SAVING MOBILIZATION MODEL FOR AGRIBUSINESS ENTREPRENEURIAL GROUPS IN EDO STATE, NIGERIA.

Achoja Felix Odemero
Department of Agricultural Economics and Extension, Delta State University, Asaba Campus, Nigeria. E-mail: lixmero40@yahoo.com; Tel: +2348032726201

Abstract
Savings is crucial in the growth of agribusiness in rural economy. It is important to investigate the dual determinants of savings mobilization among agribusiness entrepreneurial self- help groups in Edo state, Nigeria. Primary data were collected from randomly selected 96 agribusiness entrepreneurs through the use of structured questionnaire. The data were analyzed by using descriptive statistics (percentages, mean, and tables) and inferential statistics (multiple regression analysis). The result showed that interest rate, farm income and age distribution of savers significantly contributed ($p<0.05$) to saving mobilization. These are categorized into price and non price factors; also referred to as the dual determinants of saving mobilization among entrepreneurial savers. It is recommended that policies/strategies that can improve the net income of young entrepreneurs should be encouraged, since this will translate to increased entrepreneurial group savings.
Keywords: Self-help, groups, price, savings, non-price determinants

1. Introduction

Savings is the part of income not spent for immediate consumption. This implies that individuals have to pay the price for saving by postponing current consumption of part of their disposable income. Desai and Mellor (1993) viewed savings as the difference between income and consumption. Motives for savings among entrepreneurs in developing economies include planning against unforeseen contingencies, for future purposes, for the buying of expensive good and capital accumulation for investment. If there were not investment opportunities, it would never occur to the agribusiness entrepreneurs to save for the future. Savings could be mobilized through individual, families and group approaches. This gives rise to the development of different saving models. A myriad of variables such as the level of income, the accepted minimum living standard, inflationary expectation, taxation, the level of interest rate and confidence in saving system could influence savings.

Agribusiness entrepreneurial groups involve Self-Help Financial Groups of entrepreneurs that pool their financial resources together as a way of capital accumulation for future expansion of their enterprises or to set up new ones. Group capital accumulation is generally recognized as a necessary condition for development. Of the two principal sources of capital, external and internal, the internal group funds raising are by far the most effective in terms of accessibility and cost of capital. In most low-income countries and emerging economies, internally mobilized funds account for the major part of investment funding, often financing 90% and more of overall investment. Thus, internal saving mobilization is vital for development (Inaya, 2011).

Nweke, (1990) noted that traditional savings and credit association also known as financial self help groups constitute one of the most wide spread types of organization in the third world and assist members in small scale capital formation. Financial Self-Help Group of entrepreneurs is a traditional approach to rural economic development.

There is evidence suggesting that the supply of savings among traditional savers is relatively inelastic with respect to real interest rates since the primary objective is that of capital formation. This implies that raising interest rates reduces loan demand more than it would encourage savings (World Bank, 1990). Financial resources saved and devoted to expanding future income and consumption are known as investment and viewed by economist as the major strategy for promoting social and economic development (Peterson, 1983). Thus investment is a function of savings.

Rajagopalan and Kristnamorony (1969) argued that capital formation is the flow of capital deposit over time. This implies that the rate of capital formation is determined by savings. According to them, capital formation is achieved through private capital which is obtained through savings and re-investment and as such limited by individual propensities and responsiveness to saving factors (market stimuli).

There is an emerging policy debate on entrepreneurial opportunities in agribusiness value chain. Inadequate financial capital to take advantage of investment opportunities has been identified as a major challenge. Strategic financing using group approach will be panacea. Saving mobilization by agribusiness entrepreneurial groups is part of the action plan for value chain development in Nigeria (Achoja, 2012). Sondra and Michael (1999) observed that saving education, attractive saving incentives and facilitation could positively influence the saving behavior of household. They posited that

low income possibly explained the below-average saving rate of households.

Triant (2007) attempted to predict savings using economic and psychological variables, but have met with limited success. The present study is at variance with the previous of Triant (2007), in that the present study is focused on dual determinant of saving mobilization among agribusiness entrepreneurial groups.

Predicting the saving mobilization of entrepreneurs on the premise of psychological variables as hypothesized by Triant (2007), will be defective at best. Predicting the saving propensity on the basis of price and non-price (dual) determinants, will put the evaluation of the saving behavior entrepreneurial groups in a better perspective.

Before now, there is the lack of saving model that captures the incentive to save, farmers ability to save, and the age of the savers. There is the need for causality model that captures prices/non-price related factors and saving behavior among self-help groups of entrepreneurs. This study thus has implications for saving policy formulation. This is the research gap that this study was designed to fill.

1.2 Objective of the Study

The specific objectives of the study were to;

i. describe the organization of the surveyed agribusiness entrepreneurial self-help saving groups;

ii. establish a causal relationship between savings mobilization and dual factors of price and non-price;

iii. evaluate trend affect on mobilization saving among self help financial institutions.

1.3 Statistical Hypotheses

$H0_1$: There is no significant relationship between saving mobilization and price/non-price factors.

$H0_2$: Trend/period has no significant effect on saving mobilization among self-help financial institutions

1.4 Theoretical Framework

Mathematical theory of saving, contemporary theory of saving, life cycle theory of saving, buffer stock theory of saving and classical theory; are important in the analysis of savings (Carroll, 1992).

The working people save up to their post-retirement lives and after their consumption pattern according to their needs at different stages of their lives. The theory provides important prediction for the economy as a whole. It predicts that the aggregate saving of a country's depends on the rate of growth of national income are not its level. Also the stock of wealth in an economy is related to the length of retirement span.

Buffer stock savings theories predict that more vulnerable households buildup liquid savings in order to cope with income variability or to confront shocks. The buffer stock theory was derived from inter temporal utility maximization. It predicts that an increase in wealth will dampen the motive for precautionary saving and reduces consumption's over-sensitivity with respect income changes.

The fundamental principle of the classical theory of saving is that the economy is self-regulating. Classical economists maintain that the economy is always capable of achieving the natural level of GDP or output. While circumstances arise from time to time that cause the economy to fluctuate, self adjustment mechanism exists within the market system that work to bring the economy back to natural level. Say's law supports the view that income generated will be consumed in the economy. Even if the part of the income is saved, the portion that is saved will flow back to the economy through investment for the production of consumable goods and services. The flexibility of interest rate as well as other prices is the self-adjusting mechanism of the classical theory that ensures that real GDP is always at its natural level. The flexibility of the interest rate sustains the money market or the market for loanable funds.

2. Materials and Methods

2.1The Study Area, Sampling Procedure and Data Collection Techniques

Edo State was the study area. It is situated in the heart of the dense forest of the Ancient Benin kingdom. Members of agribusiness entrepreneurial self-help groups were the subjects of the study. The entrepreneurs organized themselves into Rural Financial Self-Help Groups (RFSHGs) where they meet periodically to pool their financial resources together.

Random sampling technique was used to select the eight communities from the study area. The communities includes; Sakponba, Evboesi, Ogan, Ugo, Oza, Umagbae, Abudu, Urhonigbe.Sixteen RFSHGs were sampled, with two from each of the eight villages using purposive sampling technique. A total of 96 agribusiness entrepreneurs were randomly sampled, that is; six respondents from each RFSHGs. Primary data were collected from respondents with the use of structured questionnaire.

2.2 Data Analysis Techniques

Both descriptive and inferential statistics was used in the analysis of collected data. The relationship between savings mobilization and price and non-price factors was achieved using Ordinary Least Square (OLS) technique multiple regression model.

This is stated implicitly as;

$$S = \sum \quad \sum_{i=1}^{n} \sum_{j=1}^{n} \beta_{ij} \mu_{ij} \quad + \quad \ldots(1)$$

Where X_i = price factors, X_j = non-price factors i=1 j=1

βij = parameter estimates

μ = error term

S = amount saved (₦)

The price and non-price factors were explicitly captured in a single multiple regression model and three functional forms of the model were tried. These include linear, semi-log and double log function.

3. Results

3.1 Organization of Rural Financial Self–Help Groups

The organizational structure of the various RFSHGs in the study area is shown in table 1. It is shown that four different types of rural financial self-help groups exist in the study area with their unique character tics and advantages.

Out of the four types of financial self-help groups, non-rotating saving groups are the commonest type, with about 31% of the total RFSHGs The twin advantages of saving and borrowing without a rigid order could encourage more people to participate. This further translates to increased membership and more saving mobilization. This is followed by the rotating and the daily deposit with 25% respectively. The co-operative is the least in the order of popularity with 18% of the RFSHGs in the area. Table 1 indicates that RFSHGs have a membership strength that ranges between 30 and 60 members. Membership strength of below 30 is about 50% and it is the most popular type. Low membership strength but with high propensity to save has advantages of effective control and high asset base. Large membership is mainly found among cooperatives and non-rotating saving groups. Table 1 also shows that 57% of the sampled rural financial self help groups consist of a combination of male and female. About 25% are made up of females alone, while 18% are only male.

Table 1 further show that about 50% RFSHGS make weekly saving.

Table 1 show that about 25% of sampled RFSHGs accepts any amount as contribution from their members. This is often common with dialy deposit savings group. About 50% accept ₦100, 18% accept ₦200 while 6 % accept ₦500 and above. These categories of RFSHGs that have a fixed amount of contribution are mostly the rotating, non-rotating saving groups and cooperatives.

Table 1 shows that about 56% of RFSHGs gives interest to their members on their savings. The interest rate is between 5-10%, while 33% do not give interest. In this case interest paid to savers is a source incentive to them. This is because the higher the amount deposited or saved, the higher the income generated by a saver from interest shared as dividend.

Table 1. Organizational Features of Rural Financial Self Help Groups

Types of RFSHGS	Number	Percentage
Rotating Savings Group	4	25.00
Non-Rotating Savings Group	5	31.00
Co-operative	3	18.75
Daily deposit	4	25.00
Total	16	100
Size of Group		
Below 30	8	50.00
31 – 40	5	31.25
41 – 50	1	6.25

51 – 60		2	12.5
Total	16		100
Group			
All Male		3	18.75
Mixed (Male & Female)		8	50.00
All Female		5	25.00
Total	16		
Contribution Cycle			
Weekly		8	50.00
Monthly		4	25.00
Yearly		-	00.00
Daily		4	25.00
Total	16		100
Amount (₦)			
Any Amount		4	25.00
1,000		8	50.00
2,000		3	18.75
3,000		-	-
4,000		-	-
5,000		1	6.25
Total	16		100
Govt.			
Give interest on savings		9	56.35
No interest on savings		7	43.7
Total	16		100

(Source: Field Data 2011)

3.2 Dual (Price and Non Price) Determinants of Savings Mobilization

The price and non-price determinants of saving mobilization are expressed by the multiple regression equation (2).

$Y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5$

$+.....b_9x_9+e$ (2)

Where Y = Amount Saved

x_1 = Interest rate %

x_2 = Farm income (₦)

x_3 = Age (years)

μ = Error term

The linear function was chosen as the lead equation, based on the following criteria: Relative high F – value of the model; Relative magnitude of the adjusted R^2. The saving equation is presented in equation (3).

$S = 0.156 + 0.135IR + 0.006INC + 0.004AGE + \mu$

(3) (3.589) (2.584) *** (3.826) **

(2.020) **

The values in parenthesis are the corresponding t-values.

From the multiple regression analysis in the table 2, the R^2 (coefficient of multiple determination) is

78%. This indicates that 78% of the variation in amount of saving mobilized is as a result of the joint effect of the independent variables captured in the model. The significant F – ratio in the lead equation shows the overall significant of the model and it is fit for generalization. In this

model, three of the variables were significant at alpha level of 1% and 5%. These are interest rate, farm income, and age.

Table 2. Determinants of Savings Mobilization among Financial Self Help Group

Variance	Coefficient	Std error	T - value
(interest rate)	0.135	0.052	2.584**
(Price of output)	-0.006	0.000	-0.897
(Input price)	-0.005	0.000	1.696**
(Farm income)	0.006	0.000	3.826**
(Farm size)	0.027	0.032	0.853
(Sex)	-0.026	0.048	-0.534
(Education Level)	-0.072	0.108	-0.672
(Age)	0.004	0.002	2.020**

(Source: Computed Data, 2011).

R = 0.70, R^2 = 78% R^2 = Adjusted = 74% F – cal = 10.14

***– significant at 1%

** - significant at 5%

*--Significant at 10%

3.3 Trend Response of Saving

The trend response equation of savings mobilization from 2006–2010 is shown in table 3 and equation (4).

$$S_t = 2.576 + 0.456_{t-1} + 0.356_{t-2} + 0.156_{t-3} + 0.001_{t-4} + 0.041_{t-5} \quad (4)$$

(2.509) (3.589)*** (2.678)** (1.108) (0.007) (0.287)

The result shows that the response of savings to time (period) is significant for the more recent period ($p<0.05$).

Table 3. Trend Response of Savings to financial incentive (interest rate)

Year	Coefficient	T-value	S.D
Constant	**2.576**	**3.589**	**0.234**
Year 1	0.456	3.589*	0.127
Year 2	0.356	2.678**	0.133
Year 3	0.156	1.108	0.141
Year 4	0.001	0.007	0.143
Year 5	0.041	0.287	0.143

(Source: Field Data 2011).

4. Discussion

The study has shown that the self-help entrepreneurial groups are mostly common among the rotating and non-rotating saving groups. This was to enable the groups mobilize capital. This was possible because majority of them who are farmer/ petty traders generate income within a short cycle of four days (market days). Daily deposit (saving) makes up the remaining 25%. The contribution schedule/cycles are often designed to reflect the different schedules of income generation. The surveyed rural people most often generate income daily, weekly and monthly. Accordingly savings are mobilized so as to avoid unnecessary expenses. Too much of delay could cause income leakages and dissavings.

4.1 Interest Rate

This variable entered the model with a positive sign and is significant (P< 0.05). This indicates that higher interest rate will encourage savings mobilization among the financial self-help groups. The coefficient of 0.135 implies that a 1% change in interest rate will translate to about 14% increase in saving mobilization in self help saving institution. This confirms the findings of Deaton (1995), that savings are influenced by multiplicity of economic variables, such as the level of income, the accepted minimum living standard, inflationary expectation, taxation, the level of interest rate and the confidence in a saving institution.

4.2 Income

The result shows that farm income correlates positively and significantly to saving mobilization in financial self-help groups in the study area. The coefficient of 0.006 implies that a 1% increase in the income of rural savers will translate to 6% increase in saving mobilization of self – help saving institutions in the study area. Harmleskey (1983) had earlier reported that income is a vital determinant of savings. Higher farm income can boost the financial ability of savers in saving mobilization. Economic problems that seems difficult and insurmountable on individual bases can easily bend to the collective financial abilities (income) of self-help saving institutions. Buffer-stock model of saving emphasized by Deaton (1995) and habit formation model relate strongly with this result. Growth in income triggers savings in the short run. The corollary is that saving mobilization in self- help saving institutions relates to behavior, resources and size of membership.

4.3 Age

The age distribution of rural savers correlates negatively and significantly with the amount of saving mobilized among self help groups in the study area. Arising from the above result, the null hypothesis 1 is rejected and the alternative accepted. Non-price factor i.e. age distribution of savers determine saving mobilization.

The coefficient of 0.0004 indicates that a 1% in age of working class in saving institutions will lead to about 4% increase in saving mobilization. This result agrees with life cycle theory. This theory explains the significance of age in savings. It follows that people are likely to earn and save more during their working age until they attain a maximum at retirement age. That is to say, saving is likely to drop after retirement. The age of members of self-help groups becomes an important factor that determine saving mobilization. A self-help group whose members are mainly working age is expected to mobilize more savings than that with relatively old people.

Saving mobilization response to very remote period is not signification. It then means that saving mobilization in the present generation is higher than that of past generations. This result implies that present generation earns and saves more than older generations. This will stimulate more level of group saving mobilization. This will further translate to higher capital base of rural households. It also follows that more economic growth rate will be recorded in the present generation than the past. This result confirms the assumption/hypothesis of Tullio and Marco (1997). Arising from the above result, the null hypothesis of no significant trend effect on saving mobilization is rejected and the alternative accepted. Indeed, trend/period has significant effect on saving mobilization among self-help financial institutions in Edo State, Nigeria.

5. Conclusion/Recommendations

Understanding the determinants of saving among self-help group is a crucial prerequisite in designing a number of policy interventions such as financial market regulation and economic empowerment. The analysis of saving behavior has become one of the crucial issues in rural economic analysis. This paper contribute to this body of empirical research by focusing on the experience of saving in self-help financial institutions and how saving has been the driving force of capital accumulation and house economic growth rate. There was contemporaneous correlation between saving rate and household economic growth. The study evaluated price and non-price determinations of savings mobilization among rural financial self-help groups in Edo State, Nigeria. The study established synergy between financial ability and incentive of the savers and saving mobilization among self-help groups. In this study it was obvious that price factors (farm income input prices and interest rate) and non-price factor tend to (group of savers) influence saving mobilization in self-help financial institution. Considering the importance of entrepreneurial self-help financial institutions in rural cash economy in the future, this paper concludes that price and non price are the dual factors that determine saving mobilization among agribusiness entrepreneurial self-help groups. Also saving mobilization is a time dependent endogenous factor.

It was recommended in the study that:

i. Rural development policies and programmes that will improve farm income and reduce farm input prices should be put in place by the government.

ii. Young people (males and females) should organize themselves with more self-help financial institutions in the rural areas of Edo State, Nigeria.

iii. Development funds from government and donor agencies such World Bank and UNDP should be channeled through self-help saving institution.

References

[1] Achoja, F. O. (2012). Entrepreneurial Opportunities and strategic Financing of Agro-Industry Value Chain in Delta State, Nigeria. Paper presented at a Workshop/Dialogue on Value Chains for Agricultural Commodities in Delta State, Organized by United Nations Development Programme (Unpublished).

[2] Carroll, C. D. (1992). The Buffer Stock Theory of Saving: Some Macroeconomic Evidence. Brookings Papers on Economic Activity, 23(2), 61-156.

[3] Deaton, A. (1995). Growth and saving: what do we know, what do we need to know and what might be lengths. Princeton University (unpublished).

[4] Desai, B. M., & Mellor, J. W. (1993). Institutional Finance for Agricultural Development: An Analytical Survey of Critical Issues (Volume 1 of Food Policy Review 1). Washington, D.C. U.S.A International Food Policy Research Institute (IFPRI).

[5] Harnleskey, T. M. (1983). Contemporary Development in Financial Institutions and Markets, Harlan Davidson Inc. U.S.A.

[6] Hicks, J. (1981). "IS-LM": An Explanation. Journal of Post Keynesian Economics, 3(2), 139-154.

[7] Inaya, E. (2011). Price and Non-price Determinants of Saving Mobilization among Financial Self-Help Groups in Orhionmwon Local Government Areas of Edo State. Unpublished B. Agric Project Work Delta State University, Asaba Campus.

[8] Modigliant, F. (1986). Life cycles, individual thrift and the wealth of nations. America Economic Review, 76(3), 297-313.

[9] Nweke, N. J. (1990). The Role of Women's Traditional Savings and Credit Cooperatives in Small Farm Development (African Rural Social Science Series, Research Report, No 1). Winrock International Institute of Agric. Development Research Report No.11 University of Nigeria Nsukka.

[10] Peterson, W. L. (1983). Principle of Economics (Macro). Richard, D. Iwin inc. Home wood, Illinois.

[11] Rajagopalan, V., & Kristnamorony, S. (1969). Saving Elasticity and Strategies for Capital Formation. A Micro Analysis. Indian Journal of Agricultural Economics, 24, 110 – 116.

[12] Sondra, G. B., & Michael, S. (1999). Institutional Determinant of Savings: Implications for Low-Income Households and Public Policy. Journal of Socio-Economics, 28(4), 457-473.

[13] Triantis, S. G. (2007). Economic Growth and Saving Theory. Kyklos, 52(1), 45-62.

[14] Tullio, J., & Marco, P. (1997). The Determinants of saving, Lessons from Italy. Research Network Paper R-313, 19-54. New York: Inter-America Development Bank.

[15] World Bank (1990). World Development Report (1990) on Poverty. New York, NY, USA.Oxford University press.