NIGER AGRIC .J. 37 (2006) 124-132

SAVINGS IN NON CASH FORMS AMONG FARMERS: IMPLICATIONS FOR SUSTAINABLE PRODUCTION

BY

R. O. Mejeha[1] And E. C. Nwagbo[2]
Department Of Agricultural Economics
Michael Okpara University Of Agriculture, Umudike,
Abia State
[2]Department Of Agricultural Economics
University Of Nigeria, Nsukka, Enugu State

ABSTRACT

This study was conducted in Abia State, Nigeria. The objectives of the study include the evaluation of the factors that influence non cash savings and the reasons for holding savings in non cash form. A total of 188 respondents were randomly selected for the study. A set of structured questionnaire was used in collecting data. Simple statistical tools like means, percentages, frequency distribution table and the regression analysis were used in analysing the data. Results show that non cash savings are held in form of agricultural products, mature animals, farm inputs among others. The mean savings in non-cash form estimated at farm gate price were N80,989.70. Reason for having saving in non cash form include the anticipation that the value of commodities would appreciate and provision for family food need. Four variables namely household size, distance of respondent's house to the nearest bank, off-season price and provision for family consumption were significant in affecting savings in non-cash form

INTRODUCTION

Savings have been given different definitions by different authors. In each definition, the author tries to explain the type of savings being referred to. The various definitions however, classify savings into two forms namely; cash savings and non-cash savings.

Brooman (1977) and Bannock *et al* (1982), define cash savings as that part of disposable income which is not spent on consumption. Savings can be kept in form of non-cash forms such as jewelry, gold, land, stored crops, consumer durables and livestock (Oganda 1989), Marguerite and Robinson, (1994), Upton, (1999). Such physical forms of savings could be sold any time of the year when the holder has need for cash, depending on their liquidity. Savings are held in physical forms by most small scale farmers because of practices that undermine their confidence or out of habit, Bedard *et al*, (1986)

Non-cash savings can take any of the following forms, acquisition of land, machinery and implements, buildings and structures, livestock and poultry, inventory and consumer durables (Desai and Mellor, 1993).

Economists always link savings of any kind with price and non-price factors. Most studies on savings including those done by Desai and Mellor (1993) and Gupta, (1987) adopted both econometric and descriptive methods of measuring the

relative importance of the variables. The results from these studies provided two different conclusions. The first is that the response of savings to real interest rate is positive but inelastic. For this reasons, it was suggested that improvement in the accessibility, safety, liquidity and access to other financial and non-financial services is important. The second conclusion is that rural deposits are not only positive to real interest rate but highly elastic. Based on the strength of this finding, it was suggested that savings will be enhanced by raising the real interest rate only.

Econometric studies conducted by Gupta (1975) and Ong (1972) on the determinants of savings, used the single-equation of the ordinary least square techniques of estimation. Most of the variables considered in the estimation include real interest rate on 12-month time deposit, nominal interest rate on 12-month time deposit, inflation rate, number of bank branches per 1,000 inhabitants in rural areas, per capita agricultural GDP, household income, value of financial net worth, value of financial assets etc. Most of the regression coefficients associated with the real interest rate and non-price factors (as mentioned above) gave the expected signs. However, most results show that non-price factors prove to be more important when compared with the price factors, especially in the third world countries.

Economists hold the view that holding of savings in non-cash form is not for the interest of economic growth. The reason being that such savings are not available for economic activities.

It is important to consider the reasons and problems of savings in non-cash form because modern agricultural production practices have gone beyond the level of subsistence operation and as a result involves all the inter-faces of agri-business embodying production, input supply, marketing and finance.

The broad objective of this study is to evaluate the factors that influence saving in non-cash form in the area. Specific objectives include to: examine forms of savings in non-cash form and the reasons for holding such savings.

METHODOLOGY

The study was conducted in the rural areas of Abia State, Nigeria. The State is made up of three Agricultural Zones. Namely: Aba, Ohafia and Umuahia. With the assistance of Agricultural Extension Agents in each zone, 188 farmers were randomly selected from the list of farmers compiled by the Extension Agents. The number of farmer respondents selected from each zone was determined by the population of farmers in the zone. In this regard, 62 farmers were selected from Aba zone, 74 from Ohafia zone and 52 from Umuahia zone. Data were collected from the respondents with a set of structured questionnaire. The data were collected on commodities which were held by the respondents with the intention to use or resale them in future. Then the commodities were valuated using the off-season farm gate price.

The data generated for the study were analysed with simple statistical tools like means, percentages and frequency distribution. In addition, regression analysis was used to identify the variables which are significant in influencing savings in non-cash form. Four functional forms of the regression model were tried, but the functional form that provided more significant variables and the signs agreed with a priori expectation was chosen for discussion.

The implicit function of the regression model is

$Y = f(X_1, X_2, X_3 \ldots\ldots X_n, U)$

Where y = Monetary value of savings in non cash form (N)

X_1 = Age of the respondent (years);

X_2 =Household size, the number of persons who live together with the respondent (the household head);

X_3 = Level of income (disposable) (N);

X_4 = Nominal interest payment on 12 months deposit (N);

X_5 = Level of education, number of years the respondent spent in school;

X_6 =Farm size (Ha.), total area of land cultivated by the respondent;

X_7 = Distance of the nearest rural bank branch to the respondent's residence (km);

X_8 = Monetary value of income yielding assets (N);

X_9 = Off-season price (N); the market price of stored agricultural products during the off season period;

X_{10} = Provision made for family food consumption (N); value of non cash savings reserved for family food needs; proxy for family food security.

The a priori expectations for the regression variables as defined are stated below. Household size is expected to be positively related to the value of savings in non cash form. The expectation is that households having more people will hold more of their savings in non cash form than households with less number of people.

The relationship between income level (disposable), and the amount of savings in non cash form is expected to be direct. Theoretically, people who earn more income, are expected to have more savings than those who earn less income.

It is expected in *a priori* that, the level of education will be positively related to the amount of non-cash savings. The implication is that, respondents who acquired more formal education will hold more savings.

Farm size is expected to have a direct relationship with the amount of non cash savings. It is anticipated that respondents who have large farms will hold more savings in non cash forms than those who have small farms.

The relationship between the distance of the respondent's residence to the closest rural bank branch and the amount of non-cash saving is expected to be positive. Respondents whose homes are close to bank branches are expected to hold less of their savings in non-cash forms than those who live far away from banks.

The value of income yielding assets is expected to be positively related to the amount of savings in non cash form. It is anticipated that respondents who have more farm assets that yield income will have more savings in non-cash farm than those who have less of such assets.

The anticipation that commodity price will increase during the off season period will increase the tendency for households/respondents to hold more savings in non cash form. On the other hand, less savings will be held in non cash form, when households/respondents anticipate a fall in price during off season period.

The value of commodities required for family food security is expected to have positive relationship with the amount of savings in non cash form. The expectation is that households that require more commodities for food security will hold more savings in non cash form than households requiring less commodities for food security.

RESULTS AND DISCUSSION

Forms of non-cash savings are shown in Table 1. Non-cash savings in this study include material items which are kept for future conversion into cash, for production or for direct consumption. They are made up of goods, which are in excess of the current needs for family up keep.

Table 1: Distribution of respondents according to type of non-cash savings

Form of non cash Saving	Frequency	Percent
Agric. Commodities	95	51
Re-saleable manufactured goods	22	12
Farm tools and farm inputs	36	19
Work tools	18	10
Mature Animals kept for sale	39	21
Farm and household equipment	14	7

Multiple responses were recorded; Source: Field Data, 2003

Table 1 shows that most respondents (51%) held non cash saving in form of agricultural products. The agricultural commodities are held in order to make provision for family feeding, future production and for sale. Twelve percent held non cash savings in form of re-saleable commodities other forms are farm tools and farm inputs and work tools.

Value of Non-Cash Saving

Monetary values of the average non-cash savings are shown in Table 2

Table 2: Distribution of respondents according to total and mean non-cash savings on commodity basis

Form of Non Cash Saving	Number of Respondents	Value of Saving (₦)	Average Saving (₦)
Agricultural Commodities	95	10,450,000	110,000
Farm inputs and tools	36	1,028,160	28,560
Mature animals kept for sale	39	2,909,400	74,600
Resalable manufactured goods	22	352,000	16,000
Work tools	18	162,000	9,000
Farm and household equipment	14	304,500	21,750
Total	-	15,226,060	-
Mean	-	80,989.70	-

Multiple responses were recorded; Source: Field date, 2003

Table 2 shows that the mean savings made per respondents was N80,989.70. the mean savings was highest (N110,000) for stored agricultural commodities. Agricultural commodities are palm oil, melon, rice, yam, cocoa yam and local beans. The mean savings for mature animals kept for sale (N74,600) were relatively high. The animals are chicken, sheep, goat, turkey and pigs.

The mean amount of savings in non cash form in the area appear to be much higher than the value of cash savings during the same period. Elefuo (2003), noted that the mean cash savings were N31,918 for a selected group of people involved in cash savings in the rural areas of Abia State. Similarly, Afonne, (2004) in his study on micro-credit and saving showed that farmers who were customers of the Nigerian Agricultural Co-operatives and Rural Development Bank (NACRDB) made a mean cash saving of N37,312.50.

Use of Saving Organisations by Respondents

The extent to which the respondents make use of savings organizations is shown in Table 3.

Table 3: Distribution of respondents by use of organization

Place of Saving	Number of Respondents	Percentage
Bank	43	22.8
Co-operative Societies	29	15.4
Occupational Saving Groups	36	19.1
Itinerant saving arrangement	28	14.4
Traditional saving Groups	76	40.6
Inter Personal / Home	12	6.5

Multiple responses were recorded Source: Field date, 2003

Table 3 indicates that most respondents (40.6%) have savings with the traditional saving groups. These groups among others include Rotational Savings and Credit Associations (ROSCA), Age Grades and Savings Clubs. Few of the respondents(23%) have cash savings in banks. The result suggests that most respondents do not make use of banking facilities. This observation is surprising because,. many banks especially Commercial and Community banks operate across the rural areas of the State. Reasons for having non-cash savings is shown in Table 4.

Table 4. Distribution of respondents according to reasons for holding non-cash saving.

Reasons for holding non-cash Saving	Frequency	Percent
Expectation of value appreciation	101	54
Provision for family food consumption	92	49
Safety of property	49	26
Reserve input for future production	39	21
Ease of liquidity and accessibility	35	19
Lack of confidence in savings organization	28	15
Habit (No specific reasons)	22	12

Multiple responses were recorded; Source: Field Data, 2003

Table 4 suggests that farmers have three major reasons for holding savings in non cash form. These are expectation of value appreciation, provision for family consumption and safety of property.

Other strong reasons which made people to hold savings in non-cash form included, reserving inputs for future production, accessibility and lack of confidence in deposit taking organization. A good number of respondents (26 percent) felt that, the value of their assets would be better safeguarded when they were held in material form. On the other hand, 19 percent of the respondents considered ease of control and accessibility their reason for holding saving in material form. Some respondents (15 percent) lack confidence in savings taking organizations and 12 percent hold material savings out of habit.

SOCIO- ECONOMIC DETERMINANTS OF NON-CASH SAVINGS

Regression analysis, was used to evaluate the influence of some socio-economic factors on non-cash holdings. In the regression result, the exponential function was chosen as the lead equation because, the results agree with a priori expectations and contains more significant variables. The results of the analysis were shown in Table 5.

The result in Table 5 shows that four variables were statistically significant. The variables are household size,(X_2) distance of respondents resident to the nearest bank, (X_7) off-season price (X_9) and provision for family consumption (X_{10}).

The household size (X_2) was directly related to the value of non cash savings and significant too. The direct relationship of household size with non cash savings, implies that as household size increases, the tendency to hold savings in non cash form increases. This might have resulted from the reason that most people who hold non cash savings did so for reason of security (security of food and property), accessibility and ease of liquidity. This could explain the reasons why, households with large members hold more non cash savings. They probably considered the holding of material items as easier means of meeting food demand for the family. The fact that most rural people earn low income (disposable) was a strong reason given by respondents for holding non-cash savings.

The distance of respondent's house to rural bank (X_7) was positively related to the value of non-cash savings and significant at 1 percent level. The direct relationship suggests that the respondents whose houses were closest to banks had less savings in non cash form. This finding suggests that proximity of rural banks to

rural households serve as demotivation to hold savings in non-cash form. The finding agrees with theoretical expectation because, banks are expected to employ appropriate saving mobilizing strategies to liberate hidden savings and mobilize them into productive activities. The implication is that people who live some distance away from rural banks will tend to hold more of their savings in non cash forms and then convert them when they need cash or when the monetary value of the commodities appreciate.

Off season price (X_9) was positively related to non-cash savings and significant too. The result implies that people tend to hold more non cash savings when they anticipate future appreciation in the value of material goods. This finding agrees with a priori expectation more especially with the present high inflationary trend in the country. Most importantly storable agricultural products appreciate in value during the off-season period. This situation could be related to people's understanding that under a regime of rising inflation, the rise in price might give monetary advantage to those who hold savings under storage.

The value of commodity reserved for family consumption proxy for family food security (X_{10}) was significant and had direct relationship with the value of non cash saving. The result implies that respondents who reserved more items for family use had more saving in non cash form. The result could be explained by the fact that prices of food items rise during the off reason periods.

IMPLICATION FOR SUSTAINABLE PRODUCTION

Savings in non cash forms may pose some limitation to farmers who have need for institutional financing in form of loan. This is true because, financial institutions give preference to customers who have reasonable amount of saving deposits in granting loans. The fact that few farmers had savings with banks (Table 3), means that, most of them have limited access to banking services, (credit and saving). Limited access of farmers to bank services constitutes a problem to their potential for increasing production. Equally important is the fact that many farmers have not been able to contend with problems associated with the storage and the safeguarding of stored agricultural commodities.

In the absence of insurance cover losses resulting from storage could be devastating because, the affected farmers will not have any institution to fall back to. For commercial agricultural production to be sustained, it is better for farmers to have a greater part of their savings in cash form deposited with financial institutions.

CONCLUSION

Farmers hold their savings more in non-cash forms than in cash forms. They do so because they regard savings in non-cash form better safeguarded with regard to value appreciation and food security. Farmers stand to benefit more by having greater part of their savings in cash form deposited with financial institutions.

Table 5 Savings function for non cash saving in Abia State

Functional Forms	Constant	X_1	X_2	X_3	X_4	X_5	X_6
Linear	-11977.4	6.305	211.205***	3.624E03	-5.95E-02	-249.266	1.17E-02
	(-0.804)	(0.006)	(4.202)	(0.160)	(-0.193)	(-0.414)	(-0.439)
Semi-log	-360405***	3166.244	25941.23**	1583.153	-15878.0**	-5920.778	7528.372
	(-3.232)	(0.289)	(2.531)	(-0.275)		(-1.188)	(1.602)
Double log	-2.919**	1.903E-02	0.524***	5.304E02	1.420E02	-6.64E-02	0.283***
	(-2.135)	(0.142)	(4.167)	(0.750)	(0.195)	(0.874)	(3.516)
Exponential +	9.464**	1.782E-03	2.976E-03***	4.06e-07	8.222E-03	-5.07E-03	-3.61E-03
	(23.689)	(0.063)	(2.209)	(0.669)	(0.996)	(-0.314)	(0.504)

Functional Forms	X_7	X_8	X_9	X_{10}	R^2	F-ratio
Linear	3.105**	6441.804	-2831.651	0.887***		
	(2.411)	(1.078)	(-0.774)	(8.160)	0.851***	28.058
Semi-log	29882.110	4421.507	498.815	29956.814***		
	(1.506)	(0.556)	(0.053)	(5.578)	0.759***	13.851
Double log	1.791E-02	-0.128	-0.128	0.758***		
	(0.187)	(-1.108)	(-1.108)	(11.513)	0.926***	61.565
Exponential +	1.205E-04***	-3.99E-02	0.305***	1.376E-05***		
	(3.490)	(-0.249)	(-3.113)	4.721	0.779***	19.535

SourceComputation from Field Data, 2003
*** =1% level of significance
**=5% level of significance
Values in parentheses are t values.
+ Lead equation

REFERENCES

Afonne, G. C. (2004). Impact of NACRDB's Micro-Credit Scheme on Agricultural Output, Savings and investment in Abia State. Unpublished Undergraduate project. Department of Agricultural Economics, Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria.

Bannock, S. R. C. Baxter, R. E. and Ray Rees (1982). *The Penguin Dictionary of Economics* (Marmond Word, Middle Sex England: Penguin Books Ltd.,) P.399.
Bedard, G., G. G. Khower and M. Harder (1986). The Importance of Savings for Fighting Against Poverty by Self-Help. Workshop Report. Vol. 1, June 18 20, 1986. Pp1 115.

Brooman, F. S. (1977). *Macroeconomics* (Sixth Edition) (London: George Allen and Unwin Ltd).

Desai, B. M. and J. W. Mellor (1993). International Finance for Agricultural Development: An Analytical Survey of Critical Issues. Food Policy Review, 1, Washington, D.C., International Food Policy Research Institute.

Elefluo, C. K. (2003), Performance Evaluation of Traditional Savings on Savings Mobilization in Ikwuano, L.G.A. of Abia State, Nigeria. Unpublished undergraduate research project, Department of Agricultural Economics, Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria.

Gupta, K. K. (1987). Aggregate Saving, Financial Intermediation and Interest Rate. Review of Economic Statistics Vol. 69, No. 2, Pp 303 311.

Marguerite S. R. (1994) "Savings Mobilization and Microenterprise Finance: The Indonesian Experience" *In The new World of Microenterprise Finance Building Healthy Financial Institutions for the Poor Maria* Otero Elisabeth Rhyne (Eds).

Oganda, W. (1989) "Kenya From Traditional to a cash economy". In *Banking the unbankable London: Panos publications.*

Okoye, C. U. (1995) "The Rural Economy and Community Banking in Nigeria" In Rural Development in Nigeria Concepts, Processes and Prospects E.C. Eboh, C.U. Okoye and D. Ayichi (Eds). Auto Century Publishing Company 1995. Pp. 200 - 215
Upton, Martin (1979) *Farm Management in Africa* . The Principles of Production and Planning. The English Language Book Society and Oxford University Press 1979; Pp 150 161.