



EFFECTS OF COOPERATIVE LOAN UTILIZATION ON ARABLE CROPS PRODUCTION AMONG COOPERATIVE FARMERS IN EGBEDA LOCAL GOVERNMENT AREA OF OYO-STATE, NIGERIA

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ABSTRACT

The study examined effects of cooperative loan utilization on arable crops production among cooperative farmers in Egbeda Local Government Area of Oyo-State, Nigeria. Multistage random sampling technique was adopted to select 120 cooperative farmers. Data were obtained through structured interview schedule and analysed using descriptive and inferential statistics. Majority (80% and 87.5%) of the respondents were males, married with an average age and household size of 37 years and 5 persons, respectively. Adjusted R^2 of arable crop output estimated at 80%, and off farm income, credit availability, distance to credit institution, credit size and interest on loan had significant relationship with cooperative loan utilization by arable crop farmer. Various constraints faced by farmers on arable crops' output includes: risk rationed (2.470), societies rules and norms (2.429), payment plans (2.458), price rationed without credit (2.425), quantity rationed (2.470), price rationed with (2.402), complicated procedures (2.395), response to credit (2.389), among others. The study concludes that off farm income, credit availability, distance to credit institution, credit size and interest on loan were the factors influencing cooperative loan utilization by arable crop farmers in the study area. Also majority of arable farmers utilized the loan obtained from cooperatives for aricultural activities. Therefore, the study recommended that, farmers should be encouraged and educated to join cooperative in order to have access to credit for optimum arable crop production and credit delivery in cooperative must be quick, faster and timely to meet the farmers' purpose and credit official should help credit users (arable crops farmers) to overcome credit challenges faced by arable crops farmers' output.

Keywords: Credit, Use, Cooperatives, Farmers, Arable Crops

INTRODUCTION

In Nigeria, agricultural production is dominated by small – scale farmers most of who live in rural areas. Credit activities are one of the best methods by which peasant farmers take part in their own economic advancement. (Aristide & Alfred, 2018) Credit received through an associations of persons who have voluntarily come together to achieve common objectives through the formation of a democratically controlled organization. Ekwere & Edem (2024) capital in form of credit is needed to modernize agriculture because new technologies have to be purchased before they can be used on the farms. Farmers also need money for consumption and payment for labour during the gestation period of their enterprises, In spite of the serious need for capital, the amount of it available to most farmers is a quantum compared to the alternative uses for the capital (Muhammad *et al.*, 2024). Inadequate capital stems from small – scale operations of most farmers as a result of which they have little surplus to generate income (Adewuyi *et al.*, 2018). The overall effect is lack of necessary input for farmers to produce maximally. Inadequate finance has remained the most limiting problem of agricultural production. Capital is the most important input in agricultural production and its availability has remained a major problem to small scale farmers who account for the bulk of agricultural produce of the nation (Ekwere, 2019). Credit also increases the productive efficiency of



members. Efficiency of farmers engaged in food crops production inevitable since increased output and productivity are directly related to production efficiency, arising from not only the optimal combination of inputs. This they achieve through sharing of machinery or irrigation facilities, bulk purchase of farm inputs, group farming, arrangement for produce inspection and transportation, storage and sale of members produce (Omorokunwa & Obadiaru, 2019).

Cooperative farmers plays very important role in Nigeria economy. They are the farmers whose use other means of financing their agricultural activities without using cooperative funds. Their stance stands as a means of provision of livelihood for most of the rural people. Cooperative farming in Nigeria comprises of crop farming, livestock rearing, fishery and forestry. It is a significant portion of the economies of all African countries. As a sector it can therefore, contribute towards major continental priorities, such as eradicating poverty and hunger, boosting intra-Africa trade and investments, rapid industrialization and economic diversification, sustainable resource and environmental management, and creating jobs, human security and shared prosperity. Agriculture and agribusinesses can also provide opportunities to millions of our young people entering Africa's labour markets every year (Nwaru *et al.*, 2018). Cooperative development in many countries has shown that farmers who are effectively organized can benefit from aggregated links to markets and services, from accessing centralized services that can help them achieve higher yields and higher incomes, and from speaking with a collective voice to advocate for their needs.

(Nwaru & Onuoha, 2020; Global Agricultural Information Network (GAIN), 2019) stated that at a global level, countries with the highest share of cooperatives in marketed outputs (e.g., Taiwan, Korea, the Netherlands, France, etc.) also have high average yields for staple crops like rice and wheat, as well as substantial cash crop exports. In Ethiopia, farmers who are members of cooperatives tend to achieve higher yields, and staple crops that are marketed through cooperatives attain a price premium of around 7-8%.⁵ Indeed, the 2008 World Development Report reviewed the evidence and concluded that "Producer organizations are essential to achieve competitiveness for small-scale producers" (Badaru, 2018). Agricultural cooperatives help farmers solve a collective action problem, i.e. how to procure inputs most efficiently and market their outputs on more favorable terms than they could achieve by themselves. Accordingly, Ethiopia's Growth and Transformation Plan foresees a central role for agricultural cooperatives in increasing the productivity and household income of smallholder farmers. Co-operatives are used by the government and NGOs to extend training and other capacity building initiatives. (Bolarinwa & Oyeyinka, 2025) Many stakeholders use co-operative structures to build capacity in post-harvest handling techniques as well as commodity (maize and beans) quality. To date not only has post-harvest losses reduced significantly, also become one which has improved market opportunities for the smallholder farmers. "Some co-operatives offer services to members as a way of building their capacity.

Farmers can receive training on production techniques and post-harvest, as well as literacy training, or business and marketing building workshops (Masuku, 2019). With access to market being one of the most difficult challenges, the role of co-operatives in helping them to exercise economies of scale is increasingly important. Through co-operatives, farmers can attract traders and institutional buyers, and increase their negotiating power. Adefila & Madaki (2024) claimed that cooperatives have also started apart from agriculture to emerge in other sectors such as transport or commodity transformation, with people buying trucks and milling machines and starting their own enterprises. These new activities benefit the communities through employment creation as well as service provision. This creates more income within the community and enhances food security. Asif & Muhammad (2020) investigated determinants of agricultural production: a cross-country sensitivity analysis stated that the key determinants of agricultural-production are land, physical capital, human capital and fertilizer as positive and statistically significant in agricultural-production. Also, finds out that physical-capital contribute more consistently than human capital does in agri-production. Muhammad *et al.*, (2023) further explained that, the presence of physical-capital in agricultural-production leads to the creation of a disguised unemployment in the agricultural sector, which should be channelized in order to attain maximum production.



Nigeria is endowed with abundant food and agricultural resources which are yet to be fully given the importance of agriculture to the country's economic growth, a sustained and accelerated development of agricultural production for food security and trade are crucial to economic growth and development. However, the development of agriculture and agribusiness in Nigeria is slow as compared with the total number of producers and others developed for household consumption, industrial and commercial purposes (Faleyimu *et. al.*, 2020). The aim of the study is to specifically describe socio-economic characteristics of the respondents, identify the utilization of cooperative loan by arable crop farmers, determine the effect of socio-economic factors affecting cooperative loan on arable crop farmers' outputs and identify constraints facing food production among cooperative farmers in the study area.

METHODOLOGY

Area of the Study

The study area is Egbeda is a Local Government Area in the senatorial district of Oyo Central in Ibadan, Oyo State, South-west Nigeria. Its headquarters are in the town of Egbeda. Egbeda local government area is one of the 33 local government areas in Oyo State. Egbeda local government was carved out Lagelu Local government in 1989. Egbeda is a Local Government Area located within the Oyo Central Senatorial District of Ibadan, Oyo State. Semi-urban, a mix of residential, agricultural, and industrial activities. It Lies to the East by the Osun River, North by Lagelu LGA, South by Ona-Ara Local Government, and West by the Lagos-Ibadan Express Road. It had a land area of 191km² and a population of 281,573 (NPC, 2006). The dry season lasts from November to March while the wet seasons starts from April and ends in October. Average daily temperature ranges between 25°C (77.0°F) and 35°C (95.0°F), almost throughout the year. A major economic activity in Egbeda Local Government Area is farming, where huge amounts of crops like cocoa, coconut, and cocoyam are farmed.

Sampling Technique and Sample Size

Multi-stage sampling technique was adopted to determine the sample size for the study. Initially, one zone was purposive selected from the three (3) zones in Oyo State Subsequently, Egbeda Local Government Area was selected from the zone. Following this, five communities/towns were chosen from the selected LGA, with four (4) cooperative societies purposively selected. Lastly, six cooperative arable crop farmers were randomly selected from each society, totaling One hundred and twenty (120) respondents used as the sample size.

Methods of Data Collection and Analysis

Data were collected through the use of structured a well structured questionnaire. Both descriptive and inferential statistics were used to analyzed collected data. The descriptive statistics such as frequency counts, percentage and means were used to describe the socio-economic characteristics of the farmers, identify the utilization of cooperative loan by arable crop farmers and identify problems confronting arable crop farmers in their production. Inferential statistics used was linear regression to determine the effect of socio-economic factors on obtaining cooperative loan by arable crop farmers' outputs.

Model Specification

Linear regression was adopted to assess socio-economic factors effecting cooperative credit on arable crop output by cooperative farmers. The model is specified as

$$Y_i = b_0 + b_i X_i + \varepsilon_i$$

Where:

Y_i = (Value of output in Naira)

β = Is the vector of parameters to be estimated

X 's = Is the matrix of the explanatory variables

Simple linear form:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \varepsilon_i \text{-----equ (1)}$$

Y_i = (Value of crop output (₦))



- X_1 = Farm size (hectares),
 X_2 = Highest educational level (years of formal schooling)
 X_3 = Farming experience (years),
 X_4 = Off farm income (₦),
 X_5 = Farm income (₦),
 X_6 = Previous credit rescheduled (credit rescheduled = 1 and 0 otherwise). This is used to represent the credit history of the borrower. A farmer who default or rescheduled payment of his previous loan will likely be denied access to other loan.
 X_7 = Cooperative Membership (Member of cooperative society =1 and 0 otherwise),
 X_8 = labour in man-day
 X_9 = Availability of cooperative credit (₦)
 X_{10} = Credit experience (years)
 X_{11} = Credit size (₦)
 X_{12} = Interest on loan (₦)
 ε_i = error term

RESULTS AND DISCUSSIONS

Socio-economic of Characteristic of Arable Crop Farmers

The results on Table 1, showed that majority (80%) of the respondents were males while only (20%) were females that are engaged in arable crop production within the study area, indicating a predominance of male arable crop farming. The results also revealed that 29.2% of the respondents fell within the age racket of 26-30 years while 23.2%, 18.3% and 12.5% were within 31-40, 41-50 and 51 and above years, respectively with an average age of 39 years. This implies that majority of the respondents are their active, youthful and agile productive age bracket to participate in arable farming. This finding corroborates with the assertions of Oyeniran (2019), who noted that majority (85.9%) of farmers fell within this age range. Furthermore, majority (87.5%) of the respondents were married, while only 12.5% were single. The predominance of married arable crop producers indicated that they bear family responsibilities, and married farmers are likely to experience greater pressure to enhance outputs due to family care and responsibilities. This findings aligned with the findings of (Nwibo & Nwakpu, 2017) who reported that majority of farmers had family to carter for. The findings further revealed that 18.3% of respondents had a household size of 4 or fewer, 41.7% had a household size ranging from 4 to 7, 25.0% had between 8 and 11 members, and 12.5% had 12 or more, yielding an average household size of 5 persons. This suggests a moderate household size that facilitates a balance between production and consumption. This results there by agree with (Omoare *et al.*, 2018) who said moderate household is a foundation for profitable and moderate investment. The findings also revealed that 34.2% of the respondents had farming experience 11-15 years while 33.3%, 20.8% and 11.7% had 16 and above, 6-10 and less than 5 years, respectively with a mean arable farming experience 13 years.. This showed that the majority 88.9% of respondents have amassed substantial experience, which is likely to enhance the efficiency of their production and increase their profitability. In addition, the results revealed that 12.5% of the respondents had tertiary education while 41.7%, 29.1% and 16.7% had secondary, primary education and no formal education, respectively as their level of education. This implies that a significant majority (83.3%) of the arable crop farmers in the study area are educated, simply means they can read and write. This finding is consistent with Nwaru *et. al.*, (2019), who asserted that farmers with higher educational levels can adopt innovation easily to improve their income. The findings further identified that 18.3% of respondents had less than 3 years of cooperatives membership while 26.7%, 23.3% and 21.7% had 3-6, 7-10 and 11 and above years, respectively an average of 9 years. This revealed that a significant majority (81.7%) of respondents had been members of cooperative societies for more than 3 to 11 years ago or more.



Table 1: Distribution of the Respondents based on Socio-economic Characteristics

Variable	Value	Frequency	Percentage	Cumulative frequency	Average
Sex	Male	96	80.0	80.0	
	Female	24	20.0	100.0	
Age (years)	≤25	20	16.7	16.7	37 years
	26-30	35	29.2	45.9	
	31-40	28	23.3	69.2	
	41-50	22	18.3	87.5	
	51 & above	15	12.5	100.0	
Marital status	Single	15	12.5	12.5	
	Married	105	87.5	100.0	
Household size	<4	22	18.3	18.3	5 persons
	4-7	50	41.7	60.0	
	8-11	30	25.0	85.0	
	12 & above	18	15.0	100.0	
Farming experience (years)	≤5	14	11.7	11.7	13 years
	6-10	25	20.8	32.5	
	11-15	41	34.2	66.7	
	16 & above	40	33.3	100.0	
Educational level (years)	No formal education	20	16.7	16.7	
	Primary education	35	29.1	45.8	
	Secondary education	50	41.7	87.5	
	Tertiary education	15	12.5	100.0	
Cooperative membership	< 3	22	18.3	18.3	9 years
	3-6	32	26.7	45.0	
	7-10	28	23.3	68.3	
	11 & above	38	31.7	100.0	
Total		120	100		

Source: Field Survey, 2023

Utilization of Cooperative Loan by Arable Crop Farmers

The purpose for which loan is obtained however, affects its use. These include lack of adequate market outlets, natural disasters, diseases, notable technology, and unexpected contingency facing farmers (FAO, 2019). The results in Table 2, show numerous uses into which cooperative loan is utilized by arable crop farmers. The findings revealed that majority (55.0%) of the respondents obtained cooperative loan for agricultural purposes, followed by (12.5%) utilized it for paying children school fees, (7.5%) of the respondents used the loan for consumption, health among other purposes while (6.6%) utilized the obtained loan for building houses. Similarly, 5.9%, 5.0%, 4.2% and 3.3% of the arable crop farmers diverted the cooperative credit for chieftaincy ceremony, vehicles purchased, liquidity of previous debt and social ceremony, respectively.



Table 2: Distribution of Arable Crop Farmers according to Utilization of Cooperative Loan

Variables	Cooperative Loan Beneficiaries			
	Frequency	Percentage (%)	Cumulative frequency	Rank
Paying Children School Fees	15	12.5	15	2 nd
Purchasing of Vehicles	6	5.0	21	6 th
Agricultural Purposes	66	55.0	87	1 st
Liquidity Previous Debt	5	4.2	92	7 th
House Building	8	6.6	100	4 th
Social Ceremony	4	3.3	104	8 th
Chieftaincy Ceremony	7	5.9	111	5 th
Othres	9	7.5	120	3 rd
Total	120	100.0		

Source: Field Survey, 2023

Socio-economic Factors Influencing Cooperative Credit Accessibility on Arable Crop Output

Linear regression model were tried in analysing the socio-economic factors influencing the effects of cooperative credit on arable crop output by cooperative arable crop farmer in the study area. The results of linear regression was presented in Table 3, Adjusted R^2 of the arable crop output in the study area is estimated at 0.80, implied that there is 80% of explained variation in the output models while the remaining 20% represent the unexplained variation in the models. Off farm income was negative and significant ($P<0.01$) influencing the effects of cooperative loan on arable farmers output. This implies that if respondents engage in more off-farm activities than what they had engaged in would invariable may lead to reduction in farm output and vice-versa. The results also revealed that credit availability was positive significant ($P<0.01$), this implies that if credit is being increased for the cooperative farmers in the study area to access would invariably increase food output and definitely more income would be generated. In addition, distance to credit institution was negative and significant ($P<0.01$), implying that credit institutions should be closer to where the farmers would be able to collect their credit if not it would affect arable crop output and may lead to small yield. Furthermore, credit size was positive and significant ($P<0.01$), imply that the bigger the size of the credit received by cooperative farmers, the more the arable crop output, thus, credit size should be increased to have more arable crop output. Finally, interest on loan was positive and significant ($P<0.01$), implied that interest collected on credit given to the farmers by the cooperative is very attractive thus, makes the farmers to have easy access to huge money that generated huge output of arable crops this findings supported by Kalule (2018) who argued that agricultural sector required huge amounts of capital to survive.

Table 3: Factors affecting Cooperative Credit on Arable Crop Output by Cooperative Arable Crop Farmers

Model	R	R square	Adjusted R ²	Std. Error Estimate	Mean Square	Durbin Watson
	0.81	0.78	0.80	0.77	17.779	1.51
Change statistics						
	B	Std. Error	Beta	T value	Sig	F-statistic
(Constant)	20.411	0.281		37.052	0.000	133.145
Farm size (hectares) (X ₁)	0.030	0.035	0.049	0.855	0.393	
Years spent in school (X ₂)	-0.006	0.013	-0.032	-0.488	0.626	
Farming experience (X ₃)	-0.003	0.004	-0.043	-0.646	0.519	
Off Farm income (X ₄)	-6.445	0.000	-0.110***	-2.562	0.011	
Farm monthly income (X ₅)	5.587	0.000	0.009	0.142	0.887	
Previous credit schedule (X ₆)	-0.087	0.132	-0.040	-0.659	0.510	
Membership (X ₇)	0.077	0.147	0.034	0.525	0.600	
Credit availability (X ₈)	0.460	0.139	0.181***	3.319	0.001	
Distance to credit institution from your house in km (X ₉)	-0.011	0.003	-0.202***	-3.233	0.001	
Credit experience (X ₁₀)	-0.021	0.013	-0.080	-1.583	0.115	
Credit size (X ₁₁)	2.270	0.000	0.190***	3.143	0.002	
Interest on loan (X ₁₂)	0.028	0.006	0.206***	4.395	0.000	

Source: Field Survey, 2023, ***,*, Significant at 1%, 10% levels of significant respectively

Constraints to Arable Crops Production and Credit Availability

There are many variables that were identified as major constraints to cooperative arable crop farmers' production. Constraints faced by farmers on arable crop output were obtained using a 3-Point-Likert-types scale of major constraint= 2, minor constraint = 1 and not a constraint = 0. The scores were summed up and collated for respondent or represent their constraint scores. The scores were later categorized as constraints if the score equal or greater than (\geq) mean score (2.357) and not constraints if the score is less than ($<$) mean score (2.357). The various problems confronting cooperative arable crop farmers in obtaining loan included, risk rationed (2.470), societies rules and norms (2.429), payment plans (t = 2.458), price rationed without credit (2.425), quantity rationed (2.470), price rationed with (2.402), complicated procedures (2.395), response to credit (2.389), delay in disbursement (2.387), number of credit application (2.380) which were ranked 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th and 10th respectively. In addition, seasonal nature of farm produce (2.375), high administrative charge (2.371), and credit diversion having the same value of (2.363) with high interest rate (2.363), likewise credit experience (2.350) small amount of credit approved also got same value of (2.350) were positioned 11th, 12th, 13th and 15th and also regarded as constraints while incompetency among members (2.346), transaction cost (2.340), period of credit or payback period (=2.339), harsh measure of loan recovery (2.332) were all positioned 17th, 18th, 19th and 20th respectively and regarded as not constraints in the study area. The findings indicated that farmers faced many constraints that decrease their income and outputs especially insufficient funds. This result supported by Bethuel (2018) who argued that agricultural productivity is constraint by low credit which reduces agricultural production output. Likewise Essossinam & Nadege (2018) affirmed that access to credit is significant to welfare and that being in a group enhanced full farm credit.

Table 4: Constraints to Arable Crops Production and Credit Availability to Cooperative Farmers

Constraints	Response					Bipolar response categorization		
	Major constraint	Minor constraint	Not a constraint	SD	\bar{X}	Rank	Constraint	Not a constraint
Price rationed with credit	18(15.4)	35(29.0)	67(55.6)	0.74	2.402	6 th	53(44.4)	66(55.6)
Price rationed without credit	20(17.1)	28(23.3)	72(59.6)	0.77	2.425	4 th	48(40.4)	72(59.6)
Transaction cost rationed	22(17.6)	37(30.8)	61(51.6)	0.76	2.340	18 th	59(48.4)	61(51.6)
Risk rationed	21(17.5)	36(29.6)	63(52.3)	2.13	2.470	1 st	57(47.7)	63(52.3)
Quantity rationed	17(14.3)	35(29.2)	68(56.5)	0.72	2.422	5 th	52(43.7)	68(56.5)
High interest rate	25(20.5)	27(22.8)	68(56.8)	0.80	2.363	13 th	52(43.2)	68(56.8)
Delays in disbursement	20(16.7)	33(27.8)	67(55.5)	0.76	2.387	9 th	53(44.5)	67(55.5)
Collateral requirement	19(16.5)	30(24.8)	71(58.7)	0.76	2.422	5 th	49(41.3)	71(58.7)
Response to credit	19(16.5)	35(29.2)	66(54.8)	1.33	2.389	8 th	54(45.2)	66(54.8)
Payment plans	18(15.4)	32(26.3)	70(58.3)	0.74	2.429	3 rd	50(41.7)	70(58.3)
Credit experience	26(21.9)	30(25.0)	64(53.1)	1.34	2.350	15 th	56(46.9)	64(53.1)
Societies rules and norms	17(14.8)	29(24.6)	74(60.6)	0.74	2.458	2 nd	46(39.4)	74(60.6)
Period of credit or Payback period	25(21.0)	29(24.2)	66(54.8)	0.81	2.339	19 th	54(45.2)	66(54.8)
Lender harsh measure of loan recovery	24(20.3)	31(26.0)	65(53.7)	0.80	2.332	20 th	55(46.3)	65(53.7)
Complicated procedures	23(18.8)	27(22.9)	70(58.3)	0.78	2.395	7 th	50(41.7)	70(58.3)
High administrative charge	26(21.9)	23(19.2)	71(58.9)	0.81	2.371	12 th	49(41.1)	71(58.9)
Numbers of credit application	19(16.1)	36(29.9)	65(54.1)	0.74	2.380	10 th	55(45.9)	65(54.1)
Incompetency among members	26(21.9)	27(22.1)	67(56.0)	0.81	2.346	17 th	53(43.9)	67(56.1)
Seasonal nature of farm produce	22(18.0)	32(26.5)	66(55.5)	0.77	2.375	11 th	54(44.5)	66(55.5)
Small amount of credit approved	25(21.1)	27(22.0)	68(56.9)	0.81	2.358	15 th	52(43.1)	68(56.9)
Credit diversion	22(18.1)	33(27.4)	65(54.4)	0.77	2.363	13 th	55(45.6)	65(54.4)
Grand mean					2.357			

Source: Field Survey, 2023, **SD = Standard Deviation;** Mean score $\bar{X} \geq 2.38$ = Constraint, Mean score < 2.38 is not a constraint



CONCLUSION AND RECOMMENDATIONS

The study concludes that off farm income, credit availability, distance to credit institution, credit size and interest on loan were the factors influencing cooperative loan utilization by arable crop farmers in the study area. Also majority of arable farmers utilized the loan obtained from cooperatives for aricultural activities. Based on the findings highlighted the study recommended that;

- i. Farmers should be encouraged and educated to join cooperative in order to have access to credit for optimum arable crop production and credit delivery in cooperative credit must be quick, faster, and timely to meet the farmers' purpose.
- ii. Government and non-government officials should work toward promoting credit utilization and control among rural arable crop farmers.
- iii. Credit official should help credit users (arable crops farmers) to overcome credit challenges faced by arable crops farmers' output.

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