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Socio-Economic Determinants of Commercialization Among Smallholder Farmers in Abia State, Nigeria

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SOCIO-ECONOMIC DETERMINANTS OF COMMERCIALIZATION AMONG SMALL HOLDER FARMERS IN ABIA STATE, NIGERIA.

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ABSTRACT

The general objective of the study is to analyse the socio- economic determinants of commercialization among small holder farmers in Abia state, Nigeria. The specific objectives of the study are to: examine the level of commercialization among the farmers; estimate the determinants of commercialization among the small holder farmers in the study area; and make recommendations based on the findings. A multi-stage sampling technique was adopted for this study, leading to the selection of one hundred and eighty (180) farmers / respondents. Primary source of data was used for the study. This was actualized with questionnaire administered to the already selected respondents. Household commercialization index (HCI) and multiple regression were employed in analyzing the data. The result of the commercialization index showed that none of the crops studied attained a ratio above 30 percent. Cassava had the highest ratio of 29.58 percent, while water yam was the least with 13.55 percent. The coefficient of household size, income, farming experience, farm size, distance to market, membership of society and access to credits, were all significant at various probability levels and with different signs in influencing commercialization in the study area. It is therefore recommended that markets should be created where none exist. Support to facilities in storage, business management, capacity building, packing and processing should be provided. Furthermore, interlocked transaction institutional arrangement model is recommended.

Keywords: Commercialization, commercialization index, determinants, socio-economic

INTRODUCTION

Background Information

Agriculture has continued to play important role in the Nigerian economy. It is the second largest sector after oil despite falling from 48 per cent in terms of GDP in 1970 to 20.6 per cent in 1980 and was only 23.3 per cent of GDP in 2005. However, agriculture has continued to make contribution to employment, food production, foreign exchange earnings and industrial inputs. It is estimated that 60 per cent of Nigerians are employed in agriculture and are predominantly smallholders (CBN, 2002; Daramola, 2007).

This means that a large majority of the farmers operate at the subsistence, smallholder level, with intensive agriculture being uncommon. A characteristic feature of the agricultural production system in Nigeria is that a disproportionately large fraction of the agricultural output is in the hands of these smallholder farmers whose average holding is about 1.0-3.0 hectares (CTA, 1999). Also, there is very limited access to modern improved technologies and their general circumstance does not always merit tangible investments in capital, inputs and labour(Yemisi *et. al*, 2009).

Agricultural commercialization refers to the process of increasing the proportion of agricultural production that is sold by farmers (Pradhan *et al*., 2010). Commercialization of agriculture as a characteristic of agricultural change is more than whether or not a cash crop is present to a certain extent in a production system. It can take many different forms by either occurring on the output side of production with increased marketed surplus or occur on the input side with increased use of purchased inputs. Commercialization is the outcome of a simultaneous decision-making behavior of farm households in production and marketing (von Braun *et al*., 1994).

It is recognized that agricultural commercialization and investment are the key strategies for promoting accelerated modernization, sustainable growth and development and, hence, poverty reduction in the sector. However, to attract investment into agriculture, it is imperative that those constraints inhibiting the performance of the sector are first identified with a view to unlocking them and creating a conducive investment climate in the sector. The development challenges of Nigeria's agriculture are, therefore, those of properly identifying and classifying the growth and development constraints of the sector, unlocking them, and then evolving appropriate strategies for promoting accelerated commercialization and investment in the sector such that, in the final analysis, agriculture will become one of the most important growth points in the economy.

There are still gaps in the literature particularly in comprehensively conceptualizing the level of commercialization at a household level and in modelling and estimating the determinants and impacts of commercialization. The effect of different social, cultural, institutional, economic and human factors influencing the level of household commercialization warrants better attention (Jaleta *et. al*, 2009). Furthermore, the use of panel data in commercialization studies has been limited, with most existing studies based on cross-sectional data sets. Use of panel data may better reveal the dynamics of commercialization. (Jaleta *et. al*, 2009).

Considering the importance of agricultural commercialization in agricultural and rural development policy and its potentially strong and favourable impacts on agricultural productivity, rural poverty reduction, and food and nutrition security, it is important to understand the factors affecting the extent of commercialization in Nigeria.

Hence, this study to analyse the socio- economic determinants of commercialization among small holder farmers in Abia state, Nigeria. The specific objectives of the study are to: examine the level of commercialization among the farmers; estimate the determinants of commercialization among the small holder farmers in the study area; and make recommendations based on the findings.

Methodology

Study Area

The study area is Abia State. Abia State is one of the 36 States in Nigeria. The State lies between Longitude 04^0 45' and 06^0 07' North and Latitude 07^0 00' and 08^0 10' East. It is situated in the south-east geo-political zone of Nigeria and is bounded by Imo State on the West, Ebonyi and Enugu States on the North, Cross Rivers and Akwa Ibom States on the East and Rivers State on the South. The State has a population density of 580 persons per square kilometer and a population of 2,833,999 persons (NPC, 2007). It has three senatorial zones namely Abia North, Abia South and Abia Central with seventeen Local Government Area. Agriculturally, the State is divided into three agricultural zones also. They are Umuahia, Ohafia and Aba Zones.

The climate of the State is a tropical one and usually humid all year round; with two seasons. The rainy seasons starts from March to October while the dry season starts from November and ends February/March. The major occupation of the people is farming and the major crops grown are Maize, yam, cassava, rice, vegetable, etc. Livestock kept include, goat, sheep. Pigs, etc. Plantain, palm oil, cocoa and rubber are some of the cash crops produced by the people.

Selection of Respondents

Multi-stage sampling technique was adopted for this study. First, two local government areas were selected from each of the three agricultural zones. From these local government areas, three communities were chosen. Finally, a random selection of twenty farmers were selected each from the three communities, bringing a total of one hundred and eighty (180) farmers / respondents.

Method of Data Collection

Primary source of data was used for the study. This was actualized with questionnaire administered to the already selected respondents.

Method of Date Analysis

Objective (i) employed household commercialization index (HCI), while objective (ii) was realized using multiple regression.

Model Specification

$$HCI_i = \frac{\text{Gross value of crop sales hh } i \text{ year } j}{\text{Gross value of all crop production hh } i \text{ year } j} \times 100$$

The household commercialization index (HCI) to determine household specific level of commercialization (Govereh *et al*., 1999; Strasberg *et al*., 1999). The index measures the ratio of the gross value of crop sales by household *i* in year *j* to the gross value of all crops produced by the same household *i* in the same year *j* expressed as a percentage. The index measures the extent to which household crop production is oriented toward the market. A value of zero would signify a totally subsistence oriented household and the closer the index is to 100, the higher the degree of commercialization. The advantage of this approach is that commercialization is treated as a continuum thereby avoiding crude distinction between "commercialized" and "non-commercialized" households. The effectively bring subsistence food production to the centre of discussions about commercialization.

The implicit form of the regression is stated as follows:

$Y = f\,(X_I, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, \varepsilon)$

Where Y= Commercialization index

X_1= Age

X_2= Gender

X_3= Educational attainment

X_4= Income

X_5= Farming experience

X_6= Farm size

X_7=Distance to market

X_8= Membership of society

X_9= Access to credit

X_{10}= Output (kg)

ε = error term

The four functional forms of the model, linear, semi-log, double log and exponential were tried and the one that gave the best fit based on econometric considerations were chosen.

Results and Discussions

Household Commercialization of the Selected Crops

In measuring household-specific level of commercialization, household commercialization index (HCI), which is a ratio of the gross value of all crop sales per household per year to the gross value of all crop production was used. This index has been used in the past by Govereh *et al*. (1999) and Strasberg *et al*. (1999).

The result showed that among all the crops studied none attained a ratio above 30 percent. Cassava had the highest ratio of 29.58 percent. This was followed by maize having a ratio of 24.02 percent. Sweet potatoes came third with the ratio of 19.06 percent, while cocoyam and water yam was fourth and fifth respectively with 13.79 percent and 13.55 percent. This implies that there is a low level of orientation of these crops towards commercialization in the study area. According to Govereh *et al*. (1999) and Strasberg *et al*. (1999), the closer the index is to 100, the higher the degree of commercialization.

Socio-economic determinants of commercialization among small holder farmers in Abia State, Nigeria.

From the four functional forms of the regression result, the exponential form was chosen as the lead equation based on some econometric considerations, such as number of significant variables, F- ratio and the R^2 value. The coefficient of household size, income, farming experience, farm size, distance to market, membership of society and access to credits, were all significant at various probability levels and with different signs in influencing commercialization in the study area. Household size was significant at 99 percent probability level but with a negative sign. This means that as the number of persons in the household increases, the probability of farmers' orientation towards commercialization in the study area reduces. It is argued that large household sizes detracts households from market orientation due to its effect on increasing household domestic consumption needs. Given that these farmers are already subsistence in nature due to their small holding, this result is expected. This result is in line with Enete and Igbokwe (2009) and Gebremedhin and Jaleta (2010).

The coefficient of income was also significant at 5 percent level with a positive sign. By implication, increasing income of the farm households will lead to an increase in the probability of commercialization among the farmers. Household income both farm and non-farm has the potentials of reducing dependency on the agricultural output and thus commercialization. Furthermore, Agwu and Ibeabuchi (2011) had opined that income leads to increase in volume or quantity traded and thus expansion of enterprise.

Farming experience was also significant at one percent probability level with a positive sign. The result implies that as the number of years of the farmers' increases, the probability of commercialization also increases. Experience has been known to lead to perfection in activities. This resultantly manifests in increased knowledge of techniques or otherwise involved in any enterprise. This result is consistent with Agwu (2009) and (Agwu and Ibeabuchi, 2011).

The coefficient of farm size was significant at one percent risk level with a positive sign. This means as the farm size increases, the probability of commercialization increases. Martey *et al* (2012), had opined that farm size influences the level of agricultural commercialization in a study in Ghana. This study corroborates their result.

Distance to market was seen to be significant at one percent probability level but with a negative sign. By implication, it means that the greater the distance apart to the market,

the less likely the farmer's orientation towards commercialization. Households further away from market places have lower market participation and thus market orientation. This result is in line with previous studies like (Barrett 2007; Rios *et al*., 2008; Omiti *et al*., 2009).

The coefficient of farmer's membership to associations was positive and significantly related to market orientation and commercialization at one percent probability level. This means that farmer's membership to associations increases commercialization. Membership of associations and groups possess the potentials of increased access to information important to production and marketing decisions. Given this, the result is plausible. It is also in line with previous findings of (Olwande, 2010).

Accessibility to credits by the farmers was significant and positive at 10 percent level, thus positively influencing farmer's orientation towards commercialization. Lack of credits has been noted as one of the major constraints militating against agricultural productivity among farmers, particularly small holder farmers. Credits are expected to enhance farmer skills and knowledge, link farmers with modern technology through the purchase of inputs (planting materials, fertilizer and crop protection), pay wages, invest in machinery, or to smooth consumption as well as markets, ease liquidity and input supply constraints, thus are expected to increase agricultural productivity, induce market orientation and participation and thus greater commercialization (Lerman, 2004; Martey *et al*, 2012).

The R^2 value is 0.714, implying that 71.4 percent of the variability has being explained in the model. This also goes to show that the model is a good fit.

Conclusion and Recommendations

The study has revealed some socio – economic factors affecting commercialization in Abia State, Nigeria. The study have also shown that the commercialization index was below 30 percent, ranging between 13.55 and 29.58 percent. It is therefore recommended that markets should be created where non exist. Support to facilities in storage, business management capacity building, packing and processing should be provided. Furthermore, interlocked transaction institutional arrangement model is recommended. This is an institutional arrangement which is meant to reduce transaction costs through tying agricultural credit and input supply to the delivery of product at harvest (Govereh *et al*, 1999). In other words, interlocked transactions tie input transactions with output marketing. Such an arrangement has worked in countries like Kenya amongst others (Jayne *et al.* 2004).

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Table 1: Distribution of the extent of commercialization of crops in the study area.

Crops	Gross value of crop sales (₦)	Gross value of all crop sales (₦)	Percentage ratio
Cassava	54,000.00	182,000.00	29.58
Maize	43,850.00	182,000.00	24.02
Sweet potatoes	34,800.00	182,000.00	19.06
Cocoyam	25,170.00	182,000.00	13.79
Water yam	24,742.00	182,000.00	13.55

Source: Computations from field survey, 2012.

Table 2: Estimates of the socio-economic determinants of commercialization in the study area.

Variables	Linear	Semi-Log	Double Log	Exponential +
Constant	28793.849 (2.235)**	-80310.472 (-0.113)	9.130 (2.749)***	10.062 (9.122)***
Age	-2125.915 (-0.513)	-64108.609 (-0.394)	0.068 (0.089)	-0.005 (-0.250)
Household size	184458.97 (2.553)***	148229.06 (1.975)*	0.812 (2.317)**	-1.162 (-3.086)***
Educational Attainment	9141.056 (6.389)***	122180.31 (1.133)	0.485 (0.963)	0.014 (0.293)
Income	20179.42 (1.932)*	26854.40 (0.582)	0.644 (2.995)***	0.136 (2.475)**
Farming Experience	7517.483 (1.547)	94277.701 (3.331)***	0.810 (3.584)***	0.911 (7.296)***
Farm size	-0.024 (-0.526)	-4282.615 (-0.192)	-0.058 (-0.553)	8.421 (3.623)***
Distance to market	-0.086 (-1.034)	25444.578 (0.981)	0.093 (0.768)	-8.656 (-3.717)***
Membership of society	-0.348 (-0.312	-8.169 (-2.167)*	-9.312 (-4.832)***	2.412 (2.844)***
Access to credit	9928.057 (0.664)	-434701.2 (-5.178)***	0.427 (1.090)	0.155 (2.003)*
Quantity of output	(-0.899) (801.360)	(-0.427) (3849.437)	(-0.384) (0.037)	(-0.017) (0.013)
R^2	0.678	0.516	0.674	0.714

Note: ***, **,* significant at 1, 5, and 10 percent levels of probability
Source: Computations from field survey, 2012.