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Determinants of Farmers' Financial Inclusion in Ogba Local Government Area (ONELGA) of Rivers State, Nigeria.

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A R T I C L E I NFO

Key Words

Financial inclusion

Farm inputs

Financial Products and Services

Farm social analysis

ABSTRACT

The study investigates the determinants of financial inclusion of farmers in Ogba Local Government Area (ONELGA) of Rivers State, Nigeria. Data were collected with the aid of two sets of structured questionnaires,. The data were analyzed with the use of descriptive statistics and binary logit regression analysis. The finding showed that 68.3% of the respondents were female, while 31.7% were male.Financial products and services mostly accessed by the respondents were SMS Alert, Savings account and Automated Teller machine (ATM) card. It was also found that tfarming status's coefficient is positive and significant at 10%, the coefficient of estimated annual income is also positive and significant at 10%. Same with the coefficient of educational status, positive and significant at 1%. The major constraints to accessing financial products and services among others were observed to be high interest rate on loan, poor banking services and long queues at ATM. The study recommends that the Central Bank of Nigeria, in collaboration with the government, should monitor banks' interest rates on loans in order to discourage high interest, and also regulate banks to be providing services that yield high level of customer satisfaction. Because educational status is a significant factor of financial inclusion, government should provide an enabling environment for education to those who are less privileged to assist them.

1.0 Introduction

Financial inclusion is defined as the provision of a wide range of financial services to the poor who would otherwise be unable to receive them (such as loans, investments, savings, and insurance).

According to (Sarma, 2008), financial inclusion is "a process that ensures the ease of access, availability and usage of the formal financial system for all members of an economy".

Full financial inclusion entails providing every household with a range of contemporary financial services, such as savings, credit, insurance, and payments, as well as adequate education and support to enable customers to make informed

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decisions. (Goland, Bays and Chaia, 2010) in Aduda and Kaluda (2012).

Financial Inclusion Task Force (HM Treasury, 2007), defines Financial Inclusion as "the access to appropriate financial services for every person enable the person (i) manage his money on day-to-day basis effectively, securely and confidently; (ii) plan for future and cope with financial pressure in short term with the help of long term funds; and (iii) deal effectively with financial distress like long term sickness, unemployment, or family breakdown by availing money management advice and insurance".

Treasury committee (2005) defines Financial Inclusion as "the ability of individuals to access appropriate financial products and services".

Financial exclusion, on the other hand, is the denial of financial services and the conditions that lead to depriving an individual or a group of these benefits, and it impedes inclusive economic development. (Aduda&Kalunda, 2012).

Financial inclusion will be essential in the fight against hunger and poverty (Chaddad, Cook &Heckelei, 2005; Evans &Lawanson, 2017). It is a necessary component of long-term, inclusive development. Access to inexpensive financial services, particularly credit and insurance, broadens livelihood alternatives for the poor and empowers them to take control of their life.

Agriculture is and will continue to be a key component in achieving the Millennium Development Goals around the world (MDGs). According to recent statistics, agricultural production must increase by 70% by 2050 to feed the planet, despite the fact that population growth, climate change, and urbanization are putting pressure on available cultivable land (IFC, 2011). Rural residents, especially farmers, are more involved in the agricultural sector because rural farmers produce the majority of the food consumed in urban areas. Financial inclusion (both access and use) is a requirement for agricultural development, according to Evans (2017). Financial inclusion, also known as "banking the unbanked," is a strategy for assisting impoverished farmers in achieving more stable financial situations.

Mahendra (2006) underlines the relevance of financial inclusion in improving the living conditions of disadvantaged farmers, rural non-farm firms, and other vulnerable groups. Small and marginal farmers, as well as specific socioeconomic classes, face significant financial exclusion when it comes to institutional finance. Individuals and groups who previously had limited or no access to the official financial sector, such as Nigerian farmers, would benefit from financial inclusion, which would promote long-term economic growth. (Nwankwo&Nwankwo, 2014). They went on to say that providing accessible financial services to small, medium, and large business owners helps rural residents to make a living and contribute financially to their families and communities. Families will be able to afford a reasonable standard of living, which will help to reduce poverty in the region.

Agricultural value chains, according to Evans (2017), have periodic financial needs due to crop and livestock maturation, as well as seasonal fishing constraints. A cycle consists of a period of production investment followed by a period of sale, which can span anywhere from weeks to years, adding that farmers are typically cash-strapped, limiting their ability to make improvements or upgrades. According to Onaolapo (2015), without financially inclusive systems, the poor will rely on their insufficient savings for future investments, and micro and small businesses will be unable to pursue favourable growth prospects because they will have to rely on their meagre earnings, causing persistent income disparity and a stumbling block to most developing countries' economic growth (World Bank 2008)

According to Elizabeth (2014), most small farmers have little education and minimal exposure to modern financial instruments, and many of them have little or no experience in financial management.Soumaré et al. (2016) used the Global Financial Inclusion database (Global Findex) to investigate the factors that influence financial inclusion in Central and West Africa. They discovered that financial inclusion is influenced by gender, education, age, income, residence area, employment status, marital status, and household size. Technology advancements have a beneficial

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impact on financial services accessibility because they improve the effective delivery of financial products and services even in remote places. Women now have easier access to financial products because to technological advancements that eliminate the need to travel long distances(Duncombe and Boateng, 2009).

As a result, the issue of banking sector outreach or financial inclusion in the agricultural sector on small scale rural farmers has received renewed attention.

Objectives of the Study

The broad objective of the study is to evaluate the determinants of financial inclusion of farmers in Ogba local government area

The specific objectives are;
i. describe the socio-economic characteristics of farmers in the study area
ii. identify financial products and services accessed by farmers in the study area.
iii. examine the factors that influence financial inclusion of farmers in the study area.
iv. identify the constraints associated with accessing financial products and services inOgba LGA.

Hypothesis of the study

Ho. There is no significant relationship between socio-economic factors of farmers and financial inclusion of farmers in Ogba Local Government Area (ONELGA) of Rivers State, Nigeria.

Research Methods

The research was carried out in Rivers State's Ogba Local Government Area. The Ogba people are made up of fourteen extended families organised into clans that dwell in the Niger flood plain and cover an area of around 600 km2. Farmers in Ogba land who engage in both little and large-scale farming operations made up the study's population. The respondents for this study were selected using a two-stage sampling technique. The first stage was the deliberate selection of three communities (Omoku, Obrikom, and Obie) based on a high concentration of agro-related economic activities and the presence of banking institutions. The second stage was a deliberate selection of 20 farmers from each community who are formally financially included and 20 farmers who are not formally financially included. There are 60 farmers who are formally financially included in the study, and another 60 who are not formally financially included, for a total of 120 farmers in the study. Farmers who are formally financially included were given one set of questions, whereas farmers who are not formally financially included were given the other. To meet the study's goals, descriptive statistics and a binary regression model were used.

Model Specification

In binary logit, one of the assumptions is that the **dependent variable** should be measured on a **dichotomous** scale, secondly, you have **one or more independent variables,** which can be either **continuous or categorical**.Binary logistic regression model was used given that the dependent variable is dichotomous: 0 when a farmer is not formally financially included and 1 when a farmer is formally financially included. Predictor variables are a set of socio-economic and demographic indicators of the farmers. They contain both dichotomous and continuous variables. Let Pj denote the probability that the j-th a farmer is formally financially included. We assume that Pj is a Bernoulli variable and its distribution depends on the vector of predictors X, so that:

$$P_j(X) = \frac{e^{\alpha+\beta X}}{1 + e^{\alpha+\beta X}} \quad \ldots\ldots\ldots\ldots 1$$

The logit function to be estimated is then written as:

$$\ln\{P_j/(1-P_j)\} = \alpha + \sum_I \beta_i X_{ij} \quad \ldots 2$$

The logit variable ln{Pj/(1-Pj)}is the natural log of the odds in favour of a farmer being formally financially included. The coefficient estimates of β gives the change in the log-odds (logarithm of

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relative probabilities) of the outcome—here = 1—, for a one unit increase in the independent variable, holding all other independent variables constant. Logit regressions are estimated using Maximum Likelihood (ML) rather than OLS. ML calculates coefficient estimates that maximize the likelihood of the sample data set being observed.

The binary logit model to be estimated is specified as follows:

$C_{ij} = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + \beta_9X_9 + \beta_{10}X_{10} + u$……3

C_{ij}, = Dummy = 1 if a farmer is formally financially included, and 0 otherwise.

X_1 = Age (Years)

X_2 = Household Size (Number)

X_3 = Educational Status (Years)

X_4 = Farming status (Full-time= 1, Part-time= 0)

X_5 = Cooperative Membership (Dummy; Yes =1, No=0)

X_6 = Business experience (Years)

X_7 = Internet access (Dummy; Yes= 1, No= 0)

X_8 = Owns ICT device (Dummy; Yes= 1, No= 0)

X_9 = Annual income (Naira)

u = stochastic error term.

Results and Discussion

Socio-economic characteristics of farmers

The socio-economic characteristics of the respondents are summarized in Table 1. The bulk of the respondents were females, accounting for 68.3 percent of the entire sample, while males accounted for 31.7 percent. This contradicts the findings of (Kaino, 2005), who reported that only a small percentage of women in rural Myanmar use financial services. The study also revealed that 30.0 percent of the respondents were between the ages of 31 and 60, 23.3 percent were between the ages of 41 and 50, 9.2 percent were between the ages of 21 and 30, and 7.5 percent were between the ages of 61 and 70. 65.0 percent of farmers were married, 17.5 percent were widowed, 12.5 percent were single, and 5.0 percent were divorced, according to the findings. According to the findings, 54.2 percent of the farmers had completed secondary education, 21.7 percent had only completed elementary education, 16.7 percent had completed higher education, and 7.5 percent had no formal education. The respondents' farming status differed by a large percentage. Around 75.0 percent of farmers were full-time farmers, whereas 25.0 percent were part-time farmers. This is due to the fact that there is no or little employment in the study area, which implies that more time is spent farming. About 30.0 percent of the respondents had a household size of 1-4, 56.7 percent had a household size of 5-8, 12.5 percent had a household size of 9-12, and 0.8 percent had a household size of 13-16, indicating that the household size of 5-8 was the most common in the study area. Crop farming accounted for 40.0 percent of farmers, livestock farming for 35.0 percent, fish farming for 16.7%, agro processing for 4.2 percent, and agricultural produce marketing for 3.3 percent. Crop farming is confirmed to be the greatest because of the demand for crop product, however agricultural produce marketing is verified to be the lowest since farmers will not engage marketers to be paid if the revenue from the produce is low. About 54.2 percent of farmers had 1-10 years of farming experience, 27.5 percent had 11-20 years of farming experience, 15.0% had 21-30 years of farming experience, and 3.3 percent had 31-40 years of farming experience. The following is the estimated annual revenue of the farmers: Among the farmers, 18.3% earned between ₦50,000 and ₦100,000, 75.8% earned between ₦101,000 and ₦150,000, 3.3 percent earned between ₦1,100,000 and ₦2,000,000, 1.7 percent earned between ₦2100000 and ₦3000000, and 0.8 percent earned between ₦3,100,000 and ₦4,000,000, all in naira. An ICT device, such as a phone, was found to be owned by 88.3 % of the total respondents. According to the results, 50% have a bank account, making them financially included, whereas 50% do not have a bank account, making them non-financially involved. 52.5% of the 88.3 percent of farmers who had a

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phone could access the internet, while 47.5 percent could not access it.

Table 1: Distribution of farmers socio economic characteristics

Socio-Economic Characteristics	Frequency	Percentage
Gender		
Female	82	68.3
Male	38	31.7
Age		
21-30	11	9.2
31-40	36	30.0
41-50	28	23.3
51-60	36	30.0
61-70	9	7.5
Marital Status		
Married	78	65.0
Divorced	6	5.0
Widowed	21	17.5
Single	15	12.5
Level Of Education		
Primary	26	21.7
Secondary	65	54.2
Tertiary	20	16.7
None	9	7.5
Farming Status		
Part Time	30	25.0
Full Time	90	75.0
Household Size		
1-4	36	30.0
5-8	68	56.7
9-12	15	12.5
13-16	1	0.8
Type Of Agribusiness		
Crop Farming	49	40.8
Livestock Farming	42	35.0
Fish Farming	20	16.7
Agro Processing	5	4.2
Agric Produce Marketing	4	3.3
Business Experience		
1-10	65	54.2
11-20	33	27.5
21-30	18	15.0
31-40	4	3.3
Annual Income		
₦50,000-₦100,000	22	18.3
₦101,000-₦500,000	91	75.8
₦501,000-₦1,000000	4	3.3
₦2,100,000-₦3,000000	2	1.7
₦3,100,000-₦4,000,000	1	0.8
Ownership of A Phone		
No	14	11.7
Yes	106	88.3
Have A Bank Account		
No	60	50.0
Yes	60	50.0
Have Internet Access		
No	57	47.5
Yes	63	52.5

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Source: Field Survey, 2019.

Financial Products Accessed by Farmers

The financial products and services accessed by farmers are summarized in table 2. Majority (90.0%) of the farmers that are financially included

Table 2: Distribution of Financial Products Accessed by Farmers

Products Accessed	Frequencies	Percentage
ATM		
No	6	10.0
Yes	54	90.0
Savings Account		
No	2	3.3
Yes	58	96.7
Current Account		
No	48	80.0
Yes	12	20.0
Fixed Deposit Account		
No	53	88.3
Yes	7	11.7
Mortgages		
No	60	100
Yes	0	0
Overdraft		
No	56	93.3
Yes	4	6.7
Loan		
No	45	75.0
Yes	15	25.0
Insurance		
No	52	86.7
Yes	8	13.3
Email		
No	36	60.0
Yes	24	40.0
SMS Alert		
No	2	3.3
Yes	58	96.7
Local Money Transfer		
No	25	41.7
Yes	35	58.3

Source: Field Survey, 2019

had ATM cards. Savings account was seen to be a major product accessed by the farmers and this accounted for about 96.7% of the total sample. The level of access to current accounts was low making up just 20.0% of the total respondents. This may be due to the high rate bank charges for farmers using current accounts. The percentage of farmers that accessed fixed deposit accounts was 11.7%. Based on the findings, none of the farmers accessed mortgages and just 6.7% had access to overdraft. About 25% of the farmers had access to loan. Only 13.3% of the farmers were able to access insurance. About 40.0% had email accounts. Majority 96.7% of the financially included farmers received SMS alerts. The result also revealed that 58.3% of the financially

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included farmers could perform local money transfer.

Determinants of Financial Inclusion of Farmers

A binary logistic regression was performed to ascertain the effect of socio-economic variables on determinants of financial inclusion of farmers in Ogba land. The dependent variable (determinant of financial inclusion) was captured as: financially included =1and not-financially included =0.

Results of the analysis on the major determinants of financial inclusion of farmers in the study area are presented in table 3. The results of the analysis indicate that the overall model with a log likelihood chi square ratio of 117.453 is significant at 1% suggesting that the model has a strong explanatory power which distinguishes farmers that are financially included and those that are not financially included. Nagelkreke R-square value is 0.439 indicating that 43.9% of the variation in the determinants of financial inclusion was explained by the combined effects of the independent variables in the model specified.

Out of the ten examined explanatory variables in the model, five factors; educational status, estimated annual income, business experience, farming status and ownership of a phone were statistically significant in determining financial inclusion of farmers.

The coefficient of farming status is positive and significant at 10%. This result suggests that involvement in full time farming is a major determinant of financial inclusion. The coefficient of estimated annual income is also positive and significant at 10%. This result indicates that increase in the annual income effects the financial inclusion of farmers. This conforms with the findings of According to Kohli (2013), individual income levels were found to have a considerable impact on the level of financial inclusion in India.Business experience is significant at 10% with a negative coefficient, this implies that farmers with very long experience in business are mostly not financially included. The coefficient of educational status is positive and significant at 1%.

Ownership of a phone is statistically significant at 10% with a positive coefficient, this means that farmers who own ICT devices like phones are more likely to be financially included.

Variables	**Coefficient B**	**Std error**	**Wald**	**Sig**
Gender	-.841	.552	2.325	.127
Marital Status	.027	.232	.013	.908
Age	.004	.035	.012	.912
Educational status	.182***	.063	8.261	.004
Estimated Annual Income	.000*	.000	3.033	.082
Household Size	-.008	.114	.005	.942
Business Experience	-.079*	.044	3.206	.073
Farming Status	.933*	.566	2.717	.099
Internet Access	-.338	.544	.386	.534
Own A Phone	2.048*	1.140	3.229	.072
Constant	-4.100	1.855	4.887	.027
Log likelihood	117.453			
Chi	0.000			
Nagelkerke R square	0.439			

*Source: Field Survey 2019 ***significant at 1%, **significant at 5%, *significant at 10%*

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Challenges Faced by Farmers in Accessing Financial Products and Services

Figure 2 below shows the challenges faced by farmers in accessing financial products and services. The result revealed that 31.7% of the total respondents were faced with the problem of their bank account always been hacked. About 45.0% of the farmers also had the challenges of long queue at the ATM stand. The issue of not being able to read and write wasn't a major constraint for farmers accessing financial services and products because most of them attained some level of education, this accounted for just 8.3% of the total respondents. Based on the findings, it was revealed that 38.3% of the farmers experienced long time for unsuccessful fund transfers to be returned. About 46.7% of the respondents agreed that the bank charges for each transaction was very high. The result also showed that 50.0% of farmers complained that the interest rate on loans is high.

Another challenge faced by farmers in accessing financial products and services is lack of acceptable physical collateral and this accounted for 46.7% of the total respondents. About 45% farmers were observed to be faced with the far distance from their residents to the bank. More than half (51.7%) of the respondents complained of poor banking services and this has been a major challenge in accessing financial products and services. The result revealed that 45.0% farmers could not access loans due to the problem of lack of loan guarantors. It also revealed that irregular income was a challenge to accessing financial products and services of farmers and 46.7% of the farmers agreed to that. The findings also showed that 36.7% of the total respondents had the problem of ATM not dispensing cash regularly.

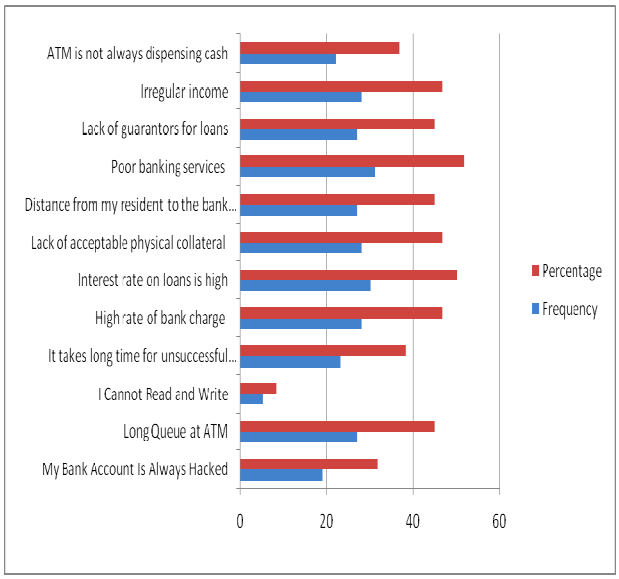

Fig 2: A graph showing the different constraints faced by farmers in accessing financial products and services all in percentages and frequencies

Conclusion

Financial inclusion is a critical factor in achieving long-term, inclusive growth. Access to low-cost financial services broadens economic options and mpowers the underprivileged to take control of their life. Increased annual income, educational level, farming status, and phone ownership were found to be key drivers of financial inclusion in the study. The farmers' main problems in obtaining financial products were exorbitant interest rates, long queues at ATMs, and poor banking services. The study recommends that the Central Bank of Nigeria, in collaboration with the government, should monitor banks' interest rates on loans in order to discourage high interest, and also regulate banks to be providing services that yield high level of customer satisfaction. Because educational status is a significant factor of financial inclusion, government should provide an enabling environment for education to those who are less privileged to assist them.

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