Agricultural Cooperatives and Rural Poverty Reduction among Rural Farmers in Anambra State, Nigeria

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ABSTRACT

This study assessed the nexus between agricultural cooperative and rural poverty reduction in Anambra State. The study utilised primary data, which were extracted from the questionnaire distributed to 213 rural farmers in Anambra State. Descriptive statistics were used to present and discuss data, while inferential statistics such as Paired sample T-Test were employed to test hypothesis at the 5% level. The results study reveal that cooperative credit, cooperative farm inputs, cooperative farm extension services and agricultural cooperative marketing have significant positive relationships with rural poverty reduction among farmers in Anambra State at 5% level of significance. The study recommends among others, that government should complement the efforts of cooperatives by evolving a favourable credit policy which would lead to entrepreneurial development in the rural areas; and that government at the three levels and all stake holders should endeavour to assist in providing adequate farm input supplies, crop varieties, good storage facilities among others because of their multiplier effects on poverty reduction, food security, job and wealth creation.

KEYWORDS: Agricultural Cooperatives, Rural Poverty, Farm Inputs, Cooperative Credit

INRODUCTION
Background to the Study

Cooperatives play a prominent role in the agricultural sector, both in developed and developing countries. Historically, cooperatives have been the main institutional and organizational tool through which independent farmers were able to withstand the market power held by local and transnational retailers. They also serve to shorten the supply chain by allowing producers to integrate most or all of the processing and marketing processes into one or few steps, thus allowing substantial savings on transaction and other intermediation costs. Poverty is a wide spread and global phenomenon that cuts across all countries of the world. No nation, not even the most technically advanced economy, could boastfully assert the absence of at least a single dimension of poverty within her economy. However, poverty seems to be predominantly a fundamental trait among developing and the less developing countries especially Africa and Nigeria in particular (Fapojuwo, 2012). Rural poverty refers to poverty found in the rural areas. Rural poverty is a long-term complex multi-dimensional phenomenon. Rural poverty is often discussed with spatial inequality which in this context refers to inequality between rural and urban areas. The rural areas are often neglected by the government, financial institutions in terms of investment as well as credit/loan services. Cooperatives are self-help organizations formed by the people themselves to meet their common economic, social and cultural needs. Cooperatives are instrumental in rural poverty reduction because they create a bottom-up approach towards rural poverty alleviation that is, they are formed by the people themselves. According to Birchall (2003), cooperatives have played and continue to play an important role worldwide in poverty reduction, facilitating the construction of homes, the provision of agricultural loans, creating employment opportunities through the supply of credit for on-farm productivity, provision of farm input like fertilizers, seedlings and education. This study is centered on the relationship between agricultural cooperatives and rural poverty reduction in Anambra State, Nigeria.

Statement of the Problem

Rural people are faced with the major challenge of rural poverty as a result of poor investment by both the government as well as inability of financial institutions to release credit/loan for farming and agricultural activities. This affects their ability to create jobs, generate income and improve their livelihood. Similarly, the growth potentials of agriculture is slowed down and this distorts the reality of poverty reduction which is being slowed down by weak job creation, low income generation and deprived state of rural household's livelihood. This can jeopardize the economic, social and political stability of the rural economy. This creates instability and affects wealth creation in the rural

area. The empirical works carried out by Ewuim, (2010); Ugwu, (2012) and Ojonemi, Agba, & Chukwurah (2014) criticized the success of the programmes and policies carried out by government towards rural poverty reduction such as Better Life Programme for Rural Women, National Poverty Eradication Programme (NAPEP) etc. for achieving minimal success. The studies posited that the government did not create a bottom-up approach by consulting the people to ensure their active participation during implementation of poverty reduction programmes. Past programmes also did not factor-in a more committed and clear goal for cooperative in poverty reduction.

Cooperatives have a comparative poverty reduction advantage over most organizations. They are labour intensive by nature; cost-effective because of member commitment and participation, they generate economies of scale and scope through horizontal and vertical integration, they establish links between the informal and the formal sectors, and they put economic and social development on a broader base. Agricultural cooperatives are a ubiquitous institution in Anambra State Nigeria, engaging in all manner of socio-economic activities which promote economic emancipation, wealth creation and reduction of poverty. There is however a dearth of empirical studies to properly situating cooperative and its poverty reduction efforts in Anambra State.

Objectives of the Study
The broad objective was to examine the relationship between Agricultural Cooperatives and rural poverty reduction among rural farmers in Anambra State.

The specific objectives were:
1. To examine the relationship between cooperative credit and rural poverty reduction among rural farmers in Anambra State.

2. To assess the relationship between cooperative farm inputs and rural poverty reduction among rural farmers in Anambra State.

3. To determine the relationship between cooperative farm extension services and rural poverty reduction among rural farmers in Anambra State.

4. To ascertain the relationship between agricultural cooperative marketing and rural poverty reduction among rural farmers in Anambra State.

Research Hypotheses
Based on the objectives of the study, the following null hypotheses were formulated:

Ho_1: Cooperative credit has no significant relationship with rural poverty reduction among rural farmers in Anambra State.

Ho_2: Cooperative farm inputs have no significant relationship with rural poverty reduction among rural farmers in Anambra State.

Ho_3: Cooperative farm extension services have no significant relationship with rural poverty reduction among rural farmers in Anambra State.

Ho_4: Agricultural cooperative marketing has no significant relationship with rural poverty reduction among rural farmers in Anambra State.

LITERATURE REVIEW
Conceptual Review
Agricultural Cooperatives
Agricultural Cooperatives also known as farmers' cooperatives is a form of cooperative formed by farmers or agriculturalists which have combined their resources together for production and marketing of their produce. They also get equipment and items to enhance the effectiveness of their production and marketing of the items with the hope of benefiting members financially and economically. These include receiving loans, farm inputs such as fertilizer, professional advice financial education, mobilization of savings, provision of extension services, management of credit and attraction of government support. Agricultural cooperatives are seen as medium through which services like provision of farm input or implements, mechanization, loans, agricultural extension, marketing of farm products and other economic activities and services are rendered to members (Sizya, 2001). Agricultural Cooperative is considered to be one of the most important organization that pays attention and tries to support rural development so as to reduce poverty.

Empirical Review
Mbah Mgbemena and Ejike (2016) examined the poverty situation in Awka metropolis of Anambra State, Nigeria using the P-alpha class of poverty measure. The study revealed that 49 percent of respondents were considered to be poor, with 0.17 poverty gap index and a 0.03 severity of poverty index. The indicators were considered to be modest when compared with the national statistics. The causes of poverty in Awka metropolis from the findings include: lack of inadequate supply of some identified basic necessities of life such as shelter, portable water and sanitation, basic healthcare services, electricity and educational services. As a result of these inadequacies, there are psychological distress, increase in destitution, child labour, violent crime, and prostitution. It was therefore recommended among others that government should step up public investment in urban infrastructure, provision of credit facilities, involvement of the people in development decision that affects their lives or participatory budgetary process and most especially, good governance at the municipal level with accountability and transparency to stamp out corrupt tendencies which has inhibited past developmental efforts of the government.

Amurtiya, Tashikalma and Chinda (2018) investigated the agricultural inputs subsidy in Nigeria with an overview of the growth enhancement support scheme (GESS) in Nigeria. The study reviewed scholarly articles and other secondary data from government sources on the scheme. Findings from the study revealed that the Scheme was able to deliver subsidised agricultural inputs to small-scale farmers with relative ease and at affordable rate which was able to boost farm output. However, the scheme was affected majorly by its politicization, the inability of the governments to release funds to agro-dealers leading to late delivery of inputs and the lack of support service (extension) to farmers. Based on these findings, it was therefore recommended that, adequate synergy should be established between all collaborating agencies of the government participating in the scheme to ensure adequate release of funds, timely disbursement of farm inputs and the provision of suitable support services to farmers.

Ringim & Shuaib (2018) investigated the influence of social capital on members' consumption per capita income and poverty alleviation in Cooperative Thrift and Credit Society of Federal Polytechnic Bida, Niger state- Nigeria. Data were collected using field research survey approach involving hand delivery of questionnaire. Simple random technique of probability sampling method was used to draw a sample size of 255 members from the population of 702 academic and non- academic members of the cooperative society. The regression results indicated that social capital dimension such as educational qualification and membership duration has significant influence on consumption while social capital indicator such as income and educational qualification has significant influence on poverty alleviation. Other variables such as gender, marital status, work status and savings were insignificant. The study therefore recommended that regulators and policy makers should encourage savings mobilization from members' income or salary in order to boost consumption and alleviate poverty. This is because income has insignificant influence on consumption and significant influence on poverty alleviation in Cooperative Thrift and Credit Society of Federal Polytechnic Bida, Niger state.

John-Akamelu and Muogbo (2018) examined the role of small and medium enterprises in poverty eradication in Nigeria. The broad objective of the study was to determine the role of small and medium enterprises in Nigeria and its contribution towards industrialization. Three research questions were posed for the study and three hypotheses formulated in line with the objectives. The instrument for data collection was questionnaire which was used in analyzing the research question while hypotheses were tested with Chi-Square(X2). The population of the study was 150. Therefore, the study revealed that small and medium enterprises provided employment opportunities, training ground, and harness utilization of local resources. The study concluded that a good development strategy if employed by these industrialists will grow to large-scale capital intensive. The study recommended that SMEs should source their loans from the financial institutions where interest rates are low.

Anigbogu and Uzondu (2018) examined the determinants of output performance of cooperative farmers in Anambra State, Nigeria using econometric regression model of the Ordinary Least Square (OLS) and a production function of the Cobb-Doughlas type. Agricultural cooperatives assist the farmers in their farming operations through provision of farm inputs, credit and extension services. Thus, two variables-provisions of credit and fertilizer use were included in the production function or model to capture the effects of cooperative services on member crop output. Indeed, preliminary investigations reveal that the members obtained much of their credit and fertilizer from their cooperatives. Also included in the model was cooperative member experience which was designed to capture the effect of the number of years the respondent has been a member of agricultural cooperative. All the entered variables - crop output, total credit, credit from cooperative, fertilizer use, cooperative experience, size of farm- except household size, were found to be significant at the conventional 5% level. Therefore based on the findings above it is recommended that the government should complement the effort of cooperatives by providing: Adequate agricultural education and extension services to cooperative farmers to enable them improve on food production. Adequate input supplies, improves crop varieties, good storage facilities among others to enable them improve on the food output. Mechanize agriculture to enhance productivity. A supervised Agricultural credit scheme using cooperatives as a platform.

Theoretical Framework
Collective Action Theory
Collective action is any form of organized social or political act carried about by a group of people in order to address their needs. Collective action refers to action taken together by a group of people whose goal is to enhance their status and achieve a common objective (Baronchelli, 2018).The economic theory of collective action is concerned with the provision of public goods (and other collective consumption) through the collaboration of two or more individuals, and the impact of externalities on group behavior. Collective active theory was propounded by Mancur Olson in 1965 (Baronchelli, 2018).

The theory states that individuals under certain institutional arrangements and shared norms are capable of organizing and sustaining co-operation that advances the common interest of the group in which they belong. This line of thought recognizes that human beings can organize and govern themselves based on appropriate institutional arrangements and mutual agreements in a community of understanding.

METHODOLOGY
Research Design
The research design adopted for this work is the descriptive survey research design.

Population of the Study
The population of the study is made up of all the members of agricultural cooperatives in selected local governments in Anambra State. There are four agricultural zones in Anambra State: (Anambra zone, Onitsha zone, Awka zone, Aguata zone) and the twenty-one (21) local governments in Anambra state are divided within each of these zones. The total number of Agricultural cooperatives in Anambra State is two thousand, eight hundred and sixty-two (2,862) cooperative societies with a membership strength of fifty thousand, eight hundred and sixty-seven (50,867) in Anambra state which served as the population of the study (Anambra State Ministry of Agriculture, 2018).

Sample Size Determination
A sample is a small group of elements or subjects drawn through a definite procedure from a specified population. The sample size for this study is statistically determined using Taro Yamane formula for a finite population (Yamane, 1967). The formula is given as:

$$n = \frac{N}{1 + N(e)^2}$$

Where:
n= the sample size
N = the finite population
e = level of significance (at 0.05 or 5% level of significance)
N = 50,867,
e = 0.05

$$n = \frac{50{,}867}{1 + 50{,}867(0.05)^2}$$

$$n = \frac{50{,}867}{1 + 143.1} = 353$$

n = 353. Therefore, the sample size is 353

Source of Data
The study basically made use of primary data. The primary data were obtained from the respondents through the administration of questionnaire. The questionnaire is divided into two parts. Part A focuses on the socio-demographic characteristics of the respondents. The part B was designed into 5 (five) point Likert scale related to the objectives of the study.

Sampling Procedure
Multi-stage sampling technique was used to determine the actual sample of the study. This was carried in four stages. The first stage was the division of the state into four agricultural zones (Anambra zone, Onitsha zone, Aguata zone and Awka zone) using judgmental sampling. Judgmental sampling is a non-probability sampling that makes use of typical cases among the population to be studied, which the researcher believes will provide him or her with the necessary data needed. The second stage was a sub-sampling also called a two-sampling. This was a random selection of selecting two agricultural zones (Anambra zone & Aguata zone) from the four agricultural zones. In the third stage, judgmental sampling was used to select six local governments (Ayamelum LGA, Orumba North LGA, Anambra West LGA and Oyi LGA) as advised by the development officers at the Ministry of Agriculture and also because these local governments constitute the food basket of Anambra State . In the fourth stage, simple random sampling was used to select three towns each from each of the four selected local governments in the zones making a total of twelve towns. In the fifth stage, simple random sampling technique was again used to select two cooperative societies from each of the twelve towns making a total of twenty-four (24) cooperative societies. Furthermore, based on the 353 copies of questionnaire that were administered to cooperative members, 213 copies of questionnaire were retrieved. Copies of the questionnaire were rated on a 5-point Likert scale ranging from 5 (strongly agree) to 1 (strongly disagree).

Data Collection Instrument
The researcher developed three sets of structured questionnaire that were administered to members of the selected cooperative societies before and after joining the cooperative society so as to capture their employment level. The questionnaire has two sections: Section A sought information on socio-economic background and status of respondents while Section B elicited information on the perception of members on the relationship between agricultural cooperative and poverty reduction in a 5-point likert- scale. Also, secondary data was sourced from journals, articles, published textbooks and online sources.

Validity of Instrument
In order to validate the instrument (questionnaire), the researchers used face and content validity. Face validity judges the face value of the instrument whether the instrument covers the topic ofresearch, while the content validity judges the extent to which the instrument provides an adequate coverage of the study. To achieve both face and content validity, the questionnaire were given to three research specialists: two from the Department of Education Foundations and one from the Department of Cooperative Economics and Management of Nnamdi Azikiwe University Awka, to determine the degree of its validity i.e. they would check if the instrument contains questions that are relevant and in agreement with the objectives of the study and also the content of items in the instrument as to whether it provides an adequate coverage of the population under study. Their suggestions, amendments, and corrections were effected before copies of the instrument were administered to respondents.

Reliability of the Instrument
To ensure reliability of the instrument, the researchers used Cronbach alpha coefficient to test reliability. The Cronbach's coefficient alpha ranges from 0 to 1. A scale is considered to have good reliability if it has an alpha value greater than 0.70 (Zikmund, 2010).

Table1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
.977	.978	12

Source: Researchers' computation. 2019.

A Cronbach's Alpha of 0.977 was obtained, and this indicates a high level of internal consistency and therefore, an indication of high reliability of the instrument.

Method of Data Analysis
The analysis of data for this study was done based on the data collected from administered questionnaire. The data were then sorted out based on nominal scales and then analyzed based on the hypothesis of the study. Descriptive analyses using frequency counts, percentages, means and standard deviations were carried out and inferential statistics of the stated hypotheses were carried out using the Paired T-test. All computations were with SPSS, version 23.

DATA PRESENTATION AND ANALYSIS
Presentation of Core Issues of Investigation

Table2: Perceptions of members on Poverty Reduction Capacity of Agricultural Cooperatives (n=213)

S/N	Item	Mean	SD	Remarks
1.	**Job Creation** Agricultural Cooperatives create jobs directly through self-employment of farmers.	3.7276	.89425	Agree
2.	Agricultural Cooperatives create jobs indirectly through its downstream activities of employing the services of middlemen, food processors and marketers.	3.3844	.62014	Agree
3	Supply of cooperative credit in form of loan and cooperative farm input such as harvesters, improved seedlings etc. increases agricultural production and creates more jobs for rural farmers..	3.6620	.85759	Agree
4	**Income Generation** Agricultural Cooperatives provide initial capital or commodities to poorest farmers to start-up their individual farming business and generate income.	3.4224	1.13582	Agree
5	Agricultural Cooperative provide variety of income generating activities such as livestock ownership, cash crops, food crops which increases members earning ability.;	3.0581	.93925	Agree
6.	Increase in income generating activities by agricultural cooperative leads to expansion of the farm-sector and attraction of the industries to the rural areas.	2.8564	.89497	Disagree
7	**Livelihood Improvement** Agricultural cooperative facilitates easy access to loan by members at low interest rate which farming activities easier and improves farmers' welfare.	3.5493	.62014	Agree
8	There is huge investment through cooperative through its extension services which has introduced new techniques of production to farmers and improved their working conditions	3.7465	1.11322	Agree
9.	Tangible assets such as market stalls, processing industries have been made available and accessible to farmers through agricultural cooperatives thereby improving their living condition.	2.9623	.91925	Disagree
	Grand mean	3.0531	.52026	Agree

Source: Survey data, 2019.

From the analysis in table 2, the respondents agreed, that agricultural cooperative is capable of creating jobs, enhancing income of members and promoting household livelihood of members. Clearly this is attested by the fact that (10) out of the twelve (12) of the items above had mean values of at least 3.06 and a grand mean of 3.05. Thus, available evidence suggests that there is agreement among the respondents that agricultural cooperatives have the capacity to create jobs, generate income and boost livelihood status of members in the area.

Table3. Members Perception of the Relevance of Cooperative Functions of Credit, Farm Input, Farm Extension & Marketing to Poverty Reduction (n=213).

S/N	Item	Mean	S.D	Remark
	Cooperative Credit			
1	Cooperative societies contribute greatly to job creation to the empowerment of the poorest farmers through cooperative credit.	4.389	0.190	Agree
2	Cooperatives provide self-employment for rural farmers in the rural areas with a minimum of social security through cooperative credit.	4.763	0.802	Agree
3	Cooperatives play an increasingly important role in rural poverty reduction, facilitating job creation, and rural economic growth through access to cooperative credit.	3.767	0.977	Agree
	Grand mean	**4.306**		
	Cooperative farm inputs			
4	Farm inputs offered through the cooperative have enhanced food security in the rural areas through increased food supply and reduced food prices sold at the local market.	3.710	0.841	Agree
5	Farm inputs have reduced the cost of credit in agricultural production through cheaper prices of input offered through the Cooperative which has fast-tracked agricultural development in the rural areas.	4.516	0.571	Agree
6	Farm inputs increase output, generate employment, creates diversification and provides input for manufacturing and processing on a sustainable basis.	3.935	0.203	Agree
	Grand mean	**4.053**		

		Farm Extension Services			
7		Farm extension offered through the cooperative has boosted agricultural productivity among rural famers thereby creating more sources of income for them.	3.811	0.189	Agree
8		New farm techniques of production have been introduced through cooperative agricultural extension services leading to creation of more rural farming jobs.	3.761	1.028	Agree
9		Agricultural extension services offered through cooperative assist farmers to determine their own problems, find desirable solutions, and take action thereby increasing farmer's productivity and income.	3.874	0.700	Agree
		Grand mean	**3.815**		
		Agricultural Cooperative Marketing			
10		Cooperative marketing encourages intelligent and orderly marketing of agricultural produce thereby eliminating speculation and waste.	3.631	0.036	Agree
11		Cooperative marketing make distribution of agricultural products between producer and consumer as direct and efficient as possible which stabilizes marketing of agricultural production.	3.439	0.374	Agree
12		Cooperatives serve to improve the marketing system by providing services at lower cost; offer an alternative market outlet to offset monopoly in the local market and provide new or improved marketing services.	3.916	0.381	Agree
		Grand mean	**3.662**		

Source: Survey data, 2019.

Table 3 indicated that the respondents gave an overwhelming affirmation on cooperative functions of credit, farm input, farm extension services and agricultural cooperative marketing in providing services that are capable of poverty reduction among rural farmers. Indeed, with grand means of 4.306, 4.053, 3.815 and 3.662 of responses to the cooperative functions of credit, farm input, farm extension services and cooperative marketing respectively there is a positive opinion of the farmers on the poverty reduction capability of agricultural cooperatives in Anambra State.

Test of Hypotheses
Test of Hypothesis I
Ho_1 : Cooperative credit has no significant relationship with rural poverty reduction among rural farmers in Anambra State.
H_1 : Cooperative credit has significant relationship with rural poverty reduction among rural farmers in Anambra State.

Table 4. Paired Samples Test

		Paired Differences					t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	**95% Confidence Interval of the Difference**				
					Lower	Upper			
Pair 1	Cooperative credit has no significant relationship with rural poverty reduction among rural farmers in Anambra State	.34000	.07359	.09736	-.15318	.53318	4.411	212	0.000

Source: Researcher's computation, 2019

Interpretation
The paired sample test seals up the relationship between cooperative credit and rural poverty reduction among rural farmers in Anambra State as indicated by the t-value = 4.411 and probability value = 0.000 as shown in table 4.7. This implies that cooperative credit has significant effect on rural poverty reduction among rural farmers in Anambra State.

Decision Rule: Accept the null hypothesis if the p-value is greater than 0.05, otherwise, reject.

Decision: Since the p-value is 0.000 which is less than the critical value 0.05, this study upholds that there exists a significant positive relationship between cooperative credit and rural poverty reduction among in Anambra State at 5% level of significance. The study concludes that cooperative credit has significant relationship with rural poverty reduction among rural farmers in Anambra State

Test of Hypothesis II
Ho_2 : Cooperative farm inputs have no significant relationship with rural poverty reduction among rural farmers in Anambra State.
H_2 : Cooperative farm inputs have significant relationship with rural poverty reduction among rural farmers in Anambra State.

Table5 Paired Samples Test – hypothesis 4

		Paired Differences						t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			t	Df	Sig. (2-tailed)
					Lower	Upper				
Pair 2	Cooperative farm inputs have no significant relationship with rural poverty reduction among rural farmers in Anambra State	.4023	.0094	.0758	-.11782	.37119		3.675	212	0.003

Source: Researcher's computation using SPSS version 23, 2019

Interpretation

Paired T-test which is appropriate for testing the mean difference between paired observations revealed that there is a significant influence of cooperative farm input and rural poverty reduction in ensuring rural poverty reduction among rural household farmers in Anambra State. as revealed in the t-value = 3.675 and associated p-value of 0.003 in table 4.8, therefore, the null hypothesis is rejected.

Decision

Since the P-value of 0.003 is less than the critical value of 0.05, then, it would be upheld that there is a significant positive relationship between cooperative farm inputs and rural poverty reduction among rural household farmers in Anambra State at 5% level of significance, thus, H_1 is preferred over Ho. The study concludes that Cooperative farm inputs have significant relationship with rural poverty reduction among rural farmers in Anambra State

Test of Hypothesis III

Ho3 : Cooperative farm extension service has no significant relationship with rural poverty reduction among rural farmers in Anambra State.

H3 : Cooperative farm extension service has significant relationship with rural poverty reduction among rural farmers in Anambra State.

Table6. Paired Samples Test

		Paired Differences						t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			t	Df	Sig. (2-tailed)
					Lower	Upper				
Pair 3	Cooperative farm extension services have no significant relationship with rural poverty reduction among rural farmers in Anambra State	.3633	.0101	.1326	-.1192	.3824		2.640	212	0.025

Source: Researcher's computation, 2019

Interpretation

The result of the paired sample test showed that cooperative farm extension services have significant relationship with rural poverty reduction among rural farmers in Anambra State. Table 4.9 indicates that the t-value is 2.640 and the p-value = 0.025. This implies that farm extension services obtained from cooperatives positively affects rural poverty reduction, therefore the alternative is accepted and the null hypothesis rejected. The researchers conclude that cooperative farm extension service has significant relationship with rural poverty reduction among rural farmers in Anambra Statec

Decision

Based on the empirical evidence that suggests that there is a significant positive relationship between cooperative farm extension services and rural poverty reduction among rural farmers in Anambra State at 5% level of significance, thus, the alternative hypothesis of the study is accepted.

Test of Hypothesis IV

Ho4 : Agricultural cooperative marketing has no significant relationship with rural poverty reduction among rural farmers in Anambra State.

H4 : Agricultural cooperative marketing has significant relationship with rural poverty reduction among rural farmers in Anambra State.

Table 6 Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 4	Agricultural cooperative marketing has no significant relationship with rural poverty reduction among rural farmers in Anambra State	.3871	.0034	.1224	-.1177	.6011	4.212	212	0.000

Source: Researcher's computation using SPSS version 23, 2019

Interpretation
The paired sample test seals up the relationship between agricultural cooperative marketing and rural poverty reduction among rural farmers in Anambra State as indicated by the t-value = 4.212 and probability value = 0.000 as shown in table 4.10. This implies that agricultural cooperative marketing has significant relationship with rural poverty reduction among rural farmers in Anambra State.

Decision Rule: Accept the null hypothesis if the p-value is greater than 0.05, otherwise, reject.

Decision: Since the p-value is 0.000 which is less than the critical value 0.05, this study upholds that there exists a significant positive relationship between agricultural cooperative marketing and rural poverty reduction among rural farmers in Anambra State at 5% level of significance. Therefore, the alternative hypothesis is accepted and the researchers conclude that agricultural cooperative marketing has significant relationship with rural poverty reduction among rural farmers in Anambra State.

Discussion of Findings
This study ascertained the nexus between agricultural cooperative and rural poverty reduction in Anambra State. The independent variable (agricultural cooperative) was proxied by cooperative credit, cooperative farm inputs, cooperative farm extension services and agricultural cooperative marketing while rural poverty reduction (which was captured by cooperative capability in creating jobs, raising income and enhancing member's livelihood) served as the dependent variable.

The result for hypothesis I indicated a t-value is 4.411 and a probability value of 0.000. This outcome implies that cooperative credit has significant relationship with rural poverty reduction among rural farmers in Anambra State at 5% level of significance.

The result for hypothesis II revealed that there is a significant relationship between input obtained from cooperatives and rural poverty as revealed in the t-value (3.675) and associated p-value of 0.003 at the 5% level of significance. Therefore, the null hypothesis was rejected.

The result of the paired sample test for hypothesis III showed that cooperative farm extension services have significant relationship with rural poverty reduction among rural farmers in Anambra State (t-value was 2.640 and the p-value was 0.025). This implies that farm extension services obtained from cooperatives have direct relationship with rural poverty reduction, therefore the the null hypothesis was rejected and alternative hypothesis was accepted.

The paired sample test in hypothesis IV sealed up the relationship between agricultural cooperative marketing and rural poverty reduction among rural farmers in Anambra State as indicated by the t-value of 4.212 and probability value of 0.000. This outcome implies that agricultural cooperative marketing has a significant relationship with rural poverty reduction among rural farmers in Anambra State.

The findings of the study is a confirmation of results of earlier investigations by Anigbogu, Agbasi and Okoli (2014); Ojiagu & Onugu (2015); Nnadozie, Oyediran & Njoku (2015); Nefale (2016); John-Akamelu and Muogbo (2018); Ringim & Shuaib (2018); Okoli (2018); Anigbogu and Uzondu (2018) asserting the primacy of cooperative functions in reducing incidents of poverty in Nigeria's urban and rural sectors. The outcome of the research is also in agreement with the tenets of the collective action theory states that individuals under certain institutional arrangements and shared norms are capable of organizing and sustaining co-operation that advances the common interest of the group in which they belong. Indeed, in the various tests of hypotheses, direct and significant relationships were established at the 5% level of significance suggesting that active involvement of members in cooperative functional areas has paid-off in reducing incidents of poverty, to wit, creating jobs, enhancing income and improving members' livelihoods.

Clearly, the findings of the study has revealed the importance of agricultural cooperatives as an instrument for ensuring a bottom-up approach to rural poverty reduction and the need to incorporate the various cooperative functions into the local, state and national policy on rural poverty reduction. Incorporating agricultural cooperatives, which are formed by rural and local people themselves with technical and financial assistance from government and bilateral agencies, would signal a desired strategic approach towards rural poverty reduction.

CONCLUSION AND RECOMMENDATIONS

This study assessed the nexus between agricultural cooperative and rural poverty reduction in Anambra State. The independent variable, agricultural cooperative was proxied by cooperative credit, cooperative farm inputs, cooperative farm extension services and cooperative agricultural marketing while rural poverty reduction index which was measured by cooperative capability in job creation, income enhancement and livelihood served as the dependent variable. The study revealed that cooperative credit, cooperative farm inputs, cooperative farm extension services and agricultural cooperative marketing had significant relationships with poverty reduction among rural farmers in Anambra State at the 5% level of significance. This therefore means that efforts at formulating an effective poverty reduction programme in the state and elsewhere must take advantage of the agricultural cooperative platform in the channeling of farm resources to rural farmers.

On the premise of the study findings, the following recommendations are made;

A. Based on the positive relationship that exists between cooperative credit and rural poverty reduction, it is suggested that government should complement the effort of cooperatives by evolving a favourable credit policy which would lead to entrepreneurial development in the rural areas.

B. Since farm inputs have a positive effect on poverty reduction, governments at the three levels and all stake holders should endeavour to assist in providing adequate farm input supplies, seed varieties, good storage facilities among others to rural farmers through their cooperatives. This obviously will have positive impact on poverty reduction, food security, and job & wealth creation.

C. The agricultural cooperative should maintain and even improve on the farm extension services they offer members. The respondents had acknowledged that farm extension offered them had boosted productivity, thereby creating a positive impact on their income, hence there is a need for the cooperative to liaise with the ministry of agriculture, agricultural research institutes and other government agencies involved in agricultural research, to enhance their capacity in farm extension services.

D. Government should provide processing facilities to assist the cooperatives in processing and packaging their agricultural products for competitive marketing. Available evidence indicates that agricultural cooperatives in the study area are very active in marketing of agricultural products. Assisting cooperatives with provision of marketing facilities will be a boost to their agricultural marketing efforts.

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