INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN ECONOMICS & MANAGEMENT SCIENCES

OPEN ACCESS JOURNAL

Vol 4, Issue 3, (2015) E-ISSN: 2226-3624

Socioeconomic Factors Influencing Agricultural Production among Cooperative Farmers in Anambra State, Nigeria

Theresa Ukamaka Anigbogu (Ph.D), Obianuju Emmanuela Agbasi, Ikechukwu Moses Okoli

Department of Cooperative Economics and Mgt, Nnamdi Azikiwe University (NAU), Awka, Nigeria

Email: tessyanigbogu@gmail.com, ujayagbasi@yahoo.com

Corresponding Author Email: ikemosesokoli@yahoo.com

To Link this Article: http://dx.doi.org/10.6007/IJAREMS/v4-i3/1876 DOI:10.6007/IJAREMS/v4-i3/1876

Published Online: 09 January 2016

Abstract

The study was informed by the perceived declining food production in Nigeria which was supported by literature. Food production in Nigeria no longer keep with population growth. Thus creating a wide gap between the demand and supply of food. To investigate the identified problem of perceived declining food production in Nigeria, the study specifically investigated the influence of socioeconomic characteristics of the cooperative farmers on agricultural production as proxied by the farmers output levels using a regression model of the ordinary least square. Findings revealed that eight (Age, Educational Qualification, Farming Experience, Farm Size, Income, Seedling Obtain, Fertilizer Obtain and Fertility of the land) out of the fourteen coefficients of the variables included in the model are significant. Twelve of the coefficients have positive relationship with the cooperative farmers output. While four of the coefficients have inverse relationship with cooperative farmers output. The joint effect of the explanatory variable in the model account for 95.9% of the variations in the factors affecting the cooperative farmers output. The study therefore recommends among others that the government should provide agricultural credit to farmers, initiate and support mechanized farming. This will help improve the productivity and output of the farmers in Anambra state. The government should also encourage the farmers by improving on agricultural Infrastructural Facilities because it has been identified as one of the major challenges faced by the cooperative farmers in improving agricultural production.

Keywords: Agricultural Production, Cooperative Farmers, Regression Model, Farmers Output, Anambra State.

Introduction

The Nigeria economy has been described by researchers as an agrarian economy where agriculture plays crucial role in the nation's socioeconomic transformation, apart from being the source of food to the people, it is the greatest employer of labour and provider of incomes, sources of industrial raw materials, and export products for foreign exchange

earnings, and has in the past been an important provider of resources for investments in other sectors of the economy (Anyanwuocha, 2006). In the literature of agricultural production in Nigeria, agriculture has been described as the most important economic sector in terms of its contribution to the GDP, after oil (Bakare, 2013; Enoma,2010). For example, the sector contributed about 41% of the country's Gross Domestic Product (GDP), employed about 65% of the total population and provided employment to about 80% of the rural population(Bakare, 2013; African Development Fund, 2005). Despite the contribution of agriculture to Gross Domestic Product in Nigeria, food production has not been able to keep pace with population growth. As stated by Abdulrahaman (2013), food production at subsistence level especially in third world countries does not keep with the pace of rapidly growing population, when compared to advanced or developed economy. Abdulrahaman (2013) further cited that in Nigeria, as at 2000, the total population estimate stood at 123,337,800 million people, this number increased to 170,123,700 in the year 2012, which shows a growth rate of 3.8% between 2000 to 2012 (Mondi index, 2012). This figure provides an indication that Nigerian population is among the fast growing population in the world. On the other hand food production increases marginally at a rate lower than population growth rate. With this growing rate can Nigeria sustain its population food demand, by providing sufficient quantity and quality of food for all (Abdulrahaman, 2013)?

Therefore, in this era of structural reforms where the government and other stake holders are devising blue prints for bridging the gap between the demand and supply of food, cooperative, more precisely agricultural cooperatives have been used as a platform for improving Nigeria agriculture for years now. The cooperative is one of the organizational forms for conducting legitimate business in a marketing economy like Nigeria. According to International Cooperative Alliance, in Nwankwo (2008) , cooperative is an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise. Nwankwo (2008) further stated that a cooperative is an independent enterprise, promoted, owned and controlled by members to meet their needs. As an enterprise, cooperatives are active in markets locally, nationally and worldwide. The cooperative has been described as a veritable approach for mobilizing disparate small farm holders in the rural areas to increase their income and enjoy the benefit large scale production (Ibe, 2002). At the introduction of formal cooperative in Nigeria over seven decades ago, cooperative was used as a platform for improving agricultural production and farmers' income. The cooperative according to Ofuebe (1992) is one of the most effective vehicles for organizing modernized rural production, which has become one of the most important preconditions for efficient mobilization of production resources and accelerated rural progress. Uchendu (1998) stated that the original impetus for the introduction of cooperative was in agriculture more precisely the marketing of agricultural products to help fetch better prices and income for cocoa farmers in the Western part of Nigeria.

Statement of the Problem

This study was informed by the declining food production in Nigeria. Food production in Nigeria no longer keep with population growth. Thus creating a wide gap between the demand and supply of food (Abdulrahaman, 2013). This is evident in the observed food deficit and the upward trend in the price of food stuff in the market over the years (Igwe and Esonwune, 2011; African Development Fund, 2005; CBN, 2002). The resulting effect of this imbalance between demand for and supply of food is malnutrition, poverty and deteriorating

living conditions (Igwe and Esonwune, 2011; Nadozie and Ibe, 2000; Eze, 2009). Against this background, the growth of Nigeria economy with reference to agriculture has been import driven rather production driven. Consequently, there is a growing advocacy for improving Nigeria agricultural production so as to achieve sustainable food security. According to Eze (2009) a lot of effort has been directed at finding appropriate institutions for organizing millions of small scale farmers towards achieving food security (through increased food production) and agricultural cooperative society has been described as the appropriate vehicle for harnessing and polling the resources of millions of small holder farmers producers together to enjoy the benefit of large scale production.

The agricultural sector in Nigeria, (Daramola, 2004) is made up of forestry, livestock, fishing, food and cash crops such as yams, cassava, maize, cocoa, groundnut and oil palm. The country is largely endowed with natural resources that are necessary for the development of agriculture. such resources include abundant land supply, human and forestry resources. The country has a total land area of about 98.3 million hectares out of which 71.2 million hectares (72.4%) are cultivable but only 34.2 million hectares (34.8%) are under use. According to Bakare (2013) and African Development Fund (2005), rural Nigeria is divided into seven agro-ecological zones; i.e. semi-arid, found only in the northern region; the savannah, found in the northern and middle region; a small highland area found in the middle and southern region; a larger transition environment of savannah derived from the forest overlapping the southern and middle regions; mangroves in the Niger Delta; freshwater swamps in the Niger Delta and Lowland rain forest in the south. The agro-ecological setting and technology base, in principle, determine the production systems. Two major production systems dominate these zones: (i) the traditional production system, which is found in all parts of the country and consists of land holdings of less than 2 ha (Obinyan, 2000) with a variety of food crops intended for consumption purposes mainly and (ii) the improved irrigation production system which comprises the improved small scale irrigation using low-lying or water logged areas for crop and livestock production as well as large-scale mechanized and/or commercial irrigation farming systems.

A number of studies have indicated that agricultural production in Nigeria is still characterized by small farm holders (Onugu,2008; Obinyan,2000; Ijere and Mbanasor,2000). Perceptibly, the socioeconomic characteristics of the small farm holders have crucial ramification on agricultural production. Food production could be affected by the farmers age, access to credit, gender, farm size, educational level, farming experience etc. it is on record that 50% of world's population is dependent on subsistence agriculture (Guy, 2001; Obinyan, 2000; Olujenyo, n.d;). Considering the prime importance of agricultural production to achieving food security and its crucial role in the nations socioeconomic transformation in terms of its contribution to the GDP and the fact that domestic supply has not been able to meet up with domestic demand, there is therefore the need to examine those socioeconomic factors that influence agricultural production so as to step up food supply.

Objectives of the study

The main objective of this study is to examine factors influencing agricultural production among cooperative farmers in Anambra state, Nigeria. The specific are:

i. To examine the types of food crops and cash crops cultivated by the cooperative farmers and the farmers' output levels.
ii. To examine the socioeconomic characteristics of the cooperative farmers as well as the socioeconomic characteristics influencing the farmers' output

Review of Related Literature

Theoretical Framework

The theoretical framework of this study is built on the cobb-Douglas production function. This theoretical model has been applied in extant literature. See: Olujenyo (n.d), Igwe and Esonwune (2011), Izekor and Olumese (2010), Olubanjo and Oyebanjo (2005) and Mpawenimana (2005). In economics, the Cobb-Douglas functional form of production functions is widely used to represent the relationship of an output to inputs. It was proposed by Knut Wicksell (1851 - 1926), and tested against statistical evidence by Charles Cobb and Paul Douglas in 1928 (Bao-Hong, 2008). In 1928 Charles Cobb and Paul Douglas published a study in which they modelled the growth of the American economy during the period 1899 - 1922. They considered a simplified view of the economy in which production output is determined by the amount of labour involved and the amount of capital invested. While there are many other factors affecting economic performance, their model proved to be remarkably accurate.

The function they used to model production was of the form:

$P(L,K) = bL^{\alpha} K^{\beta}$

Where:

- P = total production (the monetary value of all goods produced in a year)
- L = labor input (the total number of person-hours worked in a year)
- K = capital input (the monetary worth of all machinery, equipment, and buildings)
- b = total factor productivity
- α and β are the output elasticities of labour and capital, respectively. These values are constants determined by available technology. Output elasticity measures the responsiveness of output to a change in levels of either labour or capital used in production, ceteris paribus. For example if $\alpha = 0.15$, a 1% increase in labour would lead to approximately a 0.15% increase in output.

The production function relates physical output of a production process to physical inputs or factors of production. The production function is one of the key concepts of mainstream neoclassical theories, used to define marginal product and to distinguish allocative efficiency, the defining focus of economics. The primary purpose of the production function is to address allocative efficiency in the use of factor inputs in production and the resulting distribution of income to those factors, while abstracting away from the technological problems of achieving technical efficiency, as an engineer or professional manager might understand it (Cohen and Harcourt, 2003; Daly, 1997). In agricultural production, efficient allocation of farm resources help farmers to attain their objectives. It avails farmers the opportunity of improving their productivity and income. At the micro economic level efficient allocation of farm resources (farm land, credit facilities, fertilizer, labour, among others) help farmers to contribute to food production, employment creation, industrial raw material and export product for foreign exchange earnings. According to Olayide and Heady(1982) agricultural productivity is synonymous with resource productivity which is the ratio of total output to the resource/inputs being considered. According to Olujenyo (n.d), the production function could be expressed in different functional forms such as Cobb Douglas, linear, quadratic, polynomials and square root polynomials, semilog and exponential functions. However, the Cobb Douglas functional form is commonly used for its simplicity and flexibility coupled with the empirical support it has received from data for various industries and countries(see :Gujarati and Damoda, 2008; Bao-Hong,2008).

Related Empirical Literature

Olujenyo (n.d) considered the determinants of agricultural production and profitability with special reference to maize production in Akoko North East and South West Local Government Areas of Ondo-State using the Ordinary Least Square (OLS) criterion to estimate the parameters of the production function. showed that age, education, labour and cost of non-labour inputs were positively related to output while farm size and years of experience carried negative signs. However, only labour input has significant influence on output. Olubanjo and Oyebanjo (2005) analysed the effect of farm inputs use on the profitability of rain-fed paddy rice production in Ikenne Agricultural Zone, Ogun State, Nigeria. The Zellner's Seemingly Unrelated Regression (SUR) method was adopted in the analysis of the study data. Results revealed that the elasticity of the profit function increased with quantity of fertiliser applied and farm size cultivated, and decreased with respect to increased use of hired labour and seeds. Izekor and Olumese (2010) examined the determinants of yam production and profitability in Edo Sate, Nigeria using Gross Margin analysis and Production function analysis using the Ordinary Least Square (OLS) criterion to estimate the parameters of the production function. Result showed that yam production is profitable in the study area with an average gross margin of N58,400. Farm size, stalking, yam setts and the operating cost were found to be positively related to output, with Labour as the major determinant. The result further showed a return to scale of 4.582 indicating an increasing return to scale, implying inefficiency in the use of resources in the enterprise as production was in the irrational stage (stage 1) of production. Igwe and Esonwune (2011) used secondary data generated from the Abia State Agricultural Development Programme, National Root Crops' Research Institute Umudike in Abia State and the Central Bank of Nigeria, to examine the determinants of agricultural production in the State. Result showed that total land area cropped, total annual rainfall and total population were strong factors that significantly determined total crop output in the state at 1% level. Whereas the total land area and total annual rainfall were positive in their signs, the total population was negative. Mpawenimana (2005) investigated the socio-economic factors affecting the production of bananas in Rwanda, and a case studied was the District of Kanama. The results described that acreage (land), physical capital, fertilizer and price, have positive relationship with the output.

In conclusion, some of the empirical studies focus on the production of particular food crop or cash crop, without due accentuation to agricultural production in general, ignoring the fact that most of these farmers are mixed crop farmers. Looking at agricultural production in general offers a better insight to the understanding of the factors that affect the production. This study aims to fill the lapse in the existing literature by empirically tracing the socioeconomic factors that influence Agricultural Production among Cooperative farmers in Agricultural Zones of Anambra state, Nigeria.. Olujenyo (n.d) investigated something similar, but he considered the determinants of agricultural production and profitability with special reference to maize production in Akoko North East and South West Local Government Areas of Ondo-State. This study is unique in that it focused on Agricultural Production among Cooperative farmers which arguably has been a platform for the government involvement, support and participation in food production in Nigeria.

Methodology

Area of Study

Area of a study is the geographical area or boundaries where the study is carried out (Uzoagulu, 1998). This study was carried out in Anambra state. Anambra State is a state in

south-eastern Nigeria. Its name is an anglicized version of the original 'Oma Mbala', the native name of the Anambra River which is a tributary of the famous River Niger. The Capital and the Seat of Government is Awka. Onitsha and Nnewi are the biggest commercial and industrial cities. The state's theme is "Light Of The Nation". The boundaries are formed by Delta State to the west, Imo State and Rivers State to the south, Enugu State to the east and Kogi State to the north.

The indigenous ethnic groups in Anambra state are the Igbo (98% of population) and a small population of Igala (2% of the population) who live mainly in the north-western part of the state. Anambra is the eighth most populated state in the Federal Republic of Nigeria and the second most densely populated state in Nigeria after Lagos State. The stretch of more than 45 km between Oba and Amorka contains a cluster of numerous thickly populated villages and small towns giving the area an estimated average density of 1,500–2,000 persons per square kilometre.

Anambra is rich in natural gas, crude oil, bauxite, ceramic and has an almost 100 percent arable soil. In the year 2006, foundation laying ceremony for the first Nigerian private refinery Orient Petroleum Refinery (OPR) was made at Aguleri area. The Orient Petroleum Resource Ltd, (OPRL) owners of OPR, was licensed in June 2002, by the Federal Government to construct a private refinery with a capacity of 55,000 barrels per day. Furthermore, Anambra state is a state that has many other resources in terms of agro-based activities like fishery and farming, as well as land cultivated for pasturing and animal husbandry. Currently, Anambra State has the lowest poverty rate in Nigeria.

Population of the Study, Sample Size and Sampling Procedure

The population of this study is made up of all the members of agricultural cooperatives in Anambra state. Multi-staged sampling technique was used to determine the sample size of the study. This was carried out in four stages. According to Chukwuemeka (2002), multi-stage sampling is somewhat the combination of the other sampling techniques. At least, it combines two methods. The first stage was the division of the state into three agricultural zones 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 (Michael, Des-Oparaku & Oparaku (2012). The agricultural zones were selected from the three senetorial zones of the states. The second stage was a sub-sampling also called a two-stage sampling. This was a random selection of selecting two local governments each (Anambra East L.G.A, Anambra West L.G.A,; Orumba North L.G.A, Orumba South L.G.A,, Awka North and Idemili South L.G.A.) from the agricultural zones. In the third stage otherwise called the three-stage sampling, the simple random sampling technique was also used to select two towns each from each of the three selected local governments in the agricultural zone. In the fourth stage, simple random sampling technique was again used to select two farmers cooperative societies from each of the two towns. On the whole a total of 171 farmers were selected to serve as the sample size for the study. 171 questionnaires were given out but only 142 were dully completed and returned.

Model Specification

The model for this study is implicitly specified as follows;

$$\mathbf{Y = f(x_1, x_2, x_3 \ldots\ldots X_n) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots eq(1)}$$

The model is explicitly specified as follows;

$$\mathbf{Y = \alpha+\beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 \ldots\ldots \beta_kx_k \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots eq(2)}$$

The econometric form of the model becomes more realistic with the introduction of the random or scholastic term ε: The econometric form of the model is express thus:

$$\mathbf{Y = \alpha + \beta_1 \log X_1 + \beta_2 \log X_2 + \beta_3 \log X_3 + \beta_4 \log X_4 + \beta_5 \log X_5 + \beta_6 \log X_6 + \beta_7 \log X_7 + \beta_8 \log X_8 + \beta_9 \log X_9 + \beta_{10} \log X_{10} + \beta_{11} \log X_{11} + \beta_{12} \log X_{12} + \beta_{13} \log X_{13} + \beta_{14} \log X_{14} + \varepsilon \ldots\ldots\ldots\ldots\ldots eq(3)}$$

Where: Y = Output of farmers in 2014

The included variables X_1-X_{14} represent Gender (1 for male, 2 for female), Age (in years), Marital Status (1 for married, 0 for otherwise), Educational Qualification (in years), Farming Experience (in years), Farm Size (in hectares), Household Size (in numbers), Income (in naira), Credit Obtained (in naira), Seedling Obtain (in kg), Fertilizer Obtain (in kg), Type of Technology (1 for capital intensive, 0 for otherwise), Soil Fertility (1 for fertile, 0 for otherwise) and Crop type(1 for cash crop, 0 for otherwise), $\beta_1 - \beta_{14}$ are the slope coefficients of the regressors or multipliers that describe the size of the effect the independent variable (x_1 to x_{14}) are having on the dependent variable Y. α represents the vertical intercept showing values of Y when variable x_1 to x_{12} are zero. That is the value Y is predicted to have when all the independent variables are equal to zero and ε the stochastic residual term designed to capture the effects of unspecified variables in the model, which is normally distributed with a mean value of zero.

Presentation Of Empirical Findings

Table 1

Distribution of respondents according to socioeconomic characteristics of the respondents

Variables	Options	Frequency	Percent(%)	Cumulative (%)
Gender	Male	96	67.6	67.6
	Female	46	32.4	100.0
	Total	**142**	**100.0**	
Age	18-30	9	6.3	6.3
	31-40	16	11.3	17.6
	41-50	32	22.5	40.1
	51-60	49	34.5	74.6
	61 and above	36	25.4	100.0
	Total	**142**	**100.0**	
Marital Status	Married	112	78.9	78.9
	Single	11	7.7	86.6
	Divorce	3	2.1	88.7
	Widow/Widower	16	11.3	100.0
	Total	**142**	**100.0**	
Educational Qualification	Primary	38	26.8	26.8
	Secondary	73	51.4	78.2
	Tertiary	31	21.8	100.0
	Total	**142**	**100.0**	
Farming Experience	0-1	3	2.1	2.1
	1-5	7	4.9	7.0
	6-10	18	12.7	19.7
	Above 10	114	80.3	100.0
	Total	**142**	**100.0**	
Farm Size	0-1	5	3.5	3.5

	1-3	111	78.2	81.7
	4-7	20	14.1	95.8
	8 and above	6	4.2	100.0
	Total	**142**	**100.0**	
Household Size	1-3	21	14.8	14.8
	4-6	103	72.5	87.3
	7-9	11	7.7	95.1
	10-12	7	4.9	100.0
	Total	**142**	**100.0**	
Income Levels of the Farmers	100000-200000	42	29.6	29.6
	201000-400000	42	29.6	59.2
	401000-600000	38	26.8	85.9
	601000-1000000	12	8.5	94.4
	1100000-1500000	8	5.6	100.0
	Total	**142**	**100.0**	
Range of Farm Credit Obtained	10000-100000	73	51.4	51.4
	201000-300000	32	22.5	73.9
	301000-400000	18	12.7	86.6
	401000-500000	16	11.3	97.9
	Above 500000	3	2.1	100.0
	Total	**142**	**100.0**	
Quantity of Seedling Obtained	0-50Kg	96	67.6	67.6
	100kg	33	23.2	90.8
	150kg	6	4.2	95.1
	200kg	4	2.8	97.9
	250kg	3	2.1	100.0
	Total	**142**	**100.0**	
Quantity of Fertilizer Obtained	0-50Kg	58	40.8	40.8
	100kg	18	12.7	53.5
	150kg	22	15.5	69.0
	200kg	26	18.3	87.3
	250kg	18	12.7	100.0
	Total	**142**	**100.0**	
Type of Technology used in Farming	Capital Intensive	18	12.7	12.7
	Labour Intensive	108	76.1	88.7
	Capital and Labour Intensive	16	11.3	100.0
	Total	**142**	**100.0**	
Fertility of the land	Fertile	75	52.8	52.8
	Not Fertile	67	47.2	100.0

	Total	**142**	**100.0**	
Major type of Crop Cultivated	Cash Crop	36	25.4	25.4
	Food Crop	106	74.6	100.0
	Total	**142**	**100.0**	

Source: Field survey, 2014.

As shown in table 1, with respect to gender, majority 67.6% of the respondents are males while 32.4% of the respondents are females. Male majority is an indication that the cooperative societies are composed of mainly male headed household and they are naturally meant to be the bread winners of the family. So, their engagement in cooperative will enable them increase their farm production compared to women. With regards to age, all the respondents cut across the age brackets. However, majority of the respondents about 34.5% and 25.4% of them fall within the age brackets of 51-60years and 60years and above. Indicating that agricultural production in the state is mainly in the hand of the aged who are at the verge of retirement from active work force. 78.9% of the respondents are married and are living with their household. Followed by widows/widowers 11.3%, singles 7.7% and divorce 2.1%. All the respondents had formal education. But majority 51.4% of them have secondary education. Over 80% of the respondents had above ten years of farming experience. Which invariably is expected to impact positively on agricultural production. Majority of the farmers had farm size of between 1-3 hectares of land. Obinyan (2000) described the implication of small farm size of rural farmers thus: Their holdings are small most often less than two hectares and are characterized by low productivity which leads to low income and low capital investment. 72.5% of the respondents have household size of between 4-6 persons. This will provide a cheap source of farm labour to the farmers but at the same time it increases the dependency ratio of the farmers. With respect to income of the farmers, 29.6% of the farmers earn annual income of between ₦100,000 - ₦200,000 and between ₦201,000 - ₦400,000 respectively. This translates to average of ₦12,500 and ₦25,042 monthly income respectively. Low income adversely affects productivity because it leads to low capital investment. 51.4% of the farmers obtained annual farm credit ranging between ₦100,000 - ₦200,000. This suggests that most of the farmers obtain inadequate farm credit for production. 67.6% of the farmers obtained seedlings between 0-50kg. 40.8% of the farmers obtained fertilizer between 0-50kg. majority of the farmers totaling 76.1% use labour intensive technology, 12.7% use capital intensive technology while 11.3% of the farmers use a combination both labour and capital intensive technology. With respect to land fertility, 52.8% of the respondents indicated that the land is fertile against 47.2% that indicated on the contrary. Food crop is the major food production in the state. This account for 74.6% of the responses.

Table 2
Distribution of respondents according to Farmers' Output Levels

Options	Frequency	Percent(%)	Cumulative (%)
100kg-500kg	12	8.5	8.5
501kg -1000kg	32	22.5	31.0
1001kg-1500kg	64	45.1	76.1
1501kg-2000kg	18	12.7	88.7
2001kg-2500kg	9	6.3	95.1
Above 2500kg	7	4.9	100.0
Total	142	100.0	

Source: Field survey, 2014.

As shown in table 2, the farmers output ranges from 100kg to above 2500kg. However, 45.1% of the respondent generate output ranging from 1001kg to 1500kg. Which gives a monthly average of about 104kg of output for majority of the farmers.

Table 3
Distribution of respondents according to Major Cash Crop Produced by cooperative Farmers in the area

Options	Frequency	Percent(%)	Cumulative (%)
Coconut	15	10.6	10.6
Cocoa	-	-	-
Cola nut	**6**	4.2	14.8
Cotton	-	-	-
Groundnut	2	1.4	16.2
Palm oil	119	83.8	100.0
Rubber	-	-	

Source: Field survey, 2014.

Multiple Responses

As shown in table 3, 83.8% of the respondents indicated that palm oil is the major cash crop produced in the areas. This finding was in line with observation made in the literature that Palm oil was one of the major cash crop that accounted for Nigeria's sources of income and foreign exchange earnings before the discovery of oil at Oloibiri in 1959. Cash crop production for export purposes was also part of the reasons for the introduction of cooperative in Nigeria. According to Uchendu (1998), the original impetus for the introduction cooperative in Nigeria was in agriculture particularly in the marketing of agricultural product to improve the income of cocoa farmers.

Table 4
Distribution of respondents according to Major food Crop Produced by cooperative Farmers in the area

Options	Frequency	Percent(%)	Cumulative (%)
Cassava	101	22.1	22.1
Yam	98	21.4	43.5
Maize	101	22.1	65.6
Millet	-	-	-
Rice	28	6.1	71.8
Beans	-	-	-
Plantain	16	3.5	75.3
Cocoyam	74	16.2	91.5
Pineapple	14	3.1	94.5
Poultry	18	3.9	98.5
Animal Husbandry	7	1.5	100.0

Source: Field survey, 2014.

Multiple responses

Table 4 shows the major food crops produced in the areas as indicated by the respondents. 85.2% of the respondents indicated that cassava, maize and yam are the major food crops produced in the areas, followed by cocoa yam. Of the Major crop production in Nigeria which include: maize, guinea corn, millet, rice, cotton, cassava, yam, potatoes, cocoa, groundnut, rubber, oil palm, amongst other vegetable and tropical fruits. Cassava, yam and maize are the major food crops produced in the Anambra state followed by cocoa yam.

Regression Result

Table 6
Distribution of respondents according to Influence of socioeconomic characteristics of the cooperative farmers on the farmers output.

Model	B	Std. error	t	Sig.
(Constant)	-278.745	115.547	-2.412	.017
Gender	-211.084	62.738	-3.365	.001
Age	102.336	38.434	2.663	.009
Marital Status	57.151	41.672	1.371	.173
Educational Qualification	50.763	12.874	3.943	.000
Farming Experience	22.892	12.861	1.780	.077
Farm Size	23.300	26.493	.880	.381
Household Size	-14.880	21.453	-.694	.489
Income	.000	.000	2.853	.005
Credit Obtained	.000	.000	.867	.388
Seedling Obtain	263.311	46.647	5.645	.000
Fertilizer Obtain	72.113	34.726	2.077	.040
Type of Technology	113.823	68.678	1.657	.100
Fertility of the land	102.355	48.358	2.117	.036
Type of Crop Cultivated	126.995	97.812	1.298	.197

R	.979			
R^2	.959			
Adj. R^2	.955			
F-statistic	214.440			0.000

Source: Field survey, 2014.

Dependent variable: Farmers' Output Levels

Regression result

The precision of the model that evaluate the influence of the socioeconomic characteristics of the cooperative farmers on the farmers output was presented in table 6. The joint effect of the explanatory variable in the model account for 95.9% of the variations in the factors affecting the cooperative farmers output.

Eight out of the fourteen coefficients of the variables included in the model are significant. Twelve of the coefficients have positive relationship with the cooperative farmers output. While two of the coefficients have inverse relationship with cooperative farmers output. The F-statistics of 214.440 which shows the marginal contribution of the coefficients was significant at 0.000 level of significance.

Summary of Findings

I. With respect to agricultural production, the farmers output for majority of the farmers that is about 45.1% of the respondent ranges from 1001kg to 1500kg. Which gives a monthly average of about 104kg of output.
II. Palm oil is the major cash crop produced in the state.
III. Cassava, maize and yam are the major food crops produced in the areas, followed by cocoa yam. Of the Major crop production in Nigeria which include: maize, guinea corn, millet, rice, cotton, cassava, yam, potatoes, cocoa, groundnut, rubber, oil palm, amongst other vegetable and tropical fruits. Cassava, yam and maize are the major food crops produced in the Anambra state followed by cocoa yam.
IV. The joint effect of the explanatory variable in the model account for 95.9% of the variations in the factors affecting the cooperative farmers output. Eight out of the fourteen coefficients of the variables included in the model are significant. Twelve of the coefficients have positive relationship with the cooperative farmers output. While two of the coefficients have inverse relationship with cooperative farmers output. The F-statistics of 214.440 which shows the marginal contribution of the coefficients was significant at 0.000 level of significance.

Conclusion

In conclusion, this study examines factors influencing agricultural production among cooperative farmers in Anambra state, Nigeria. The findings are robust with varying insightful significance. Taking a cursory look at all the variables entered in the model, gender has an inverse relationship and significant relationship with agricultural production which indicates that an increase in more males than female in agricultural production activities will bring about a decrease in farmers output by 211.1kg. age has positive and significant relationship with the farmers output levels. Suggesting that a year increase in the ages of the farmers will bring about an increase in the farmers output by 102.3kg. Marital Status has positive relationship with the farmers output levels. Indicating that as the number of married farmers

increase by one person. Famers output will increase by 57.2kg. Educational qualification has significant relationship and its showed a positive sign indicating that a year increase in educational qualification will bring about an increase in farmers output by 50.8kg. Farming experience shows a positive relationship with the farmers output levels indicating that a year increase in farming experience will bring about an increase in the farmers output by 22.9kg. Farm size shows a positive relationship which implies that an hectare increase in farm size will bring about an increase in the farmers output by 23.3kg. Household size has an inverse relationship thus indicating that as the household size increase by one person, farmers output levels decrease by 14.9kg. Although not properly signed, but it suggests that apart from the household head, other members of the household are not supportive it the agricultural production. They only increase the dependency ration and consequently affect productively of the farmer negatively. Income and credit obtained by the farmers have positive relationship but they have only yielded constant return to scale. Which is unfavourable to the farmers. This can only be explained by low income of the farmers and inadequate credit obtained by the farmers. However, the farmers income is significant. Seedling Obtained, Fertilizer Obtained, Type of Technology employed, Soil Fertility and Crop type have positive relationship with the farmers output. Any increase in any of the variables increases output by 263.3kg, 72.1kg, 113.8kg, 102.4kg and 127.0kg respectively. Seedling Obtained, Fertilizer Obtained and Soil Fertility have significant relationship with the farmers output.

Recommendations

Based on the analysis and findings of this study, the researcher therefore recommends that:

I. The government should initiate and support mechanized farming. This will help improve the productivity and output of the farmers in Anambra state.

II. The government should also encourage the farmers by improving on agricultural Infrastructural Facilities because it has been identified as one of the major challenges faced by the cooperative farmers in improving agricultural production in Anambra state among other.

III. Credit to farmers was identified to be inadequate. Providing adequate credit to the farmers is therefore imperative. This will help improve the farmers output. Increased output leads to increased income and increased capital investments in the agricultural sector.

IV. Capacity building in the agricultural sector should also be engendered by the government among graduates in the state. This will help address the challenge of shortage of Agricultural labour Supply.

References

Abdulrahaman, S. (2013) Expenditure on Agricultural Sector and Food Security in Nigeria. *Arabian Journal of Business and Management Review (Nigerian Chapter), 1(3),* 41-53.

Anyanwuocha, R.A.I (2006). *Fundaments of Economics Onitsha-Nigeria,* African first Publishers Ltd.

Bakare A. S. (2013), An econometric analysis of sustainable agriculture and rural development in Nigeria: A Vector Autoregressive Approach (VAR). *Journal of Agricultural Economics and Development*, 2(5), 184-193.

Bakare, A. S. (2013). An econometric analysis of sustainable agriculture and rural development in Nigeria: A Vector Autoregressive Approach (VAR). *Journal of Agricultural Economics and Development,* 2(5),184-193.

Bao, T. (2008). Cobb-Douglas Production Function. Cobb-Douglas. http://en.wikipedia.org/wiki/Cobb douglas.

Chukwuemaka, E. E. O. (2002). *Research Method and Thesis Writing: A Multi-Disciplinary Approach*. Enugu, HRV Publishers.

Cohen, A.J. and Harcourt, G.C. (2003) "Retrospectives: Whatever Happened to the Cambridge Capital Theory Controversies?" *Journal of Economic Perspectives*, 17(1), 199-214.

Daly, H (1997). "Forum on Georgescu-Roegen versus Solow/Stiglitz". *Ecological Economics,* 22 (3), 261–306.

Enoma A. (2010), Agricultural Credit and Economic Growth in Nigeria: An Empirical Analysis. *Business and Economics Journal,* 14, 1-7.

Gujarati, D. N., & Porter, D. C. (2009). *Basic Econometrics*. New York, America. McGraw-Hill Education.

Ibe. A.C. (2002). *Successful Management of Cooperatives Awka.* Sell York International Company.

Ijere, M.O. and Mbanabor, J. (2000), *Agribusiness Development and Nigeria Agriculture.* In Nwosu, AC et al (ed) Agricultural Transformation in Nigeria. Owerri. Novelty Industrial Enterprises Limited.

Michael, M. C., Des-Oparaku, L. & Oparaku, D.C (2012). Basic Tools in Research Method and Project Writing. Hornicorn Int'l.

Mundi Index (2012) Country facts and Figures. Retrieved on 15th Janiuary, 2013 from http://www.indexmundi.com/facts/indicators/nigeria. Time 9:45 Nigeria. *International Journal of Social Science Tomorrow,* 2 (1), 1-6.

Nnadozie, B and Ibe, E. (2000). *Effect of Fertilizer Treatment and Harvest stage on seed Yield Protein and Fat Content of Soybean*. In Nwosu, AC et al (ed) Agricultural Transformation in Nigeria. Owerri. Novelty Industrial Enterprises Limited.

Nwankwo, F.O. (2008). *Impact of Informal Credit on Agricultural Production in Awka South L.G.A Anambra State.* Nigeria. *Journal of Cooperative Economics and Management,* 4 (1),

Obinyan, E. (2000) *The Private Sector and Agricultural Transportation.* Nwosu, A.C. et at Agricultural Transformation in Nigeria. Owerri: Noelty Industrial Enterprises Ltd.

Olayide S.O. & E.O. Heady (1982): *Introduction to Agricultural production Economics.* Ibadan University Press, University of Ibadan, Nigeria.

Olubanjo O.O. & Oyebanjo O.(2005), Determinants of profitability in rain-fed paddy rice production in Ikenne Agricultural Zone, Ogun State, Nigeria. *African Crop Science Conference Proceedings,* 7, 901-903.

Onugu, C. U (2008). Advancing Women Participation in Agricultural Development Through Cooperative Societies: The Case of Women in Agriculture Programme in Anambra State, Nigeria. *Nigerian, Journal of Cooperative Economics and Management*. 4 (1), 66-77.

Uchendu, S. O. (1998). *Fundamentals of Cooperative Business Enterprise. Enugu-Nigeria:* Re-joint Communication Ltd.

Uzoagulu, A. E (1998). Practical *Guide to Writing Research Project Reports in Tertiary Institutions.* Enugu, John Jecob's Classic Publishers.