

Analysis of Rice Farmers' Cooperative Societies' Performance in Anambra State, Nigeria

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Abstract – This study assessed the analysis of rice farmer's co-operative societies in Anambra State, Nigeria. A multi-stage sampling procedure was adopted in selecting one hundred and twenty (120) rice farmers for the study. Data for the study were collected from primary sources using a well-structured questionnaire. Descriptive statistics and multiple regression analyses were used to analyse data. The results showed that roles of cooperative societies in rice production were access to land ($\bar{x} = 4.15$), provision of insurance against crop failure ($\bar{x} = 4.12$), provision of farm implements to members ($\bar{x} = 4.00$), and facilitate training for members ($\bar{x} = 3.91$) members. The benefits received by members of cooperative societies in rice production in the area of study include; increase in yield ($x = 4.13$), increase in income ($x = 4.10$), access to extension agents ($x = 4.09$), access to better information ($x = 4.03$) easy access for training ($x = 3.87$). The result of multiple regression analysis that influenced the income of the rice farmers in cooperative societies showed that educational rank, farming knowledge and access to credit significantly and positively influenced the performance of the rice farmers in cooperative farming. The cooperative participants performed key roles in rice production and benefited immensely which contributed to improve their social and economic livelihood, through increased yield and income generation. The study recommended that the government should make available, adequate and excellent extension service delivery system that is capable of diffusing effectively enhanced technologies to farmers of rice.

Keywords – Cooperatives, Societies, Rice Farmers, Analysis and Performance.

I. INTRODUCTION

Agriculture remains a foundation of the Nigerian economy, contributing relevantly to job opportunities, food safety, and economic progress. Among staple crops, rice has emerged as one of the most widely cultivated and eaten, it plays a central role in the nation's food delivery and economic diversification agenda (Yusuf and Ibrahim, 2023). The growing demand for rice, motivated by population increase and changing consumption patterns, has positioned rice cultivation as a vital sector for income making and job establishment in both public and private organisations (Bello and Musa, 2023). Rice (*Oryza sativa*) production has become an increasingly significant instrument for sustainable agricultural growth, particularly in developing economies such as Nigeria's (Aliyu and Abubakar, 2025). Through the *Federal Ministry of Agriculture and Rural Development*, the government expressed a strong commitment to ensuring that rice production is projected to the level where the country becomes self-reliant (Ajibade et al., 2020). Ebonyi State is a major manufacturer of rice in Nigeria, with smallholder farmers controlling the sub-sector (Izogu et al., 2023; Izuogu et al., 2025) while Anambra State is a major rice producing state, it is typically recognized as a leading producer in the southeast region in Nigeria (Nwalieji, 2020). Rice production in the state is highly gainful, with farmers achieving a net rice farming income (NRFI) of about N1,300,000 (One million, three hundred thousand naira) per hectare (Amusa et al., 2022). However, there is still a gap in supply and demand as it is obvious in the existing market price of rice. Rice cultivation promotes economic constancy and enhances income making of the farmers (Nnebedum et al., 2024).

Rice in terms of comparative benefit can be cultivated in flooded and non-flooded earth because it has both lowland and upland species that can adjust to different agro-climatic and soil conditions (FAO, 2023). Rice is grown in almost all the agro ecological zones in Nigeria. However, the capacity of rice produced does not meet up with its demand. Oruma, et al., (2021) reported that the amount of rice produced in Nigeria was estimated at three million tons, while the demand amounted to five million tons. However, there has been an introduction of recent policies by the Central Bank of Nigeria such as the *Anchor Borrowers Program* in order to boost rice production, improve food safety, and reduce the level of importation, thus saving money for the nation.

To meet the expectation of rice cultivation, non-governmental organizations, and donor groups have also encouraged and supported the creation of cooperatives as obligatory for accessing agricultural supports (Independent Computing Architecture, 2023). Also participation in extension programme drastically enhanced the livelihoods of rice and cassava cultivators in South East Nigeria (Uchemba et. al., 2025). In the same vein, the function, communication, connections, coalition and information flow in the cooperative scheme depend on the overall performance of individual associates.

Cooperatives are associations put together by various set of individuals unified by a common objective envisaged to be naturally advantageous to them. Cooperatives which are based on the idea of participatory government are run by the people who equally use their services. Cooperative is a voluntary association in which persons, businessmen and traders with shared benefit pull their wherewithal together to advance the financial safety and wellbeing of their associates. When individuals get together to address shared economic, social and cultural concerns, they form independent association that are democratically governed (Bijman, 2020). The history of cooperative groups cannot be comprehensive without discussing Robert Owen (1771-1858) who built the first cooperative at New Lanark, England. However, the accomplishment of retail cooperative organizations is dated back to the one formed by Rochdale Pioneers in 1844. The history of cooperatives in Nigeria cannot be traced without relating it to the customary cooperatives, which the end result is Cooperative Society's Ordinance of 1935. This resulted to the successive establishment of cooperative groups of various forms. Typical forms of cooperatives include: wholesale cooperatives, retail cooperatives, manufacturer cooperatives, credit unions, consumer cooperatives housing cooperatives etc (Bauwens and Niarons, 2020). Cooperatives have shown adaptability across various sectors including social services and infrastructural development. Wholesale cooperatives are funded by small-scale traders who buy goods in bulk from the manufacturers at a realistic price and sell them in little numbers to retail cooperatives whose members are, more than not, the very customers of their company. To be eligible for the payout, they must purchase cooperative shares. Consumer cooperatives are possessed and managed by a group of final consumers who team up their resources together in order to buy goods and services in large quantities and share them mainly to its members (Bauwens and Niarons, 2020). Producer cooperatives are created by manufacturers of similar goods who organize cooperative creation and embark on joint marketing of the goods on a wholesale or retail basis (Bijman, 2020).

In 1844, the Rochdale Society of Equitable Pioneers Ltd however had the utmost impact on the willpower of cooperative rules and principles. It created a special operating instruction with its goal being to resolve members' needs for improved housing, employment, food, education and other social needs.

II. METHODOLOGY

Anambra State is situated in the south eastern region of Nigeria. It lies between the latitudes of 5°40'N and 6°50'N, as well as the longitudes of 6°35'E and 7°25'E. It is bounded by Delta State to the West, Imo and Rivers States to the South, Enugu State to the East and Kogi State to the North. Ninety-eight percent (98%) of the residents are Igbo people while the left-over two percent (2%) of the populace are Igala people who live in the North-Western part of the state. National Population Commission in 2006 recorded that the state had a total population of 4,055,048 with male comprising 2,174,641 and female 1,980,407 portions of the inhabitants. The state has an estimated land mass of 4,855km². Anambra is among the most densely populated states in Nigeria, boasting a population density of approximately 840 individuals per square kilometre (2,200 per square mile).

The population of the study consists of all the rice farmers' cooperative societies in the area. A multistage sampling method involving purposive and simple random sampling technique was used to select 120 rice growers.

Data for the study were gotten from primary sources using a structured interview schedule consisting of closed and open-ended questions to obtain information from the participants.

III. RESULTS AND DISCUSSIONS

Role of Cooperative Societies in Rice Production

The results as shown in Table 1 indicates that the major important roles which the rice farmers in cooperative society play in rice production in the study area include; facilitate members access to land ($x = 4.15$), provision of insurance against crop failure ($x = 4.12$), provision of farm implements for members ($x = 4.00$), facilitate training for members ($x = 3.91$) facilitate farm inputs for members ($x = 3.82$). Help in marketing of crops ($x = 3.71$), provision of institution linkage ($x = 3.63$) sharing of vital information ($x = 3.31$), facilitate low interest rate credit ($x = 3.25$), and ensure easy access to irrigation facilities ($x = 3.21$). These shows that majority of the variables considered were vital roles they played in rice production, which immensely benefited them and positively affected their standard of living. This finding concurs with Christian et al, (2024), that agricultural cooperatives contributed positively to farmer's livelihood. Other variables that are not important to the roles of cooperative societies in the area, were provision of manual labour ($x = 2.65$) help in harvesting of crops ($x = 2.15$) and help in preparing nursery and transplanting ($x = 2.10$). This is in agreement with the conclusion of Chigbo et al., (2022), that to improve the productivity of members of rice cultivators' cooperative societies in Anambra State, the government should kick off a supervised credit system that will advance the capital base and profits of the rice growers by extension service.

To enhance the output of members of rice farmers' cooperative societies in Anambra State, the government should initiate a supervised credit scheme that will improve the capital base of the rice farmers and income by extension. The government should ensure that beneficiaries adhere strictly to market participation arrangement to avail the farmers the opportunity for a better bargain for their output. Critical infrastructure should be put in place by the government to enhance environmental sustainability in agricultural production. To enhance the output of members of rice farmers' cooperative societies in Anambra State, the government should initiate a supervised credit scheme that will improve the capital base of the rice farmers and income by extension. The

government should ensure that beneficiaries adhere strictly to market participation arrangement to avail the farmers the opportunity for a better bargain for their output. Critical infrastructure should be put in place by the government to enhance environmental sustainability in agricultural production. To enhance the output of members of rice farmers' cooperative societies in Anambra State, the government should initiate a supervised credit scheme that will improve the capital base of the rice farmers and income by extension. The government should ensure that beneficiaries adhere strictly to market participation arrangement to avail the farmers the opportunity for a better bargain for their output. Critical infrastructure should be put in place by the government to enhance environmental sustainability in agricultural production.

The finding contrasts with the result of Uchemba et. al. (2025), that the adjustment strategies to climate change were the use of improved rice and cassava species, the timing of sowing and rice bunding. David, (2013) in their study contributions of cooperative development, examined the contribution of cooperatives to agricultural development in Awka North Local Government Area (LGA) of Anambra State in Nigeria. The results revealed that cooperative organizations in the LGA were engaged in crops, livestock, and storage enterprises that provided credit facilities and supplied farm inputs to their principal contributions of the cooperatives to enhance agricultural production.

Siddique, (2015) in their study, on the role of cooperative society in marketing agricultural products in Bangladesh, revealed that most of the farmers were illiterates, and could not therefore sell their products to the final consumers. Intermediaries (Middle-men) played marketing roles, so farmers did not get a fair price for their products. Therefore, the researcher suggested that a solid framework for cooperative society operations would have minimized the role of middlemen in the marketing of agricultural products in Bangladesh. Manzano, (2015) contributed by examining the functions and features of Ugandan agricultural cooperatives and farmer organizations that influenced SAPS services provided to cooperative members and went on to analyze how to improve its impacts. The results showed that only 8.1% of the organizations aligned with better management of their natural resources and 6% only claimed that their main objective was related to environmental sustainability issues. This study also showed that there was a significant level of correlation between the numbers of SAPS services provided by cooperative organizations with information access.

Table 1. Roles of cooperative societies in rice manufacturing.

Variable	Mean	Decision
Facilitate members access to land	4.15	Important
Provision of insurance against crop failure	4.12	Important
Provision of farm implements for members	4.00	Important
Facilitate training for members	3.91	Important
facilitate farm input for members	3.82	Important
Helps in marketing of crops	3.71	Important
Provision of institution linkage	3.63	Important
Sharing of vital information	3.31	Important
Facilitate low interest rate credit	3.25	Important

Variable	Mean	Decision
Ensure easy access to irrigation facilities	3.21	Important
Provision of manual labour	2.65	Not important
Helps in harvesting of crops	2.15	Not important
Helps in preparing nursery and transplanting	2.10	Not important

Source: Field survey, 2026.

Benefits of Co-operatives Societies in Rice Production

Table 1 revealed that major benefits and mean scores of cooperative societies in rice production in the area of study include; increase in returns ($x = 4.13$), increase in income ($x = 4.10$), access to extension agents ($x = 4.09$), access to better information ($x = 4.03$) easy access for training ($x = 3.87$), strong bargaining price for produce ($x = 3.85$), provision of access to market ($x = 3.81$), education and enlightenment for members ($x = 3.62$), and ensure unity and peace in the society ($x = 3.25$). This implies that the respondents agreed that majority of the variables considered were highly beneficial to the well-being of their members and assisted them to the modern agricultural knowledge that had positive impact on their livelihood. Other variables that were considered not benefit to the members include, rendering guidance and counselling for members ($x = 2.35$) and organizing exhibition for members ($x = 2.15$). This is in contrast with the conclusion of Ugwuoti et al, (2026), that advantages such as improved access to innovation, capacity building, and agro inputs may be driving encouragement, the link between profit and membership in group activity is frail, The frail link between profit and membership is as a result of challenges like lack of knowledge on group activities, frail organisational support, and so on. Abate et al., (2014) reported a positive association between a decision to join a cooperative and the educational level of members. Hence, the probability of membership in cooperative societies increases with an increase in educational level. On marital status, it can be argued that members with spouses are likely to involve their spouse in all the cooperative activities and thereby gain more benefits than the farmers not with spouses. Similarly, members with spouses can play complementary roles in the cooperatives and are likely to get benefits that will support their rice production activities

Salihu et al., (2019) stated that the benefits of a co-operative society on rice production include; advice on the quality of seeds, fertilizers, pesticides, and cropping practices ($M = 4.68$), helped in facilitating access to a better market ($M = 4.57$), enlightening and educating members on new improved farm practices and access to farm inputs ($M = 4.50$), subsidize agricultural inputs to members ($M = 4.41$) and helped in creating a strong bargaining price for products (rice) ($M = 4.40$). These forms of guidance are necessary especially as agricultural activities are time-bond and the availability of production resources especially farm inputs require timely supply, both knowledge and precision of utilization in the process of production. They also reported that members of rice producer cooperative societies got assistance from the societies through accessing credit, marketing their produce, and making farm inputs available at cheap prices thereby increasing farmers' income. Also, the result implies that if more farmers join co-operative societies and have access to the expected benefits, there is a likelihood of boosting rice production in the study area. Hence, membership of farmers in cooperative societies is most likely to increase the success of agricultural production.

Okeke and Nwoye, (2019) in the study activities of rice producers' cooperative society in food production: A

case study of Ayamelum Local Government Area of Anambra State, Nigeria, revealed the overall benefits of rice producers' cooperative to the beneficiaries. From their findings, the majority (98.2%) of the co-operators indicated that they had increase in farm income, 96.4% had increase in yield, 94.5% improved well-being, 92.7% had market access, 90.9% had increase in sales and 89.1% benefited from subsidized quality inputs. These were followed by better bargaining power 83.5%, better access to information 81.8%, low cost of labour 76.4%, improved farm management 72.7%, communal labour 69.1%, access to low interest rates 60.0%, access to training 58.2% and access to extension agents 49.1%. The result shows that the majority of the rice producers' co-operators benefited immensely from their membership and this aligns with the core objectives of cooperative societies as highlighted by Oluyombo (2012). That social intermediation in cooperative societies includes training of members in different areas of vocations, creation of a market, provision of subsidized quality input, provision of communal labour and access to low-interest loans.

Table 2. Benefits of cooperative societies in rice production.

Variable	Mean	Beneficial
Increase in yield	4.13	Beneficial
Increase in income	4.10	Beneficial
Access to extension agents	4.09	Beneficial
Access to better information	4.03	Beneficial
Easy access for training	3.87	Beneficial
Strong bargaining price for produce	3.85	Beneficial
Provision of access to market	3.81	Beneficial
Education and enlightenment for members	3.62	Beneficial
Ensure unity and peace in the society	3.25	Beneficial
Rendering guidance and counselling for members	2.35	Beneficial
Organizing exhibition for members	2.15	Beneficial

Source: Field survey, 2026.

Table 2 revealed that the major benefits and mean scores of cooperative societies in rice production in the study area include; increase in yield ($x=4.13$), increase in income ($x= 4.10$), access to extension agents ($x = 4.09$), access to better information ($x =4.03$) easy access for training ($x=3.87$), strong bargaining price for produce ($x = 3.85$), provision of access to market ($x = 3.81$), education and enlightenment for members ($x = 3.62$), and ensure unity and peace in the society ($x = 3.25$). This implies that the respondents agreed that majority of the variables considered were highly beneficial to the well-being of their members and assisted them to the modern agricultural knowledge that had positive impact on their livelihood. These results agree with Umebalie et al (2019) that cooperative societies contributed to the yield, income, sharing of information, motivating people towards adoption and positively impact on their livelihood both socially and economically. Other variables that were considered not benefit to the members include, rendering guidance and counselling for members ($x = 2.35$) and organizing exhibition for members ($x = 2.15$). The finding is in contrast with the findings of Nnebedum et al (2024) that state that the institutional factors, economic factor and managerial facto-

-rs were the major factors challenging rice farmers' benefits due to the effects of covid-19 pandemic.

Table 3. Socioeconomic variables that influenced the income of the rice farmers in cooperative societies.

Variable	Coefficient	t-test
Constant	395353.447	30.33
Sex	7214.952	1.93*
Age	1352.683	6.51
Marital Status	-1740.349	-1.12
Family Size	1201.613	3.40
Educational rank	4136.243	2.94*
Farming Experience	1177.659	2.27*
Farm Size	13198.492	5.63
Extension Visit		
Access to credit	1072.492	1.61
R Square	9085.251	2.07*
F-Stat.	0.636	0.0
Obs.	21.37	
* = significant at 5%	120	

Field survey, 2026.

Socioeconomic Variables that Influenced the Profits of the Rice Farmers in Cooperative Societies

The result of regression analysis shows that the coefficient of multiple determination R^2 to be 0.636. This entails that 64% of the variations in annual production income obtained by the respondents were clarified by the autonomous variables considered while the remaining 36% was due to error and under or over estimation. The overall result of the regression was established to be statistically significant as F-statistics value of 21.37 was significant at 5% probability level. This indicates that the independent variables collectively influenced the dependent variable.

The result of the multiple regression analysis of socio-economic variable in annual production income of the rice farmers in cooperative societies is as shown in Table 3. The variables considered in the analysis were sex, age, marital status, family size, educational rank, farming experience, farm size, extension visit and access to credit. The collected data were tried in four purposeful forms of linear, exponential, semi-log and double-log.

Out of the nine variables considered as independent variables, educational rank, farming experience, and access to credit were optimistically correlated and statistically significant at 5% probability level. This entails that any boost in those variables will equally increase the profits of the rice cultivators in cooperative societies in the locale. Family size and farm size are positively correlated but not significant at any probability level. This indicates that any unit boost in any of the variables increases the same unit in the level of income of the respondents. In addition, marital status of the respondents was negatively correlated with the profits of the farmers but not significant at any probability level. This implies that any rise in marital status of the rice farmers

will decrease the same in the level of income of the rice farmers and the co-operators in the study area had enough experience that will make them understand that extension services delivery are important for improvement of their farm activities and welfare. Ogundari and Oyetunde (2022) studies supported the research finding that majority of the participants were associates of cooperative societies, and that their years of membership could have enhanced their understanding of the importance of extension services delivery for improving their farm activities and welfare.

IV. CONCLUSION AND RECOMMENDATIONS

The roles of cooperative societies in rice production revealed that, facilitation of members' access to land ($\bar{x} = 4.15$), provision of insurance against crop failure ($\bar{x} = 4.12$), provision of farm implements ($\bar{x} = 4.00$), and facilitates training for members among other variables were the most important roles performed by the cooperative societies in the area. The results of the benefits of cooperative societies revealed the major benefit to include. Increase in yield ($\bar{x} = 4.13$), increase in income ($\bar{x} = 4.10$), access to extension agents ($\bar{x} = 4.09$), and access to better information ($\bar{x} = 4.03$) among others. The results of the regression analysis of socio-economic characteristics of the rice farmers' cooperative societies showed that educational level; farming experience and access to credit were positively correlated and statistically significant at 5% probability level. Poor leadership style ($\bar{x} = 2.93$), conflicts among members ($\bar{x} = 2.90$), trust among members ($\bar{x} = 2.87$), poor membership contribution ($\bar{x} = 2.83$), and inadequate credit ($\bar{x} = 2.81$) among others were the major variables hindering the performance of rice farmer's cooperative societies in the study area.

The results of the study on analysis of rice farmers cooperative societies' performance in Anambra State, Nigeria revealed that the cooperative members performed key roles in rice production and benefited immensely which contributed to improve their social and economic livelihood, through increased yield and income generation. The study showed that educational level, farming experience and access to credit were optimistically correlated and statistically significant at 5% probability level. Irrespective of the tremendous benefits in rice farmer's cooperative societies there were still constraining issues that hindered cooperative activities in the area, which include poor leadership style, conflict among members, inadequate trust, and poor membership contribution. However, if these problems are reduced to its barest minimum, the full scale benefits in cooperative societies would be enjoyed by the rice farmers in the study locale.

Cooperative members should take decisive measures in electing their leaders in order to actualize their mandate since leadership is one of their major problems. Government and non-governmental agencies should endeavour to help rice farmers to access credit at single digit interest rate in commercial and Agricultural banks, to help them achieve their potential capacity in rice production. Government should make available, excellent extension service delivery system that is competent in disseminating improved technologies and influence the knowledge effectively to rice farmers' cooperative societies.

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