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Analysis of the Potentials of Okra Production and Marketing in Aba Agricultural Zone, Abia State, Nigeria

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Abstract
An underutilized crop such as okra has great potentials for enhancing livelihoods in urban and rural areas thereby, enforcing food security. As a result, this study examined the profitability of okra production and marketing in Aba Agricultural Zone of Abia State, Nigeria. The study employed a multi-stage sampling approach to select 120 okra farmers. Data were collected using a standardized questionnaire. Descriptive statistical tools, budgetary technique analysis, multiple regression and 5-point rating scale were employed in the data analysis. The results suggests that the average age of the farmers was 32 years, 66 were females and majority (53.33%) were married. Meanwhile, only 9.17% had no formal education with mean household size of 6, an average experience of 12 years and had extension contacts. The result on the perceived potentials of okra production showed that the farmers were in agreement that okra production demands low capital, administrative skills, quick cash return and frequent harvest with more than 3.0 mean scores respectively. The result also showed that okra marketing was profitable by returning N2.83 for every N1.00 spent. Regression results of factors affecting profitability okra marketing showed that education, household size, extension contact and farm size were all positive and significant at10%, 1%, 10% and 5% respectively while gender was negative but significant at the 5% level. The production function result showed that increasing the farm size (10%), inputs such as herbicides (1%) while reducing the quantity of seeds planted affected the enterprise. Some of the problems encountered by the farmers include high cost of agro-inputs, insufficient capital, lack of processing technologies/facilities and high perishability of the product. This study therefore recommends policies aimed at the provision of appropriate preservation technologies at subsidized levels and efficient marketing channels to reduce wastage. More so, adding value to the commodity will make it competitive with the staples in the market thereby increasing profitability and efficiency.

Keywords: Potentials, Okra production, Marketing, Efficiency, profitability

1.0 Introduction

Vegetables are very crucial for the prevention of diseases and maintenance of health. It is one of the main sources of income for small farmers. Okra is one of the most important fruit vegetable crop but its potentials have not been fully utilized. The crop provides the calorie (4550Kcal/kg) suitable for human consumption (Oyewo et al.,2020). It is a popular vegetable crop in the tropics (Babatunde et al., 2007; Edet and Etim, 2010). Okra cultivation is widely practiced because of its contribution to the economy and can be found in most markets in Africa. The cultivation and production of okra is an important livelihood activity for smallholder farmers, which constitute the majority of the rural labour force in Nigeria. According to Udoh, et al (2005), okra is grown in the tropics particularly in tropical Asia, East Central and West Africa. The varieties of okra differ by plant height, size of fruit, colour, early or late maturing etc., white velvet, green

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velvet, dwarf green pods, long pods, lady finger (Udoh et al, 2005). The current crop indicative yields per hectare of vegetable especially okra in Nigeria estimated at six million tonnes per year (FMARD, 2015; FAO, 2019) is low and far below potential (Christine et al., 2019). Christine et al., (2019) further stated that, 1,480,386 hectares were cultivated in 2017 with a yield of 1,392 kg/ha in Nigeria while 51,630 tonnes of okra were produced from 19780 hectares of land in Abia State. It is grown in two distinct seasons in Nigeria: peak and lean seasons. Okra fruits are produced in limited quantities, making them scarce and expensive to get in lean season while it is produced in large quantities above what the local populace can consume during the peak (wet) season (Famide et al, 2006). Therefore, proper preservation and efficient marketing channels is necessary to enhance profitability and reduce wastage that is experienced during the peak season. However, the development of appropriate technologies for okra production and marketing according to Oguntade and Adeleke, (2012) is sin-qua-non to high market value. Presently, okra production is low due to climate change and over dependence on rain fed farming leading to a wide gap between the demand and supply of the crop. Okra deteriorates rapidly in Nigeria due to the lack of storage and preservation technologies. There is a supply-demand gap for okra in Nigeria. During the harvest season, there is an abundance of okra, but during the off season, it is scarce. Most of the unsold products are wasted during off season due to high perishability of the product (Imoh and Ajaero, 2007). Meanwhile, the horticultural crop production (vegetables and other fruit crops) has gotten little attention in Nigeria's agricultural development programs and objectives. The country has only one research institute, National Horticultural Research Institute (NIHORT) established in 1975 for all the horticultural crops (Nwalieji et al., 2015). And despite various initiatives to improve the agricultural economy, the horticultural sector remains under developed. In addition, vegetable production has received less institutional support compared to other staple crops such as meat, milk and eggs. Several factors such as inefficient use of available resources, small scale production, heavy losses during the peak season and involvement of few vegetable farmers hamper the potentials of okra as a good source of food and nutrition. Hence an efficient and sustainable production and marketing of okra is important as it is seen as a driver of rural development and a source of revenue. Therefore, this study aims to find the profitability of okra production and marketing in Aba Agricultural zone, Abia State. Specifically, the study will examine the socio-economic characteristics of the okra farmers, examine the potential of okra production in the area, estimate the cost and returns of okra production and marketing, estimate the determinants of okra profit and marketing, estimate the production function of the okra enterprise and analyze the constraints militating against okra production and marketing of okra in the study area.

2.0 Research Methods

The research was done in Aba Agricultural Zone of Abia State. It is located in the South East region of Nigeria between longitude $7.14^{0}49^{1}$E and $7.33^{0}28^{1}$E and latitude $5.81^{0}95^{1}$N and $5.149^{0}72^{1}$N. The major occupation of the people is farming. They produce crops such as yams, cassava, cocoyam, maize, vegetables, okra and cocoa. The study comprised of all okra farmers in five communities of Osisioma Ngwa, Abia State. A multi-stage sampling method was used to select the sample size needed for this study. The first stage involved the purposive selection of Osisioma Ngwa local government area from Aba agricultural zone due to the high level of okra production in the area. In the second stage, five (5) communities (Uratta, Aro-Ngwa, Amasa, Amaitolu and Umunneise) were selected using simple random sampling. While in the last stage, twenty-four (24) okra farmers were randomly selected giving a sample size of 120 farmers. The data for this study were obtained through primary source using a well-structured questionnaire.

Method of Data Analysis

The data were analyzed using econometric models, mean score and descriptive statistics such as means, percentage and frequency distribution. The socio- economic characteristics of okra farmers were analyzed using simple descriptive tools while the perceived potentials of okra enterprise and constraints militating

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against it were analyzed using mean scores. Farm budgeting techniques was used to analyze the cost and returns of okra production and marketing while regression analysis was used to analyze the factors of the level of profit of okra production and marketing and the production function for the farmers respectively.

Model Specification

Farm budgeting techniques model:

Gm = TR – TVC.

$\sum PiQi - \sum Cixi$ …… (1)

Where:
GM = Gross Margin
TR = Total revenue
TVC = Total variable cost of production and marketing
Pi = Price per unit output (naira)
Qi = Output per farmer (kg)
Ci = Price of input (naira)
Xi = Quantity of variable Input

Multiple regression model:

The model for factors influencing the level of profit of okra production and marketing is as specified below.
$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}) + e$ ……(2)
Explicitly the model is stated thus:

Linear Form

This was chosen to be the lead model considering the relatively high R^2 (37%) F-statistics. Also, five of the variables considered are significant at either 5% or 1%.

$$Y(\text{profit}) = \beta_0 + \beta_1 \text{Gender} + \beta_2 \text{Age} + \beta_3 \text{Educ} + \beta_4 \text{Experience} + \beta_5 \text{HHsize} + \beta_6 \text{Coop} + \beta_7 Transp + \beta_8 Extn + \beta_9 Labour + \beta_{10} Sellingp + \mu$$
…… (3)

Semi-Log (log-linear) Form

$$Ln\ Y(\text{profit}) = \beta_0 + \beta_1 \text{Gender} + \beta_2 \text{Age} + \beta_3 \text{Educ} + \beta_4 \text{Experience} + \beta_5 \text{HHsize} + \beta_6 \text{Coop} + \beta_7 Transp + \beta_8 Extn + \beta_9 Labour + \beta_{10} Sellingp + \mu$$
…… (4)

Double Log (log-log) Form

$$\text{LnY (profit)} = \beta_0 + \beta_1 Ln\text{Gender} + \beta_2 Ln\text{Age} + \beta_3 Ln\text{Educ} + \beta_4 Ln\text{Experience} + \beta_5 Ln\text{HHsize} + \beta_6 Ln\text{Coop} + \beta_7 LnTransp + \beta_8 LnExtn + \beta_9 LnLabour + \beta_{10} LnSellingp + \mu$$
… … … … … … … … … … … … … … … ….(5)

Exponential Form

$$\text{Y (profit)} = \beta_0 + \beta_1 Ln\text{Gender} + \beta_2 Ln\text{Age} + \beta_3 Ln\text{Educ} + \beta_4 Ln\text{Experience} + \beta_5 Ln\text{HHsize} + \beta_6 Ln\text{Coop} + \beta_7 LnTransp + \beta_8 LnExtn + \beta_9 LnLabour + \beta_{10} LnSellingp + \mu$$
… … … … … … … … … … … … … … … ..(6)

Where;
Y = Level of profit (₦)
Gender = Gender (1 = Male, 0 = Female)
Age = Age of marketers (years)
Educ = Level of formal education (years)

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Experience = Marketing experience (years)

HHsize = Household size (number of people living with respondents)
Coop =Membership of cooperatives (Yes = 1, No = 0)
Transp = Transport cost (₦)
Extn = Number of Extension contacts
Labour = Labour cost (₦)
Sellingp = Selling price (₦)
e = error term

Production function model:

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

Where;
Y = Quantity of okra produced in kg
X_1 = Farm size (ha)
X_2 = Labour input in man-days
X_3 = Cost of planting materials (₦) (such as improved seeds, agrochemicals etc)
X_4 = Fertilizer input (kg)
X_5 =Capital input (₦) (which include depreciation of farm tools and equipment, machinery, etc, interest charge s on borrowed capital, repair and maintenance costs etc.)
e = error term

5-point rating scale was specified as the response option categorized into Strongly Agree (SA) = 5, Agree (A) = 4, Undecided (U) = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1. Based on the 5-point rating scale, the cut-off point was calculated thus:

$\mathcal{E}FX/N$ = 5+4+3+2+1 / 5 = 3.00

3.0 Results and Discussion

Socio-Economic Characteristics of the Okra farmers

The socio-economic characteristics of the okra farmers are presented in table 1. The features include age, gender, marital status, household size, level of education, farming experience, farm size and extension contact. The result shows that the mean age of the farmers was 32 years. This means that majority of farmers were young, strong and agile. These young farmers are more likely to adapt new and improved technologies in agricultural production (Udoh et al; 2007). Majority of the farmers (55%) were women. This is in line with the assertions of Arimi (2014), that females participate more in farming activity than men. Most of the farmers (53.33%) were married. This shows that they will be able to put resources together for efficient production and marketing. This agrees with the findings of Okoye et al, (2010) who says that married people are responsible and their opinion is highly respected within rural communities. The higher percentage of household size (34.17) of 7 – 10 may means additional responsibilities. The outcome could be explained by the fact that most vegetable producers in the LGA used enterprise revenues to supplement family income and employed a big and inexpensive family labour force in vegetable production following the study of Akpan *et al* (2012). These have a positive impact on farmer welfare, enterprise sustainability and cost minimization objective for Nigerian vegetable farms. The result from educational attainment showed that 71.67% of the farmers attended secondary form of education. This implies that majority of the okra farmers are educated, indicating the ability to access and process information that will enable them understand and accept innovations following the study of Simon et al (2010). The farmers had a mean experience of 12 years. This shows that farmers had long years of farming experience and have the knowledge by their own experiences to produce okra following the study of Simon et al (2010). The result

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from the farm size showed that majority (23.33%) of the farmers had farm sizes ranging 0.1 – 0.5. This suggests that the majority of farmers owned small farms. The result could be attributable to the continuous subsistence nature of vegetable crop production in Southern Nigeria which is exacerbated by rising land fragmentation and urbanization. The finding consolidated the study of Onyenweaku et al (2007), Akpan *et al* (2012). Also, the results show that majority (70.83%) of the respondents had extension contact while 29.17% had no form of extension contact. Good extension programs and interactions with producers are an important factor in technology dissemination and adoption (Bonabana -Wabbi, 2002) for increased production and productivity.

Table 1: Frequency distribution of the farmers according to their socio-economic characteristics

Variable	Frequency	Percentage
Age		
21- 30	18	15.00
31- 40	47	39.17
41- 50	24	20.00
51- 60	30	25.00
61- 70	1	0.83
Total	120	100
Mean: 32		
Sex		
Female	66	55.00
Male	54	45.00
Total	120	100
Marital Status		
Single	13	10.83
Married	64	53.33
Widowed	13	10.83
Divorced	6	5.00
Separated	4	3.33
Total	120	100
Household Size		
1-3	22	18.33
4-6	35	29.17
7-9	41	34.17
10-12	22	18.33
Total	120	100
Mean: 6		
Educational Status		
No formal education	11	9.17
Primary level	13	10.83
Secondary level	86	71.67
Tertiary Level	10	8.33
Total	120	100
Farming Experience		
1-5	18	15.00
6-10	46	38.33
11-15	49	40.83
16-20	3	2.50

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21-25	4	3.33
Total	120	100
Mean: 12		
Farm Size		
0.1-0.5	28	23.33
0.6-1.0	16	13.33
1.1-1.5	22	18.33
1.6-2.0	23	19.17
2.1-2.5	14	11.67
> 2.5	17	14.17
Total	120	100
Mean: 1.8		
Extension Contact		
Yes	85	70.83
No	35	29.17
Total	120	100

Source: Field survey

Potentials of okra production and marketing in the study area

The results in Table 2 show the rating scale analysis of farmers' perception of the potentials of okra production and marketing in the study area. The results show that the respondents were in agreement that okra production requires low establishment cost (3.11), low managerial skills and experience (3.33), quick cash return and turnover (3.08) and high harvest frequency (3.00). Others include yield are more predictable and assured (3.26), low incidence of pests, diseases and rodents (3.15), less labour intensive (3.21) and can be double cropped, both in rainy and dry season without implications (3.39). The respondents also were in dis-agreement that okra has low cost of production (2.30%), high demand from outsiders for industrial application (2.34), low risk management (2.38), less affected by climate change (2.30) and high land utilization because of intercrop (2.28). This may be due to lack of awareness of the various uses of the commodity, even for industrial purposes (Omoniyi et.al., 2018)

Table 2: Rating scale of perception in the potential for okra production

Perception	SA[5]	A[4]	U[3]	D[2]	SD[1]	TOTAL	MEAN
Requires less capital for establishment	-	54 (216)	13 (78)	26 (52)	27 (27)	265	3.11
Low cost of production	-	6 (24)	23 (69)	59 (118)	32 (32)	243	2.03
Less managerial skills and ability	-	69 (276)	32 (96)	9 (18)	10 (10)	400	3.33
Quick cash return and turnover	-	57 (228)	32 (96)	15 (30)	16 (16)	338	3.08
High frequency of harvest	(5)	55 (220)	20 (60)	30 (60)	14 (14)	343	2.86
High demand by outsiders for industrial usage	-	21 (84)	22 (66)	54 (108)	23 (23)	281	2.34
Low risk management	-	-	62 (186)	12 (24)	16 (16)	286 266	2.38
Yield are more predictable and assured	-	75 (300)	17 (51)	12 (24)	16 (16)	391	3.26

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Low incidence for pests, diseases and rodents	-	68 (272)	21 (63)	13 (26)	18 (18)	379	3.15
Less affected by climate change	-	24 (520)	13 (39)	69 (138)	14 (14)	276 287	2.39
Less labour intensive	-	67 (268)	22 (66)	21 (42)	10 (10)	386	3.21
High land utilization because of intercrop	-	50 (200)	19 (57)	19 (38)	32 (32)	273 327	2.73
Can be double cropped, both rainy and dry season without irrigation	-	75 (300)	23 (69)	16 (32)	6 (6)	407	3.39
Can thrive well in varieties of soil	-	7 (35)	25 (100)	77 (231)	-	360 394	3.38
More drought tolerance low incidence of crop failure	-	3 (15)	- -	1 (3)	44 (44)	206	1.74

Source: Field Survey
Figures in Parenthesis are rating scale

Profitability of okra production and marketing in the study area

The results in Table 3 show the profitability analysis of okra production and marketing in the study area. The result shows total revenue of about ₦314,620.81 from one ha of okra production with a total variable cost of about ₦149,021.00 with labour being the most important and costliest input in the study (₦110,000.00). The results show that okra productivity uses profitability by returning ₦2.08 for every ₦1.00 spent. Also, the revenue from marketing is ₦251,696.65 which was about 80% of quantity produced. The other 20% was consumed and given as gift. The most input component of variable cost uses transportation (₦46,950.33) with total variable costing making ₦87,240.40

The result also show fixed cost depreciated at ₦1,365.97 and total cost at ₦89,106.35. The gross marketing margin and market margin was ₦164,456.25 and ₦164,456.25 respectively. This shows that okra marketing was profitable by returning ₦2.83 for every ₦1.00 spent. The results also show a total fixed cost of about ₦2,500 for production with total cost of ₦151,521.90. The gross margin and profit was ₦165,599.81 and ₦163,098.91 respectively. The result show that okra production was profitable by returning ₦2.08 for every ₦1.00 spent.

The results also show revenue from marketing at ₦251,696.65 which was about 80% of quantity produced. The other 20% was consumed and given as gift. The most important component of variable cost was transportation (₦46,958.33) with total variable costing making ₦87,240.40.

The results also show Fixed cost depreciated at ₦1,865.97 and total cost at ₦164,456.25 respectively. This shows that Okra marketing was profitable by returning ₦2.83 for every ₦1.00 spent. This shows that it is more profitable when the producers sell to the market directing than going through the middleman.

Table 3: Profitability of okra production and marketing per ha and marketing in the Study Area

Production Items	Value	Marketing Item	Value
a) Revenue	314,620.81	Revenue	251,696.65
b) Variable Costs		Variable Costs	
Labour:	110,000.00	Transportation:	46,958.33
Fertilizer:	28,000.00	Storage:	17,657.10
Seed:	3,821.00	Loading/offloading:	20,460.40
Herbicide:	7,200.00	Marketing charges:	2,164.38
	149,021.00		87,240.4
c) Fixed Costs		Fixed Costs (Depreciated)	1,865.97

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	(Depreciated)	2000.9	Total Costs (B+C)	89,106.35
d)	Total Costs (B+C)	151,521.90		
e)	Gross Margin (A+B)	165,597.81	Gross Marketing Margin (A-B)	164,456.25
f)	Profit (A-B-C)	163,098.81	Marketing Margin (A-B-C)	162,590.28
	B CR (A/B+C)	2.08:1.00	Marketing Efficiency (A/B*100%)	288.51

Source: Field Survey

Determinants of profitability of okra production and marketing in the study area

The double log functional form gave the best fit and hence it was chosen as the lead equation as shown in Table 4 above. The choice is based on its high value of R^2, number of significant factors and agreement with prior expectations. The R^2 value of 0.7238 indicates 72.38% variability in profit explained by the independent factors. The F value of 28.56 was highly significant at 1% level indicating a regression of best fit.

The coefficient of gender was negative and significant at 10% level. This implies that the female farmer made more profit than their male opponents. Gender stereotyping across sex lines suggests that okra is primarily farmed by women in the study area; women have been proven to be prolific agricultural production, thereby adding value to their products for improved earnings (Nwaobiala *et al* 2009).

The coefficient of education is positive and significant at 10% level. This implies that any increase in education will lead to a corresponding increase in profit. This is expected because education will enable the farmers to access and process information in agricultural innovations for increased productivity and profit. Education helps unlock the natural talents of the farmers and inherent enterprising qualities (Nwaru, 2004)

The coefficient of household size was positive and highly significant at 1% level probability. This implies that any increase in household size will lead to a corresponding increase in profit. This may be because of the availability of family labour which in turn reduces cost of hired labour in the study area.

The coefficient of efficient content was positive and significant at 10% level. This implies that okra farmers with extension content made more profits than their counterparts without content. Any increase in extension content will lead to increase in adoption okra improved technologies thereby leading to more yield and profit, following the study of Nwaobiala and Ogbonna (2014).

The coefficient of farm size was positive and significant at 5% level. This implies that any increase in farm size will lead to corresponding increase in okra profit. Increased in farm size is expected to lead to increased okra output that will translate to more profit.

Table 4: Regression Estimate of the Determinants of Okra Profit in The Study Area

Variable	Linear	Exponential	Cobb Douglas+	Semi-log
Constant (b0)	-6772.367	9.245938	9.195938	3197.717
	(-0.61)	(32.92)**	(14.77)**	(0.11)
Gender (X1)	5021.807	-.085517	-.1198863	6260.157
	(2.12)*	(-1.21)	(-2.00)*	(-2.26)*
Age (X2)	-108.402	-.0036772	-.0921327	-1358.67
	(-0.98)	(-1.31)	(0.93)	(-.30)
Education (X3)	2600.569	.1147033	.0720199	727.284
	(1.30)	(2.27)*	(1.68)*	(0.37)
Farming Experience (X4)	146.1818	.0085938	.0295737	-347.7227
	(0.51)	(1.18)	(0.61)	(-0.15)

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Household size (X5)	5475.916	-.140742	.8509432	29802.13
	(11.99)***	(1.35)	(14.68)**	(11.13)***
Member of cooperatives (X6)	2237.256	.0085061	.0112409	2087.024
	(0.81)	(0.12)	(0.18)	(0.74)
Transportation cost (X7)	-2.151569	-.0000479	-.0255553	-2632.735
	(-0.32)	(-0.28)	(-0.40)	(-0.90)
Extension contact (X8)	5807.33	.1826104	.1462267	4982.871
	(2.10)*	(2.61)**	(2.37)*	(1.75)*
Farm size (X9)	3949.665	-.0829943	.119318	5416.475
	(2.89)**	(2.40)**	(3.10)***	(3.03)***
Marital status (X10)	-114.9952	-.0232317	-.0112362	325.3723
	(-0.09)	(-0.73)	(-0.40)	(0.25)
R^2	0.6056	0.6259	0.7238	0.6011
$\bar{R}$	0.5696	0.5916	0.6984	0.5645
F	16.75***	18.24***	28.56***	16.42***

*, **and*** is significant at 10%, 5% and 1% level
figures in parenthesis are +- values
+ = lead equation

Production function estimates for okra in the study area

The results in Table 5 show the production function estimates for okra in the study area. The Cobb-Douglas functional form was chosen as the lead equation based on high R^2 value, number of significant factors and agreement with *a prior* expectations.

The coefficient of farm size and labour was positive and significant at 10% level each. This implies that a 1% increase in farm size and labour will lead to a 0.004% and 0.323% increase in output respectively.

The results also show that the coefficient of seed was negative and significant at 5% level. This implies that a 1% increase in seed will lead to a 0.148% decrease in okra output. This is against a prior expectation probably because of over use of seed as a planting material leading to plant competition thereby reduction in yield.

The coefficient of herbicide was positive and highly significant at 1% level. This implies that a 1% increase in herbicide use will lead to a 0.618% increase in okra output in the study area.

Table 5: Production Function Estimation for Okra

Variables	**Linear**	**Exponential**	**Cobb Douglas+**	**Semi-log**
Constant(b0)	.6210309	.7858689	1.034326	.6448695
	(0.70)	(5.09)***	(1.57)	(0.15)
Fertilizer	.0017327	.0001557	-..0634287	.4894278
	(0.80)	(0.41)	(1.10)	(1.27)
Farm Size(ha)	.3121261	.0392272	.0943341	.6314553
	(1.73)*	(1.25)	(2.59) *	(2.60) *
Capital	-.0000416	-.433e-06	-.0301809	-.3438001
	(-0.26)	(-0.16)	(-0.50)	(-0.85)

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Labour	.400872	.0825088	.3227996	2.43333
	(2.45)**+**	(2.90) **	(1.88) *	(2.12) *
Seed	-.0003152	-.000102	-.147608	-.4460764
	(-2.06)*	(-3.84)***	(-3.15) *	(-1.43)
Herbicides	.4018133	.0668657	.6180425	2.509577
	(2.50) *	(2.39) *	(4.95) ***	(3.01) ***
R^2	0.6259	0.6493	0.7352	0.6074
$\bar{R}$	0.5916	0.6307	0.7210	0.5863
F	18.24***	34.87***	51.83***	28.88**

Source: Field Survey

*, ** and *** is significant at 10%,5% and 1% level.

Figures in parenthesis are of t–values, + = lead equation

Constraints affecting okra production and marketing in the study area

The result in Table 6 shows the constraints militating against okra production in the study area. The results show that the farmers use the agreement in the following constraints; high cost of inorganic fertilizer (3.13) insufficient capital (3.06), lack of collateral required to secure loan (3.25) and high cost of agrochemicals (3.42).

The respondents also were in disagreement with the following constraints; poor access to good roads *2.18) scarcity of farmland (2.72), lack of technical knowledge in the use of technology (2.13) and high interest rate in loan (2.58).

Others include; high cost of improved variables (2.77), poor extension agent farmers contact (2.30), lack of market roads and social facilities, high incidence of pests (2.28).

Table 6: Major constraints in of Okra Production

Constraints	SA[5]	A[4]	U[3]	V[2]	SD[1]	Total	Mean	Decision
High cost of inorganic fertilizer	-	71	15	13	21	376	3.13	Agree
		(284)	(45)	(26)	(21)			
Scarcity of farm land	-	11	75	23	11	326	2.72	Disagree
		(44)	(225)	(46)	(11)			
Insufficient capital	-	60	23	21	16	367	3.06	Agree
		(240)	(69)	(42)	(16)			
Poor access to good roads	-	9	25	64	22	261	2.18	Disagree
		(36)	(75)	(128)	(22)			
Lack of technical knowledge in the use of technology	-	9	24	60	27	255	2.13	Disagree
		(36)	(72)	(120)	(27)			
Lack of collateral to secure loan	-	63	32	17	8	390	3.25	Agree
		(252)	(96)	(34)	(8)			
High interest rate on loan	-	44	19	19	38	309	2.58	Disagree
		(176)	(57)	(38)	(38)			
High cost of improved varieties	-	53	18	17	32	332	2.77	Disagree
		(212)	(54)	(34)	(32)			

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Poor extension agent farmer's contact	-	21 (84)	20 (60)	53 (106)	26 (26)	276	2.30	Disagree
Lack of market, roads and social facilities	-	-	47 (141)	56 (112)	17 (17)	270	2.25	Disagree
High cost of agrochemicals	-	81 (324)	21 (63)	5 (10)	13 (13)	410	3.42	Agree
Unavailability of labour to carry out farm activities	-	71 (284)	15 (45)	13 (26)	21 (21)	376	3.13	Agree
High incidence of pests	-	11 (44)	23 (69)	75 (150)	11 (11)	274	2.28	Agree

Source: Field Survey

Constraints militating against okra marketing in the study area

The results in Table 7 show the rating scale analysis of constraints militating against okra marketing in the study area was spoilage (3.42), followed by processing (3.25). The respondents were in disagreement with the following constraints thus; cost (2.20), poor storage facilities (2.13), price instability (2.56) and seasonality of commodity (2.77). Others include; market remoteness and inadequate market information.

Table 7: Rating scale of problems encountered in the marketing of okra

Constraint	SA^5	A^4	U^3	V^2	SD^1	Total	Mean	Decision
High transportation cost	-	9 (36)	26 (78)	64 (128)	22 (22)	264	2.20	Reject
Poor storage facilities	-	9 (36)	24 (72)	60 (120)	27 (27)	255	2.13	Reject
Processing	-	63 (252)	32 (96)	17 (34)	8 (8)	390	3.25	Accept
Price instability	-	44 (176)	19 (57)	19 (38)	38 (38)	309	2.58	Reject
Seasonality of commodity	-	53 (212)	18 (54)	17 (34)	32 (32)	332	2.77	Reject
Market remoteness	-	21 (84)	20 (60)	53 (106)	26 (26)	276	2.30	Reject
Inadequate market information	-	-	47 (141)	56 (112)	17 (17)	270	2.25	Reject
Spoilage	-	81 (324)	21 (63)	5 (10)	13 (13)	410	3.42	Accept

Source: Field Survey

4.0 Conclusion

The result of the study shows that majority of the farmers were within the active productive age and capable of adopting new technologies for production and efficient marketing. The study also shows that okra production and marketing were profitable. The factors that influenced okra production were; gender, education, household size, extension contact and farm size while education, household size and labour influenced okra marketing efficiency. Hence, an efficient, sustainable okra production and marketing system requires an increase in the awareness of the potentials of the commodity by the farmers, policy makers and other stakeholders involved in the okra value chain. It is also recommended that the government

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should provide appropriate and adequate preservation technologies and efficient marketing channels at subsidized rates to reduce wastage. Also, adding value to make the crop competitive with common staples in the market through further researches, food processing and development of new products will attract more farmers and stakeholders who would want to invest in them.

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