

Savings Behavior and its Determinants Among Plantain Farmers in Ogba/Egbema/Ndoni, Local Government Area of Rivers State, Nigeria

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Abstract

This study examined the savings behaviour and its determinants among plantain farmers in Ogba/Egbema/Ndoni Local Government Area of Rivers State, Nigeria. Specifically, the study described the socio-economic characteristics of plantain farmers, analyzed their level of savings, determined the factors influencing savings, and identified the constraints associated with savings. The primary data collected and analyzed from 143 respondents revealed that the mean monthly income was ₦139,545. The average annual gross income of the farmers was ₦1,429,742.19, while the average annual savings amounted to ₦419,687.50, giving an average propensity to save of 0.29, indicating that farmers saved about 29% of their gross income. Multiple regression analysis showed that production cost was the only variable that significantly influenced savings ($p < 0.05$). The hypothesis test revealed that the determinants included in the regression model did not jointly exert a significant influence on savings ($p > 0.05$), hence, accepting the null hypothesis. The study concludes that although plantain farmers demonstrate a moderate saving culture, their savings capacity is constrained mainly by economic and financial factors. It recommends policies aimed at increasing farm income, reducing production costs, improving access to affordable financial services, among plantain farmers.

Keywords: Savings behaviour, determinants of savings, propensity to save, Plantain farmers, Savings capacity, Farm income, Production cost, Agricultural savings.

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INTRODUCTION

Savings among the farming households in a developing economy like Nigeria is of crucial importance as the degree of progress a farmer will attained depends largely upon what the farmer does with the additional incomes generated yearly from farm activities (Ayawale & Bamire, 2000).

According to Amu & Amu (2012) savings is the act of putting something aside for future use or what will be considered deferred expenditure. The desire and ability to save depends on having more than the resources required for basic needs (Carpenter & Jensen, 2002). According to Bime (2008), savings go beyond capital formation to being a catalyst for capital formation and a major determinant of the cost of credits based on the law of scarcity which holds that “when the former is low and scarce, it becomes more costly to obtain”. Remarkably, Nigeria is adjudged as one of the largest plantains producing nations of the world (Kainga and Seiyabo, 2012). Due to the rich availability of fertile forests and laterite soils favourable for plantain growth, plantain production is concentrated in the southern region of Nigeria. Anambra, Benue, Cross River, Akwa-Ibom, Imo, Kwara, Enugu, Plateau, Kogi, Rivers, Edo, Delta, Lagos, Ogun, Osun, and Oyo (Ekunwe and Ajayi, 2010).

Savings is a common word used by individuals on daily basis. Mobilization of saving is also critical for household welfare in that it helps households’ smoothen their consumption and finance productive investments in human and physical capital (Karlán *et al.*, 2013). Savings operate under different names such as (esusu among the Yorubas of South Western Nigeria), (etoto among the Igbos in the South East) and (adashi in the North for the Hausas (CBN, 2000).

Ayanwale and Bamire (2000) opined that the saving behavior of farmers in developing countries are less dependent on the absolute level of aggregate income and more dependent on the relationship between current and expected income, the nature of business, household size, wealth and demographic variables like age.

Objectives

1. Describe the socio-economic characteristics of plantain farmers in the study area.
2. Analyze the level of savings made by plantain farmers.
3. Determine the factors influencing savings among plantain farmers in the study area.
4. Identify the constraints associated with savings among plantain farmers in the study area.

Hypotheses of the Study

H₀: The determinants of savings among plantain farmers does not significantly influence savings.

THEORETICAL FRAMEWORK

The theoretical framework for the study anchors on the Permanent-Income theory and Relative Income.

Permanent-Income theory

Permanent-income theory was propounded by Friedman (1999); in Morgan, (2009) and states that the huge challenge encountered by people when the level of income is not stable could negatively impact on their saving abilities. According to Friedman households that are well off in their level of income are differentiated from other normal household who tend not to have a stable level of income permanent income and (positive or negative) deviations from that level, which was termed as transitory income. Friedman assumed that consumption consists of a planned part that depends on permanent income and an unplanned part that is totally independent of income (Morgan, 2009).

In relation to the study, the Permanent-income theory is considered an important tool for assessing the income factor that is also the economic and Social Class in this study. Under economic factors, income, employment or occupation and capital form the largest factor of consumption and saving. The higher one earns, the larger one saves as consumption is not affecting the individual's budget and thus much is left to save. The low income leads to poor saving culture. Unemployment also means low income and high expenditure and thus, unemployment leads to poor saving culture. Lack of capital means less income and thus, lack of capital leads to poor saving culture. In relation to Social Class that influence low-income include a large number of dependents, higher living standards, and poverty.

Relative Income Theory

This was formulated by James Duesenberry (1949). The relative income theory stipulates that a consumption pattern of a consumer is determined by two main factors. First, their current income which mainly depends on the income standard set by the household in the past depending on the income earned in the past. Secondly the consumption pattern is dependent on the income earned by the households around the consumer. This is based on the argument that the status one holds in a society matters and that as one's fellow society members consume quality goods, he or she will not be satisfied with the lower quality goods he or she may be purchasing and hence would want to keep up with the standards of the community. The theory argues that families earning similar level of income have different consumption patterns. In this case, the consumption level of each family depends on the relative income of group that the family has placed itself in. Families with high levels of income tend to have high consumption levels when compared with the level of income they earn and this is meant to ensure that such families remain in the same class or standard with the families in the same group. A family's savings depend on its income.

Empirical Literature

Rodney, Solomon and Salome (2020) examined farmers' attitudes towards saving behaviour in Ika South Local Government Area of Delta State, Nigeria. Using questionnaire data analyzed with descriptive statistics and logistic regression, the study found that farmers generally had a positive attitude towards saving, although they showed limited confidence in commercial banks and therefore relied on alternative savings channels. The respondents were predominantly male, with most having formal education, while the average farm size and

household size were 2.9 hectares and four persons, respectively. Education level, farm size and farming experience significantly influenced farmers' saving behaviour. However, inadequate income, family responsibilities and high input costs constrained their ability to save. The study therefore emphasized the need to improve farm income and expand farm sizes while encouraging commercial banks to provide financial services that are more responsive to farmers' needs. Overall, the findings suggest that although farmers recognize the importance of saving, their saving capacity and choice of financial institutions are strongly shaped by socioeconomic conditions and the accessibility and suitability of formal banking services. Though the study provides useful evidence on farmers' attitudes and saving behaviour, but it leaves some gaps. First, the study focused specifically on Ika South Local Government Area of Delta State, limiting the generalizability of its findings to farmers in other locations with different socioeconomic and agricultural conditions. Second, although it identified education, farm size and farming experience as determinants of saving, it gave limited attention to other potentially important factors, such as access to credit, income level, financial literacy, access to extension services, interest rates, trust in financial institutions, and distance to banking facilities. Third, the study primarily examined farmers' attitudes and determinants of saving, without sufficiently examining the actual level, frequency, and forms of savings among farmers. Finally, the study identified farmers' discomfort with commercial banks but did not deeply investigate the specific reasons for this distrust or the effectiveness of alternative savings mechanisms. Therefore, the research gap lies in the need for further studies that examine the broader socioeconomic, institutional and financial factors influencing farmers' actual saving behaviour, particularly in other geographical areas and within the context of changing financial services.

Sallawu and Hassan (2021) investigated the effects of savings and investment on the food security status of farm households in Agaie and Katcha Local Government Areas of Niger State, Nigeria. Using data from 120 respondents, the study employed descriptive statistics, a food security index, OLS regression and Exploratory Factor Analysis. The findings showed that farmers used different savings mechanisms, including bank deposits, rotational savings, daily contributions and cooperative societies, while their major investment activities included livestock production, produce purchasing, contract farming, trading and agricultural processing. More than half (53%) of the households were food secure, while 47% were food insecure. The regression results established that savings, investment, education, farming experience, farm size, association membership and access to credit positively influenced food security, whereas age and household size had negative effects. The study further identified personal, administrative and production-related challenges as major constraints to savings and investment. Overall, the study demonstrates that savings and investment are important financial strategies for improving the welfare and food security of farm households, particularly when supported by education, credit access and collective financial arrangements such as cooperatives.

Despite its contribution, the study has some limitations that create areas for further research. First, its primary focus was on the effect of savings and investment on food security, rather than on the factors that directly determine farmers' saving behaviour and saving decisions. Thus, it provides limited explanation of why some farmers save more or less than others. Second, the study was conducted only in Agaie and Katcha Local Government Areas of Niger State, making it difficult to generalize the findings to farmers in other geographical areas with different socioeconomic and institutional conditions. Third, although the study identified constraints to savings and investment, it did not extensively examine factors such

as financial literacy, accessibility and trust in formal financial institutions, banking services, income levels, interest rates, and farmers' attitudes towards different savings channels.

Therefore, the gap lies in the need for further research to examine the socioeconomic, institutional and behavioural factors influencing farmers' saving behaviour, rather than focusing mainly on the outcome of savings and investment on food security. Such a study would provide a deeper understanding of how farmers make savings decisions and the factors that encourage or constrain their participation in formal and informal savings schemes.

METHODOLOGY

Study Area

Savings Behavior and Its Determinants Among Plantain Farmers in Ogba/Egbema/Ndoni, Local Government Area of Rivers State, Nigeria. study area is majorly upland and home to the highest upstream Oil and Gas exploration/exploitation activity in the State since early 1960's with about 12 mining/producing fields operated by AGIP, Total Energies and Shell/NPDC with many others. Rainfall is between 2000mm to 2500mm with highest values from April till October of every year. The study area experience intense temperature of above 320C from January to March and as low as 260C within July period. It has annual humidity of 85%, indicating it is characterized by tropical climate environment (Chiadikobi, et al., 2019; Nwaerema, et al., 2018).

Research Design

Survey research design was used for this study because a sample of plantain farmers were interviewed, rather than the total plantain farmers in the study area.

Population of the Study

The population of the study consists of all the plantain farmers in Ogba/Egbema/Ndoni Local Government Area, Rivers State. This is owing to the unavailability of data on the population from recognized institutions like; Agricultural Development Programme (ADP), the Rivers State Ministry of Agriculture and the LGAs associated with the study area.

Sampling Procedure and Sample Size

Multi-stage sampling technique was used for the study. The first stage involved a purposive selection of three villages each from Ogba/Egbema/Ndoni respectively making it nine villages in total based on their high level of plantain farming. The villages were Obirikom, Omoku, Erema, Ase-Azzga, Agwe, Anieze, Okwuzi, Mgbede and Agah.

The second stage involved the random sampling of 16 plantain farmers each from the nine villages for administering of questionnaire and oral interview. Thus, this gave a total of 144 respondents. One questionnaire was not retrieved.

Since there is no available data on the population of plantain farmers in Ogba/Egbema/Ndoni Local Government Area, the sample size was calculated using the formula given by Cochran, W.G. (1977).

$$n = \frac{4XpXq}{d^2}$$

Using 20% expected prevalence and 5% desired absolute precision at 95% confidence interval.

Were

n = required sample size

P = confidence level at 90%

D = margin of error at 5% (students value of 0.05)

Using an approximate 95% confidence level, taking worst case scenario and set $p=0.1$, $q=1-p$, and $d=0.05$.

$$n = \frac{4 \times 0.1 \times 0.9}{0.05^2}$$

$$n = \frac{4 \times 0.1 \times 0.9}{0.0025}$$

$$n = 144$$

Table 1: Summary of Procedure for Sampling of the Respondents

Clan	Village	No. of Respondents
Ogba	Obirikom	16
	Omoku	16
	Erema	16
Egbema	Okwuzi	16
	Mgbede	16
	Agah	16
Ndoni	Ase-Azzgah	16
	Agwe	16
	Anieze	16
Total		144

Source: Researcher's initiative 2026

Method of Data Collection

Primary data were used for the study and were collected through an interview schedule and structured questionnaire administered to the respondents. The structured questionnaire was considered appropriate because it enabled the researcher to obtain standardized, uniform and comparable responses from all respondents. It also facilitated the systematic collection of information on the respondents' socioeconomic characteristics, saving behaviour, investment activities and constraints. In addition, the structured format made the data easier to code, analyze and interpret using appropriate statistical techniques. The interview schedule was used to guide the data collection process and to provide clarification where necessary, thereby enhancing the reliability and completeness of the information obtained.

Method of Data Analysis

Objectives (i) and (ii) was analyzed using descriptive statistics such as percentages, frequencies, charts. Objective (iii) was analyzed using multiple regression and objective (iv) was analyzed using likert scale and mean score.

Justification for the Use of SPSS Version 23

SPSS Version 23 was used for the analysis of data because it is a reliable and widely accepted statistical software package for quantitative research in the social and agricultural sciences. It was considered appropriate for organizing, coding, and analyzing the data collected from the 143 plantain farmers. The software was used to obtain descriptive statistics, including frequencies, percentages, means, and standard deviations, as well as to conduct multiple regression analysis for determining the factors influencing the savings behaviour of the respondents. SPSS Version 23 also facilitated the testing of the study hypothesis and reduced the possibility of computational errors, thereby enhancing the accuracy, reliability, and proper interpretation of the research findings

Model Specification

Objective 3 was analyzed using multiple regression.

Savings model:

Where;

Y= Amount Saved (Naira)

X₁= disposable income (naira)

X₂= price of plantain (naira)

X₃= cost of plantain (naira)

X₄= farm size (plots)

X₅= plantain production (quantity)

X₆= labour cost (naira)

X₇= fertilizer cost (naira)

X₈ = access to credit (naira)

e_i = Error term

b₀ = Intercept,

X₁ – X₈ = Regression parameters to be estimated.

Three functional forms (Linear, Semi-log and Double-log function) of the specified model were fitted to the data. The lead equation was selected based on the values of R² coefficient, the magnitude of the F-ratio as well as the conformity of signs of coefficient to *a priori* expectations and the number of significant parameters. The three functional forms of the regression model that were used are specified as follows;

Linear Form:

$$Y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + \dots b_nx_n + e_i$$

Semi – log form:

$$Y = b_0 + b_1\log x_1 + b_2\log x_2 + b_3\log x_3 + b_4\log x_4 + b_5\log x_5 + b_6\log x_6 + b_7\log x_7 + \dots b_n\log x_n + e_i$$

Double log form:

$$\log Y = b_0 + b_1\log x_1 + b_2\log x_2 + b_3\log x_3 + b_4\log x_4 + b_5\log x_5 + b_6\log x_6 + b_7\log x_7 + \dots b_n\log x_n + e_i$$

Test of Hypotheses

Hypotheses for the study was tested using Multiple Regressions.

RESULT AND DISCUSSION

Socio-Economic Characteristics of the Respondents

Table 2: Socio-Economic Characteristics of respondents

Variables	Frequency(n =143)	Percentage (%)	Mean (■)
Sex			
Female	71	49.7	
Male	72	50.3	
Age (years)			
21 – 30	18	12.6	
31 – 40	38	26.6	
41 – 50	48	33.6	44 years
51 – 60	28	19.6	
61 – 70	11	7.7	
Marital status			
Single	26	18.2	
Married	89	62.2	
Divorced	7	4.9	
Separated	8	5.6	
Widowed	13	9.1	
Educational Level			
No formal education	21	14.7	

Primary	36	25.2	
Secondary	58	40.6	
Tertiary	28	19.6	
Household size			
1-4	41	28.7	
5-8	68	47.6	6 persons
9-12	33	23.1	
13 and above	1	0.7	
Years of Experience (years)			
1 – 5	43	30.1	
6 – 10	38	26.6	
11 – 15	28	19.6	10 Years
16 – 20	18	12.6	
21 years and above	16	11.2	
Monthly income (₦)			
21,000 – 30,000	3	2.1	
31,000 – 40,000	5	3.5	
41,000 – 50,000	8	5.6	
51,000 – 60,000	15	10.5	
61,000 – 70,000	11	7.7	₦139,545
71,000 - 80,000	11	7.7	
81,000 – 90,000	17	11.9	
91,000 – 100,000	13	9.1	
101,000 – 110,000	14	9.8	
111,000 – 120,000	46	32.2	

Source: Field survey, 2026

The socio-economic characteristics of plantain farmers in Ogba/Egbema/Ndoni LGA that were examined comprised gender, age, educational level, marital status, household size, years of experience, extension contact, cooperative membership and income.

The result in table 2, shows that most 50.3% of the plantain farmers were male while 49.7% were female. This implies that plantain farming in the study area were male dominated than their female counterparts. The plausible reason could be the fact that plantain bunches and heavy and therefore needs more of masculine energy in the farmind process. This observation agrees with Confidence, Orokwu, King and Etuk (2023) who found that 55.6% of the plantain farmers in in Tai Local Government Area were males. This finding also agrees with the finding of Olumba (2014) in Anambra State, where 67% of plantain farmers were males and 33% were females. However, this is a variant of Wilcox (2021) findings in Bayelsa State, where 71.5% were female farmers and 28.5% were male farmers.

Result on age revealed that most (33.6%) of plantain farmers were within 41 - 50 years followed by 26.6% who were within 31 - 40 years. Another percentage of plantain farmers 19.6% were within 51 - 60 years, 12.6% of them within 21 – 30 years and only 7.7% of them were within the age bracket of 61 - 70 years.

The mean age for the respondents (plantain farmers) was 44 years, which implies that the respondents were still in their reproductive and active ages and will be able to put in more energy to cultivate more area of land if they have the resources to do so therefore conscious of the importance of saving and investment to their farming enterprise. The finding of this study confirms that of Wilcox (2021) in Bayelsa State, Nigeria who found that most of the respondents were still in their reproductive ages.

Maritally, the study revealed that most 62.2% of the plantain farmers were married followed by 18.2% plantain farmers who were single. Another percentage (9.1%) plantain farmers were widowed, 5.6% of them were separated. A lower percentage 4.9% of them were divorced. This implies that majority of the respondents were married. Marriage confers a higher level of responsibility on an individual as well as the probability of higher investment in the study area. Marriage is often associated with stability and social support, which can be beneficial for individuals engaged in farming activities as reported by Oyewole *et al.*, (2023), and the high percentage of married plantain farmers suggests that this may be a relatively stable population, which can have positive implications for the sustainability in that endeavour. The finding of this study is in line with that of Elum and Tigiri (2018) who also found out that majority (66.3 %) of the respondents in Khana Local Government Area of Rivers State were married.

Educationally, 14.7% of the plantain farmers had no formal education while more 40.6% of them had secondary education. Also, 25.2% of them had primary education while only 19.6% of them had tertiary education. Cumulatively, 85.3% of plantain farmers had formal education implying that they are capable of understanding the importance of savings and investment thereby leading to financial literacy. According to Oduro *et al.* (2014), a positive correlation exists between education and farm output and productivity; thus education is essential for the growth of the sector.

Result on household size showed that more (47.6%) of plantain farmers had household sizes ranging between 5 to 8 persons, while 28.7% of them had household sizes ranging between 1 to 4 persons and 23.1% of them had household sizes ranging between 9 to 12 persons while only 0.7% of them had household sizes ranging between 13 persons and above. The mean household size was 6 persons. This implies that plantain farmers had a moderate household size. This is as a result of the marital status of the respondents that favours the married household majorly and as such the tendency to give birth or having individuals under their care. This collaborates with the study of Nwaiwu (2015) who found out that in southeastern Nigeria, household maintained a moderate household size.

Based on farming experience, more 30.1% of plantain farmers had between 1 to 5 years farming experience followed by 26.6% who had 6 to 10 years farming experience. Another percentage (19.6%) had between 11 to 15 years farming experience, 12.6% had between 16 to 20 years farming experience while only 11.2% had 21 years and above farming experience. The mean farming experience was 10 years. This implies that the respondents had been into plantain farming for quite a long time and should know the benefits of saving and investment to the enterprise. Experience in this case can be linked with innovativeness and improvement in technical-know-how. Furthermore, the finding suggests that there may be a strong

community of practice around plantain farming in the study area. This community of practice may facilitate the exchange of knowledge, skills, and best practices among farmers, leading to further improvements in productivity and profitability (Oyewole, 2023).

Result on income revealed that most of the plantain farmers 32.2% earned a monthly income between ₦111,000 – ₦120,000, 11.9% of them earned between ₦81,000 – ₦90,000, 10.5% earned between ₦51,000 – ₦60,000 and 9.8% earned between ₦101,000 – ₦110,000. Furthermore, 9.1% of them earned between ₦91,000 – ₦100,000 monthly, 7.7% of them earned between ₦71,000 – ₦80,000 and ₦61,000 – ₦70,000 monthly, 5.6% of them earned between ₦41,000 – ₦50,000 while 3.5% of the respondents earned between ₦31,000 – ₦40,000 and only 2.1% earned between ₦21,000 – ₦30,000 monthly. The mean monthly income for plantain farmers was ₦139,545. This means that respondents in the study area can save little from their income as a result of high cost of living.

Level of Savings Made by the Plantain Farmers

Table 3: The level of savings made by the plantain farmers

Average gross income (farm income and off-farm income)	Average saving
1,429,742.188	419,687.5

Source: Field Survey 2026

In this study, the gross income of plantain farmers was used in the analysis. The gross income consist of income from farm and off-farm activities. Off-farm income covers both income earned by the farmer from other auxiliary activities engaged in as well as unearned income which represent gifts from friends and family relatives in the urban areas and contributions from other members of the household. The farmers were asked to give what they were able to save from their farm and off-farm income; the amount saved in various form (at home, Isusu, at Bank and others) as well as their expenditure. From their response and information gathered; savings was computed for the farmers. The sum of average income of the farmers from both farm and off farm income were ₦1,429,742.188 and they were able to save ₦419,687.5. This result is in conformity with the findings of Nayak (2013) who reported that rural families earn their livelihood from agriculture, petty trading and daily wage working. Result on the average saving of farmers is high if compared with the finding of Jalo (2015) who reported that average saving of cooperative farmers in Adamawa State was ₦210,000. The average propensity to save (APS) was 0.29 implying that 29 percent of the gross income of the households were saved while 71 percent were either consumed or invested. This result shows that there is propensity to save among plantain farmers in the study area.

The following formular was used.

$$\text{Average propensity to save (APS)} = \frac{\text{Gross savings}}{\text{Average gross income}}$$

$$= \frac{419,687.5}{1,429,742.188}$$

$$\text{APS} = 0.29$$

Determinants of Savings among Plantain Farmers

The determinants of saving and investment among plantain farmers was analyzed using multiple regression and result presented in Table 4 below.

Table 4: Summary of Multiple Regression Analysis Results on the determinants of savings and investment among plantain farmers

Variables	Linear		Semi-log		Double log	
	Coeff	PV	Coeff	PV	Coeff	PV
(Constant)	-52220.547	0.668	3.609	0.012	-7.775	0.485
Income	998.326	0.716	0.021	0.436	0.244	0.543
Farm Size	468.717	0.963	-0.024	0.800	-0.325	0.569
Labour Cost	0.058	0.856	-3.137E-7	0.918	0.022	0.942
Fertilizer Cost	-0.152	0.207	-6.165E-7	0.577	-0.127	0.596
Production Cost	0.452	0.037*	2.941E-6	0.127	1.196	0.164
Plantain Production	-69.551	0.237	0.000	0.577	0.193	0.715
Plantain Price	8.190	0.759	0.000	0.608	1.682	0.472
R-Square	0.647		0.535		0.514	
F-Cal	2.096		1.316		1.208	
Sig F	0.161		0.352		0.395	

*=Significant difference ($P \leq 0.05$), NS = Not significant ($P > 0.05$)

Source: Researcher's computation with SPSS 23.0

Table 4, shows the results of multiple regression analysis on the determinants of saving among plantain farmers. Three functional forms were used namely; linear, semi-log and double log. The linear result was chosen due to the value of the coefficient of determination (R^2) which was 0.647.

The coefficient of determination (R^2) = 0.647 for the savings model shows that 64.7% variation in the level of savings was explained by the independent variables used in the model. The remaining 35.3% were explained by other variables not included in the model.

From the result on Table 4, only production cost significantly determines saving $PV < 0.05$ level of significance. The coefficient of production cost was positive (0.452), implying that an increase in the cost of production increases savings among plantain farmers. The plausible reason for this is because higher costs often reflect greater investment in inputs, scale, improved technology or markt-oriented production. This will lead to greater output which will translate to profitability, which in turn increases the capacity to save. This finding agrees with that of Arowolo, et al., (2022) and Joel et al., (2022) who found that cost and returns in plantatin farming move together, thereby supporting the logic of cost being a precursor to savings.

Table 5: Response on constraints to savings and investment

	Constraints	Sum	SD	Mean	Remarks	Ranking
1	Constant illness	345	1.016	2.41	Disagreed	
2	High bank charges, delays, congestion at the bank and remoteness of the bank hinder farmers saving	359	0.918	2.51	Agreed	6th
3	Lack of trust of security of savings	317	0.965	2.22	Disagreed	
4	Cost of inputs	432	0.907	3.02	Agreed	3rd
5	Family responsibility	379	1.036	2.65	Agreed	4th
6	Inadequate income	471	0.863	3.29	Agreed	2nd
7	Market Access	288	1.007	2.01	Disagreed	

Source: Field survey 2026 Multiple Responses
≥ 2.5 - Agreed; ≤ 2.5 -Disagreed

The results presented in Table 5, show that inadequate income (Mean = 3.29) was the most important constraint to savings and investment among plantain farmers in Ogba/Egbema/Ndoni Local Government Area of Rivers State. This finding is consistent with Akpan, Edet, and Charlie (2025), who examined the savings behaviour of small-scale tomato farmers in Akwa Ibom State, Nigeria. Their study found that farm income and non-farm income significantly increased both the probability of saving and the amount saved, while low-income farmers had limited capacity to accumulate savings. The implication is that inadequate income remains the primary barrier to savings among smallholder farmers because household consumption and production expenses often take precedence over savings.

The study further revealed that the high cost of farm inputs (Mean = 3.02) constituted a major constraint to savings and investment. Rising costs of fertilizers, agrochemicals, improved planting materials, and labour reduce farmers' disposable income, leaving little surplus for savings and investment. This finding is consistent with Akpan et al. (2025), who reported that farm income significantly influences both the decision to save and the saving capacity of smallholder farmers. Since production costs directly reduce net farm income, higher input costs inevitably diminish farmers' capacity to accumulate savings and invest in their farming enterprises.

Another important constraint identified by the respondents was family responsibility (Mean = 2.65). The finding suggests that household expenditures such as feeding, education, healthcare, and other family obligations reduce the proportion of income available for savings. This agrees with Akpan et al. (2025), who found that family size and dependency ratio negatively influenced farmers' probability of saving because larger households require greater consumption expenditure, thereby reducing the capacity to accumulate savings.

he respondents also agreed that high bank charges, delays, congestion, and the remoteness of banking facilities (Mean = 2.51) hindered savings and investment. This implies that the cost

and difficulty associated with accessing formal financial institutions may discourage farmers from using banking services for savings mobilization. The finding agrees with Adepoju and Yusuf (2021), who reported that many rural smallholder farmers in Nigeria experience financial exclusion due to barriers such as high transaction costs, limited access points, and inadequate financial capability. Similarly, the International Monetary Fund (IMF, 2023) identified the cost of financial services and distance to financial access points as important obstacles limiting financial inclusion in Nigeria, particularly among rural populations. Improved access to affordable and convenient financial services is therefore essential for enhancing farmers' ability to save and invest in agricultural activities.

Conversely, respondents disagreed that constant illness (Mean = 2.41), lack of trust in the security of savings (Mean = 2.22), and poor market access (Mean = 2.01) were major constraints to savings and investment. This suggests that, although these factors may influence some farming households, they were not perceived as the dominant barriers in the study area. Instead, the evidence indicates that financial and economic factors, particularly inadequate income, rising production costs, household financial obligations, and limited access to formal financial services, are the principal determinants of savings behaviour among plantain farmers in Ogba/Egbema/Ndoni Local Government Area.

Hypothesis: The determinants of savings among plantain farmers does not significantly influence savings in the study area.

Table 6: Summary of Multiple Regression Analysis Results on the influence of Savings Determinants on Savings Among Plantain Farmers

Variables	Linear		Semi-log		Double log	
	Coeff	PV	Coeff	PV	Coeff	PV
(Constant)	-52220.547	0.668	3.609	0.012	-7.775	0.485
Income	998.326	0.716	0.021	0.436	0.244	0.543
Farm Size	468.717	0.963	-0.024	0.800	-0.325	0.569
Labour Cost	0.058	0.856	-3.137E-7	0.918	0.022	0.942
Fertilizer Cost	-0.152	0.207	-6.165E-7	0.577	-0.127	0.596
Production Cost	0.452	0.037*	2.941E-6	0.127	1.196	0.164
Plantain Production	-69.551	0.237	0.000	0.577	0.193	0.715
Plantain Price	8.190	0.759	0.000	0.608	1.682	0.472
R-Square	0.647		0.535		0.514	
F-Cal	2.096		1.316		1.208	
Sig F	0.161		0.352		0.395	

*=Significant difference ($P \leq 0.05$), NS = Not significant ($P > 0.05$)

Source: Researcher's computation with SPSS 23.0

Table 6 shows the results of multiple regression analysis on the effects of the determinants of savings on savings among plantain farmers in the study area. The double log model was chosen since it had the highest coefficient of determination (R^2) of 0.647 indicating that 64.7 percent variation in the dependent variable is explained by the explanatory variables. From

the result, it was observed further that the p-value (0.161) of the F-ratio was greater than α (0.05), this indicates that the independent variables does not significantly influence the dependent variable. Given the fact that the p-value is greater than α (0.05), the null hypothesis (H_0) which states that the determinants of savings among plantain farmers does not significantly influence savings in the study area was upheld.

CONCLUSION

This study examined the savings behaviour and its determinants among plantain farmers in Ogba/Egbema/Ndoni Local Government Area of Rivers State, Nigeria. The findings showed that the majority of the farmers were economically active, married, and possessed some level of formal education, indicating their potential to make informed financial decisions. The farmers also had considerable farming experience and earned moderate incomes from both farm and off-farm activities.

The study further revealed that plantain farmers demonstrated a moderate saving culture, with an average propensity to save of 0.29, implying that about 29% of their gross income was saved while the remaining income was utilized for consumption and investment. Among the explanatory variables examined, production cost was the only factor that significantly influenced savings, suggesting that farmers who invested more in production tended to generate greater returns that enhanced their saving capacity. However, the overall regression model indicated that the selected determinants did not jointly exert a statistically significant influence on savings.

The study also established that inadequate income, high cost of farm inputs, family responsibilities, and poor access to formal financial institutions constituted the major constraints to savings among plantain farmers. These challenges reduce disposable income and limit the ability of farmers to accumulate savings for future investment and expansion of their enterprises.

Overall, the study concludes that although plantain farmers in Ogba/Egbema/Ndoni Local Government Area have a positive saving culture, their saving capacity is constrained largely by economic and institutional factors. Improving farmers' incomes and expanding access to affordable financial services will be critical to strengthening savings mobilization and promoting sustainable agricultural development in the study area.

Contribution to knowledge

The results of the study have far-reaching consequences on saving among plantain farmers. The major contributions of this study to knowledge are as follows:

- It was discovered that male farmers were more involved in plantain farming in the study area.
- The study also showed that the farmers had high propensity to save in the study area.
- Only farm income influenced saving among plantain farmers in the study area.
- Finally, it was discovered that inadequate access to credit was a major constraint to saving in the study area.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

1. Government should implement policies and programmes that increase the profitability of plantain farming through the provision of subsidized farm inputs such as improved planting materials, fertilizers, and agrochemicals to reduce production costs and enhance farmers' disposable income.
2. Financial institutions should expand rural banking services by establishing more accessible banking outlets, reducing transaction charges, simplifying savings procedures, and developing farmer-friendly savings products that encourage regular savings among rural households.
3. Policies that promote affordable agricultural credit and risk management mechanisms, such as crop insurance and low-interest production loans, should be strengthened to reduce farmers' financial vulnerability and encourage greater savings and investment.

Suggestions for Further Research

- This study limits itself to one local government area in the state, therefore, effort should be made to cover more areas, not only in Rivers state but also other geographical regions of the federation for a comparative analysis.
- It is important to undertake an extensive research on how rural households allocate their income among competing needs for detail knowledge of savings and investment.

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