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Analysis of Social Economic Factors Affecting Cocoa Production in Ile Oluji Community of Ondo State, Nigeria

Akinfiresoye, W.A.[1]
Adebayo, S.A.[2]
Olarewaju O.O.[3]

(✉ Corresponding Author)

[1,2,3]*Agricultural Technology Department, Federal Polytechnic, Ile-Oluji, Ondo State, Nigeria.*
[1]*Email: waleolaakinfiresoye@gmail.com Tel: +2348033573716*
[2]*Email: adebayoayodeji90@gmail.com Tel: +2347061142361*
[3]*Email: olarewaju4abidemi2016@gmail.com Tel: +2348151511882*

Abstract

Ile Oluji is one of the communities known for cocoa production in the South West of Nigeria and thus selected to examine the factors responsible for decline in cocoa production in the country. Primary data was collected using a well-structured questionnaire and oral interview administered to 250 cocoa farmers selected across the 6 wards of the community using a multi-stage sampling technique. Data obtained were analyzed descriptively using Statistical Package for the Social Sciences (SPSS, 23). Further analysis of the data through linear regression and analysis of variance at $P \leq 0.05$ showed that all the factors, such as gender, sex, age, fungicides used and household size investigated are significant to the production of cocoa in this community. Younger ones, as well as women are to be encouraged to go into cocoa farming while the local breeds should be replaced with the hybrid for improved production.

Keywords: Cocoa, Cocoa farmers, Cocoa production, Socio-economics, Ile Oluji, Ondo state, Nigeria.

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Ethical: This study followed all ethical practices during writing.

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Contribution of this paper to the literature
The study revealed factors responsible for a decline in cocoa production in Ile-Oluji community of Ondo State, Nigeria. These factors when properly addressed will improve cocoa production in the community, and this can be applied to the state and by extension in Nigeria.

1. Introduction

Cocoa (*Theobroma cacao*) is one of the tropical agriculture major cash crops to be traded worldwide having its origin to the Amazon River in South America (Akinniran & Taiwo, 2016). It was introduced into many countries in West Africa during the nineteenth century, and it has become an important export crop in Ghana, Cote D'ivore, Nigeria, Togo and Equatorial Guinea who supply more than two-third of the World's cocoa (Akinniran & Taiwo, 2016; Folayan, Daramola, & Oguntade, 2006). It is the principal source of income for millions of farm workers in the cocoa producing states of Nigeria (Oguntade, 2013). The quantity of cocoa beans exported from Nigeria between 1976 -1977 and 2021 - 2003 was an average of 166,813 tons annually according to Oguntade (2013). Soneye (2014) observed that the high yield of cocoa was as a result of the local weather in Nigeria, coupled with the climatic condition of the producing environments and the joint possibility of growing arable food crops on the same plot by the peasant farmers especially when the cocoa seedlings are still young and there are also free space to support that. However, there have been a declining growth rate and production of Cocoa in Nigeria (Folayan et al., 2006). Onyeiwu, Pallant, and Hanlon (2009) substantiated the declining growth rate and production of cocoa in Nigeria while Job, Nmadu, and Busayo (2015) observed factors such as age, sex, education and adaptation to innovation as responsible for this decline in Africa. In the work of Ajayi, Afolabi, Ogunbodede, and Sunday (2010) Ile Oluji was seen to have the potential of producing greater yield of cocoa annually if there is a Federal government of Nigeria intervention. Although these researchers worked on the effect of rainfall on cocoa, this study investigated other factors that may influence cocoa production in Ile Oluji.

2. Materials and Method

The study was carried out in Ile-Oluji, an agrarian community in Ile-Oluji / Oke-Igbo Local Government Area of Ondo State, Nigeria prominent for cocoa production (Ajayi et al., 2010). A three stage random sampling technique was used in the cross sectional surveying of the study area. The study area was grouped into six (6) according to the number of wards in the community. In each ward, simple random sampling was used to select 35 cocoa farmers and 6 cocoa buyers. Then 4 cocoa retail shops owners selling cocoa farm tools, fungicides, pesticides and the likes were also interviewed. This gave two hundred and fifty (250) total respondent for the study. The research employed the use of primary data through structured questionnaire and oral interview schedule. Information about the social and economy lifestyle of cocoa farmers were obtained. This include age of cocoa farmers, marital status, size of family, gender, size of farm, level of education, ownership, type of breed and fungicides used. These factors formed the independent variables while the tons of cocoa produced per year formed the dependent variable. Data collected were analyzed using Statistical Package for the Social Science (SPSS) 2013 version. Both descriptive statistics such as means, frequencies and percentage were used to determine the levels of each of the independent factors. Linear regression and analysis of variance (ANOVA) were also used to establish the level of relationship between the dependent and independent variables.

3. Results and Discussion

The social economy factors affecting cocoa production in Ile-Oluji is as presented in Figure 1 to 6. It was seen from Figure 1 that 76 % farmers growing cocoa in this community were males while about 24 % were females. This was the trend as observed also by Osarenren, Ejuetueyin, and Eweka (2016) in a similar study carried out in Edo state, Nigeria. Therefore, more females should be encouraged to go into cocoa farming for production boosting.

As shown in Figure 2, about 37 % of cocoa farmers are 50 years and above, while about 25 % are between age 41 and 50. Those within ages 21 and 30, and 31 and 40 were just 17 % and 21 % respectively. However, the cumulative percentage of cocoa farmers within the age range of 21 and 50 was 63 % which was higher than those in the 50 years and above range. This implied that there should be an improvement in cocoa production based on the percentage of farmers within the economy active age as corroborated by Akinniran and Taiwo (2016) in a related study.

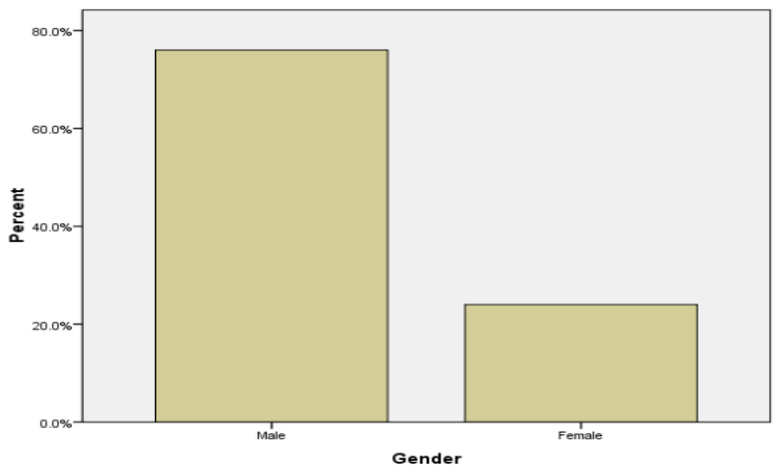

Figure 1. Bar chart showing gender distribution.

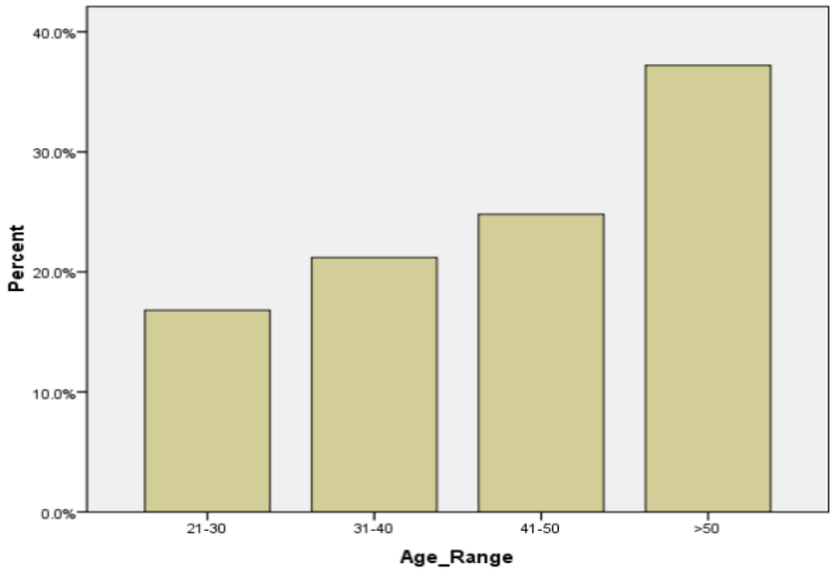

Figure 2. Bar chart showing age distribution.

The marital status of these farmers as shown in Figure 3 revealed that 32 % of them have lost their spouses, 22 % were divorced, 18 % have compromised relationship status while 18 % were married and another 18 % were still single. The family size presented in Figure 3 showed that 35 % of the farmers have between 7 and 9 family members of the father, mother and children. About 29 % of the farmers have between 4 and 6 family members while 20 % of them have 1 to 3 family members and only 16 % have more than 9 family members. The oral interview conducted showed that the farmers leverage on the size of the family as labour for an increase in cocoa production.

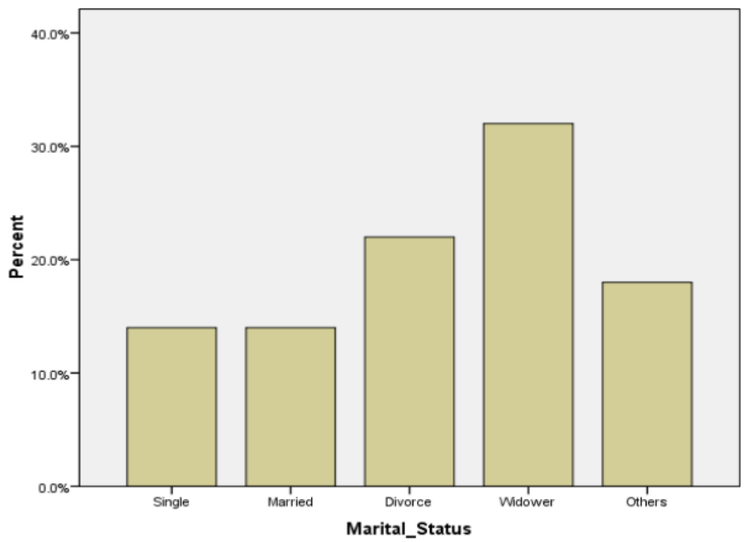

Figure 3. Bar chart showing marital status distribution.

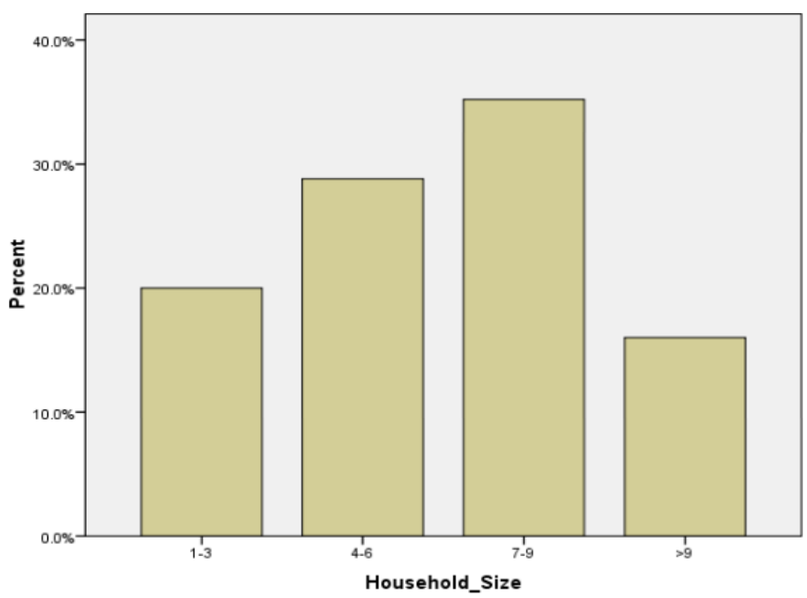

Figure 4. Bar chart showing household distribution.

As shown in the bar chart of Figure 5, it was discovered that 36.1 % of the farmers have been farming on cocoa between 11 and 20 years. About 30.2 % have been on cocoa farming for 30 years while only 17.9 % have 10 years and

below experience. About 37 % of these farmers have secondary education, 25 % have tertiary education while 18 % have primary education as shown in Figure 6. The farm experiences and elementary education is enough to positively affect cocoa production as equally observed by Akinniran and Taiwo (2016).

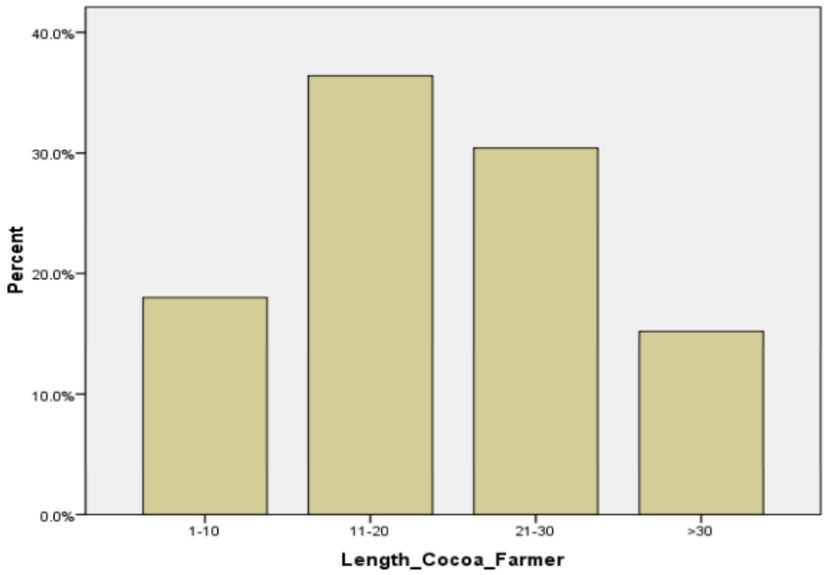

Figure 5. Bar chart showing farming length status distribution.

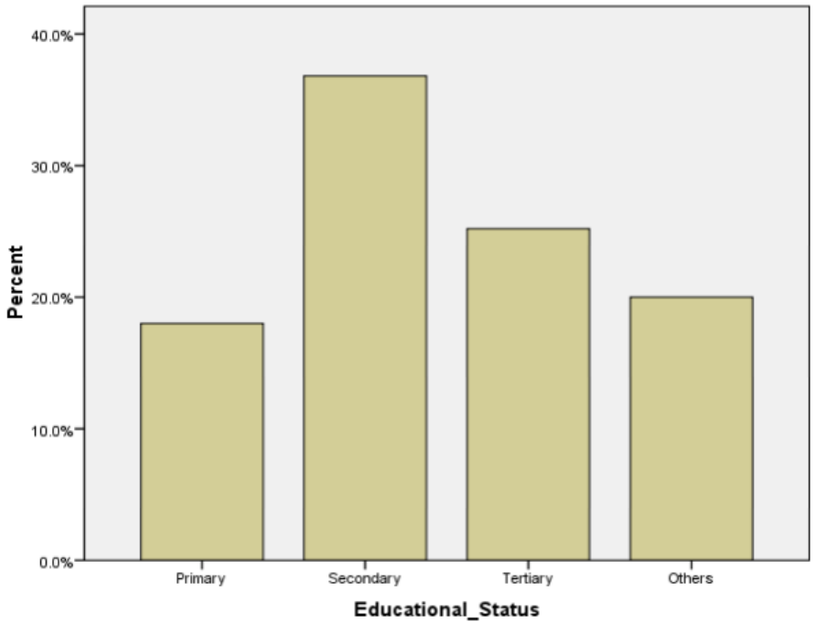

Figure 6. Bar chart showing Educational distribution.

It was observed from Figure 7 that about 44 % of the farmers have between 6 and 10 hectare of cocoa plantation, while only 14 % has 10 ha and above whereas 18 % of the farmers has between 1 and 5 ha of cocoa farm.

It was also discovered as shown in Figure 8 that only 18 % of these farmers cultivated their cocoa farm from the scratch, while 44 % inherited their farms. The implication of this is that the self-cultivated farm has an history known to the farmer when compared to the one inherited. Hence, it is easier for the former to improve productivity than the latter.

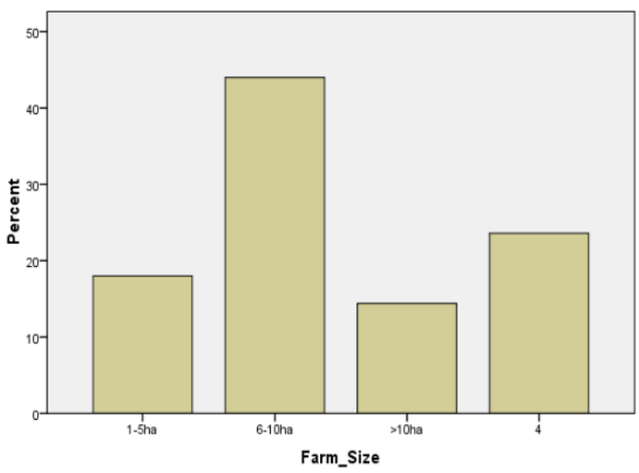

Figure 7. Bar chart showing farm size.

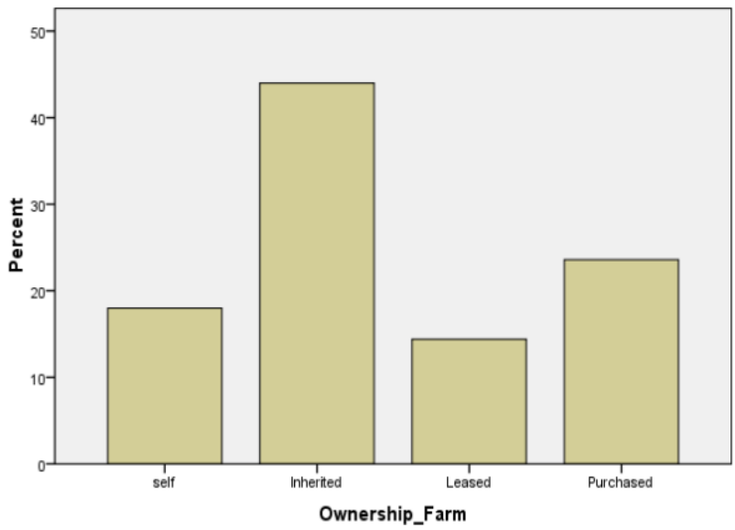

Figure 8. Bar chart showing ownership status.

It was shown in Figure 9 that 64 % of cocoa plantation in Ile-Oluji were local breeds while only 36 % were hybrids. This corroborate the ownership status percentage whereby 44 % of these farms were inherited. There will be low production of cocoa beans if there is no improvement in increasing the percentage of the local breeds to hybrid. This was also the observation of Akinniran and Taiwo (2016) in a related study. The researchers also discovered a reduction in harvest years due to the introduction of improved cocoa hybrids which will also work same for Ile Oluji community if the 36 % of cocoa hybrids presently planted can be increased.

As shown in Figure 10, about 36 % of the farmers used more than three types of fungicides, while 28 % used more than three types of fungicides, 22 % used two types and only 14 % used one type of fungicides. Majority of these famers used more than two fungicides as also observed by Akinniran and Taiwo (2016).

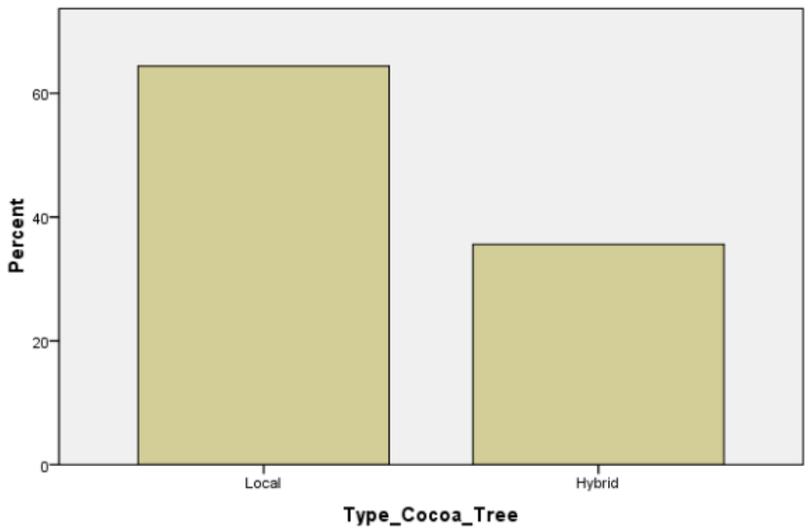

Figure 9. Bar chart showing cocoa breed.

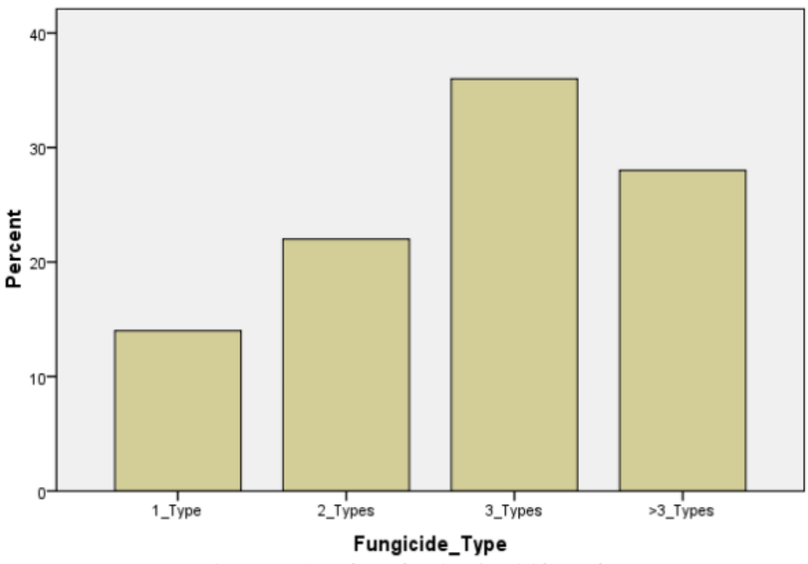

Figure 10. Bar chart showing fungicide used.

4. Regression Analysis and Analysis of Variance (ANOVA)

The regression analysis carried out as shown in Table 1 revealed a high degree of correlation, R, between the dependent and independent variables which value was 97.4 %. The R^2 value was 94.7 % which signified an existence of a large relationship between dependent and independent variables. In other words, about 95 % of the dependent variable is being explained by the explanatory variables.

Table 1. Regression analysis.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.974[a]	0.949	0.947	0.229

Note: [a] predictors or independent variables.

The Analysis of Variance (ANOVA) represented in Table 2 showed that the regression model at significant level of $p \leq 0.05$ predicts the dependent variable significantly well. This was so because the p value here was 0.000, which is less than 0.05. Hence the independent variables played significant roles in determining the output of the dependent variable.

Table 2. Analysis of variance.

Model		Sum of Squares	df	Mean Square	F	Sig,
1	Regression	233.196	8	29.149	557.535	0.000[a]
	Residual	12.600	241	0.052		
	Total	245.796	249			

Note: [a] significant at $p \leq 0.05$.

5. Conclusion and Recommendation

The socio-economic factors affecting cocoa production in Ile Oluji, Ondo State, Nigeria was assessed. The study established a strong relationship between the independent and the dependent variables. The independent variables include the age of cocoa farmers, sex, marital status, fungicides used and the breed of cocoa among others; while the dependent variable was the ton of cocoa produced annually. More females should be encouraged to go into cocoa farming and farmers within age 21 and 50 should maximize this productive age to boost cocoa production in the community. Improved hybrid of cocoa should be planted to replace the older ones inherited by farmers in this community. It is however recommended that more study should be carried out on the specific effects of fungicides on the cocoa production as this community used up to three types of fungicides annually.

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