EFFECT OF MICRO FINANCE SERVICE ON SAVING INVESTMENT AND OUTPUT IN ABIA STATE OF NIGERIA

R. O. Mejeha, O. R. Iheke and G. Afonne
Department of Agricultural Economics,
Michael Okpara University of Agriculture, Umudike, Nigeria

ABSTRACT

This study investigated the effect of financial service (loans) and savings facilities delivery) on saving, investment and output in Abia State of Nigeria. Data used for the study were collected from clients of the Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB). Eighty loan beneficiaries of the bank were randomly selected and interviewed with structured questionnaire. Data collected were analysed using simple statistical tools such as the t – test statistic, percentages, frequency distribution and multiple regression analysis. The results suggest that access to microfinance services has significant positive effects on investment and output. The effect of micro finance service on saving was positive but not significant. The result of the regression analysis showed that savings had significant positive effect on investment while the effect of interest payment on investment was negative and significant Based on the findings, we recommend that microfinance services should be expanded in the study area and that people should be encouraged to make more saving as to enhance their income.
Key words: Microfinance, Savings, Investment and Output

INTRODUCTION

Economic advancement and growth to a great extent are determined by the rate of growth in domestic saving, investment and output of goods and services. Increase in domestic saving for instance, offers investors opportunity to have access to investment funds through financial intermediaries (FAO, 1995). According to economic theory, increase in investment gives rise to more production and higher income. On the other hand, Zeller, *et al*., (1997) explained that access to savings has positive correlation with production, investment and consumption.

Low level of financial savings has been identified as a major factor limiting the economic growth of most developing countries (Jhingan, 1985; Adewunmi, 1996). These authors have observed that savings are low in these countries for the fact that their citizens earn low income. Yaron *et al*., (1997) and Jhingan (1985) explained that, low-income earners have high marginal propensity to consume, and low marginal propensity to save. Most often, they are concerned with the day-to-day survival rather than saving or investment. When they fail to provide for their daily needs, they go into borrowing or use up previously accumulated savings (Upton, 1996).

The World Bank (1995) reported that poverty rate in Nigeria has been on the increase since 1980. It observed that the Gross National Product (GNP) per capita, has declined from US $ 1,260 in 1980 to US $ 300 in 1993, one third of the Nigerian population is said to be very poor.

Empirical data have further shown that Nigeria is among the 20 poorest countries in the World, (World Bank, 1995). The Bank predicted that, it would take Nigeria about 30 years to achieve the standard of living it attained at the peak of its oil boom in 1981. Jhingan (1985) explained that poverty could be alleviated through savings or planned development. In the absence of savings the vicious circle of poverty will continue, because low savings gives rise to low investment, capital deficiency and low productivity, which in turn leads to low income, in this manner the vicious circle of poverty postulated by Rostow (1960) is completed. Given the fact that most Nigerian farmers are poor, investment in agriculture is low. Low investment in agriculture led to low per capita output of major food staples and persistent dwindling in productivity (Ijere, 1992). Dwindling productivity impacts negatively on farm income and investment in agriculture. The above scenario is considered to be detrimental to the quest for food security in the country. According to Nmadu *et al* (2001), investment in agriculture will lead to the production of more food and stable food security.

Mbanasor and Nwosu (1997), observed that for a period of 10 years running, (1986 to 1996) there was a decline in investment in agriculture in Nigeria. The problem was attributed to lack of strong policy incentives on agricultural investment and lack of interest by the private sector to invest in agriculture.

In Nigeria, among the government efforts towards increasing savings, investment and output of goods and services was the establishment of specialized banks. One of such banks is the Nigerian Agricultural Cooperatives and Rural Development Bank (NACRDB). The bank is a merger of the defunct, Nigerian Agricultural Cooperative Bank (NACB), the People's Bank of Nigeria and Family Economic Advancement |programme (FEAP (CBN, 2005). NACRDB which was established in 2000 offers microfinance services to the people especially farmers and the rural dwellers.

Microfinance is concerned with the provision of financial services to the poor who are traditionally not served by the conventional financial institutions (CBN, 2005). The major feature of micro-financing is that it involves granting micro (small) loans to customers and mobilizing micro (small) savings from customers which accumulate to huge sums over time. According to the specifications of the microfinance policy of Nigeria, a micro loan is a credit not greater than ₦500,000.00 (CBN, 2005). Globally,

microfinance is regarded as one of the most effective and flexible strategies in the fight against global poverty (Kefas, 2005). It is believed that poverty can be alleviated through savings, investment and increase in the output of goods and services. This study was undertaken in view of the fact that most Nigerian's are poor, as a result savings and investment are low.

The objectives of the study are to: ascertain the effect of micro-financing on saving, investment and output and evaluate the effect of microfinance on farm level investment.

Materials and Method
The study was conducted in Abia State, Nigeria. Abia State is made up of three agricultural zones namely Aba, Ohafia and Umuahia zones. The State has 17 Local Government Areas. In this study, we used both crop and livestock farmers who are clients of the Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB). Our respondents were drawn from farmers who had savings deposit accounts with the bank and at the same time benefited from loans from the bank. The reason for using clients of NACRDB is because, farmers are among the target clients of the bank.

There are many rural based bank branches (including Commercial Banks and Community Banks) located across the three agricultural zones among. These banks include six branch units of the Nigerian Agricultural Cooperative and Rural Development Bank (NACRDB) (Mejeha, 2005). For the purpose of even spread the six (6) branch units of NACRDB, were studied.

The sampling frame from which we drew respondents (the bank customers) was provided by bank officials of the banks. The respondents are made up of bank customers who maintain savings account with the bank and secured loans for the 2004 farming years. Random sampling procedure was used to select 13 respondents each from five branch units and 15 respondents were selected from the sixth bank branch unit which had more customers than the other five. This gave a total of 80 respondents. Forty eight (48) and 32 respondents were crop farmers and livestock farmers respectively.

Two sets of data were collected from the respondents. The first set of data were on the status of the variables (savings, investment and output) before the respondent had access to financial services of the bank, especially loan and saving facilities. The second sets of data were generated from the respondents with the use of bank financial services. The issue of saving became important because, loan beneficiaries were mandated to open and maintain savings deposit account up to a certain minimum amount for the period the loan lasted.

Data were collected from respondents with the help of structured questionnaire. Investment was measured as the money value of all resources used by respondents in production during the period covered by the study. Savings comprise total cash deposits made by the respondent who are at the same time loan beneficiaries. In order to ascertain whether the use of microfinance services (Loans and Saving facilities) resulted to significant increase in saving, investment and output of crops and livestock, the t – test was used. This approach enabled us to check whether there is significant difference in the mean values of the variables studied (savings, investment and output) or not with the use of microfinance services and without the use of microfinance services. This approach has been used by Gittinger (1982) in the evaluation of the effect of agricultural programmes. Output of crops and livestock were valued in monetary terms based on the prevailing market price (farm gate price) at the relevant period.

The t – test was conducted as follows:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\overline{S}_{x1} - \overline{S}_{x2}} \qquad \qquad (1)$$

$$S\overline{x}_1 - \overline{x}_2 = \sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}} \qquad \qquad (2)$$

Where equations (1) and (2)
t   =   t. values
$\overline{X}_1$ =   mean value with credit
$\overline{X}_2$ =   mean value without credit.
$S^2_{\overline{x1}}$ and $S^2_{\overline{x2}}$ = variance value with credit and without credit respectively.
$n_1 - n_2$ = number of respondents
$\overline{S}_{x1} - \overline{x2}$ = sample standard error of the means

Considering the fact that investment in agriculture is a major objective for micro-financing programmes in Nigeria, we evaluated the effects of microfinance services on farm level investment. This was achieved with the use of multiple regression analysis. The implicit form of the regression model is given as

$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, \wp i)$ -   -   -   -   (3)

Where:

Y= Farm investment, the monetary value of resources measured in naira employed by farmer respondent in production.

X_1 = Sex of respondent, measured by using the proxy, one (1) for male and zero (0) for female.

X_2 = Age of the respondent (beneficiary of microfinance services) measured in years.

X_3 = Household size, the number of people living in the same house with the respondent.

X_4 = Years of formal education, measured as the number of years the respondent spent in school.

X_5 = Farm size, money value of farm assets measured in naira.

X_6 = Income, money value of total earnings within the period, measured in naira

X_7 = Savings, naira value of cash deposits within the period.

X_8 = Interest (nominal) payment, value of money paid as interest on loan.

ei   =   Error term

The *a priori* expectations for the regression variables are stated as follows.

It is expected that male respondents will have more investment than the female respondents. Age is expected to have positive relationship with investment. The relationship between household size and investment is expected to be negative. It is expected in *a priori* that years of formal education, income of the respondent and cash saving will have direct relationship with investment. On the other hand interest payment on loan is expected to have a negative influence on investment.

Four functional forms of the regression model were tried, namely the linear, exponential, semi-log and the double log, in order to use the model that produces the best fit on the basis of R^2 value, number of significant variables and their conformity with a *priori* expectations.

Results and Discussions

The results were discussed under the following headings; the effect of microfinance services (loans and savings facilities) on savings, investment and output, the average value of saving, investment and output and the effect of microfinance services on farm level investment.

Effect of microfinance service delivery on savings, investment and output.

In Table 1, the effect of microfinancing on the variables (savings, investment and output) were shown, using the incremental values on the variables based on the with and without microfinancing criteria.   In discussing the effect of microfinance on investment and output, enterprises were separated into crops and livestock.

Table 1:   Effect of Microfinance on Savings Investment and Output

Variable Studied	Value without Loan (₦)	Value with Loan (₦)	Increment	*% Increment*
1. Savings deposit	2,865,000	2,985,000	120,000	4.02
2. Investment				
i. Crop	901,410	1,018,595	117,185	11,50
ii. Livestock	1,030,000	1,195,380	165,380	13.80
Total Investment	1,931,410	2,213,975	282,569	12.76
3. Output				
i. Crop	1,700,690	2,153,075	452,385	21.01
ii. Livestock	1,364,500	1,842,075	477,575	25.92
Total Output	3,065,190	3,995,150	929,960	23.28

Source: Field Survey data, 2005

The result in Table 1 suggests that, with access to financial services (loans and savings) the beneficiaries recorded increases in savings, investment (both in crops and livestock) and in output of crops and livestock. The use of bank services led to 4.0 percent increase in the value of savings made by respondents. Investment in crops and livestock increased by 11.50 percent and 13.80 percent respectively. The output of crops and livestock increased by 21.01 percent and 35.92 percent respectively.   The increases could be attributed to the fact that the bank complemented loans with technical advise relating to good production management.

87

The percentage increase in savings of 4.02 percent is considered marginal. The reason for the marginal increase in saving could be attributed to the fact that most loan beneficiaries gave preference to repaying their loans to making more saving deposits. Before the loans were approved, the bank required prospective beneficiaries to make prescribed saving deposit (compensating balance) with the bank. The amount of loan granted to a beneficiary is linked to the amount ot saving deposit the person has made. The requirement for the initial savings deposit is meant to encourage the customers to form the habit of savings and to serve as collateral in the event of loan default by a beneficiary.

The result obtained is in consonance with theoretical expectation regarding the effect of microfinance on saving, investment and output.   The positive increase of microfinance could have been made possible given the reason that microfinance services in Nigeria are delivered in packages. Agricultural loans for instance are usually complemented with insurance cover and technical advisory services.

Average values of savings, investment and output with and without microfinance services.

The effect of micro-financing on the average value of the variables (savings, investment and output) is shown in Table 2. The effect was captured by the average increase on the variables using the with and without microfinance service criteria. Saving became an important variable because, the amount of microfinance service (especially loan) granted to a beneficiary depended on the amount of savings deposit he/she held with the bank. The average increase for saving was ₦2,000.00. The increase in the average values was more for livestock both for investment and output. The reason for higher average increase in livestock is because, investment in livestock is more capital intensive.

Table 2 Average Values of Saving, Investment and Output With and Without Microfinance Service

Variable Studied	Average Value Without Microfinance Service (₦)	AverageValue With Microfinance Service (₦)	Average Increase in Value (₦)
1. Saving deposit	47,750	49,750	2,000
2. Investment			
i. Crop	20,031	22,635	2,604
ii. Livestock	68,667	79,692	11,025
3. Output			
i. Crop	37,793	47,846	10,053
ii. Livestock	90,967	122,805	31,838

Source: Field Survey data, 2005.

In Table 3, t – test was used to ascertain the extent micro-financing affected investment, savings and output.

Table 3   Effect of Micro-financing using t - test

	$\overline{X}_1$	$\overline{X}_2$	S_1^2	S_2^2	t – cal	t - tab
Output Crop	430,615	340,138	480,392.65	376,963.84	4.749	1.96
Livestock	368,415	272,900	525,286.08	381,980.98	1.579	1.96
Investment	127,324.38	112,676.25	112,755.17	98,598.42	3.119	1.96
Crop	149,422.50	128,812.50	274,419.36	241,116.29	0.600	1.96
Livestock Savings	3,731,200	35,812.5	9.16×10^7	9.04×10^7	0.995	1.96

Source: Computation from survey data, 2005

The result in Table 3 suggests that, there was significant increase in investment in crops and output of crops. This is explained by the fact that for investment in crops the computed t – value (4.75) is greater than the tabulated t – value (1.96). For output of crops, the computed t – value is 3.12 and the tabulated t – value is 1.96, indicating significant increase in output of crop with the use of microfinance. The implication of the results is that, more access of farmers to microfinance services will lead to more agricultural investments and higher agricultural output.

However, the increase in savings was not statistically, significant. Similarly, the effect of microfinance services on investment in livestock and output of livestock was not significant. This could be explained by the fact that investment in livestock is capital intensive and the loans granted are scarcely enough to encourage large scale livestock production.

The effect of microfinance on investment
The result of the regression analysis on the effect of microfinance is shown in Table 4. Results of the regression analysis in Table 4 show that the double-log function produced the best fit. The reasons are because, the coefficient of multiple determination (R^2) is reasonably high (ie 0.654 or 65.4%) and the F – ratio is statistically significant at 5% alpha level. Moreover, the signs of the variables that are statistically significant agreed with theoretical and econometric expectations. Four variables have statistically significant effect on farm level investment. The variables include, household size (X_3), income (X_6), saving deposit (X_7) and interest payment (X_8) The implication of (R^2)

value of 65.4% is that variation in investment is explained by the variables ($X_1 - X_8$) included in the model, 34.6% of variation in investment are explained by variables other than those in the model.

Household size had a significant negative effect on investment. This result suggests that households with more people made less investment than those with less number of people. The finding agrees with those of Ukoha and Echebiri (2003), when they observed that households with more people spend more of their income on consumption and less of it on investment. The finding is in agreement with theoretical expectation.

Table 4: Farm Level Investment Function

Variable	Linear	Exponential	Semi-Log	Double-Log +
Intercept	7.448	10.324	2.614	8.383
	(1.667)***	(19.617)*	(0.834)	(2.345)**
X_1 (Sex of the Respondent)	-1.083	-0.250	-9.8789	-0.289
	(-0.565)	(-1.114)	(-0.360)	(0.923)
X_2 (Age of the Respondent)	-7.884	-1.054	-1.4020	-0.289
	(-0.434)	(-0.496)	(-0.499)	(-0.903)
X_3 (Household Size)	2.036	2.165	3.195	-0.423
	(1.373)	(1.230)	(1.929)***	(-2.238)**
X_4 (Year of formal Education)	-1.227	7.343	-2.472	-0.118
	(0.479)	(0.024)	(-0.971)	(0.410
X_5 (Value of farm output)	-6.758	-1.152	-8.073	0.174
	(-1.251)	(1.823)***	(-0.664)	(1.568)
X_6 (Income)	-1.80	-1.580	-3.869	0.380
	(-1.785)	(-1.341)	(-2.711)**	(2.331)**
X_7 (Saving deposit)	7.504	6.282	4.310	1.727
	(0.180)	(0.129)	(0.480)	(1.965)**
X_8 (Interest payment)	2.797	7.338	2.139	-0.715
	(1.142)	(2.558)**	(0.888)	(-2.034)**
R^2	0.240	0.582	0.364	0.654
F – ratio	3.250**	14.321**	5.887	19.441**

Source: Computed from survey data, 2005.

* = Significant at 1% level; ** = significant at 5%

Figures in parenthesis are the t – ratios;   + = Lead equation

The effect of income on investment was significant and direct. This implies that respondents who earned more income made more investment. Going by economic theory, this type of relationship is anticipated. The effect of the amount of saving deposit on investment is positive and significant at 5% level. The implication is that respondents who had more savings had more investment and those with less savings made less investments. This agrees with that of Zeller *et al*., (1997) who observed that access to cash saving has positive correlation with investment, production and consumption.

The amount of interest payment on loan has a negative and significant effect on investment. This implies that payment of high interest on loan resulted in low investment. The reason for this is explained by economic theory, in the sense that, interest payment is regarded as the cost of borrowed fund. In this regard, high interest payment leads to less demand for investment fund.

Recommendations

Drawing from the findings of this study, we make the following recommendations. In order to promote cash savings, increase investment and output in the study area, the bank should be encouraged by the government to continue to render microfinance services to farmers. Access to financial services by farmers will enable them to increase their production.

Interest charges on loans for investment in agribusiness should be adjusted to the barest as to minimum suit returns on agricultural investments. Such loans should be obtained from the cheapest sources, a greater part of the loans should be made up of grants and aids.

The bank should expand its financial services as to reach out to a greater number of people. The expansion of the financial services is important in view of the fact that they have positive impact on investment and output.

Conclusion

Microfinance services produced positive effect on saving, investment and output. For Nigeria to achieve the desired increase in savings, investment and output, microfinance services should be intensified. The expansion of the services will empower the economic active poor population to stabilize food security through increased investment in agriculture and production.

REFERENCES

Adewunmi, W. (1996). Mobilizing Domestic Resources for Economic
    Development. The Role of Central Bank of Nigeria and Financial Institutions.
    CBN Economic and Financial Review Vol. 34 No. 4.

Bannock, G. R.E. Baxter and E. Darib (1999). *Dictionary of Economics* John Wiley
    and Sons, Inc. New York p 221.

Central Bank of Nigeria (2005) *Microfinance Policy, Regulatory and Supervisory
    Framework for Nigeria* pp 1 – 5, CBN, Abuja

Food and Agricultural Organization (1995) *Safeguarding Deposits, Learning from
    Experience*. F.A.O. Agricultural Series Bulletin 116.

Gittinger, J. P. (1982). *Economics Analysis of Agricultural Projects*. Second
    Edition, Completely Revised and Expanded EDI series in Economics Economic
    Development. The Johns Hopkins University Press Baltimore and London pp
    47 – 52.

Ijere, M.O. (1992) *Leading Issues in Rural Development* ACENA Publishers
    Enugu pp 2– 3

Jhingan, M.C. (1985). *The Economics of Development and Planning, Pabhet
    Offset*, Delhi, India.

Jhingan, M.C. (1997). *Theories of Interest Rates in Mean Economics theory.* New
    Delhi: Vrinda Publications Ltd. Pp 186.

Kefas, S.D. (2005). Fighting poverty through Empowering women with
    Microfinance. *Nigerian Quarterly Microfinance Newsletters* Vol. 2; June, 2006.

Mejeha, R. O. (2005). Determinants of Savings Mobilization in the Rural Economy
    of Abia State, Nigeria. Unpublished Ph.D Dissertation in the Department of
    Agricultural Economics, Michael Okpara University of Agriculture Umudike;
    p. 130.

Nmadu, J.N.; J. O. Okukosi and D.O. A. Philip (2001). "Structural Characteristics of Income Among small-scale farmers in Doko and Jima Districts of Niger State, Nigeria" Proceedings of the 35th Annual Conference of the Agricultural Society of Nigeria, September 16 – 20, 2001; Held at University of Agriculture, Abeokuta, Nigeria. F.K. Salako, S.T.O. Lagoke, A.B.J. Aina D. Eruvbetine and A.O. Dipeolu (EDS). Pp. 328 – 330.

Mbanasor, J. A. and A. C. Nwosu (1997) "Agricultural Policies and Sustainable Agricultural Investment in Nigeria: Critical Issues" Proceedings of the 13th Annual Conference of Farm Management Association of Nigeria (FAMAN) held at Federal University of Agriculture, Umudike; 12th – 15th October, 1997. Nwosu, A.C. and J.A. Mbanasor (Eds.) pp. 29 – 37.

Rostow, W.W. (1960). *The Stages of Economic Growth*. Cambridge University Press. 1960.

Ukoha, O. O. and R. N. Echebiri (2003). Socio-economic Determinants of Investment in Soil Conservation in Ikwuano Local Government Area of Abia State, Nigeria. *Journal of Agriculture and Food Sciences Volume 1*, Number 1 2003, pp 53 – 61.

Upton, |M. (1996). *The Economics of tropical Farming System*. Cambridge University Press.

World Bank (1995). Trends in Developing Economies. The World Bank, Washington D.C. 1995.

Yaron, J., M.P. Benijamin and S. C. Piprik (1997). *Rural Finance Issues, Design and Best Practice*. Publication of the World Bank Washington, D.C. 1997

Zeller, M. Schrieder G. B.J.V. Braun and F. Heidhues (1997). *Rural Finance for Food Security for the Poor Implications for Research and Policy*. Review No. 4. Internationals Food Policy Research Institute, 1997.