recommendations: Financial institutions should simplify and digitize service delivery using mobile platforms to improve farmers' access to credit and reduce bureaucratic delays. Cooperative-based lending and land-sharing arrangements should be encouraged to overcome collateral challenges and promote economies of scale. Capacity-building initiatives focused on financial and digital literacy, delivered in local languages, are needed to strengthen farmers' ability to utilize financial services effectively. Financial institutions should broaden their support to include project planning, marketing, and risk management services tailored to smallholder rice farmers. Government and development partners should also prioritize investment in rural roads and market infrastructure to reduce transaction costs, enhance market participation, and improve loan repayment performance.

Table 1: Socio-Economic Characteristics of Respondents

Variables	Frequency	Percentage (%)	Mean
Sex			
Male	255	68.2	
Female	119	31.8	
Age (years)			
21-30	135	36.1	31 years
31-40	134	35.8	
41-50	38	10.2	
51 and above	67	17.9	
Marital status			
Single	25	6.7	
Married	349	93.3	
Household size (Number of persons)			
1-5	208	55.6	4 persons
6-10	157	42.0	
11-15	9	2.4	
Level of education			
Primary education	80	21.3	
Secondary education	167	44.7	
Tertiary education	127	34.0	
Method of land acquisition			
Inherited farm land	28	7.5	
Farm freely on family farm land	238	63.6	
Purchased land	75	20.1	
Rented land	33	8.8	
Farm size (hectares)			
1-3	273	73.0	2.9 hectares

Socioeconomic Determinants of Access and Utilization of Formal Financial Services by Rice Farmers in Nasarawa State, Nigeria

4-6	92	24.6	
7-9	9	2.4	
Rice farming experience (years)			
1-10	120	32.1	13.8 years
11-20	196	52.4	
21-30	58	15.5	
Cooperative society membership			
Yes	235	62.8	
No	139	37.2	
Years of cooperative membership (years)			
Non-members	139	37.2	3.2 years
1-5	147	39.3	
6-10	61	16.3	
11-15	15	4.0	
16-20	12	3.2	
Access to extension services			
Yes	249	66.6	
No	125	33.4	
Estimated rice annual income (₦)			
1,000-1,000,000	211	56.4	(₦) 954, 881 .02
1,001,000-2,000,000	33	8.8	
2,001,000-3,000,000	7	1.9	
Above 3,000,000	123	32.9	

Source: Field survey, 2025

Table 2: Types of Formal Financial Institution Available in the Study Area

Formal financial institution	*Frequency	Percentage (%)
Cooperative Society	349	93.3
Non-Governmental Organizations (NGOs)	347	92.7
Commercial bank	335	89.6
Bank of Agriculture (BOA)	210	56.1
Central Bank	201	53.7
Farmers' Association	169	45.2
Micro finance Bank	86	23.0
Community Bank	30	8.3

Source: Field survey, 2025

*Multiple responses

Table 3: Level of Utilisation of Formal Finance Service by Respondents in the Study Area

Utilization of Formal Finance Service	Frequency	Percentage
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Socioeconomic Determinants of Access and Utilization of Formal Financial Services by Rice Farmers in Nasarawa State, Nigeria

Banking transactions	364	96.3
Loan/credit	300	80.0
Insurance service	264	70.3
Wealth management	249	66.6
Project planning	155	41.4
Training on product marketing	149	39.8
Storage of valuables	118	31.6

Source: Field survey, 2025

*Multiple responses

Decision rule: Any score between 1-39% = low utilisation, 40-69% = moderate utilisation, and 70% and above = high utilisation.

Table 4: Effects of Socioeconomic Characteristics of the Respondents on their Level of Utilization of Formal Financial Services

Table 4: Effects of Socioeconomic Characteristics of the Respondents on their Level of Utilization of Formal Financial Services							95% Confidence Interval	
Predictor Variable		Estimate	Std. Error	Wald	Df	Sig.	Lower Bound	Upper Bound
Threshold	[level of utilization = High]	-4.947	1.139	18.853	1	0.000	-7.180	-2.714
	[level of utilization = Low]	0.622	1.109	.314	1	0.575	-2.796	1.552
	[Age=18-36]	0.139	0.417	0.111	1	0.739	0.678	0.956
	[Age=37-55]	0.356	0.415	0.736	1	0.391	-0.457	1.170
	[Age=Above 55]	0 ^a	.	.	0	.	.	.
	[Gender=Female]	0.419	.321	1.708	1	0.191	-0.210	1.048
	[Gender=Male]	0 ^a	.	.	0	.	.	.
	[Farm Size=less than 1]	-0.597	0.641	0.868	1	0.351	-1.854	0.659
	[Farm Size=1-5]	0.306	0.332	0.845	1	0.358	0.346	0.957
	[Farm Size=6-10]	0 ^a	.	.	0	.	.	.
	[Rice Production Experience=1-10]	-0.102	0.448	0.051	1	0.821	-0.981	0.777
	[Rice Production Experience=11-20]	0.476	0.469	1.029	1	0.310	1.396	0.444
	[Rice Production Experience=21-30]	0.187	0.459	0.167	1	0.683	1.087	.712
Location	[Rice Production Experience=31-40]	0 ^a	.	.	0	.	.	.
	[Household Size=1-5]	0.620	0.413	2.257	1	0.133	0.189	1.428
	[Household Size=6-10]	0.283	0.397	0.509	1	0.476	.495	1.061
	[Household Size=11-15]	0 ^a	.	.	0	.	.	.
	[Income=less than 100,000]	2.102	1.002	4.402	1	0.036**	0.138	4.065
	[Income=100,000-500,000]	2.363	0.967	5.968	1	0.015**	0.467	4.259
	[Income=Above 500,000]	0 ^a	.	.	0	.	.	.
	[Level of Education=Primary]	9.592	0.715	179.737	1	0.000***	-10.994	-8.190
	[Level of Education=Secondary]	5.506	0.573	92.396	1	0.000***	-6.628	-4.383

Socioeconomic Determinants of Access and Utilization of Formal Financial Services by Rice Farmers in Nasarawa State, Nigeria

[Level of Education=Tertiary]	0 ^a		0	
Pearson = 4855.678			560	0.720
Deviance = 265.093			560	1.000
Nagelkerke = 0.839				
-2 Log Likelihood =284.841				0.000

Source: Field survey, 2025

Link function: Logit.

Note: This parameter is set to zero because it is redundant

Dependent variable: Level of Utilization of Formal Financial Services

*** Significant at 1%, ** significant at 5%

Table 5: Constraints to Effective Utilisation of Formal Financial Services by the Respondents

Constraints	Mean
Untimely disbursement of credit	4.61*
Untimely credit information	4.53*
Inadequate collateral	4.50*
Lack of specified bank account	4.24*
Lack of large farm land	4.12*
High cost of inputs (fertilizer among other farm inputs)	4.10*
Poor roads	3.99*
Bureaucratic hurdles in accessing institutional financial services	3.98*
Limited financial literacy	3.96*
High interest rate	3.91*
Inadequate amount of loan given	3.85*
Lack of guarantor	3.64*
Low volume of credit	3.01*
Poor sales of product	2.50
Climate change effects on rice production	2.46
Cultural barrier	2.27
Theft of rice on the field	2.19
Inadequate processing facilities	2.12
Lack of farm recoding keeping	1.54
Risk of natural disasters in rice production	1.50
Limited access to market	1.38
Rice farming is a seasonal source of income	1.30
Inadequate infrastructural facilities in rural areas	0.79

Source: Field survey, 2025

*Multiple responses

Decision rule = A weighted mean of ≥ 3.0 will mean serious constraint, while any weighted mean of < 3.0 will mean not a serious constraint

** = Serious constraint

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Socioeconomic Determinants of Access and Utilization of Formal Financial Services by Rice Farmers in Nasarawa State, Nigeria

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