



Profitability Of Okra Production In Ughelli North Local Government Area Of Delta State, Nigeria

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ABSTRACT

The study was designed to evaluate the profitability of okra production in Ughelli North Local Government Area of Delta State, Nigeria. Specifically the study aimed at describing the socio economic characteristics of the farmers ascertain their gross margin, identify the determinant of profitability and identify the constraints in okra production in the study area. Simple random sampling technique was used to select 5 communities from the 7 communities in the study area, after which 55 respondents who responded from a sample population of 70 registered okra farmers gotten from Delta State Agricultural and Rural Development Authority (DARDA) was selected. Finally, additional 47 respondents were also selected randomly in the 5 communities to sum up the total of 102 respondents used in the study. Data were collected using well structured questionnaire and personal interview methods. The result indicated males (52.0%) mean age of 45.6 years. The result also showed a net income of ₦1,084,004.18 and gave a gross margin ₦1,090,403.38 per annum showing that the business is profitable in the study area. Furthermore, farmers encountered several constraints such as weed infestation, high cost of labour, small farm size holding, scarcity of labour among others.

Key words: Profitability, Okra and Gross margin analysis

INTRODUCTION

Vegetables are necessities in maintaining health and preventing diseases. The importance of vegetables and fruits in the human diet has been recognized by the World Health Organization (WHO), which promotes and recommends the consumption of at least 400g of vegetables and fruits per day to maintain health and provide the necessary nutrients lacking in other food groups (Dias, 2011). Okra, *Abelmoschus esculentus* is one of the most widely known and utilized



species of the family Malvaceae and an economically important vegetable crop grown in tropical and sub-tropical parts of the world (CBI Market Intelligence, 2016). Okra originated in Ethiopia (Sathish, & Eswar, 2013) and was then propagated in North Africa, in the Mediterranean, Arabia and India by the 12th century BC. “Okra” is known by many local names in different parts of the world. Okra plants are grown commercially in many countries such as India, Japan, Turkey, Iran, Western Africa, Yugoslavia, Bangladesh, Afghanistan, Pakistan, Myanmar, Malaysia, Thailand, India, Brazil, Ethiopia, Cyprus and in the Southern United States (Habtamu, Negussie, Gulelat, Ashagrie & Fekadu, 2015).

Okra production has been widely practiced because of its importance to the economy development and can be found in almost every market in Africa (Ngbede, Ibekwe, Okpara, Onyegbule & Adejumo, 2014). Okra plays an important role in the human diet by supplying fats, proteins, carbohydrates, fibers, minerals and vitamins which can protect against cancer, improve digestion, and boost immunity (Organic Facts, 2018). Okra is a multipurpose crop due to its various uses of the fresh leaves, buds, flowers, pods, stems and seeds (Mihretu, Wayessa, & Adugna, 2014). In essence, the entire plant is edible and is used to have several foods (Maramag, 2013). Okra immature fruits (green seed pods), which are consumed as vegetables, can be used in salads, soups and stews, fresh or dried, fried or boiled (Akintoye, Adebayo, & Aina, 2011). The edible portions of the pod are good sources of protein with an ascorbic acid content of 20g\100g and high level of calcium, fiber ash; mature seeds contain about 21% of edible oil (Uzowuru, 2010).

Okra offers mucilaginous consistency after cooking. Okra mucilage has medicinal applications when used as a plasma replacement or blood volume expander (Maramag, 2013). The mucilage of Okra binds cholesterol and bile acid carrying toxins dumped into it by the liver. Okra seeds are sources of oil and protein (MEF, 2013). Okra seeds have been used on a small scale for oil production. It can be also used as non-caffeinated substitute for coffee. Okra has industrial applications and is used in confectionary. (Adetuyi, Osagie, & Adekunle, 2011).

In Nigeria, okra ranked third among fruit vegetables after tomato and pepper in terms of consumption and production. The world production is estimated at 17 million tonnes per year and India ranked first with 6,003,000 tons of okra production quantity followed by Nigeria with



2,037,229 tons and Sudan with 297,447 tons per year (Food and Agriculture Organization Statistics [FAO]. 2017). Okra has a high market price in Nigeria markets because it is included daily in the diet of most Nigerians. Okra is produced both as an irrigated and a rain fed crop in Nigeria. The unpredictable drought and high temperatures during the growing season are potential environmental factors affecting crop productivity and food security worldwide (FAO, 2011).

Objectives

The broad objective of this study was to analyze the profitability of Okra Production in Ughelli North L.G.A, Delta State, Nigeria.

The specific objectives of the study were to:

- i. describe the socio-economic characteristics of okra producers in the study area.
- ii. determine the cost and returns of okra production in the study area.
- iii. identify the constraints faced by okra producers in the study area.

METHODOLOGY

This study was carried out in Ughelli North Local Government Area in Delta State, Nigeria. It is situated in the central part of Delta State and located between Latitude: 5°29.3736' N and Longitude: 6°0.2442' E of the equator with an altitude of 26m. Ughelli North has its' headquarter located in Ughelli. The area is bounded to the east by Isoko North Local Government area and to the west by Uvwie local government area. Ughelli North LGA has a total area of 818 square kilometres with an average temperature of 25 degrees centigrade and total precipitation of about 2950mm per annum. This area is divided into seven communities namely; Agbarha, Agbarho, Ewreni, Ogor, Orogun, Uwheru and Ughelli. The vast majority of this population is involved in agriculture; they are mainly peasant farmers, fishermen and traders. Varieties of plants thrive in the area.

RESULTS AND DISCUSSION

Socio-economic Characteristics of Okra producers

The socio-economic characteristics of the Okra farmers in the study area are presented and discussed as follows;



Table 1: Socio-economic characteristics of the Okra farmers.

Variables	Frequency (n=102)	Percentage %	Mean
Age in years			
25-34	9	8.8	45.6years
35-44	36	35.3	
45-54	39	38.2	
Above 54 years	18	17.7	
Sex			
Male	53	52.0	
Female	49	48.0	
Education level			
Non formal education	14	13.7	
Primary education	31	30.4	
Secondary education	33	32.4	
Tertiary education	24	23.5	
Marital status			
Married	73	71.6	
Single	7	6.9	
Divorced/separated	9	8.8	
Widowed	13	12.7	
Farming experience in years			14.8 years
1-10	39	38.2	
11-20	42	41.2	
Above 20 years	21	20.6	
Household size in number			6 persons
1-6	74	72.6	
7-12	25	24.5	
Above 12	3	2.9	
Status of land			
Self owned	25	24.5	
Rented	77	75.5	
Source of labour			
Hired	61	59.8	
Family	29	28.4	



Source: Field Survey, 2021.

From the result in table 4.1, it was observed that from the age distribution of the respondents, 8.8% of the respondents were between the ages of 25 and 34 years, 35.3% were between 35 and 44 years, 38.2% were between 45 and 54 years and 17.7% were above 54 years. The mean age of the respondents was 45.6 years. This result indicates that the larger percentage of the respondents were above 35 years but below 70 years. Most of the young men and women below 35 years are not interested in farming leaving the older generation on the farm. The implication of this is that the future of okra production in the study area is uncertain and okra production may become a thing of the past. The males dominated with 52.0% while 48.0% were females. This agrees with the findings of Babalola et al., (2020) where majority of their farmers were male, within the age of 47-56 and above.

About 13.7% of the respondents did not have any formal education, 30.4% attended primary school, while 32.4% had secondary school education and 23.5% had tertiary education. This implies that a higher percentage of the respondents were educated. A higher percentage, 71.6% of the respondents were married, only 6.9 were single, while 8.8% and 12.7% were divorced and widowed respectively. This conforms to the findings of Oyewo, et al., (2020) who in their research on Okra indicated that majority (85.7%) of the farmers had first school leaving certificate and 68.6% were married.

It was also observed that 38.2% of the respondents had been in the practice of okra production for not more than 10 years, 41.2% had experience between 11 and 20 years, while 20.6% had grown okra above 20 years. The mean years of okra production experience was 14.8 years implying that okra production is an age long profession of the people in the study area. This is in line with Nwaobiala, et al., (2012) where the farmers experience in their two farmers group were 27.41 years and 28.56 years respectively implying that the farmers are experienced in okra production.

The household size of the respondents was between 1 to 15 persons were 72.6% were below 7 persons and 27.4% were 7 persons and above with mean of about 6 persons. A large percentage



of the respondents, 75.5% did not own the land used for farming. Majority of the farmers, 59.8% used hired labour, 28.4% made use of family labour while 11.8% were both hired and family labour. This agrees to the findings of Ekunwe et al., (2017) where their average household size was 5 persons.

Cost and returns of Okra production

This section shows how profitable Okra production is in Ughelli North L.G.A. of Delta State, Nigeria.

Table 2: Cost and returns for Okra production

Variables	Unit of measure	Amount per annum/ha ₦
Revenue:		
Sales from Okra (P x Q)	₦/Tonnes	3,261,116.67
Variable cost:		
Seeds	Kg	63,117.65
Pesticide/Herbicide	Litre	11,123.01
Fertilizer	Kg	36,065.36
Labour	Mandays	1,153,311.2
Harvesting	Mandays	496,934.22
Transportation	Tonnes	289,679.29
Rent on land	₦	28,656.87
Amount damaged	Tonnes	91,825.69
Total variable cost		2,170,713.29
Gross margin (TR-TVC)		1,090,403.38
Fixed Cost:		
Total Fixed cost (Depreciation of equipments and tools; Cutlass, hoes, shovels, wheel barrow)		6,399.20
		2,177,112.49
Total cost (TVC+TFC)		1,084,004.18
Net income (TR-TC)		



Source: Field Survey, 2021

From the result in table 4.2, it was observed that the total variable cost was two million one hundred and seventy thousand seven hundred and thirteen naira twenty nine kobo, ₦2,170,713.29 annually while the total fixed cost was six thousand three hundred and ninety nine naira twenty kobo, ₦6,399.20 per annum, amounting to a total cost of production of two million one hundred and seventy seven thousand one hundred and twelve naira forty nine kobo, ₦2,177,112.49 per annum. The bulk of the total cost was spent on labour and harvesting. The total revenue was valued at three million two hundred and sixty one thousand one hundred and sixteen naira sixty seven kobo, ₦3,261,116.67 per annum. The net return was one million eighty four thousand four naira eighteen kobo, ₦1,084,004.18 per annum. This implies that okra production gave returns on the investment.

Furthermore, it was also observed that the total revenue and total variable cost gave a gross margin of one million ninety thousand four hundred and three naira thirty eight kobo, ₦1,090,403.38 per annum indicating that Okra production is profitable in the study area. This result agrees with the findings of Osalusi et al., (2019) who reported that okra farming was seen to be lucrative in their study with profitability index of 56.38, a rate of return on investment of 117.50% and operating cost ratio of 38.59%.

Constraints faced by Okra farmers in the study area

This section identified the various problems faced by Okra farmers in Ughelli North L.G.A. of Delta State, Nigeria.

Table 3: Problems of Okra production

Problems	Yes	Yes Percentage	No	No Percentage
	Frequency (n=102)	%	Frequency (n=102)	%
Weed infestation	85	83.3	17	16.7
High cost of labour	63	61.8	39	38.2
Size of land holding	62	60.8	40	39.3
Scarcity of labour	56	54.9	46	45.1
Damage of pests	56	54.9	46	45.1
Unavailability of quality improved				



seeds	50	49	52	51
Storage problem	47	46.1	55	53.9
Capital/funding	45	44.1	0	0
Scarcity of fertilizer	27	26.5	75	73.5
Unfavourable weather condition	21	20.6	81	79.4
High cost of transportation	10	12.7	0	0
Low demand	7	6.9	95	93.1
Lack of machines	5	4.9	0	0
Source of finance				
Personal savings	94	92.2	8	7.8
Contributions/osusu	75	73.5	27	26.5
Friends/relatives	38	37.3	64	62.7
Bank	13	12.7	89	87.3
Farmers association	0	0	0	100

Source: Field Survey, 2021.

The result from Table 4.3 shows the various problems in order of seriousness faced by the okra farmers in the study area with their respective frequency and percentage. Comparing each percentage with 50% benchmark; Weed infestation with 83.3% was considered most serious by the okra farmers followed by High cost of labour with 61.8%. The problem of small farm size was 60.8% while problem of scarcity of labour and damage of pest was 54.9%. Difficulty in getting quality improved seeds was 49% while difficult in storage was 46.1%. Lack of capital was 44.1% while scarcity of fertilizer was 26.5%. Unfavorable weather, high cost of transportation and low demand were 20.6%, 12.7%, and 6.9% respectively. The least problem identified was lack of machines 4.9%.

Majority of the farmers sourced capital from their personal savings 92.2% and from contributions 73.5% for production. This result indicated that despite the fact that okra production is a profitable venture several constraints are still encountered by the farmers in the study area. This result agrees with the findings of Babalola et al., (2020) who identified similar problems among okra farmers in their study.



Conclusion

In conclusion, Okra production though a profitable venture in the study area, production is still at a small scale level drawing for the need for improvement on the current practices in Okra production in order to actualize optimum production of Okra. There is need for extension services in the study area to help the farmers in overcoming majority of the problems encountered in Okra production.

Recommendations

1. Finance firms such as Microfinance Banks and Bank of Agriculture should work with farmers in the provision of credits and grants for Okra production.
2. Farmers should be encouraged and mobilized to form cooperatives that will help generate financial aids and machineries to facilitate and ease large scale production.
3. The younger generation should be encouraged on the need to go into Okra production.
4. Okra could serve as an export commodity thereby providing foreign exchange earnings; hence the government should join efforts with the farmers to support Okra production.

Extension agents should constantly reach out to farmers, teach and properly train them on improved farming techniques and practices in the production, harvesting, processing and storage of Okra and more research should be encouraged to figure out improved methods from production to storage of Okra.

REFERENCES

- Adetuyi, F.O., Osagie, A.U., & Adekunle, A.T. (2011). Nutrient, antinutrient, mineral and zinc bioavailability of “okra” *Abelmoschus esculentus (L) Moench* variety. *Am. J. Food. Nutrition*, 1(2),49-54.
- Akintoye, H.A., Adebayo, A.G., & Aina, O.O. (2011). Growth and yield response of okra intercropped with live mulches. *Asian J. Agric. Res*, 5,146-153.



- Babalola, T.S., Alemoru, M.O and Lawal, J.A. (2020). Evaluation of Okra Production among Small holder Farmers in Kabba-Bunu Area of Kogi State, Nigeria. *East African Scholars Journal of Agriculture and Life Sciences* ISSN2617-7277(Online), 3(8),260.
- Bragg, S. (2017). The interpretation of financial statements. Retrieved from <https://www.accountingtools.com/articles/2017/5/14/profitability>, 2.
- CBI Market Intelligence. (2016). Fresh okra in Europe. Retrieved from https://www.cbi.eu/sites/default/files/market_information/researches/product-factsheet-europe-fresh-okra_final_approved.pdf, 2.
- Dias, J.S. (2011). World importance, marketing and trading of vegetables. *Acta Horticulturae*, 921,153-169.
- Ehirim, N.C., Osuji, E.E., Obasi, I.O., Ukoha, I.I., Maduiké, I.A., Ejike, R.D., & Oguegbuchulam, M.N. (2014). *Int'l Journal Of Agric. And Rural Dev. SAAT FUTU*. 17 (1), 1587-1593.
- Ekunwe P.A., Alufohai G. and Adolue C.F. (2017). Economic viability of okra (*Abelmoschus esculentus*) production in Ika South and North East Local Government Areas of Delta State, Nigeria. *Agro-Science*, 17(1),57–62. DOI: <https://dx.doi.org/10.4314/as.v17i1.8>.
- FAO. (2017). Food and Agriculture Organization of the United Nations. Retrieved from <http://www.fao.org/faostat/en/?#data/QC>, 1.
- FAO. (2011). “The state of the worlds land and water resources for food and agriculture (SOLAW) - Managing systems at risk,” Food and Agriculture Organization of the United Nations, Rome and Earthscan, London, 120–123.
- Farinde, A.J., Owolarafe, O.K., and Ogungbemi, O. (2010). An overview of Production, Processing, Marketing and Utilisation of Okra in Egbedore Local Government Area of Osun State, Nigeria. *Agricultural Engineering International: the CIGRE journal*, IX,(07002).
- Habtamu, F.G., Negussie, R., Gulelat D.H., Ashagrie Z.W., & Fekadu B. (2015). Nutritional quality and health benefits of “okra” (*Abelmoschus esculentus*): A Review. *International Journal of Nutrition and Food Sciences*, 4(2),208-215.
- Katepan, P., Mekhora, T., Mankeb, P. and Sarutayophat, T. (2020). ‘Determinants of productivity and efficiency of okra production for export in Suphan Buri and Nakhon



- Pathom Provinces, Thailand'. *World Review of Entrepreneurship, Management and Sustainable Development*, 16(1),50–62.
- Maramag, R.P. (2013). Diuretic potential of *Capsicum frutescens L.*, *Corchorus olitorius L.*, and *Abelmoschus esculentus L.* *Asian journal of natural and applied science*, 2(1),60-69.
- MEF, (2013). Biology of “okra”. Series of crop specific biology document. *Ministry of Environmental and Forest Government of India*.1-8.
- Mihretu, Y., Wayessa, G., & Adugna, D. (2014). Multivariate analysis among “okra” (*Abelmoschus esculentus (L.) Moench*) collection in South Western Ethiopia. *Journal of Plant Sciences*, 9(2),43-50.
- Ngbede, S.O., Ibekwe, H.N., Okpara, S.C., Onyegbule, U.N., & Adejumo L. (2014). An overview of okra production, processing, marketing, utilization and constraints in Ayaragu in Ivo Local Government Area of Ebonyi State, Nigeria. *Greener Journal of Agricultural Sciences*, 4(4),136-143.
- Nwalieji, H.U., Okeke, M. N. and Uzuegbunam, C.O. (2015). Comparative Profit Analysis of Dry and Rainy Season Okra (*Abelmoschus Esculentus*) Production among Women in Ayamelum Local Government Area of Anambra State, Nigeria. *IOSR Journal of Agriculture and Veterinary Science (IOSR-JAVS)*,8(7),69-74.
- Nwaobiala, C.U. and Ogbonna, M.O. (2014). Adoption Determinants and Profitability Analysis of Okra Farming In Aninri Local Government Area (LGA) of Enugu State, Nigeria. *Discourse Journal of Agriculture and Food Sciences*. 2(1),1-10, ISSN: 2346-7002 www.resjournals.org/JAFS.
- Organic Facts. (2018). 5 Wonderful benefits of okra. Retrieved from <https://www.organicfacts.net/health-benefits/vegetable/health-benefits-of-okra.html>.
- Osalusi, C.S., Akanni-John, R., Okeke, E.N., Ogunsola, J.O. (2019). Analysis of the Profitability of Okra production among Small holder Okra farmers in Akinyele Local Government Area, Oyo State, Nigeria. *International Journal of Environment Agriculture and Biotechnology* (ISSN:2456-1878), 4(5),1377-1381.
- Oyewo, I.O., Shaib-Rahim, H.O., Robert, A.E., Oyewole, O.O., Adedipe, J.O., Aduloju, A.R., and Agboola, F.O. (2020). Cost and Returns Analysis of Okra Marketing in Ijebu North



- Local Government Area of Ogun State, Nigeria. *International Journal of Research and Scientific Innovation (IJRSI)*ISSN2321–2705, VII(X),221.
- Sathish, D., & Eswar, A. (2013). A Review on: *Abelmoschus esculentus* (“Okra”). *Int. Res J Pharm. App Sci*, 3(4),129-132.
- Sedanur, E. (2013). Waste disposal problems and management in Ughelli, Nigeria. *Journal of Environmental Protection*, 04(04),6.
- The Big Book Project, (2019). Okra Production: FactSheet (Inc.PDFGuide), March 14.
- Tiamiyu, R. A., Ahmed, H. G. and Muhammad, A. S. (2012). Effect of Sources of Organic Manure on Growth and Yields of Okra (*Abelmoschus esculentus* L .) in Sokoto , Nigeria. *Nigerian Journal of Basic and Applied Science*, 20(3),213–216.
- Tiripathi, K. K., Govila, O. P., Warriar, R. and Ahuja, V. (2011). Biology of *Abelmoschus esculentus* L. (Okra). *Mumbia*, 1.
- Ume, S.I., Ezeano, C.I., Okeke, C.C., & Gbughemobi, B.O. (2016). Determinants of Okra (*Abelmoschus esculentus*) Production and Profitability in Ayamelum Local Government Area of Anambra State, Nigeria. *International Journal of Case Studies*, 5(11),8. Available at SSRN: <https://ssrn.com/abstract=2881141>.
- Uzowuru, P. (2010). The effect of inorganic and organic fertilizers on okra. Retrieved from <http://www.indiastudychannel.com/attachment/resources/107413-28747>.