

SOCIOECONOMIC DETERMINANTS OF PLANTAIN PRODUCTION IN OVIA NORTH EAST LOCAL GOVERNMENT AREA IN EDO STATE

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ABSTRACT

The study centered on socio-economic determinants of plantain production in Ovia North East of Edo State, Nigeria. The study was conducted to update existing literature on the plantain production enterprise. A sample size of one hundred and twenty ($n = 120$) farmers in plantain propagation were randomly selected from the study area. Respondents were interviewed with structured questionnaire. Simple descriptive statistics and multiple regression were used to analyze the data collected. The result revealed that 68.3 % of the farmers were male while 31.7% were female. The mean age of plantain farmers was 53.3 years. The mean farm size was 7.24Ha. The mean annual income of farmers was ₦268,666.67. Majority of farmers (60.8%) had no form of formal education. Majority of the respondents (54.1%) had no contact with extension workers. The study revealed that 85% of the farmers practiced bush burning. The regression result revealed that R^2 was 0.81 which implies that over 80% of the changes in number of local technologies adopted by the plantain farmers were determined by the independent variable. Some variable like education, farm income and local knowledge in plantain production were significant. Among others, it was recommended that plantain farmers should be assisted with technologies where there are gaps as in staking, irrigation and wind-break erection in plantain production.

Key words: Socioeconomic, Technologies, Farmers, Plantain production

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INTRODUCTION

Plantain belongs to the family *Musaceasp* and the genus *Musa*. It is a perennial herbaceous edible crop plant with about 1.5 to 9.5 meter tall from the ground having an underground rhizome or corm (Angiosperm, 2009). The main species are *Musa paradisca* (French plantain) *Musa acuminata* and *Musa corniculata* (Horned or curved Plantain).

In Nigeria, the pseudo-horned or curved type is the popularly distributed for the reason that has the capacity to tolerate low nutrient soil condition more than other varieties (John and

Marehel, 1995). Jirgi and Baba (2001) reported that South-South of Nigeria is known to be the highest plantain producer. Edo, Delta, Bayelsa, Rivers, Ogun, and Ondo States are leading States. Other producing States are, Imo, Kogi, Abia and Enugu. Plantain crop growing is not restricted to large plantation; they are grown in small orchards and backyards.

Plantain is very important in the diet of many Nigerians, it is usually eaten in convenient form as boiled, fried like “dodo” or chips, and as plantain flour for “amala” (Akinwumi, 1999); the flour contains protein, mineral and vitamins which are advantageous over carbohydrate foods. Plantain can be used as medicine to treat some ailment similar to sore throat, diarrhea, nausea and kwashiorkor owing to its high nutrients (Idachaba, 1995).

Extension is noteworthy in supporting farmers to build up expertise in the management of farm and all-purpose agricultural advisory services (Agbamu, 2006). Extension agents are also involved in farm input distribution (e.g. seed yam, hybrid maize, local sucker) which invariably increase output and income generation.

The study was guided by the following research questions: what were the socio-economic characteristics of plantain farmers?; which local technologies were used by plantain farmers, and what factors affected the various levels of technology adoption? Empirical answers to the questions will update existing literature on the enterprise.

Objectives

The broad objective of the study is to investigate the socioeconomic determinants of plantain production in Ovia North East Local Government Area in Edo State. The specific objectives are to:

- i. describe the socio-economic characteristics of plantain farmers in the study area; and
- ii. identify local technologies in plantain production and determine the factors that affect the various levels of technology adoption.

Hypothesis

Ho: Socioeconomic characteristics of the farmers had no effect on plantain production

METHODOLOGY

This research was carried out in Ovia North East Local Government Area of Edo State. It is located between latitudes 5⁰40' and 7⁰40' North and longitudes 5⁰00' and 6⁰30'. Ovia North East LGA is made up of 12 major communities. They are Okada (headquarters), Oduna, Oghede, Utoke, Iguoshodin, Oluku, Adolor, Isuiwa, Uhiere, Ofunm-Wengbe, Khohuo and Uhen. The inhabitants are predominantly farmers producing various crops and quite a number of the farmers are plantain producers. A simple random sampling of selecting ten farmers per community was done. Respondents were interviewed with structured questionnaire. This

yielded a total of 120 plantain farmers from the Local Government Area. Data collected were analyzed with descriptive statistics and multiple regression analysis

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Farmers

The socio-economic characteristics of the farmers studied include age, family size, gender, educational level, farm size, knowledge of plantain production and contact with extension agent per year.

From the results presented in Table 1, it was discovered that mean age of the farmers was 53.3years. This finding agrees with Kainga and Seiyabo (2012) who stated that plantain farmers in Bayelsa State were, on the average, 50 years of age. The mean size of farmers' family was 8 persons per household. A total of 68.3% of the plantain farmers in the study area were male while the female accounted for 31.7% of plantain producers in the study area. The mean income per annum generated from plantain production was ₦268,666.67. In a similar study, Kainga and Seiyabo (2012) found out that the annual average income of plantain farmers was estimated at ₦223,420.00. It was observed that majority of the farmers (60.8%) had no formal education while 22.5% had primary education. Only 15.8% had secondary education while the remaining 0.8% had higher education. The mean farm size of respondents was 7.24Ha. This result is not in agreement with the findings of Kainga and Seiyabo (2012) who discovered that the average farm size of plantain farmers was 0.7Ha in Yenagoa LGA. Attainment of knowledge in plantain production showed that 66.7% of the respondents had medium knowledge while 15.8% had low knowledge with 5% having no knowledge at all in plantain production. It was also seen from the result that 12.5% of the respondents in the study area had high knowledge or were very knowledgeable in plantain production. The respondents (65%) had no contact with extension workers throughout the year.

Available Local Technologies in Plantain Production

The available local technologies of plantain production found in the study area were fallow land preparation, bush burning, mulching, ash-surfacing, pruning, staking, irrigation, wind break erection and plant population density maintenance. The result in Table 2 revealed that 85% of the farmers practiced bush burning; next was bush fallow land preparation (80%), while the least local practice was irrigation (05%) at dry seasons. Olumba (2014) finding on the frequency of practice of available local technologies is at variance with that of this study: local technologies practiced by plantain farmers in Anambra State revealed that propping (staking) was highest (70%) in local technology ranking compared to plantain staking(9%) in Edo State.

Factors that Determine Level of Local Technologies in Plantain Production

The various socio-economic characteristics of the small scale farmers which may determine the level of local farming technology adopted by plantain farmers in the study area was

analyzed through the use of multiple regression analysis. The analysis was carried out in there functional forms of model, linear model, semi log model and double log models.

From the three functional forms examined, the linear regression model equation was found to be the best fit and hence selected as the lead equation. This is based on the size of the coefficient of determination (R^2) and also the number and signs of the predictor variables included in the model.

Table 3 reveals that the coefficient of Determination (R^2) is 0.81 which implies that over 80 percent of the changes in number of local technology adopted by the plantain farmers were determined by the independent variable. Also the F ratio value of 15.206 implies that the overall regression equation was significant at $p = 0.1$ level.

The family size of the farmers has a coefficient of -0.037 with a t-value of -2.294; this is significant at 5 percent level. The negative sign of the variable implies that as the number of family size increases, the number of local technology adopted by the farmer reduces and vice versa. This is in line with the findings of Doss (2004).

Farm income has coefficient of 0.185 with a t-value of 3.246 which is significant at 0.01 level. The sign of the coefficient is positive and implies that as the farmer gets more income, he/she will adopt more local technology in plantain production. This is in line with the findings of Ike (2012) which showed a positive relationship between income and technology adopted by small scale farmers in Enugu State.

Education variable has a coefficient of 0.677 with a t-value of 8.059. It is positively significant at 0.01 level. This means that the more farmers are educated, the more they adopt local production technologies. This also supports the findings of Ike (2012).

Farm size (0.429) with t-value of 2.544 is statistically significant at 0.05 level. It implies that farmers with larger farm size will adopt more local technologies all things being equal. This is in line with the observation made by Basley (1993) which showed that the size of a farm can influence a farmer to adopt new technologies.

Farmers' knowledge which measures the number of local technologies known to the farmers has a coefficient of 0.0346 with a t-value of 6.784. This implies that as more local technologies are made known to the farmers, the more the number they will adopt in the course of their farming. Hence, it is important that extension agent should be disseminating the information of new local technologies to farmers as much as possible. Olumba (2014) asserted that family size, farm income, education, farm size are major determinants of plantain productivity. Finally the socio-economic characteristics of the farmers had effect on plantain production in the study area, so we rejected the null hypothesis which states that the socio-economic characteristics of the farmer had no effect on plantain production and accepted the alternative hypothesis that the socio economic characteristics of the farmers have effect on plantain production.

CONCLUSION AND RECOMMENDATIONS

The study showed that the socioeconomic characteristics of the farmers affected plantain production in the study area; socioeconomic characteristics such as family size, farm income, education, farm size and local knowledge of the farmer were determinants of plantain production in the study area.

It was therefore recommended that:

- Farmers should be assisted with technologies where there are gaps as in staking, irrigation and wind-break erection in plantain production in the study area. Such assistance can come from both government and non-governmental organizations that are engaged in the provision of agricultural extension services.
- More youths should be encouraged to engage in plantain production since mostly aged people are involved in business in the study area. This can be achieved by the government through deliberate policies that offer special incentives to youths interested in plantain production.
- The existing poor contact between plantain farmers and extension workers implies that more efforts should be done in carrying out extension activities. Both public and private institutions engaged in the provision of agricultural extension services should re-strategize accordingly.

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APPENDIX

Table1: Socio-Economic Characteristics of Farmers

Socioeconomic characteristics	Frequency	Percentage distribution (%)	Mean
Age			53.3
21 – 30	1	0.8	
31 – 40	20	16.7	
41 – 50	23	19.2	
51 – 60	36	30	
61 – 70	40	33.3	
Family Size			8
0 – 5	10	8.3	
6 – 10	103	85.8	
11 – 16	6	5.0	
17- 22	1	0.8	
Gender			
Male	82	68.3	
Female	38	31.7	
Income per Year (₦)			268,666.67
0 – 200,000	40	33.3	
201,000 – 400,000	63	52.5	
401,000 – 600,000	15	12.5	
601,000 – 800,000	0	0	
801,000 and 1,000,000	2	1.7	
Educational level			
No formal	73	60.8	
Primary	27	22.5	
Secondary	19	15.8	
Higher education	1	0.8	
Farm Size (Ha)			7.24
0 – 5	22	18.3	
6 – 10	92	76.7	
11 – 15	6	5.0	
16 – 20	0	0	
Knowledgeable in Plantain Production			
No knowledge	6	5.0	
Low	19	15.8	
Medium	80	66.7	
High	15	12.5	
Contact with Ext. worker			
Fortnightly	8	6.7	
Yearly	12	10.0	
Monthly	35	29.2	
Never	65	54.1	

Source: Field Survey 2015

Table 2: Local Technologies in Plantain Production

Local Practices	Respondents (multiple response, %)
Bush burning	85
Bush fallow Land Preparation	80
Plant population density maintenance	60
Pruning	48
Mulching.	30
Ash –Surfacing	28
Wind Break Erection	25
Staking (Propping)	09
Irrigation	05

Source: Field Survey 2015

Table.3: Determinants of Local Technologies in Plantain Production

Variable	Coefficient	Standard Error	t - Value	Sig
Constant	7.928	2.315	3.425	0.001
Age	-0.020	0.026	-0.789	0.432
Family size	-0.037	0.124	-2.394*	0.769
Sex	0.416	0.609	0.684	0.496
Farm income	0.185	0.057	3.246**	0.001
Education	0.677	0.84	8.059**	0.000
Farm size	0.429	0.169	2.544*	0.000
Local knowledge	0.346	0.051	6.784**	
R ²				0.801

F ratio = 15.206*Significant @ 5%, and ** Significant @ 1%