Journal of Agriculture and Environment Vol. 14 No. 1, 2018: 21-29
ISSN 1595-465X

EFFECT OF LIFT ABOVE POVERTY ORGANIZATION (LAPO) MICROCREDIT ON THE ECONOMIC PERFORMANCE OF CASSAVA FARMERS IN EDO STATE NIGERIA

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ABSTRACT

The study examined the effect of Lift above Poverty Orgnization (LAPO) microcredit on economic performance of cassava farmers in Edo State. Profitability indices (gross margin, net profit, land productivity, labour productivity and returns on investment) were compared between cassava farmers who were users of LAPO microcredit (Treatment) and non-users (Control). To get the Treatment, 93 users of microcredit were selected using simple random sampling from the list of cassava farmers obtained from LAPO Microfinance Bank. The second group – the Control (93) were selected from identified non-users of microcredit using simple random sampling giving a total sample size of 186. Farm Budgetary analysis was carried out to assess the economic performance of respondents. Analysis of results showed that both groups had similar socioeconomic characteristics with mean household size of seven; mean ages of non-users and users of microcredit were 48 and 45 years respectively; farming experience was 21 and 19 years respectively; and both groups cultivated less than two hectares showing they were operating on a small scale. Results indicated that respectively, non-users and users had net profit of ₦59, 071 and ₦40, 388 per hectare; land productivity of 12.03 tons/ha and 12.61 tons/ha and labour productivity of 86kg/man-day and 94 kg/man-day. The t statistic showed that there were no significant differences in all these variables between the Treatment and Control. For the desired benefits of accessing microcredit to be more pronounced in cassava production, farmers should seek more ways to empower themselves by forming cooperatives so that they can pool resources together and embrace mechanization which can help in enhancing the economic performance of their collective enterprises.

Keywords: Labour productivity, Land productivity, Mechanization, Microcredit, LAPO, Profitability

INTRODUCTION

Microcredit is the extension of small loans to the poor with little or no collateral, provided by legally registered institutions. It was established so that poor people are also

bankable without the conventional collateral. Hence, it is expected to have a great impact on economic performance of farmers since most of the poor are involved in one form of agricultural enterprise or the other.

Interestingly, Cassava is a dominant starchy staple crop in Nigeria, consumed by most households (Nweke, Ugwu and Dixon, 1996). However, finance is needed to start a profitable cassava production enterprise in order to purchase sufficient inputs such as fertilizers, pesticides, herbicides, improved varieties, and equipment. Scale of production can subsequently be increased to a much desirable level. Thus, the injection of outside cash in the form of microcredit to cassava farmers could be the panacea to the low agricultural productivity and profitability in the country as a whole, *ceteris paribus*. One source of such outside cash in Nigeria is the Lift above Poverty Organization (LAPO) Microfinance Institution. LAPO is a Non-governmental Organization in Nigeria whose aim is to give microcredit to the poor. They have gained worldwide reputation because of their nationwide coverage and a host of farmers are clients of this institution.

In spite of the increasing attention the provision of agricultural microloans to farmers is receiving, there seems to be no noticeable effect on the profitability of cassava farmers. In fact, a study conducted in Edo State showed that profitability of the small scale cassava production was low (Oyinbo, Damisa, and Ugbabe, 2011). It is therefore vital to make empirical comparisons between microcredit users and non-users to know if microcredit delivery is achieving what it purports to achieve with regards to the performance of cassava farmers in Edo State using Lift above Poverty (LAPO) as a case study. Against this backdrop, this research sought to answer the following questions

i. What are the socioeconomic characteristics of users and non-users of Lift above Poverty microcredit in Edo State?
ii. How does land and labour productivity of users of microcredit differ significantly from those of non-users?
iii. How profitable are users of microcredit vis a vis non-users?
iv. What are the constraints faced by both users and non-users of microcredit in the production of cassava?

MATERIALS AND METHODS

The study was carried out in Edo State. The State is largely agrarian and major crops grown include cassava, maize, plantain, oil palm, cocoa and rubber. This study was targeted towards sole cassava farmers in Edo State who get microcredit from LAPO – a renowned microfinance bank in Nigeria.

Primary data was elicited from cassava farmers through the use of structured questionnaire. Two groups of respondents were selected for the study; the Treatment Group and the Control. The Treatment group consisted of sole cassava farmers who had been using microcredit for at least a year while the Control referred to those not using microcredit. To get the Treatment, 93 users of microcredit were selected using simple random sampling technique from the list of cassava farmers given by LAPO Microfinance Bank. The second group – the Control (93) were selected from identified non-users of microcredit from the same communities where users of microcredit resided using simple random sampling technique. This gave a total sample size of one hundred and eighty six. (186). The Control Group was used as a baseline measure because it gave an estimate of

what would have happened if users of microcredit did not receive any credit, *ceteris paribus.*

In estimating the profitability of users and non-users of microcredit, budgetary analysis such as gross margin, net farm income, and returns on investment were used.

Gross margin (GM) = TR−TVC

Net Income (NI) =TR−TC

Return on Investment (ROI) = $\frac{\text{TR} - \text{TC}}{\text{TC}}$

Where TR = Total Revenue;

TC = Total Cost;

TVC = Total Variable Cost;

TFC = Total Fixed Cost.

The t-statistic was then used to compare whether there is a statistically significant differences in profit levels between the two groups. According to Kothari and Garg (2014), t-statistic is given as

$$t = \frac{\overline{x_1} - \overline{x_2}}{\sqrt{\frac{S_1^{\,2}}{N_1} + \frac{S_2^{\,2}}{N_2}}}$$

Where $\overline{x_1}$ = average profit level of users of microcredit

$\overline{x_2}$ = average profit of nonusers of microcredit

$S_1^{\,2}$ is the variance of users of microcredit

$S_2^{\,2}$ = variance of nonusers of microcredit

N_1 and N_2 is the sample size for users and nonusers of microcredit respectively

In estimating the land and labour productivities of respondents, the formula given below was applied as defined by Dharmasiri (2009).

$$\text{Land Productivity} = \frac{\text{Crop Yield (kilogram)}}{\text{Total Land Area (Hectarage)}}$$

$$\text{Labour Productivity} = \frac{\text{Crop Yield (kilogram)}}{\text{Total Labour(Man-days)}}.$$

Identified constraints faced by cassava farmers in general were ranked on a 4-point rating scale. It was rated as: Very Serious coded 4, Serious coded 3, Not Serious coded 2, and Not a Problem coded 1. A mean score of 2.5 and above showed that the constraints were significant while a mean score less than 2.5 showed that farmers on average regarded such constraints as less severe.

RESULTS AND DISCUSSION

Socioeconomic Characteristics

Results presented in Table 1 presents socioeconomic characteristics of users and non-users. Males and females were highly involved in cassava production for users (52%, 48%) and non-users (57%, 43%) of microcredit respectively. Moreover, 97% of users and

86% of non-users had some form of education ranging from primary to tertiary education. However, only 7% of non-users and 14% of users had tertiary education.

Table 1: Socioeconomic characteristics of cassava farmer users and non-users of microcredit

Variables		Frequency (Non-Users)	% (Non-Users)	Frequency (Users)	% (Users)
Sex	Male	53	57.0	48	52.0
	Female	40	43.0	45	48.0
Marital Status	Married	81	87.0	78	84.0
	Single	5	5.5	10	11.0
	Separated	2	2.0	0	0.0
	Divorced	0	0.0	2	2.0
	Widow/widower	5	5.5	3	3.0
Educational Level	No formal education	7	7.5	3	3.0
	Primary education	34	37.0	38	41.0
	Secondary education	45	48.0	39	42.0
	Tertiary education	7	7.5	13	14.0
Age	23.0 and below	0	0.0	1	1.0
	24.0 - 38.0	25	27.0	26	28.0
	39.0 - 53.0	41	44.0	45	48.0
	54 and above	27	29.0	22	23.0
		Mean = 48		Mean= 45	
Farm Size (Ha)	< .50	20	22.0	7	8.0
	.50 - .99	26	27.0	18	19.0
	1.00 - 1.49	12	13.0	23	25.0
	1.50 - 1.99	12	13.0	16	17.0
	2.00+	23	25.0	29	31.0
		Mean= 1.40		Mean= 1.99	
Household Size	5.0 and below	39	42.0	30	32.0
	6.0 - 10.0	43	46.0	56	59.0
	11 and above	11	12.0	8	9.0
		Mean = 7		Mean = 7	
Number of Years of Borrowing from LAPO	-	-	-	Mean = 1.9	-
Annual Interest Rate				Mean=30%	

Source: Field Summary data, 2016

A further examination of the results in Table 1 indicates that mean ages for users and non-users of microcredit were 45 and 48 years respectively indicating that cassava production was dominated by active middle-aged farmers. However, except cassava production experiences an injection of young and able bodied farmers in the next decade, many cassava farmers would get older which could adversely affect development in cassava production.

The mean farm size for users was 1.99 hectares and for non-users; 1.41 hectares for usres, showing that most of the respondents were small scale farmers. This is similar to the results of Toluwase and Abdu-raheem (2013) who reported that farm size of cassava farmers in Ekiti State ranged from 1 to 3 Ha. This certainly would have a negative impact on their level of production as these farmers would not derive the benefits of economies of scale. Moreover, both samples had mean household size of seven persons. Another noteworthy fact was the interest rate at which LAPO charged the farmers. As shown in Table 1. Each new month, the farmers pay 2.5% interest on original amount borrowed which would amount to 30% on principal per year. This annual interest rate is exceedingly high especially for poor farmers. In order to redeem their loans to the relentless LAPO officials, some farmers had to leave their farms to work elsewhere and get quick wages to pay back before the next month.

Moreover, the monthly payback of loans was quite distressing to the farmers because cassava as an annual crop would only bring returns after harvest (about 12 months or more). Yet these farmers had to start paying from the second month of borrowing when the planted cassava stems had just started to sprout.

Budgetary Analysis and Productivity Measures

Results from Table 2 show that for a production cycle, total cost of production for non-users and users of microcredit were ₦188, 188 and ₦203,724 with variable costs taking up ₦176,959 and ₦188,659 respectively. A total fixed cost for non-users and users of microcredit was ₦11, 229.11 and ₦15, 065.14 respectively. This showed that bulk of the costs incurred by these farmers were on variable costs. Thus, gross margin values per hectare were as low as ₦67, 035 and ₦47, 959 for non-users and users of microcredit while net farm incomes per hectare were ₦59, 071 and ₦40, 388 respectively.

Return on investment for the production cycle was 0.40 and 0.44 respectively showing that for every ₦1 invested in cassava production, 40k and 44k was realized as profit for users and non-users respectively which is not attractive enough especially for small scale enterprises.

Table 2: Budgetary analysis of cassava farmers for users and non-users of microcredit

Variables	Non-Users	Users
Variable Cost (₦)		
Cassava Cuttings	5875.00	17025.27
Fertilizer	3907.65	1411.29
Herbicide	11047.96	881.31
Pesticide	278.57	83.33
Land Preparation	18165.82	24279.03
Planting	21427.83	29953.82
Spraying Herbicide	12159.18	12568.82

Slashing	17581.12	32843.01
Spraying Pesticide	535.71	353.76
Fertilizer Application	2323.37	2343.87
Harvesting	66828.47	43164.52
Transportation	16828.06	23750.54
Total Variable Cost	176958.7	188658.6
Fixed cost/ Depreciation (₦)		
Cutlass	327.29	1382.59
Hoe	137.86	701.33
Wheelbarrow	222.51	1005.45
Bag	134.85	492.26
File	183.80	685.48
Sprayer	160.13	791.52
Bike	1412.12	4341.40
Basin	278.61	681.23
Rent for Land	8371.94	4983.87
Total Fixed Cost	11229.11	15065.14
Total Cost	188187.9	203723.7
Total Revenue	271478.6	284096.8
Gross Margin	94519.83	95438.2
Gross Margin/Hectare	67035.34	47958.89
Net Farm Income	83290.72	80373.07
Net Farm Income/Hectare	59071.43	40388.48
Return on Investment	0.442593	0.39452

Source: Field Summary Data, 2016

Land and labour productivities were also estimated for non-users and users of microcredit. From Table 3, it was estimated that for land productivity, both groups had 12.03 and 12.61 tonnes per hectare respectively. Labour productivity values were 86 kg/manday and 94kg/manday for nonusers and users of microcredit.

Table 3: Land and labour productivities for users and non-users of microcredit

Land Productivity	Non-users	Users
Yield (kg)	16, 846	25, 220
Farm Size (ha)	1.4	1.99
Land Productivity (kg/ha)	12, 034.86	12, 610.26
Labour Productivity		
Land Preparation (man-days)	24	30
Planting (man-days)	5	8
Weeding (man-days)	21	25
Spraying/Fertilization (man-days)	5	7
Harvesting (man-days)	21	24
Total Man-days	196	268
Labour Productivity (kg/man-day)	86	94

*Source: Field Survey, 2016 *One man-day equals six hours of work*

In comparing these economic variables between non-users and users of microcredit using a student t-test, it was observed from Table 4 that there were no statistical differences between the gross margin, net profit, return on investment, land productivity and labour productivity. This showed that the credit borrowed by cassava farmers did not impact significantly on their economic performance. It stands to reason therefore that the farmers would actually have performed better if they did not access LAPO microcredit, judging from the fact that non-users recorded higher returns on investment.

Table 4: Test for equality of means for productivity and profitability

Variables	Status	Mean	T	P-value
Gross Margin/Hectare	Non-users	67035.34	0.097	0.923
	Users	47958.89		
Net Farm Income/Hectare	Non-users	59071.43	0.292	0.770
	Users	40388.48		
Return on Investment	Non-users	0.442593	1.354	0.177
	Users	0.39452		
Land Productivity	Non-users	12034.86	-0.559	0.577
(Yield (Kg) /Hectare)	Users	12610.26		.
Labour Productivity	Non-users	86.0	-0.492	0.623
(Yield/Man-day)	Users	94.0		

Source: Field Summary Data, 2016

Constraints Faced by Respondents

The result presented in Table 5 showed the mean scores for insufficient funds to be the most serious problem with mean values of 3.74 and 3.79 for users and non-users of microcredit respectively. This agrees with findings of Akinnagbe (2010) who stated that high cost of planting materials is an impediment to cassava production.

Table 5: Production constraints of users and non-users of microcredit

Constraints	Mean (Users)	Mean (Nonusers)
Unfavourable Weather	2.25	2.480
Insufficient Fund	3.74*	3.786*
Insufficient Land	1.46	1.653
High Labour Cost	2.53*	2.541*
Absence of Ready Market	2.04	2.000
Incidence of Pest and Diseases	2.51*	2.347
Livestock Invasion	2.55*	2.694*
Poor Soil	1.49	1.327
Poor Road Network	2.28	2.255
Outbreak of Farm Fire	2.56*	2.806*
Flooding	1.20	1.173
Theft	1.15	1.143
High Interest Rate	3.70*	
Inability to Pay Back Loan	1.62	-
High Collateral	1.58	-
Temptation to Divert Loan	2.51*	-

*Mean ≥ 2.5 Serious Constraints**Source: Field Survey, 2016

Livestock invasion had mean values 2.55 and 2.69 for users and non-users of microcredit respectively depicting it as a serious constraint. This is in consonance with Ajobi (2014) who stated that livestock invasion was a serious problem to farming as most cassava farmers suffer great loss of crops when the animals feed on and trample on crops.

High labour cost had mean scores of 2.53 and 2.54 for users and non-users of microcredit respectively which indicates that high cost of labour was another significant problem faced by cassava farmers. Cassava production is highly laborious and the production of cassava is still predominantly manual; farmers employing traditional tools and manual labour for virtually all production operations (Alimi, 2012).

Farm fire had mean scores of 2.56 and 2.81 for users and non-users of microcredit respectively indicating that both groups were seriously affected. This agrees with Enete and Achike (2008) who opined that fire leads to a decline in farm yields and a fluctuation in farm income.

CONCLUSION

It can be concluded from this study that agricultural loans obtained from Lift above Poverty Microcredit Scheme has not significantly impacted on net profit and returns on investment of cassava farmers in Edo State. It has also been seen that such microcredit did not have significant effect on their land and labour productivities. Since LAPO loans did not impact farmers profit level positively, farmers should find other areas to help themselves such as formation of cooperatives where they can pool resources together and buy farm machinery such as tractors. This would have a great influence on productivity, reduce labour costs and increase profitability.

Farmers who produce crops like cassava whose gestation period is about one year should be asked to redeem their loans at the end of the production cycle when the farmer would have harvested and sold their products, not when the farmer is still in the process of production.

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