

Socio–Economic Fluted Pumpkin Out- Put Determinants in Bende Local Government Area of Abia State, Nigeria

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Abstract: The study examined the socioeconomic determinants of fluted pumpkin output in Bende Local Government Area of Abia State, Nigeria. A total of 60 respondents selected through a random sampling and purposive sampling efforts were interviewed using a well-structured questionnaire. Data collected were analyzed using descriptive statistics and multiple regression analysis. The results revealed that majority (89%) of the farmers were females, mean age of the farmers was 39 years and 88.33% of the farmers are literates. Majority (83.33%) of the farmers was married and the mean household size of the farmers was 7 persons per household. Majority of the farmers [60%] reported having access to credit facilities. Mean years of farming experience of the farmers was 13 years while average farm size of the farmers was 0.62 ha. A coefficient of multiple determinations, $(R)^2$ of 67.53 % indicated high relevance of the inputs in explaining the observed variation in fluted pumpkin output. From the regression result, 6 regression coefficients were statistically significant (age, access to credit facility, labor source, household size, educational level and farming experience) while one [marital status] was not statistically significant. Based on the findings of the result, it is recommended that enhancing access of fluted pumpkin farmers to cultivable land and credit facilities should be made available to them in form of soft loans to enable them procure necessary inputs for production through favorable policies which will increase output. And which will be disbursed through farmers' cooperative societies and other credit institutions that will serve as a mechanism of disbursements to the targeted farmers.

Key words: Socio-Economic Determinants • Fluted Pumpkin Output • Regression Analysis

INTRODUCTION

Fluted pumpkin (*Telfairia occidentalis*) is a major component of the diets of West African populace particularly in Nigeria. It is though a perennial crop but usually cultivated all year round through irrigation and it is of the family *Cucurbitaceae* and originated from West Africa cultivated primarily for its nutritious leaves and seeds [1, 2]. Fluted pumpkin is an important food crop especially in the zone of West Africa. Apart from being widely consumed in various parts of the country by all religious and social classes, fluted pumpkin plays a prominent role in the medicine and economic life of the people. Its cultivation creates employment and income opportunities for vast population of the rural farmers. Fluted pumpkin is among the crops of which their production is dominated by small scale poor resource rural farmers with farm holdings of less than 2 hectares, with typical characteristics of subsistence agriculture of

which is responsible for 95% of their total output. In addition, Olukosi and Isitor [3] identified several possible limiting factors to small scale agriculture in time past which ranges from limited access to credit facilities, low farm gate price, high cost of labour input, inadequate supply of modern technology farm input and inefficient use of resources to inefficient marketing system. Fluted pumpkin as a vegetable has an average human recommendation of 285g/person/day, being the source of daily vitamins, minerals, protein and dietary fibers intake for the large Nigerian populace [4]. As a food crop, fluted pumpkin contribute 250- 325g of a balanced diet per capital daily for about 353 million people in West Africa while servicing as an important source of income to the people [5]. Fluted pumpkin is rich in protein 29%, fat 18%, minerals [Contain high levels of potassium and iron] and vitamins 20% while the fluted pumpkin seeds is considered as an “oil seed”, has 53% fat and 27% crude protein [6]. As a food security crop in West Africa, fluted

pumpkin can be eaten in diverse ways - in soup, yam porridge, stew and sauce preparation. Fluted pumpkin output has increased overtime. This increase is however attributed to increased demand based on nutritional value though still cultivated by small scale farmers [7]. Given the popularity of fluted pumpkin to many household and still contributing immensely to rural and regional economies [8] and its significance among the food crops in Nigeria. Thus there is need for further investigation into socio-economic determinants of fluted pumpkin output in Bende Local Government Area of Abia state.

MATERIALS AND METHODS

Study Area: The study was conducted in Bende Local Government Area of Abia State. Bende Local Government Area is bounded by Arochukwu, Ohafia, Umuahia North, Ikwuano and Isuikwuato Local Government Areas with coordinates of 5°34' N and 7°38'E of the Greenwich meridian, which covers a total land area of 306.3 square km and a population of 128, 227 at the 2006 census (National Population Commission, NPC 2006). Two state constituencies of Bende Local Government Area namely – Bende North and Bende South state constituencies were chosen. This local government was purposely chosen for the study because the people are predominantly farmers. Two villages where pumpkin is grown extensively were randomly selected from the two state chosen constituencies in the ratio of one per State constituency (1:1). Bende village was chosen from Bende South and Item village from Bende North respectively. Thirty (30) pumpkin farmers were selected in each of the villages with the help of key informants from a compiled list of pumpkin growers in the area. This gave a total of 60 respondents for the study.

Method of Data Analysis: Data collected were analyzed with descriptive statistics and regression analysis. The implicit model of the regression is $Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, e_i)$.

where:

Y = Value of Fluted Pumpkin Leaf Production (N);

X₁ = Farmer's age (Years)

X₂ = Farmer's marital status (Dummy variable; Married=1, Single = 2, Divorced = 3, Widow = 4);

X₃ = Farmer's Household size (Number of person);

X₄ = Farmer's Level of education (Non Formal education = 1, Primary education = 2, Secondary education = 3, Tertiary education = 4, Adult education = 5);

X₅ = Fluted Pumpkin farming experience (Years);

X₆ = Access to credit facility (Dummy variable; yes = 1, No = 0);

X₇ = Farmer's source of labor (Dummy variable; hired labor = 1, family labor =2,); and

e_i = Error term.

RESULTS AND DISCUSSION

The distribution of the respondents according to their socio-economic characteristics is shown in Table 1. From the table, most of the respondents [36.67 percent] fall within the age bracket of 31 - 40 years with mean age of 39years. Again, 83.33 percent were young and middle aged [Mostly] women below the age of 50. This finding is consistent with Emenyonu *et al.* [9] who found that majority of women are involved in fluted pumpkin output and in terms of age, this implies that majority of the fluted pumpkin farmers in the study area are in their economic active age. This agrees with the findings of Rahman *et al.* [10] in which they showed that farmers' age may influence adoption in several ways. On level of educational attainment, 88.33 percent of fluted pumpkin farmers attained one form of formal education or the other ranging from primary to tertiary education. Agbamu [11] reported that there was a positive correlation between level of education and adoption of innovations and formal education had a positive influence on adoption of innovations. Therefore, a higher level of adoption of new technology for fluted pumpkin output may be expected in the study area. Table 1 also showed that most of the respondents [89 percent] were females while 83.33 percent were married. The implication of the finding is that marital status is an important factor in social rural participation and acceptance which remains a valued culture and confers responsibility on individuals in the study area. Household size of 6-10 was dominant representing 68.33 percent of the entire households. This is an indication that a large family is still a common practice among farmers as they often depend on family labour. Family labour is important because household size is the principal determinant of labour availability in small-scale farming given the relatively soaring cost of hired labor. This distribution of household size in the area could either enhance or retard output efficiency depending on whether the households provide the farm labor or not and how such labour is utilized. From Table 1 also, it can be observed that with mean farming experience years of 13, the farmers are knowledgeable and experienced in fluted pumpkin crop farming and their experience increased their

Table 1: Socio – Economic Characteristics fluted pumpkin farmers [n=60]

Age	Frequency	Percentage
21-30	11	18.33
31-40	22	36.67
41-50	17	28.33
51-60	9	15.00
61 and above	1	1.67
Mean	39.42	
Standard deviation	12.04	
Sex		
Male	7	11
Female	53	89
Marital Status		
Single	4	6.67
Married	50	83.33
Widowed	6	10.00
Divorced	-	-
Household size		
1-5	17	28.33
6-10	43	68.33
11-15	2	3.34
Mean	4.75	
Educational Status		
No Formal Education	2	3.34
Primary Education	5	8.33
Secondary Education	21	35.00
Tertiary Education	27	45.00
Adult Education	5	8.33
Years of Farming Experience		
1 -10	24	40.00
11- 20	20	33.33
21- 30	13	21.67
31 and Above	3	5.00
Mean	13.67	
Farm Size		
0.1 - 0.4	14	23.33
0.5 - 0.8	37	61.67
0.9 - 1.2	9	15.00
Mean	0.62	
Access to Credit		
Yes	24	40
No	36	60
Mean		
Farmers source of labour	1.60	
Hired	22	36.7
Family	37	63.3
Mean	1.63	

Source: Field survey 2016

Table 2: Regression results for Socio – economic determinants of fluted pumpkin output

Variables	Parameters	Coefficients	Std. error	T-value
Constant	B ₀	8559.619	18842.178	0.454
Age	X ₁	5446.238	1864.976	2.920*
Marital Status	X ₂	6666.768	4438.462	1.502
Household Size	X ₃	3206.370	2706.881	2.485**
Education	X ₄	1070.469	2034.467	2.526*
Years of farming experience	X ₅	368.983	1669.027	2.501**
Access to credit	X ₆	7337.226	3666.262	2.491**
Labor source	X ₇	3817.464	3246.161	1.996***
F- Static	2.48**			
R	0.67			
R ² adjusted	0.55			

Source: Computed from field survey Data 2016

* = statistically significant at 1%

**=statistically significant at 5%

***=statistically significant at 10%

farm output and also enhanced their ability to understand and evaluate new output technologies. On farm size of the respondents, most of the respondents [61.67 percent] cultivated on 0.8 hectare of land, while 15.00 percent cultivated on 1.2 hectares. The average farm size of the farmers was 0.62 ha implying that the farmers are mainly small-scale farmers. This is disadvantageous because to a large extent, farm size determines output level. The small land holding may not be unconnected with the prevalent land tenure system in the study area which is mainly by inheritance. The result in Table 1 shows that 63.3 percent of the farmers used family labour, 36.7 percent employed hired labour. This shows that most of the farmers used their family members for farming activities. This was similar to what [12] observed that majority of the small scale farmers are poor and usually utilize family labour.

Socio – Economic Fluted Pumpkin Output Determinants:

In order to determine the socio- economic factors influencing fluted pumpkin leaf outputs in the study area, a multiple regression analysis was done in four functional forms (Linear, semi log, double log and exponential forms). The linear function was chosen as the lead equation. The reason for the choice of the linear form as the lead equation is because it has the highest R^2 value (0.6753). The result presented in Table 2 shows how socio-economic factors of respondent influenced fluted pumpkin production output.

The coefficient of multiple determinations (R^2) was found to be 67.53 percent. This implies that the explanatory variables explained up to 67.53 percent variations in fluted pumpkin leaf output in the study area and that the regression has a high explanatory power. From the regression result, six regression coefficients were statistically significant and positive (Age, labor source, house hold size, educational level, farming experience and farm size) while marital status was not statistically significant. The regression coefficient of age and level of education were very positive and significant at 1% level of probability each. This implies that age has a direct relationship on the output of fluted pumpkin leaf while level of education also has a direct relationship with the fluted pumpkin output of farmers. The level of education tends to increase with the output. The coefficient of household size, access to credit and years of farming experience were significant at the 5% level and also positive each. Farmers with larger households recorded higher output than farmers with smaller households while years of farming experience result indicates that the more experienced farmers

recorded higher output than the less experienced farmers. Access to credit facility at 5% significant level implies that increase in the availability of agricultural credit facilities may lead to increase in fluted pumpkin output. Labour source as a positive coefficient variable that is significant at the 10 % level of probability shows that farmers made use of family labour than hired labour because majority of the farmers practice subsistence agriculture. The f-ratio which determines the overall significance of the regression is significant at the 5% level implying that the explanatory variables jointly explained the variations observed in the dependent variable.

CONCLUSION AND RECOMMENDATION

The findings of this study revealed that the majority of the fluted pumpkin farmers were married, young, educated, experienced and small scale female farmers. Provisions should be made that will tend to relocate inputs especially fertilizer and credit to fluted pumpkin leaf output and particularly to the female farmers are necessary. Such provisions should be targeted more at experienced farmers with large household sizes and small farm size, to increase their output scale. To ensure capital availability, farmers should organize thrift among themselves in terms of esusu, rotational contribution etc. Soft loan should be given to fluted pumpkin farmers through functional farmers cooperative societies. These farmers' cooperative societies will save as mechanisms for credit disbursement. In addition to farmers' cooperative societies, formal credit institutions like Nigerian Bank of Agriculture [NBoA] should encourage farmers through financial empowerment and easy loan access.

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