Socio-Economic Variables and Cocoa Production in Cross River State, Nigeria

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ABSTRACT The extent to which a farmer is efficient in his work can to a large extent be determined by the demographic variables. Therefore, this study evaluates the effects of farmers' socio-economic variables on cocoa production. The study was carried out in Cross Rivers state of Nigeria and the information was collected from the respondents with the aid of structured questionnaire and the information sought for include demographic variables, farm size as well as cocoa output. Descriptive statistics as well as regression analysis were used to analyze the data collected Result showed that youths of the age bracket 20-30 years has the highest proportion (36%) of the respondents while majority of the respondents (80%) were formally educated. However, educational level as well as farm size significantly affected the level of cocoa production in the study area (p<0.05 and p<0.01 respectively). Based on the findings, it was recommended that farmers should be encouraged to improve their level of education and that government should assist the farmers with soft loans so as to enable them expand their farms. It was also suggested that government should vigorously enforce land use decree in order to remove any obstacles to an increase in farm size.

INTRODUCTION

Cocoa which belongs to the family *Sterulia-caea* and genus *Theobroma* was discovered in 18th century at the Amazon basin and later spread to other tropical areas of South and Central America, and West Africa (Opeke 1987). Since the end of the first world war, West Africa has been the highest producer of cocoa. The crop was eventually introduced into Nigeria in 1887 (Ayorinde 1966). Nigeria as a developing country was rated the second largest world producer of cocoa in the 1960s (Adegbola and Abe 1983), and, for a long time, the crop has been generating substantial foreign exchange earnings for the country. However, the production of this important cash crop for export has suffered a reduction in the recent years in the country owing to a number of factors. Villalobos (1989) identified some of these factors as: low yield, inconsistent production patterns, disease incidence, pest attack and use of simple farm tools. In addition, Oduwole (2004) identified ageing cocoa farms as one of the factors responsible for the decline in cocoa production in south western Nigeria. He observed that many farms were over 40 years old and such farms constitute as much as 60% of the cocoa farms in Nigeria. However, in a study conducted by Daramola et al. (2003), it was found that most cocoa farms in Ondo and Osun states are very old with low productivity while farms in Cross River state are relatively younger and mostly in productive phase. Apart from these, socio-economic variables of farmers have been found to have substantial impact on production. According to Nelson and Phelps (1966), education is a measure of human capital and it reflects the ability to implement technology. This was however corroborated by Feder et al. (1984) who identified education and experience as human capital and they increase the value of human resources. Hence, education is expected to increase technology adoption and output of the farmers. In this study, the socio-economic characteristics of the farmers were used, in assessing cocoa farmers' production in the study area.

However, this study was undertaken to evaluate the effects of socio-economic variables of cocoa farmers on cocoa production.

METHODOLOGY

The study was carried out in Cross Rivers State of Nigeria. Cross River State is known as the second largest cocoa producer in Nigeria (MANR 2006). Out of a total of eighteen Local Government Areas (LGAs) in the state, fourteen produces cocoa. However, four LGAs representing 30%, of the cocoa producing LGAs in the

state were selected for this study. The LGAs selected included Ikom, Etung, Obubua and Boki. The sampling of the LGAs was in proportion to the production capacity of the LGAs. From the nine heavy producer LGAs, three - Ikom, Etung, and Boki - were selected. One LGA (Obubra) was selected out of the five low producer LGAs. A total of fifty respondents were selected for interview and the information was collected from the respondents with the aid of structured questionnaire.

The data collected from the respondents include the socio-economic variables such as age, sex, marital status, educational level; the size of their cocoa farms as well as their cocoa output. Descriptive statistics was used to analyse the socio-economic variables of the respondents, while regression analysis was used to analyse the effect of the socio-economic variables of the respondents on the level of cocoa production. Explicitly, regression model is expressed thus:

$$\ln Y = \pm_o + \pm_1 \ln X_1 + \pm_2 \ln X_2 + \pm_3 \ln X_3 + \pm_4 \ln X_4 + \pm_5 \ln X_5 + U$$

Where

Y = Cocoa output (Tons);

X_1 = Age (Years);

X_2 = Sex (Male = 1, Female = 2);

X_3 = Marital status (Married = 1, Single = 2);

X_4 = Household size;

X_5 = Educational level (No formal education = 1, Primary education = 2, Secondary education = 3, Tertiary education = 4);

U = Random error term.

RESULTS AND DISCUSSION

Youths of age bracket 20-30 years had the highest proportion of the respondents (36%) (Table 1). This is closely followed by the respondents with age 41-50 years (30%). However, the least proportion of 10% is by the age bracket 31-40 (Table 1). The result however showed that there was a widespread of respondents among all the age groups. This implies that cocoa farming is embraced by all the age groups of the respondents in the study area.

Table 1 also showed that majority of the respon-dents (92%) were males while just few (8%) were females, showing that majority of cocoa farmers in the study area are males. This is so because cocoa farming is a tedious job and requires more strength which females may not be able to provide.

Table 1: Socio-economic variables of the respondents

Variable	Frequency	Percentages
Age (years)		
20-30	18	36
31-40	5	10
41-50	15	30
51-60	6	12
> 60	6	12
Total	50	100
Sex		
Male	46	92
Female	4	8
Total	50	100
Marital Status		
Single	7	14
Married	43	86
Total	50	100
Educational Level		
Non-formal education	10	20
Primary education	11	22
Secondary education	23	46
Tertiary education	6	12
Total	50	100
Farm Size(Ha)		
0-2.0	19	38
2.1-4	10	20
4.1-6	12	24
6.1-8	9	18
Total	50	100

Furthermore, from Table 1, most of the respondents (86%) were married while just 14% were single. As regards the educational level of the respondents, it could be observed from Table 1 that majority of the respondents (80%) were formally educated and 20% had no formal education. About 12% of the total respondents had tertiary education. This is an indication that some graduates were involved in cocoa production in the study area. This is a good pointer to improved productivity as the level of education is a tool with which an individual could be efficient at whatever endeavour being undertaken by the individual (Oluyole and Usman 2006).

As regards the farm size, a high proportion of the respondents (38%) had not more than two hectares of farm while only 18% of the total respondents had between six and eight hectares of farm. This however shows that most of the respondents were small scale cocoa farmers. However, the reason given by most of the farmers for not expanding their farms was lack of fund. Apart from this, one of the problems affecting the farmers in the study area is the lack of roads. Most of the farms could not be reached by vehicles; hence it is very difficult for the proceeds from such farms to be brought to the market.

Table 2: Regression result for farmers cocoa production in Cross River State.

Variables	Estimates	Std. error	t	Sig
(const.)	-4.294	4.581	-0.937	0.354
Age	-1.22E-02	0.071	-0.170	0.865
Sex	0.531	1.877	0.283	0.778
Marital status	3.114	2.031	1.533	0.133
Household size	0.366	0.376	0.972	0.336
Educational level	1.638	0.706	2.321	0.025**
Farm size	1.578	0.220	7.171	0.002*
R^2Adjusted R^2	0.588	0.542		
Std. Error	0.03300			
DW	1.937			
F	10.217			

Source: SPSS Software Computer Printout
** Significant at 5% level; * Significant at 1% level

Table 2 shows the result of the regression analysis. Double-log regression result was chosen based on the number of dependent variables that are significant, the value of the Coefficient of multiple determinations (R^2), the F-value as well as the value of the standard error. The Table showed that R^2 is 0.59 meaning that the independent variables can explain 59% of the variations in dependent variable. F-value of 10.217, meaning that the overall equation is significant ($p<0.05$) while Durbin Wattson (DW) of 1.937 (which is approximately 2.0) shows the absence of auto-correlation.

The result shows that out of six explanatory (socio-economic) variables used, only two variables were significant, these are educational level as well as farm size. Educational level of the respondents significantly affected the level of cocoa production in the study area ($p< 0.05$). This is due to the fact that the more a farmer is formally educated, the more the ability to be efficient and hence the more will be the productivity of the person. Farm size of the respondents was also found to significantly affect the production level of cocoa in the study area ($p< 0.01$). This is so because the more the hectarage of a farm, the more will be the output from the farm (especially if the farm is given the desired agronomic/management practices). Other variables that did not affect the level of production significantly in the study area are age, sex, marital status and household size.

CONCLUSION AND RECOMMENDATIONS

A highest proportion (36%) of cocoa farmers in the study area are youths within the age bracket 20-30years. This is however a good pointer to an increased cocoa production in the study area simply because youths would have more strength to work than old people.

Majority of the respondents (80%) had formal education while 20% had no formal education. This also embraces increased production level since those that are educated would be able to adopt new technologies more because they would be able to read the instructions guiding the adoption of such technologies. The highest proportion (38%) of the respondents were small scale farmers, that is, their farm size was not more than two acres. While few respondents (18%) have between six and eight hectares. Educational level as well as farm size of the respondents significantly affected the level of cocoa production in the study area. However, it was discovered that other socio-economic variables considered such as age, sex, marital status and household size were found not to have significantly affected the level of production.

Since educational level was found to have significantly affected the level of cocoa production, then farmers could be encouraged to improve their level of education. This could be inform of attending adult literacy programmes. This will however assist the farmers to be able to read and write to an extent and hence increases their efficiency.

Government (or any non-governmental organization) should assist the farmers with soft loans so as to enable the farmers to be able to expand the hectarage of their farms since production level was found to have significantly affected by farm size. In addition, farmers should be assisted to provide the necessary infrastructural facilities such as road network, this will in no small way help the farmers especially in evacuating their proceeds from farms to the markets

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