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Microcredit Access, Repayment, and Profitability Differences in Cassava Production in Ona-Ara Local Government Area, Oyo State, Nigeria

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ABSTRACT

This study aimed to profile the socio-economic characteristics of cassava farmers, assess loan volumes accessed and repaid, and compare profitability between microcredit beneficiaries and non-beneficiaries in Ona-Ara Local Government Area, Oyo State, Nigeria. The methodology utilised multistage sampling involving purposive selection of cassava-prominent villages and communities, stratification by credit status, and random sampling of 2% of registered farmers (218 usable responses), with data gathered through questionnaires and interviews. Analysis via descriptive statistics, t-tests for group differences, budgetary techniques for profitability, Cobb-Douglas production function for input effects, and marginal value productivity for efficiency assessment. Results showed farmers were mostly male, married, educated to secondary level, with small households and infrequent extension visits; beneficiaries farmed larger areas (2.1 ha compared to 0.8 ha) and sourced credit primarily from cooperatives (59.5%) and microfinance banks; significant gaps existed in loan demand (₦240,900 requested compared to ₦117,747 disbursed) and repayment (₦70,923 repaid), with t-tests confirming differences; profitability was markedly higher for beneficiaries, driven by farm size elasticity (>1), planting materials, and labour, though inputs generally showed inefficient use except herbicides among non-beneficiaries. The study concluded that microcredit significantly enhances cassava profitability for beneficiaries by enabling greater production scale and returns, notwithstanding low repayment rates and disbursement shortfalls. Recommendations encompass promoting farmer cooperatives for collective savings and improved credit access, extension-led education on microcredit advantages, policy reforms for timely and sufficient soft loans, and enforcement of repayment discipline to sustain lender confidence and program viability.

Keywords: Cassava, Microcredit, Profitability, Loans, Cooperatives

1. INTRODUCTION

The CBN (2005) had seen that the importance of such credit would make monetary

assistance available to a huge portion of possibly useful farmers who in any case, would have next to zero admittance to formal monetary help, improve administration conveyance of Micro credit money establishments to farming for agrarian creation and blend working norms and give key stage to the advancement of miniature money establishments to embrace best practices.

Agribusiness is a major part of the Nigerian economy. It is the basic sector that can alleviate the growing socio-economic crises and hunger in the country. Agriculture provides food, employment and livelihoods for many. It also the main source of arable and cash crops, woods and timbres, livestock and fisheries (Esobhawan, *et al* 2013). Regardless of the sector's limited performance in the 1970s due to the neglect of the sector, agriculture still engages a sizable 70 per cent of the country's populace and a source of foreign exchange for the nation and raw materials for the industries.

Rural areas in Nigeria are dominated by small-scale farmers that are poor. The increase in rural poverty is credited to low agricultural output. The local farmers' profits on their efforts are restricted by various variables, including insufficient capital. Esobhawan and Alabi (2011) believed that farming business in Nigeria is characterized by small farm holders with fragmented farm holdings, simple cultivating framework, low capitalization and low yields per hectare. They further added that little homestead holders comprised around 80 per cent of the cultivating populace in Nigeria. 90 per cent of the complete food creation were from little ranches with 60 per cent of the general population making money from these homesteads (Oluwatayo *et al*, 2008).

The agricultural sector serves as market for products of non-farmer sector as well as major contributor to the national's Gross Domestic Product (GDP) but small-scale farmers play a vital role in this contribution. Be that as it may, their usefulness and development are upset by restricted admittance to credit offices (Rahji and Fakayode, 2009; Odoemenem and Obinne, 2010). In spite of its significance, Fakayode, *et al* (2008), expressed that agriculture in Nigeria is as yet confronted with various issues including non-availability of inputs in the right quantity and quality, inadequate funding, underdeveloped marketing system and inadequate infrastructural facilities for production which in turn warrants farmers' need for credit. This has slowed down advancement in the area with continuing expansion in food imports (Enoma, 2010; Adetiloye, 2012). Yunus (2000) uncovered that miniature credit has ended up being a powerful and well-known measure in the continuous battle against poverty, empowering those without admittance to loaning foundations, to get credit at bank rates for business purposes. Most agricultural nations have less than 20 bank offices for every 100,000 grown-ups, and individuals store cash at the pace of 33 per cent. This absence of formal monetary administrations, alongside numerous different elements, have repressed farmers and different business people, especially in rustic regions, from expanding reserve funds, capital development and ventures, with subsequent decrease in family utilization. Monetary administrations could assist farmers with the accumulation of funds to purchase useful inputs such as fertilizer which are helpful for increasing the production of food crops such as cassava, rice, yam, maize etc.

According to IITA (2009), cassava-*Manihot esculenta*, a woody shrub of the Euphorbiaceae (spurge) family, a native of South America, is extensively cultivated as an annual crop in the tropical and subtropical regions of the world. It stated that cassava is the third largest source of food carbohydrates in the tropics, after rice and maize. Similarly, it has been proved that cassava is a major staple food in the developing world, providing a basic diet for over half a billion people. IITA, in its extensive research work has documented that cassava is also one of the most drought resistant crops with lenient yields on minimal soils. It additionally declared that Nigeria is the world's biggest producer of cassava, while Thailand is the biggest trading nation of dried cassava. In a similar examination, IITA (2009), guaranteed that in excess of 228 million tons of cassava was delivered worldwide in 2007, of which Africa represented 52 per cent. In 2007, Nigeria delivered 46 million tons making her the world's biggest maker. As indicated by FAO (2002), Africa's product is assessed to be just a single ton of cassava yearly. It additionally expressed that nineteen million hectares of cassava were planted worldwide in 2007, with around 63 per cent in Africa.

Fakayode, *et al*., (2009) reported that in most part of Africa, the culture is basically subsistence where the family cultivates small plots for food needs. Cassava productivity in Nigeria is low due to the reality that cultivating activities is typically done among poor and low pay farmers, developing little and divided farmland to support occupation. These farmers are often constrained due to their economic status and lack of availability to capital and other important sources of information which would have worked with the expansion in food crop creation nearby.

Since cassava possesses a unique position as a food security crop to small scale farmer in Oyo State specifically, and Nigeria in general, the production of crops needs to be encouraged by minimizing all the constraints surrounding its production. Among the bunches of issues affecting the production of crop; limited access to credit by farmers has been identified as the most serious problem. One of the major constraints small-scale farmers are facing in Nigeria is that of inability to access credit facilities for agricultural production. It is envisaged that when these conditions are improved upon that the value of farmers' income will meet their expectations that will bring about improvement in their standard of living. Having recognized that credit is prominent for expansion of

business. This study will be focused on cassava farmers who are involved also in cooperative activities. The study seeks to address the following objectives:

a. to examine socio-economic characteristics of cassava farmers in the study area;
b. to determine the loan volume accessed and repaid by the farmers;
c. to determine and compare the profitability of cassava production by loan beneficiaries and non-beneficiaries

2. MATERIALS AND METHODS

Study Area

The study was carried out in Ona-ara Local Government of Oyo State, Nigeria. It is one of the 33 LGAs in Oyo state, Nigeria. It was created from the agitation by its founding fathers after the creation of Oluyole LGA that was considered to be extremely large for any meaningful and effective administration. The argument of these founding fathers was premised on the fact that too much emphasis was placed on urban areas to the detriment of the predominately agrarian rural areas. Ona-ara lies on latitude 7′.22^0 North of the equator and Longitude 4′.03^0 East of the Greenwich Meridian. According to the 2006 population census, Ona–ara has a total population of 265,059 people, made up of 131,471 males and 131,588 females. The land mass is about 3570km^2.which is bounded in the north, by Egbeda LGA, in the south by Oluyole LGA, in the east by Ogun and Osun States and in the west by Lagos-Ibadan express way with Ibadan South East LGA on the other side of the express way. Ona–ara comprises of six (6) wards. The people of Ona–ara are predominantly farmers that cultivate fertile land for crops including cocoa, kola cashews and citrus like oranges, and mangoes. The farming population is scattered all over the various communities in the LGA.These communities include Foworogun, Idi–Ogun, Elese–Erin, Olosunde, Ojebode, Akanran and Gbada–Efon among others It has an annualrainfall of 1,250mm. The Local Government council has a Traditional Council made up of the 13 recognised Baales whose chairmanship is on rotational basis the Olubadan.

Research design

The research design adopted was the survey method. This design is one in which a group of people or items are studied by collecting and analysing data from only a few of the people or items of investigation that are considered to be representative of the entire group or population. This method was chosen because it was considered to be more economical in terms of resources required and the time needed for the study. It facilitates sample(s) drawn from the population.

Study Population

The study covered farmers in the six wards of the Ona-ara LGA. The lists of these farmers were obtained from Oyo State Ministry of Agriculture and Natural Resources and Agricultural Development Projects (ADPs) to form the sampling frame. The list revealed that there were 11,826 registered farmers in the study area.

Sampling Techniques

A multistage sampling technique was adopted in selecting the respondents for the study. The first stage of selection was the purposive selection of two (2) agricultural villages from each of the 3 Agricultural Wards based on the prominence of cassava production activities. The selected villages were: Akanran and Alagbaa from Akanran ward, Gbedun and Kajola from Gbedun ward, Jago and Butu-Butu from Olorunsogo. In the second stage of selection, three (3) communities were purposively selected from each of the Villages, also based on prominence of cassava production activities, to give a total of eighteen (18) communities that were studied. The communities are shown in Table 1. The third stage was the stratification of the farmers into credit beneficiaries and non-beneficiaries, the forth and the final stage was the random sampling techniques to select 2% from the population of registered farmers in the study area. This came to a total of two hundred and thirty eight (238) questionnaires administered; where two hundred and eighteen (218) were retrieved representing 91.6% response rate. Details are shown in Table 1

Table 1. Study Sampled outlay

Agricultural Ward	Agricultural village	Communities	Population	2% of thepopulation
Akanran	Akanran	Aperin	468	**10**
		Ogbere	583	**12**
		Odi Aperin	985	**20**

	Alagbaa	Oremeji	1310	**26**
		Agugu	250	**5**
		Ojebode	380	**8**
Gbedun	Gbedun	Gbedun	1000	**20**
		Olorunda	820	**16**
		Araromi	623	**12**
	Kajola	Gbada Efon	1075	**22**
		Odi Odeyale	650	**13**
		Aba Eku	400	**8**
Olorunsogo	Jago	Ogunbunmi	1030	**21**
		Kupalo	438	**9**
		Jago	372	**7**
	Butu-Butu	Butu-Butu	650	**13**
		Aba Paanu	400	**8**
		Eletu	392	**8**
3	**6**	**18**	**11,826**	**238**

Sources of Data and Data Collection Method

The data for the study were obtained from primary sources. The data were obtained from the respondents through the administration of structured questionnaire for the literate farmers and interview schedule for the non-literate farmers. Questions covered the areas relating to the farmers' socio-economic characteristics, sources of capital, and accessibility of farmers or otherwise to microfinance institutions, production inputs and output obtained. The secondary data were obtained from text books, journals and internet.

Data Analysis Techniques

Data collected were analysed as follow:

Descriptive statistics

Descriptive statistical tool, involving frequencies, percentages, means and standard deviation, was used to analyse the socio-economic characteristics of the respondents. The tool was also used to determine the proportion of micro credit obtained from the various sources and the amount repaid by the beneficiaries to achieve objectives one and two. The estimation technique for the analysis is given as:

Amount of loan requested = AAmount of loan granted = B Amount of loan repaid = C
Amount of loan outstanding = DAmount of interest paid = E
Hence, proportion of loan granted **Pg.** = B/A × 100/1Proportion of loan paid **Pp.** = C/B ×100/1
Proportion of loan outstanding **Po.** = D/B ×100/1

Budgeting analysis

The enterprise budgeting technique involving the estimation of the costs involved in cassava production, the output and revenue derived was used to determine the profitability of cassava production business by the beneficiaries and non-beneficiaries. This is expressed mathematically as:

Cost Analysis

This was expressed as:
TC = TFC + TVC .....(1)

Profitability Analysis

The net revenue analysis was used to determine the profitability of the enterprise. This isexpressed as:

NR = TR – TC…..(2)
Where
NR = Net revenue
TR = Total revenue from cassava sales during the production year
TC =Total cost incurred in carrying out cassava production. Total cost is made up of Total Fixed Cost (TFC) and Total Variable Cost (TVC). This was used to achieve objective three.

The profitability analysis also involved the determination of the feasibility and the riskiness of cassava production in the study area. The tool used to determine the enterprise feasibility is the Net Return on Investment (NROI) analysis expressed as

$$NROI = \frac{NI}{TC} \times \frac{100}{1}\ \% \quad \ldots\ldots(3)$$

The higher the proportion obtained, the more feasible is the enterprise. The tool used in determining the riskiness of the enterprise is the Break-Even Analysis and Coefficient of Variation. The smaller the proportion obtained, the less risky is the enterprise.Coefficient of Variation is expressed as:

$$CV = \frac{SD}{\ddot{x}} \quad \ldots\ldots(4)$$

Where SD = the Standard Deviation of the mean net income and ẍ = mean of the net income.

3. RESULTS & DISCUSSION

Socio-Economic Characteristics

Age Distribution

The analysis of the age of respondents in Table 2 revealed that the mean age was 50 and 47 years for credit- beneficiaries 50 years and non-beneficiaries respectively. This result implied that older farmers need more credit to pay for labour especially. This is because as a farmer ages, their physical strength required for active farming decreases. Thus, the dominant age group found in this study is indicative of the active demand for credit to supplement dwindling strength of the farmers as shown by Audu *et al*. (2009) that the ageing trend of the farmers is undesirable for agricultural production. Also, the mean age of both groups of farmers which are 50 and 47 years respectively is in contrast with Obinne *et al*. (2009) who stated that the active farming age for Nigerian farmers was 37years, implying a certain level of potential to effectively use of credit.

Table 2. Age Distribution of the Respondents

Credit Beneficiaries			Non-Beneficiaries
Age Range (yrs)	**Frequency**	**%**	**Frequency %**
≤30	1	0.90	5 (4.7)
31-40	20	18.02	28 (26.2)
41-50	36	32.43	30 (28.0)
51-60	43	38.74	37 (34.6)
>60	11	9.91	7 (6.5)
Total	**111**	**100.0**	**107 (100.0)**
Mean		**50.0**	**47.0**

Source: Analysed tables from data generated from field

Sex Distribution

Table 3 shows the sex distribution of the respondents. The sex distribution of the respondents shows that the males dominated farmingoperation among the loan beneficiaries. It shows that about 92% of the males and about 8% ofthe females were

involved in cassava production. Also, among the non- credit beneficiaries, the males accounted for about 83% while the females accounted for about 7%. This is an indication that males were more involved in cassava production because of the energy requirement in the operations. The study also shows that males have more access to credit are dominant in the sample. This finding confirmed that men tend to benefit more from agricultural innovations and interventions than women (Mohammed *et al*. 2009). However, Shaw (2004) had demonstrated that credit empowers women, promotes gender-equality and improves households' wellbeing.

Table 3. Sex Distribution of the Respondents

Sex	Credit Beneficiaries		Non-Beneficiaries	
	Frequency	%	Frequency	%
Male	102	91.9	89	83.2
Female	9	8.1	18	16.8
Total	**111**	**100.0**	**107**	**100.0**

Note: The figures in the brackets are the percentage values
Source: Analysed tables from data generated from field

Marital Status

The marital status of the respondents in Table 4 revealed that majority of the loan beneficiaries (81.1%) and (78.5%) non-beneficiaries were married respectively. The result agrees with Nasiru *et al*. (2006) findings that marriage is a labour asset source to agricultural productivity in the developing countries. It also indicates that the farmers involved in cassava farming were responsible people who generate money from cassava farming to cater for their families' numerous needs.

Educational Level

The educational level of the respondents' in Table 5 shows that majority of them were literate with about 85% of the credit beneficiaries and 82% of the non-beneficiaries having had formal education. The finding corresponded with Balogun *et al*. (2007), who stated that the average level ofeducation among farmers was secondary. Idiong *et al*. (2006) also revealed that education facilitates the acquisition and utilization of appropriate technologies. Muhammad-Lawal *et al*. (2006) stated that the level of education was expected to influence ability to adopt agricultural innovations and make decisions.

Table 4. Distribution of Respondents According to Marital Status

Marital Status	Credit Beneficiaries		Non-Beneficiaries	
	Frequency	%	Frequency	%
Married	90	81.1	84	78.51
Single	6	5.4	10	9.34
Widows/widowers	13	11.7	12	11.22
Divorce	2	1.8	1	0.93
Total	**111**	**100**	**107**	**100**

Note: The figures in the brackets are the percentage values
Source: Field Survey, 2022

Table 5. Distribution of Respondents according to their Educational Level

Education Level	Beneficiaries		Non-Beneficiaries	
	Frequency	%	Frequency	%
No Formal education	17	15.32	19	17.76
Primary education.	27	24.32	28	26.17

Secondary education.	49	44.14	44	41.12
Tertiary education.	18	16.22	16	14.95
Total	**111**	**100.0**	**107**	**100.0**

Note: The figures in the brackets are the percentage values

Family Size

Table 6 presents the family size of respondents. The respondents maintained a small family with a mean family size of about 4 persons each for the credit beneficiaries and non- credit beneficiaries per household. The smallness in mean family size of the respondents is in contrast with the finding of Nwaru *et.al*. (2011), that farmers maintained large family size and concluded that large size of respondents seemed to encourage seeking knowledge about the availability of credit. It however confirmed our findings that the respondents were educated who know the economies of maintaining small family size through birth control.

Table 6. Family Size

	Credit Beneficiaries				Credit Beneficiaries			
Family size	**Frequency**	**%**			**Frequency**	**%**		
1-2	4	3.6			16	15.0		
3-4	54	48.7			52	48.6		
5-6	46	41.4			30	28.0		
>6	7	6.3			9	8.4		
Total	**111**	**100.0**	**4.0**	**1.5**	**107**	**100.0**	**3.7**	**2.1**

Source: Analysed tables from data generated from field

Extension Access

The result in Table 7shows the extension access of respondents that 80.2% and 95.3% of credit beneficiaries and non-beneficiaries respectively had no access to extension services. This could hinder the farmer's knowledge of adopting modern farming technologies.

Table 7. Extension Access

	Credit Beneficiaries'		Non-Beneficiaries	
Access	**Frequency**	**%**	**Frequency**	**%**
had no access	89	80.2	102	95.3
had access	22	19.8	5	4.7
Total	**111**	**100.0**	**107**	**100**

Source: Analysed tables from data generated from field

Farm Size

The farm size of the farmers in Table 8 shows that the credit beneficiaries cultivated larger hectarage (2.1ha) than the non-credit beneficiaries whose hectarage size of (0.8ha). This could be so considering the fact that the beneficiaries could have more financial empowerment to cultivate and maintain larger farm sizes

Table 8. Farm Size

	Credit Beneficiaries			Non-Beneficiaries		
Farm size	**Frequency**	**Mean**	**S.D**	**Frequency**	**Mean**	**S.D**
≤1 (8.1)	9 (8.1)			97 (90.7)		
1.1-2.0	89 (80.2)			10 (9.3)		
2.1-3.0	11(9.9)			-		

3.1-4.0	1 (0.9)			-		
4.1-5.0	1 (0.9)			-		
Total	**111 (100.0)**	**2.1**	**0.54**	**107 (100.0)**	**0.8**	**0.6**

Note: The figures in the brackets are the percentage values.
Source: Analyzed tables from data generated from field

Land Acquisition Mode

The result of land acquisition mode in Table 9 shows that the respondents' mode of land acquisition for farming was mainly through lease/rentage, that accounting for 68.5% of the credit beneficiaries and 72.9% for the non-credit beneficiaries. This is an indication that the farmers were tenants who have no personal cultivable land for farming. This could hinder the scope and size of their farming enterprise.

Table 9. Land Acquisition

Land Acquisition	**Credit Beneficiaries**		**Non-Beneficiaries**	
	Frequency	**%**	**Frequency**	**%**
Rented	76	68.5	78	72.9
Lease	2	1.8	0	0.0
Inherited	33	29.7	29	27.1
Total	**111**	**100.0**	**107**	**100.0**

Source: Analysed tables from data generated from field

Type of Microfinance Accessed

Table 10 showed the frequency distribution of the respondents based on the type of microfinance accessed by them. The result revealed that the farmers' main source of microfinance was the cooperative societies, which accounted for about 60%. The reason may be due to the fact that the interest rate by cooperatives was comparatively lower and more convenient to payback. Microfinance bank accounted for about 31.5% as the source of micro credit to the farmers. This could also be because microfinance banks' credit main targets were the poor and the low- income earners in the society with the small-scale farmers inclusive. Money lenders accounted for the least as sources of credit to the farmers, accounting for just 0.9%. This is contrary to the general belief that farmers patronize money lenders more because of its easy access. Respondents claimed that the money lender option was limited on the basis of the high-interest rate charge and the tough and stringent conditions of loan repayment.

Table 10. Frequency Distribution of credit Beneficiaries based on the Type ofMicrofinance Accessed

Type of Microfinance	**Frequency**	**%**
1. Cooperative	56	50.45
2. Thrift and loan scheme	11	9.91
3. Microfinance bank	35	31.53
4. Association/ESUSU	8	7.21
5. Money lenders	1	0.90
Total	**111**	**100.0**

Source: Analysed tables from data generated from field

Test of hypothesis of no significant difference in the socio-economic characteristics of credit beneficiaries and non-beneficiaries

Table 11 presents the test of hypothesis in the socio characteristics of credit beneficiaries and non-beneficiaries. The socio-economic variables examined were age of the respondents, educational level and family size, farming experience and the farm size cultivated. The result for the test of hypothesis in Table 10 shows that out of the five (5) variables examined, only two variables, the family size of the respondents and the farm size cultivated, showed significant difference across the two categories of respondents. However, the remaining three (3) variables that is age of the respondents, the educational level and their farming experience showed no significant

difference.

Table 11. Test of hypothesis of no significant difference in some socio-economic characteristics of the credit beneficiaries and non-beneficiaries (t-test)

Socio-economic Characteristics	Credit group	mean	S.D	df(n-2)	t-cat	t-tab	decision
Age (yrs)	Beneficiaries	49.61	9.10	109	1.84	1.96	**N.S**
	Non-beneficiaries	47.18	10.32	105			
Education (yrs)	Beneficiaries	9.35	5.16	109	0.64	1.96	**N.S**
	Non-beneficiaries	8.90	5.29	105			
Family size (No)	Beneficiaries	5.26	1.84	109	2.41	1.96	**S**
	Non-beneficiaries	3.66	2.00	105			
Experience (yrs)	Beneficiaries	15.60	8.37	109	1.62	1.96	**N.S**
	Non-beneficiaries	13.75	8.55	105			
Farm size (ha)	Beneficiaries	2.06	0.55	109	16.41	1.96	**S**
	Non -beneficiaries	**0.78**	**0.60**	**105**			

Note: N.S = Not significant at 5% level
S = Significant at 5% level

Source: Analysed tables from data generated from field

Test of no significant difference between credit requested and granted to the farmers

The result contained in Table 12, shows that there is significant difference in the amount of credit requested by respondents and the amount of credit obtained by them.

Table 12. Test of no significant difference in credit requested and granted to the farmers(t-test)

Variables	Mean (#)	S.D	t-cal	t-tab (0.025,109)	Decision
Amount requested	240,900.90	132,394.38	3.22	1.96	Significant
Amount granted	117,747.70	68,618.64			

Source: Analysed tables from data generated from field

Test of no significant difference between the loan amount granted and the amount repaid

The result of t-test Table 13 shows that there is significant difference in the amount of credit granted to the farmers and the amount of credit repaid by them.. Since the result is significant, the null hypothesis of no significant difference is rejected, while the alternate hypothesis is accepted. Hence, there is significant difference in the amount granted and the amount repaid.

Table 13. Test of no significant difference in the amount granted and the amount repaid

Variables	Mean (#)	S.D	t-cal	tab (0.025, 109)	Decision
Amount granted	117,747.70	68,618.64	6.07	1.96	Significant
Amount repaid	70,923.40	46,030			

Source: Analysed tables from data generated from field

The result as contained in Table 14 shows, that there is significant difference between the profit earned by the credit beneficiaries and non-beneficiaries. The t-test value (t-cat=14.05) > (t-tab=1.96) is significant. Therefore, the null hypothesis of no significant difference is rejected, while the alternate hypothesis is accepted. Hence, there is significant difference in the net profit obtained between the two groups of farmers.

Table 14. Test of no significant difference in the profit earned by the two groups of farmers (t-test).

Respondents	Mean profit N.I. (#)	S.D (#)	Sample size (n)	Df (n-2)	t-cal	t-tab	Decision
Beneficiaries	201,267.1	91,489.3	111	109	14.05	1.96	Significant
Non-bene.	57,245.90	56,351.06	107	105			

Note: significant at 5% level

Source: Analysed tables from data generated from field

Analysis on Credit

Table 15 shows the summary statistics of the credit amount requested by the beneficiary respondent, the amount granted, the amount repaid and the amount outstanding. Their proportions to the total are also represented in the table. The investigation shows that out of the total amount of ₦240,900.90 requested by the farmers, only 48.9% of the loan (₦117,747.70) was granted to them and the proportion of the loan repaid by the farmers was (₦70,923.40) representing 60.2%, while 39.8% (₦46,624.30) of the credit were outstanding. The above statistics show that the credit granted to the farmers was grossly inadequate to meet the financial needs of their farming operations. This situation could affect the scope of their farming business and invariably the productivity of the input used and the output obtained.

Table 15. Summary Statistics of Variables on Respondents Amount of Credit issues

Variables	Min Value	Max. Value	Mean	S.D
(A) Amount requested (₦)	20,000.00	800,000.00	240,900.90	132,394.38
(B) Amount granted (₦)	15,000.00	600,000.00	117,747.70	8,618.64
(C) Amount repaid (₦)	10,000.00	350,000.00	70,923.40	46,030.29
(D) Amount outstanding (₦)	4,000.00	250,000.00	46,624.30	36,893.04
(E) Interest repayment (₦)	5,000.00	220,000.00	17,612.60	23,693.08

Proportion of amount granted (%) **48.9**

Proportion of amount repaid, (%) **60.2**

Proportion of amount outstanding, (%) **39.8**

Source: Analysed tables from data generated from field

Cost and returns to cassava production / Ha.

The cost implication of farmers' cassava production activities in the study area is presented in Table 16. The mean annual Total Variable Cost (TVC) incurred by the credit beneficiaries was ₦295,461.80 per/ha, accounting for 82.2% of the Total Cost (TC), while the corresponding mean annual Total Variable Cost (TVC) incurred by the non-credit beneficiaries was ₦163,521.10 per/ha, representing 86.3% of the Total Cost (TC). The high TVC indicates that variable costs are the dominant expenses in cassava production for the two groups of farmers. Labour variable was the dominant cost item accounting for 37.2% and 40.8% of the total cost for the beneficiaries and non-beneficiaries respectively. This shows the importance of labour in agricultural production activities. The statistics also shows that the transportation cost was ₦89, 950.90, accounting for 25% for credit beneficiaries and ₦46, 451.10 accounting for 24.5% for the non-beneficiaries. Thus, labour shortage resulting from the migration of the young able- bodied people to the urban area to seek greener pasture and the result of the youth in the farming communities, taking to motor cycle transportation (Okada) are the reasons for the high cost of labour. Also, the high cost of transport could be the result of inaccessibility to the farming communities due to deplorable state of their roads; hence the few available means of transport charged exorbitant cost.

The result of the profitability of cassava production for the two groups of farmers is also contained in the Table 15. It reveals that with the mean annual net income of ₦201, 267.10 obtained by the credit beneficiaries and ₦57, 215.90 by the non-credit beneficiaries, the enterprise is more profitable for the credit beneficiaries. The reason could be the gains of the economies of large-scale production enjoyed by them because of the larger hectarage size cultivated by the credit beneficiaries which was made possible by the credit the farmers got which enabled them to expand their holding and acquire better farming inputs. On the basis ofthe net income per/ha, the credit beneficiaries had ₦95, 841.48 which is higher than the net income per/ha of the non-credit beneficiaries with ₦71, 519.99. Also, the credit beneficiaries net returns on investment were 56% while that of non-credit beneficiaries was 30.2%, indicating that for

every ₦100.00 spent in the farming operation by the beneficiaries they will gain ₦56.00, while for the non- beneficiaries they will gain about ₦30.00. On the basis of the riskiness of the business, Break Even Point (BEP) analysis and the Coefficient of Variation (C.V) analysis were used for the measurements. The result also shows that it is less risky to obtain credit to undertake farming business because of the ability of the farmers to expand their farming business with the resultant benefit of the economics of large-scale production. The break-even point for the beneficiaries is 24% of the total revenue while that of the non-beneficiaries was 30% and hence, the lower the break-even point obtained, the less risky is the business. Also, for the coefficient of variation, the result indicates that the beneficiaries have 0.45, while the non-beneficiaries have 0.98, revealing that the enterprise is less risky for the beneficiaries than the non-beneficiaries.

Table 16. Respondents Cost and Returned Analysis per hectare

Items	Beneficiaries mean (₦)	Non-beneficiaries mean (₦)
(A) Costs		
Land (Rent)	34,594.60 (9.6)	17,962.60 (9.5)
Depreciation	11,569.00 (3.3)	8,042.70 (4.2)
Interest payment	17,612.60 (4.9)	0.00 (0.0)
Total fixed cost (TFC)	63,776.20 (17.8)	26,005.30 (13.7)
Cost of cassava stem	17,957.50 (5.0)	8,199.00 (4.3)
Labour cost	133,585.60 (37.2)	77,322.40 (40.8)
Cost of herbicides	8,216.70 (2.3)	3798.10 (2.0)
Transportation cost	89,950.90 (25.0)	46,457.10 (24.5)
Maintenance and fuel cost	45,751.10 (12.7)	27,750.50 (14.6)
Total variable cost (TVC)	295,461.80 (82.2)	163,521.1 (86.3)
Total Cost (TFC+TVC)	359,238.00 (100.0)	189,526.40 (100.0)
(B) Profitability Analysis		
Total Revenue (TR)	560,505.10	246,742.30
Qty of cassava produced (kg)	23,488.60	10,569.30
Total Fixed Cost (TFC)	63,776.20	26,005.30
Total Variable Cost (TVC)	295,461.80	163,521.10
Total Cost	359,238.00	189,526.40
Gross Margin (TR-TVC)	265,043.30	83,221.20
Net Income, NI (TR-TC)	201,267.10	57,215.90
Net Return on investment	56.0%	30.2%
Farm Size (Ha)	2.1	0.8
Net Income/Ha	95,841.48	71,519.99
Break-Even Point BEP	24%	30%
Coefficient of Variation CV	0.45	0.98

Note: The figures in the brackets are % of TC
Source: Analysed tables from data generated from field

4. CONCLUSION

It could be concluded from the study that access of micro credit could offer more opportunities to farmers in terms of higher profit, expansion of farm holding, reduction of risks and enjoyment of economies of large-scale production with the associated benefits of reduction in the cost of operations and increase in returns.

The study Analysed the effect of micro credit on food security status of cassava farmers in Ona-ara local government, and compared the beneficiaries and non-beneficiaries of micro-credit. Primary data were collected from 111 beneficiaries and 107 non-beneficiaries in 2 villages each of three agricultural wards of the local government area, using multistage sampling technique. Data were analysed using descriptive statistics, budgetary analyses and inferential statistics, adopting Ordinary Least Square multiple regression analysis.

The important findings from the study include:

a. They were at their energetic and productive age with a mean of not more than 50 years.
b. The males dominated cassava production and majority of them were married couples with small family size.
c. They were literate farmers with majority of them having had formal education.
d. They maintained small farm size holding with the credit beneficiaries cultivating larger hectarage size. Both group of farmers had no access to extension service.
e. All the socioeconomic variables examined had positive relationship with revenue generations from cassava production by the two groups of farmers.
f. There was no significant difference between the beneficiaries and non-beneficiaries with respect to age, educational level and farming experience. While there was significant difference in their family size and farm size.
g. Cooperatives (59.5%) and Micro Finance Bank (35%) were the major sources of credits for the micro credit beneficiaries.
h. There was a great disparity between the amount of credit requested by the farmers (N240,900.90) and the amount granted (N117,747.70) but their repayment ability was reasonably high (N70,923.40)
i. Labour and transport were the major cost consuming items in the farming operations for the two groups.
j. Cassava production was more profitable and less risky for the beneficiaries than the non- beneficiaries.

Arising from the findings, the following recommendations are made:

a. Farmers should form viable cooperative in their farming investment in order to pool savings to facilitate credit facilities and the benefits to farmers.
b. Rural farmers should be educated through agricultural extension officers on the benefit of microcredit.
c. Policies that would enable farmers to have easy access to credits, such as more rural outlets of existing banks, provision of soft, well timed and less bureaucratic loan process should be put in place by government. The amount of credit requested by farmers should be granted to those with good credit repayment history.
d. Loan beneficiaries should repay as at when due so as to be considered for more credit in subsequent time.

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Author Contributions

Ismaila, M.O.: Conceptualization, methodology, data collection, formal analysis, writing – original draft preparation. Akanbi, O. M.: Data validation, writing – review and editing. Fakayode, S.B.: Supervision, project administration, writing – review and editing. All authors read and review the final manuscript.

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Conflict of interest

The authors declare that they have no conflicts of interest, competing financial interests or personal relationships that could have

influenced the work reported in this paper.

Ethical approval

Ethical approval was not required for this study as it did not involve animals, or plants requiring ethical clearance. The study was based solely on survey interviews with farmers regarding their agricultural practices and credit access.

Informed consent

Informed consent was obtained verbally from all participating farmers after explaining the purpose of the study. Participation was voluntary, and respondents were assured of confidentiality and the right to withdraw at any time.

Data availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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