

Factors Affecting Farmers Income Generation from Ginger Production in Abia and Imo States, Nigeria

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ABSTRACT

The paper examined the factors that affect income generation from ginger farmers in Abia and Imo States, Nigeria. Multi-stage sampling technique was used to select 80 ginger farmers for the study. Data were obtained with the aid of structured interview schedule and Focus Group Discussion. The data collected were analyzed with descriptive statistics and regression. Result revealed that, majority of the ginger farmers in the study area were males and have average age of 53 years and average household size of 9 persons. They are all subsistence farmers, with average ginger farm size of 0.3 hectare. On average, the farmers are literate and with annual income of ₦72,487.5 from ginger production. The regression result shows that four variables namely age, farm size, educational level and income from other farm produce, were significant factors affecting farmers' income generation. Farm size and income from other farm produce were positive and significant at 1%, while age and educational level were positive and significant at 5%. The study revealed that farmers rely on income from farm produces to increase their productivity. It was recommended that Government should ensure that farmers have access to credits so as to help them increase their productivity.

Keywords: Farmers, Ginger production, Factors, Income generation, Constraints, Abia State, Imo State.

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Highlights of this paper

- The paper examined the factors that affect income generation from ginger farmers in Abia and Imo States, Nigeria.
- The study revealed that farmers rely on income from farm produces to increase their productivity.
- It was recommended that Government should ensure that farmers have access to credits so as to help them increase their productivity.

1. INTRODUCTION

Agriculture is an important sector of Nigeria economy with enormous potentials and opportunities for job creations, food production and value addition to food products in the food value chain Okonji [1]. Nwaru, et al. [2] reported that about three-quarters of poor people in developing countries directly or indirectly depend on subsistence agriculture for their livelihoods. Promotion of agriculture in agriculture-based countries such as Nigeria is imperative for achieving food security, reduction of poverty and hunger [3]. Ginger is one of the crops being promoted in the country because of its economic benefits [4].

Ginger (*Zingiber officinale* Rose) is a herbaceous perennial plant which is grown commercially as an annual crop. The crop is regarded as a native of tropical South-East Asia from where it was introduced into African countries and other tropical belt of the world [5]. It is a rhizomatous spice widely cultivated as a cash crop. Ginger rhizome is highly valued in pharmaceutical, beverage and confectionary industries as a raw material. The characteristic odour and flavor of ginger rhizome is caused by a mixture of zingerone, shogaols and gingerols, volatile oils that compose about one to three percent of the weight of fresh ginger [6]. Ginger is an important cash crop in Nigeria, and is one of the major world producers and exporters of the crop [7]. In the world market, the current major five exporting countries have been China, Nigeria, India, Jamaica, and Brazil [8]. Area under ginger cultivation in the world was 429,481 hectares in 2007. The largest area under ginger cultivation is in Nigeria, which is about 55% of the total area under ginger cultivation in the world [9]. Research has shown increase in ginger production in Nigeria in the past years. Nigeria's ginger production in 2006 which was put at 134,000 metric tonnes increased to 140,000 metric tonnes in 2008 [10] which is 4.3% increase. Out of this production, an average of 10% is locally consumed as fresh ginger, while 90% is dried and 20 percent of this is consumed locally for various uses while the remaining is exported [11].

Ginger production in Nigeria is laborious, as all operations are done manually. This limits the hectares farmers can cultivate. Furthermore, production of the crop is unattractive with tedious processes involved and production costs are relatively high due to the relative high cost of labour [12]. These have led to poor management and low progress in ginger production with resultant poor yield, which consequently affects the farmers' income. Ginger production is regarded as economically promising for both rural growers and urban industrial processors in terms of income and employment generation [13]. Despite its importance in global phenomenon, farmers have not been able to fully exploit the economic values in ginger production. Efforts to upgrade through improved production and processing strategies to increase economic benefits have been faced with difficulties. In Nigeria presently, the crop ginger is under-utilized for income generation. There is lack of awareness of ginger potentials among farmers. The inadequate recognition and exploitation of ginger potentials pose serious setbacks to farmers and stakeholders in Nigeria in terms of sustainability of the crop [14]. This study therefore aims at examining the factors that influence the income generation of ginger farmers in Abia and Imo States, Nigeria. Specifically, the study described the socio-economic characteristics of ginger farmers, estimated the factors affecting the farmers' income from ginger sales and determined the constraints in ginger production.

2. METHODOLOGY

The study was conducted in Abia and Imo states. These two states are in South-Eastern zone of Nigeria. The states share similar characteristics. The zone covers the bulk of the Igbo-speaking ethnic territory or Igboland. The area lies mainly on plains under 200m above sea level. The people of South-East Nigeria, especially the rural dwellers, engage mainly in subsistence farming. The major crops grown are yam, cassava, oil palm, cocoyam, rice, cocoa, maize, plantain, melon and okro. The respondents for this study were purposively selected based on confirmed existence of ginger cooperatives in the states and available records of partnerships with the ginger farmers and Ginger research programme of NRCRI Umudike. Two cooperatives were selected from each state. At the cooperatives level, a list of the members of each cooperative was used as the sampling frame from where 20 farmers were randomly selected from each cooperative to participate in the study. A total of 80 ginger farmers were used for individual interviews. Focus group discussions (FGDs) and well structured questionnaire were used to elicit information for the study. Data generated were analyzed using descriptive and inferential statistics. Descriptive statistics such as frequency, percentage and mean were used to describe the socio-economic characteristics of the respondents. Constraints to ginger production were realized with mean score using a 3 point likert type rating weighed in this order: Never = 1, Mild = 2, Severe = 3. Mean score response equal to or above calculated mean score of 2.0 were regarded as serious constraints. Regression was used to estimate the factors affecting the income from ginger sales. The regression equation is given by:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, e)$$

Where:

Y = Income generated from ginger (Naira).

X₁ = Age (year).

X₂ = Household Size (number).

X₃ = Educational Level (year).

X₄ = Farm Size (hectare).

X₅ = Farming Experience (year).

X₆ = Income from other farm produce (naira).

U = Error term.

3. RESULTS AND DISCUSSION

3.1. Socio-Economic Characteristics

Table 1 shows the socio-economic characteristics of sampled ginger farmers. The findings revealed that majority (60%) of the ginger farmers are male and have average age of 53 years. This indicates that they are in their active age and still find pleasure in agricultural activities. Increase in the number of years of farmer might result in additional experience of the farmer to improve upon their level of productivity and income. This result is in agreement with the report of Madu and Umebali [15] that most farmers are strong and vibrant in agricultural production. Majority of the farmers (97.5%) are literate with mean educational level of 11 years. Literate farmers will meaningfully engage in agricultural production which will impact on their lives positively. Formal education is a means of facilitating farmer's use of written information, and ways of increasing their knowledge and comprehension of new farm practices especially in ginger production [11]. Similarly Eze [16] stated that the resultant effect of lack of formal and informal education is acute resistance to change especially in the spread of information which include participation in the innovative programmes that are meant to change the lives of farmers positively. On the average the respondents have five years experience in ginger production. It implies that majority

of the farmers' just embraced ginger production as part of their commodity crops in farming. Farmers continue cultivation of ginger enables them to be more knowledgeable in the information needs for effective and sustainable ginger production. Years of farming experience enables farmers to set realistic goals [17]. From the result, the ginger farmers had average household size of 9 persons. This shows that the respondents have large household size which will provide enough labour for agricultural production. Large household serves as proxy to cheap family labour in the farm [18]. The table revealed that, the respondents had average farm size of 0.3 hectare of ginger farms. This indicated that all the respondents sampled were small scale ginger farmers. The farmers had average annual income of seventy two thousand four hundred and eighty seven naira fifty kobo (N72,487.50) from ginger sales. This amount is quite low, which could be as a result of lack of ginger market in the study area. The farmers mainly sell their ginger rhizome at farm gate.

Table-1. Distribution of Ginger farmers according to their socio-economic characteristics.

Variables	Frequency (n=80)	Percentage	Mean
Gender			
Male	48	60.00	
Female	32	40.00	
Age (years)			
21 – 30	2	2.50	53
31 – 40	15	18.75	
41 – 50	23	28.75	
Above 50	40	50.00	
Household size (No.)			
1 – 5	32	40.00	9
6 – 10	43	53.75	
11 – 15	5	6.25	
Experience in ginger cultivation (years)			
1 – 10	57	71.25	5
11 – 20	23	28.75	
Ginger farm size (ha)			
<1	80	100	0.3
Income from ginger (Naira)			
40,000 – 59,000	5	6.25	72,487.5
60,000 – 79,000	68	85.00	
80,000 – 99,000	7	8.75	
Educational level			
No formal education	2	2.50	11
Primary	33	41.25	
Secondary	38	47.50	
Tertiary	7	8.75	

Source: Field survey, 2018.

3.2. Factors Affecting Farmers' Income from Ginger Production

Table 2 shows the factors affecting income from ginger sales. Regression model was used to estimate the factors affecting the income from ginger sales. The result in Table 2 revealed that 61% of the variation in the factors affecting income from ginger sales was explained by the independent variables included in the model. Four variables were statistically significant in the factors affecting farmers' income from ginger production. The variables were age, educational level, farm size and income from other farm produce. Age of the farmer significantly affected income from ginger sales at 5% level. This implies that the farmers' age significantly accounted for the income from ginger sales since majority of ginger farmers are still within their productive age. Farm size was positive and significantly affected income from ginger production at 1% level. This indicated that as farmers increase their farm size under ginger cultivation, more ginger rhizomes will be produced and sold which will generate more income for the farmers. Educational level significantly affected farmer income from ginger production at 5%. The higher the

level of education of the ginger farmers, the more income they realize from ginger sales. This is because education enables farmers to adopt new technologies that will help to increase their productivity. This agrees with the report of Mazza [4] that educated farmers accept change easily and are known to be less conservative. Income from other farm produce was positive and significant at 1%. This implies that the farmers in the study area invest more in ginger production based on income from other farm produce they realized from their farms.

Table-2. Factors affecting income from Ginger sales.

Variables	Unstandardized coefficients		Standardized coefficients	t-value	Significance
	B	Std. Error	Beta		
(Constant)	7.213	1.724		3.781	.000
Age(x ₁)	-.379	.181	-.440	-2.362	.029**
Household size(x ₂)	.142	.375	.065	.371	.706
Educational level(x ₃)	.715	.313	.282	2.273	.030**
Farm size(x ₄)	.514	.144	.415	3.585	.001*
Farming experience (x ₅)	.147	.423	.069	.335	.723
Income from other farm products (x ₆)	.568	.137	.520	4.611	.000*

Source: Field survey, 2018.

R² = 0.61 ***Significance at 1% level, ** Significance at 5% level, * Significance at 10% level.

3.3. Constraints to Ginger Production

Table 3 shows the constraints to ginger production in the study area. The result revealed that there were many constraints to ginger production in the study area, and serious among them were low yield of local varieties (x = 2.83), lack of improved ginger varieties (x = 2.81), inadequate capital (x = 2.67), inadequate ginger processing machines (x = 2.65) and storage problems (x = 2.51). This confirms the report of Mohammed [19] that farmers' major constraints in crop production are inadequate improved varieties, low yield of local varieties and inadequate processing machines. From the result, other none serious constraints to ginger production were inadequate inputs (X = 1.70), unavailability of agricultural credit (x = 1.68), problem of pest and disease infestation (x = 1.57), tedious and time consuming harvesting process (x = 1.54), poor technical skill (x = 1.36) and poor soil fertility (x = 1.31).

Table-3. Distribution of respondents according to constraints to Ginger production.

Constraints	Never	Mild	Severe	Total	Mean(x)	Rank
Low yield of local varieties	0(0)	14(28)	66(198)	226	2.83	1
Lack of improved varieties of ginger	2(2)	11(22)	67(201)	225	2.81	2
Inadequate capital	4(4)	19(38)	57(171)	213	2.67	3
Inadequate processing machines	5(5)	18(36)	57(171)	212	2.65	4
Storage problem	10(10)	19(38)	51(153)	201	2.51	5
Inadequate inputs	38(38)	28(56)	14(42)	136	1.70	6
Unavailability of agric. credit	40(40)	25(50)	15(45)	135	1.68	7
Problem of pest and disease infestation	52(52)	10(20)	18(54)	126	1.57	8
Tedious and time consuming harvesting process	48(48)	21(42)	11(33)	123	1.54	9
Poor technical skill	56(56)	19(38)	5(15)	109	1.36	10
Poor soil fertility	58(58)	19(38)	3(9)	105	1.31	11

Source: Field survey, 2018.

4. CONCLUSION AND RECOMMENDATION

From the study, farmers in both Abia and Imo States grow ginger and the crop has generated income to them. They sampled farmers were all subsistence farmers, with average ginger farm size of 0.3 hectare. They are literate and with annual income of seventy two thousand four hundred and eighty seven naira fifty kobo (N72,487.5) from ginger production. The major factors affecting farmers' income generation from ginger production were age, educational level, farm size and income from other farm produce. Farmers rely on income from other farm produce

to increase ginger production. Government should provide improved ginger varieties to farmers and also ensure that farmers have access to credits so as to help them increase their productivity and extension agents should organize programmes on how to use technology that will increase farmers' productivity there by bringing about higher returns.

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