

PERCEPTION AND PERFORMANCE OF POULTRY FARMER COMMODITY INTEREST GROUPS (CIGS) ON THE COMMERCIAL AGRICULTURAL DEVELOPMENT PROJECT (CADP) IN ENUGU STATE, NIGERIA

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ABSTRACT

The study was conducted to assess the perception and performance of poultry farmer commodity interest groups on the Commercial Agricultural Development Project (CADP) in Enugu State, Nigeria. The specific objectives were to identify the factors that affected the perception of poultry farmer commodity interest groups (CIGs) on the CADP in the state and compare the performance of poultry farmer CIGs in terms of gross margin and after CADP. Multistage random sampling technique was employed in the selection of 150 poultry CIGs. The result of the Probit analysis showed that the coefficients for age, level of education, income of the farmers and access to information by farmers were all positive correlated, while that for political connection in the state was negatively correlated to the perception of the poultry farmers CIGs on CADP. The total variable cost (TVC) of CIGs with financial grant increased from ₦3,493,110 to ₦5,570,300. With financial grant, total revenue more than doubled; without financial grant it was ₦10,788,448, and with financial grant, ₦22,785,219. The Gross Margin also had a significant increase from ₦7,295,338 without financial grant, to ₦17,214,919 With financial grant. The following recommendations were proffered: CADP should increase matching-grant on input, especially on feed which constitute the major cost, CADP's grants should be awarded to qualified farmers within the shortest possible time and CIG groups interested in participation in the project should be given relevant training.

KEYWORD: Poultry Farmers, Commercial Agriculture, Interest Groups, Financial Grant, Gross Margin

INTRODUCTION

There has been a history of under performance of agricultural projects and programmes in Nigeria. National efforts to boost food production through programmes such as Accelerated National Food Programmes (ANFP) did not make a substantial positive impact on the nation's agricultural outputs (NBS/CADP, 2010). In recognition of the importance of the agricultural sector in Nigeria, the government has initiated and endorsed other national and international programmes, projects, and policies aimed at rapidly growing the sector and reducing poverty. These include; the National Economic Empowerment and Development Strategies (NEEDS I and NEEDS II), the implementation of Comprehensive Africa Agriculture Development Program (CAADP), the Seven-Point Agenda, the National Food Security Program (NFSP), the Agricultural Transformation Agenda (ATA) as well as Commercial Agriculture Development Project (CADP) (NBS/CADP, 2010). It is recognized that agricultural commercialization and investment are the key strategies for promoting accelerated modernization, sustainable growth and development hence, poverty reduction in the sector (Mayong, Ikpi, Olayemi, Yusuf, Omonona,

Okoruwa, & Idachaba, 2005). This justifies the introduction of projects such as commercial Agricultural Development project (CADP).

The Commercial Agriculture Development Project (CADP) is one of the World Bank investment programs in Nigeria aimed at improving the non-oil growth. The project is expected to have 50,000 direct beneficiaries (i.e. 10,000 beneficiaries per state) over a period of five years (CADP, 2014). The project development objective is to strengthen agricultural production systems and facilitate access to markets for targeted value chains among small and medium scale commercial farmers in the five participating states of Nigeria, namely: Cross River, Enugu, Kano, Kaduna and Lagos States. The value chains considered are: oil palm, cocoa, fruit trees, poultry, aquaculture and dairy with maize and rice as staples (NBS/CADP, 2010). The Project was implemented over a five-year period, starting from April 16, 2009. The Project was to be concluded in December 31, 2014 but, it was extended for two years, thus terminated in 2016 (CADP, 2015).

CADP supported three value chains per state,

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distributed thus: Cross River (Oil Palm, Cocoa, and Rice), Enugu (Fruit Trees, Poultry, and Maize), Kaduna (Fruits Trees, Dairy, and Maize), Kano (Rice, Dairy, and Maize) and Lagos (Poultry, Aquaculture, and Rice). The value chains chosen by each of the participating states were based on the respective comparative advantage and their contribution to agricultural growth (NBS/CADP, 2010). The project was intended to help improve access of participating small and medium scale commercial farmers to technology, infrastructure, finance, and output markets (CADP, 2014). Evidence that underpins this project suggests that the project is timely, and that interest in commercial agriculture in Nigeria as an area for private investment is growing (Mayong, et al. 2005).

The CADP, as one of her institutional and implementation arrangements requires empowerment of farmers to enable them to establish their Commodity Interest Groups (CIGs) and Commercial Agriculture Development Associations (CADAs). These associations serve as vehicles to foster the sustainable development of commercial agriculture in the participating states (CADP, 2015). CADP finances agriculture through the use of 'matching grants: A one-time capital grant to finance activities aimed at improving the adoption of existing agricultural technologies by participating commercial farmers and to finance some of the activities to support staple crop production systems (NBS/CADP, 2010). The matching grant is open to all qualified/eligible CIGs and/or members of CADAs. The entities should be financially sustainable with capacity to initiate and implement acceptable/viable proposals; CIGs must belong to CADA and must show evidence of funds (including own funds or other sources) to match the grant.

Poultry production was selected as one of the value chains for Enugu state, based on an evaluation of market equivalents during appraisal, the value chains selected are expected to have high demand and markets have the capacities to absorb the additional production (Ettah and Okorie, 2018). The gap in the supply and demand of meat in Nigeria is still very wide. Nigeria is trailing behind with the current low animal protein intake per head per day of 10g compared to FAO recommended 36g (Federal Ministry of Agriculture and Water Resources, 2015). In the aspect of poultry production, it is recorded that the industry contributes to about 25% of the country's agricultural gross domestic product (GDP). Nigeria presently produces about 300,000 tons of poultry meat per annum and 650 thousand tons of eggs (United States Department of Agriculture (USDA, 2014). A parallel record from Poultry Association of Nigeria (PAN) indicates that Nigeria produces about 1.25 million tons of egg per year. Despite this volume, Nigeria is far from meeting her domestic demand for poultry products (NBS/CADP, 2010). Moreover, Brancket and Gueye (2000) observed that poultry products from most developing countries, especially in Africa are still expensive and the marketing system is generally informal and poorly developed. Considering these facts, CADP preferred poultry as one of the three value chains for increased output and commercialization in Enugu State. This research will benefit small and medium commercial poultry farmers for whose welfare the project was designed in the first

place, this is because the lack of adequate finance and other inputs forces farmers to use minimal levels of inputs, and they are able to produce agricultural products in only small quantities, which can often barely meet their families' basic needs. The study is therefore designed to realize the following objectives:

- i. Identify the factors that affect the perception of poultry farmer CIGs on the CADP in the state;
- ii. Compare the performance of poultry farmer CIGs in terms of gross margin before and after CADP.

The following null hypothesis guided this study:

H_0 : There is no significant difference in the profit of poultry farmer CIGs before and after receiving CADP benefits in Enugu State.

While the alternative following hypothesis is stated as:

H_A : There is significant difference in the profit of poultry farmer CIGs before and after receiving CADP benefits in Enugu State.

Research Methodology

The Study Area

The study was conducted in Enugu state Nigeria. Enugu state is located between latitudes $5^{\circ}56'N$ and $7^{\circ}06'N$ and longitudes $6^{\circ}53'E$ and $7^{\circ}55'E$ and a total land area of 7,161 km² (Enugu State Agricultural Development Programme (ENADEP, 2015). Enugu state was one of the pioneer states chosen to participate in the 'Commercial Agricultural Development project. The state derives its name from the capital city, Enugu (top of the hill) which is regarded as the oldest urban area in Igbo speaking area of Southeast Nigeria (Enugu State Wikipedia). The State has a population of over 3.3 million people, 1596042 males, and 1671795 females (National Bureau of Statistics (NBS, 2012).

Enugu State shares borders with Abia State to the south, Ebonyi State to the east, Benue State to the northeast, Kogi State to the northwest and Anambra State to the west (ENADEP, 2015). The mean temperature in Enugu State in the hottest month of February is about 87.16 °F (30.64 °C), while the lowest temperatures occur in the month of November, reaching 60.54 °F (15.86 °C). The State is divided into six Agricultural zones as follows: Enugu, Agwu, Nsukka, Udi, Enugu Ezike and Agbani zones (ENADEP, 2015).

The Sampling Procedure

Multistage random sampling technique was employed in selecting the respondents. First, three agricultural zones were selected based on the abundance of poultry CIGs. Two Local Government Areas (LGAs) were selected from each of the three agricultural zones, still based on the abundance of poultry CIGs, to make a total of LGAs for the study. Poultry farmer CIGs were not evenly distributed in these LGAs, so proportional random sampling was used in the ratio of 4:3:3:2:2:1, hence Enugu East L.G.A had 40 respondents, Enugu North L.G.A, 30 respondents, Enugu south, 30 respondents, Nkanu East L.G.A, 20 respondents, Awgu L.G.A, 20 respondents and Oji-river L.G.A, 10 respondents, to give a total of 150 poultry CIGs. This was done because some LGAs had more CIGs than others, and to ensure that a representative number from the selected LGAs was used.

Data Collection and Data Analysis

The data for this study were collected using structured questionnaires, which was administered to the head of each poultry farmer CIG or his/her representatives. Objectives i and ii were realized using probit regression and gross margin analyses, respectively.

Validity of the Instrument

The instrument for data collection in this study was validated by passing it through experts, who gave their independent opinions on the adequacy and

$Pr(Y = 1/x) = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_6X_6 + e$
Where Y = farmers perception = 1 if positive, 0 if otherwise.

B_1 - B_6 = Coefficients

e =stochastic error

X_1 = Age of the farmer (years)

X_2 = Level of Education (No of years spent in school)

X_3 = Gender (Male, Female)

X_4 = Income of farmers (Naira)

X_5 = Farmers access to information (1 for yes, 0 otherwise)

X_6 = Political connection (1 for yes, 0 otherwise)

Gross Margin Analysis

Gross margin analysis was used to compare the performance of poultry farmer CIGs before and after benefiting from CADP matching grant. This was used to achieve objective (ii). The model is specified as thus;
 $GM = TR - TVC$; Where; GM =gross margin; TR =total revenue; and TVC =total variable cost.

Student t-test

t-test was used to compare the mean gross margin of poultry farmer CIGs before and after benefiting from CADP matching grant. This was used to test the hypothesis of this study.

relevance of the research instrument to ensure that it possessed both face and content validity.

Model specification

Probit Model

Probit model was used to analyse the factors that affect perception of poultry farmer CIGs on CADP (objective i). The dependent variable was a dummy variable assigned 1 if the farmer had a positive perception or 0 if otherwise, while the independent variables were the factors hypothesized to affect perceptions of poultry farmers CIGs on the CADP.

The model is specified in its explicit form thus:

Result and Discussion

Factors affecting the perception of Poultry farmer CIGs on CADP in the state.

From the result of the analysis in table 1, the coefficient of determination (pseudo R^2) was (0.6103), thus implying that 61% of the total variation in Y (the perception of poultry farmers CIGs on CADP), was explained by the combined influence of the independent variables in the model.

Table. 1 Factors affecting the perception of Poultry farmer CIGs on CADP in the state.

Variable:	Coef.	Std. Err.	Z	p> z
Constant.	1.592038	2.51621	0.63	0.528
Age	312921.5	96218.02	3.25***	0.002
Education	84934.26	39977.34	2.12**	0.036
Gender	1.467359	2.525551	0.58	0.56
Income	.2235359	.0528527	4.23***	0.000
Access to info.	.0164051	.0106992	1.53**	0.128
Political conn.	.0855645	.0219596	-3.90***	0.000
LR chi² = 6.71	pseudo R²= 0.6103	prob> ch² = 0000	No of observations. =150	

. Source: field survey, 2017.

***, ** indicate significance at 1% and 5% respectively

The coefficient of age of the farmers was positively and statistically significant at 1%. This indicated a direct relationship between the age of the farmers and the farmers' perception of CADP. This implies that the older the farmer grows the more confident he/she is in government projects. Hence, increase in the age of the farmers leads to the farmer's positive perception of the performance of CADP in the state. The coefficient for the level of education of the farmers was also positive, and significant at 5%. This indicated that a higher level of education is positively

related to perception of the CIG farmers of CADP. Esiobu et al.(2014) reported that exposure to high level of education is an added advantage in terms of achieving huge income, efficient marketing and running sustainable agribusiness enterprise. However, the coefficient for Gender was not significant; this shows that gender had no role in the farmer's perception of CADP in the area.

Income of farmers was also positively significant at 1% indicating that the farmers' positive perception of CADP increased resulted to income increase. Aboki et al. (2013) reported that though the technological development of many production factors lags behind

international standards, poultry production is already highly profitable for many farmers in Nigeria as a result of CADP. Hence CADP (2014) concluded that CADP project is highly effective in terms of enhancing participating farmers output in the area. Farmers' access to information about CADP grants was also positively significant at 1%, implying that the more farmers have access to information about the grant, the more their perception about the grant increases. This is expected as information is a vital aspect of communication of innovations in agriculture; in line with the assertion of Aboki et al. (2014).

The coefficient for political connection in order to receive grants was negatively related to perception and was significant at 1%. In other words, the farmer groups were not favorably disposed to the issue of political connection as a factor in securing the financial grant. This agrees with the report of Afolabi et al. (2014), that political bias and affiliation was not a serious challenge of the World Bank assisted projects.

Performance of poultry farmer CIGs in terms of profit with and without CADP matching-grant.

The result of the gross margin analysis in table 2 showed that a greater percentage of the cost of poultry production was explained by the cost of feed. After the farmers received financial grant, they had a slightly lower percentage (79.23%) in the cost of feeds though they had a larger average farm size of 3581.818 birds, compared to period before farmers received the financial grant. The percentage of feed cost was (84%) and average farm size was 1923.864 birds per farm. This reduction in the percentage of feed cost to total cost could be explained by the fact that some of the farmers received input in the form of poultry feed as financial

grant. This was in agreement with IFAD (2012) that financial grant can be either in cash or in kind, or a combination of both.

The cost of day old chicks was one of the very significant costs in this analysis. After the financial grant the percentage cost increased to 13.45%, and before the financial grant, the percentage cost was 10.31% of the total variable cost. This could be explained by the seasonal variations in prices of day-old chicks complained by some of the heads of poultry CIGs and also, the increased farm capacity. Cost of medication was reasonably significant for the farmers before the financial grant (4.48%), but there was some percentage reduction in the cost of medication (4.24%) after the farmers received the financial grant. This percentage reduction could be explained by the fact that farmers may have received poultry medication as financial grant, moreover, the economies of scale reduces cost, as scale of production increased.

The cost of water was not a major cost among poultry farmer CIGs in the area. The percentage costs of water were 0.63% and 0.80% before and after the financial grant, respectively. This was explained by the fact that most of the farms own water wells within the farms. There was a significant increase in the total variable cost (TVC) from ₦3, 493,110 before the farmers received the financial grant to ₦5, 570,300 after the financial grant. This is in line with the findings of Ettah and Angba (2016) that TVC often constitute a greater percentage of cost of farm production. There was also a corresponding increase in the total revenue (TR) of the farmers from ₦10, 778,448 to ₦22, 785,219. This brought about a significant increase in the gross-margin to ₦17, 214,919, after the financial grant, compared to ₦7,295,338, gross margin before the financial grant.

Table 2; Gross Margin Analysis of CADP Poultry farmer CIGs in Enugu State with and with Financial-grant

Variable (₦)	mean farm size percentage(%) Before(mg)*	mean (₦) Before (mg)	percentage (%) After (mg)	mean farm size After (mg)	mean cost with(mg)
Farm size	1923.864			3581.818	
Transport cost (farm inputs)		11833.33	0.34		122125
	2.19				
Cost of DOC		360193.1863	10.31		749333.33
Cost of feed		2940000	84.17		4413545.45
Cost of medication		156500	4.48		236458.3
Cost of litter		2611.11	0.07		4145.83
	0.07				
Cost of water		21972.22	0.63		44691.67
	0.80				
A. Mean Total variable cost		3,493,110	100		5,570,300
	100				
B. Mean Total revenue		10,788,447.9			22,785,218.59
. Gross margin (B-A)		7,295,338.0537			17,214,919.007

Source; field survey 2017

N =132mg* (matching-grant)

The result of the independent t-test showed that the t-value (2.017) was greater than the tabulated t-value (1.96) at infinite degree of freedom, hence null hypothesis was rejected, instead the alternative one

which stated that there is significant difference in the profit of poultry farmer CIGs with and without financial grant was accepted at 5% level of significance.

Table 3 Test of Hypothesis

Variable	Mean	Std. Deviation	t	N
Gross margin without grant	7295338.0537	361549.0537	2.017	132
Gross margin with grant	17214919.007	7439463.7102	2.017	132

Conclusion and Policy Recommendations

The study was conducted to assess perception and performance of poultry farmer commodity interest groups on the Commercial Agricultural Development Project in Enugu State, Nigeria. The specific objectives were to identify the factors that affect the perception of poultry farmer CIGs on the CADP in the state and compare the performance of poultry farmer CIGs in terms of gross margin and after CADP intervention. Multistage random sampling technique was employed in the selection of 150 poultry CIGS.

Result of analysis showed that the perception of poultry farmers CIGs was explained by the combined influence of the independent variables in the model. The coefficients for age, level of education, income of the farmers and access to information by farmers were all positively correlated, while that for Political connection in the state was negatively correlated to the perception of the poultry farmers CIGs on CADP. The Performance of poultry farmer CIGs in terms of profit with and without CADP matching-grant showed that total revenue more than doubled with financial grant. The Gross Margin also increased significantly indicating that profit increased with the financial grant. The following recommendations were proffered: CADP should increase financial grant on input, especially on feed which constitute the major cost, CADP's grants should be awarded to qualified farmers within the shortest possible time and CIG groups interested in participation in the project should be given relevant training.

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