

Cost and Returns Analysis of Okra Marketing in Ijebu North Local Government Area of Ogun State, Nigeria

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Abstract: The studies examined the cost and returns analysis of okra marketing in Ijebu North Local Government Ogun State Nigeria. The socio economic characteristics of the respondents, cost and returns of okra marketing, the profitability of okra marketing and the problems affecting okra marketing in the study area were examined. Well-structured questionnaires were administered for primary data collection to seventy marketers. Data were analyzed using descriptive statistics while profitability of the enterprise was analysed using Gross Margin analysis (GM). Results showed that all (100%) of the respondents were female, (34.4%) of the respondents were within the age of 30-40 years while 1.4% were within the age of 60 and above. Majority (85.7%) of the farmers had first school leaving certificate and 68.6% were married, 78.6% had household size of 1-5 people, 52.9% of them had been in the business of okra marketing for 1-5 years (71.4%). The total revenue was ₦813,000 and total variable cost was ₦688, 866. 66k while the gross margin was ₦124,133.33 and benefit cost ratio was 1.18. It is therefore, concluded that okra marketing was a profitable agricultural business in the study area. Major constraints in okra marketing were lack of finance and transportation. In the light of the above findings of the this study, it was recommended that government should renovate the roads to the various farms where the marketers source for their stock and provide credit facilities to the marketers to enable them improve their profits.

Keywords: Cost, Return, Gross Margin, Okra, Marketing, Ogun State

I. INTRODUCTION

Okra as a vegetable crop belongs to the genus *Abelmoschus*, Family Malvaceae and has two main species: *Abelmoschus esculentus* (L) Moench and *Abelmoschus caillei* (A. Chev) Stevels (Siemonsma, 1982). It originated from Africa, the plant is now cultivated in tropical, sub-tropical and warm temperate regions around the world (NRC, 2006). The economic importance of okra cannot be overemphasized. Okra contains carbohydrate, protein and vitamin C in large quantities (Adeboye and Oputa, 1996). The essential and non-essential amino acids that okra contains are comparable to that of Soybean. It was also reported by Eke *et al.*, (2008) that fresh okra fruit is a good source of vitamins, minerals and plant proteins. As a result it plays a vital role in human diet; it can be consumed boiled, fried or cooked for the young immature fruits. In Nigeria, okra is usually boiled in water resulting in slimy soups and sauces, which are relished.

The fruits also serve as soup thickeners (Schippers, 2000). It contains valuable food ingredients, which can be successfully utilized to build up and repair the body (Bakhru, 2003). The leaves, buds and flowers are also edible. Okra seed could be dried. The dried seed is a nutritious material that can be used to prepare vegetable curds, or roasted and ground to be used as coffee additive or substitute (Farinde *et al.*, 2001). Okra leaves are considered good cattle feed, but this is seldom compatible with primary use of the plant. Okra mucilage is suitable for medicinal and industrial applications. It has medical food application as a plasma replacement or blood volume expander. Industrially, okra mucilage is usually used in glaring certain papers and also useful in confectionery among other uses (Markose and Peter, 1990).

Vegetables are valuable in maintaining alkaline reserve in the body. The production of vegetable has become very popular in many countries of the world due to their importance in the diet of the people. The production of vegetables have been recognized as the most affordable and accessible sources of micronutrient, which is increasingly regarded as a catalyst for rural development and as a means of increasing and generating foreign exchange in Africa (AVRDC, 2004a). Okra production constitutes about 4.6 percent of the total staple food production in Nigeria in the year 1970 – 2003 (CBN, 2004). Okra is the most important fruit vegetable crop and a source of calorie (4550Kcal/kg) for human consumption. It ranks first before other vegetable crops (Babatunde *et al.*, 2007). It is one of the most commonly grown vegetable crops in the tropics. Okra cultivation and production has been widely practiced because of its importance to the economy development and can be found in almost every market in Africa. Varieties vary by plant height, size of fruit, color, maturity, etc., viz; white velvet, green velvet, long pod, lady finger, dwarf green pods (Udoh *et al.*, 2005). Christo and Onuh (2005); Katung and Kashina (2005) documented that okra is consumed throughout Nigeria. According to CBN (1996), the average growth rate of vegetable crop including okra produced in Nigeria between 1989 and 1993 was 14.0% compared to 6.4% of cassava, 18% for palm oil and 3.8% for maize. Worldwide, production of okra as fruit vegetable is estimated at six million tonnes per year. In West Africa, it is estimated at 500,000 to 600,000 tonnes per year (Burkil, 1997). In Nigeria, there are two distinct seasons for okra, the

peak and the lean seasons. During the lean season okra fruits are produced in low quantities, scarce and expensive to get (Bamire and Oke, 2003). In the peak season, it is produced in large quantities much more than what the local populace can consume. Proper processing, preservation, marketing and utilisation of okra is necessary to arrest the wastage being experienced during the peak season. Such efforts should involve the development of appropriate technologies for processing and preserving okra to products of high market value. This will enhance the standard of living of the farmers and processors. It is however important to assess the production of okra which has been recognized as the most affordable and accessible sources of micronutrient, which is increasingly regarded as a catalyst for rural development and as a means of increasing and generating household income in Africa. Therefore, assessment of cost and return of Okra marketing will enable the people in Ijebu North market to increase their level of production, as the knowledge of its profitability will be assessed. These therefore necessitate the following research objectives which are to examine the socio economic characteristics of the respondents; determine the cost and returns of Okra marketing, analysis the profitability of okra marketing and examine the problems affecting okra marketing in the study area.

II RESEARCH METHODOLOGY

2.1 Study Area

The study was carried out in Ijebu North local government area of Ogun State. Ijebu North is a local government area in Ogun state, Nigeria. It has an area of 967km² and a population of 284,336 as at the 2006 census. The postal code of the area is 120. The local government was established in 1979 and has its headquarters at Ijebu Igbo. It plays host to Olabisi Onabanjo University (Annex campus). This region is dominated by the Ijebus, who live in the following major town: Ijebu Igbo, Ago- Iwoye, Oru, Awa, Ilaporu, e.t.c. There are several markets in the town but the most popular of them all is Obada Market. Also several indigenes of the town engage in timber business so there are many sawmills in the town. The title of the traditional ruler of the town is called Orimolusi of Ijebu Igbo.

Agriculture is the economic mainstay of the people of the local Government area, producing such as farm products as oil- palm, cocoa, coffee, kolanut, maize, yam, vegetables and poultry stocks. These agricultural products are the source of raw materials for agro-allied industries which in turn utilize the available labour in the area.

The local government also has the area office located at Ago-Iwoye, Oru, Awa-Ilaporu and Mamu. These area offices are being used to disseminate information about government policies to the people at the grassroots and to generate revenue.

2.2 Sampling procedure

The population of the study comprises of okra marketers in Ijebu North Local Government Area. Multi stage sampling method was used for this study. First stage sampling, the study employed a purposive sampling technique to select okra markets in Ijebu North Local Government Area which are obada market, Atikori market, Osun market, awe market, and Oru market. Second stage involved random selection of seventy okra marketers from the selected markets. Random selection of 20, 20, 10, 10, and 10 okra marketers was made respectively from each of the markets to give a total of seventy okra marketers, data were collected with the use of well structured questionnaire for the analysis.

2.3 Data collection and Data Analysis:

The questionnaires were administered via structured interview. This allowed those that are not formally educated to be eligible to participate in the study through reading the question and recording their responses by the researcher. The analytical tools employed for this study include the analysis of frequency, descriptive, statistics analysis and Gross Margin Analysis, benefit cost ratio (BCR) to analysis the data for the study.

Gross Margin= GM

GM= TR- TVC

Where;

GM= Gross Margin

TVC= Total Variable Cost

TR= Total Revenue

BCR- Benefit cost ratio is the ratio to determine the profitability of okra marketing.

Note: if BCR <1, the business is not profitable; if BCR >1, the business is profitable.

III RESULTS AND DISCUSSION

3.1 Socio economic characteristics of the respondents

The table 1 shows the socio-economic characteristics of the respondents. It was revealed that 100% of the respondents were female. It also shows that 14.3% of the respondents were aged between 30 and 40 which is the highest percentage while (1.4%) of the respondents aged 61 and above had the least population. The table also indicated that majority of the respondents (68.6%) were married while the least percentage (10.0%) were divorced. In terms of religion, majority of the respondents (60.0%) were Christian while others (40.0%) were Muslim. From this study, it was revealed that majority of the respondents (85.7%) have first school leaving certificate in their educational background while 2.9% of the respondents have no formal education. It also indicated that majority of the respondents have the household size of 1- 5(78.6%) while few have the household size of 6-10 (21.4%) was the least. The

table also shows that majority of the respondents were engaged in farming (52.9%), (40.0%) of the respondents in trading and (7.1%) work as civil servants. It also shows that majority of the respondents have 1-5 years (71.4%) marketing experience while few of the respondents have 11 years and above (1.4%) marketing experience.

3.2 Respondents marketing activities

From The table 2 it was revealed that majority of the respondents (35.7%) started their business with ₦1500.00 while few of the respondents (1.4%) started their business with ₦900.00. The table also shows the price in which the respondents purchase a basket of okra. It was found that majority of the respondents (38.6%) purchase a basket of okra at the price rate of ₦2500 while few (1.4%) of the respondents purchase a basket of okra at the rate of ₦3500.00. From the study it was revealed that majority of the respondents (37.1%) sold a basket of okra at the price rate of ₦3000.00 while the least percentage (1.4%) sold their own at the rate of ₦1500.00 and ₦4000.00. It also indicated that 45.7% of the respondents sold 4 basket of okra within a month while the least percentage (4.3%) sold 6 basket of okra within a month. It was revealed that (37.1%) of the respondents earned the sum of ₦2000.00 after the sale of okra while the least percentage (1.4%) earned the sum of ₦1700.00 and ₦3500.00 respectively. From this study, it was revealed that majority of the respondents (30.0%) paid ₦1000.00 for transportation from the farm to the market while few of the respondents (1.4%) paid ₦600.00 and ₦1,600.00. (100%) of the respondents stated that there were no storage facility for okra marketing. This study revealed that (71.4%) of the respondents rented their shops for okra marketing while (28.6%) of the respondents did not. 57.2% of the respondents paid ₦1,200.00 for shop rent while 2.9% paid ₦700.00. It was found that (100%) of the respondents pay tax to the local government, 72.9% of the respondents pay the sum of ₦1600.00 for tax while few of the respondents pay ₦1000.00. The table also indicated that 98.6% of the respondents were supplied regularly with okra for marketing while the least percentage (1.4%) were supplied not often. This table also revealed the supply rate in which the respondents got okra for selling. Therefore, majority of the respondents (95.7%) got okra for selling weekly while few of the respondents (4.3%) got their own daily.

3.3 Cost and return on okra marketing

Fixed cost = Total fixed cost ₦85,500

Cost of okra = ₦147,000

Sales from Okra

Total revenue = ₦ 813,000

Average = ₦11,614.28

Total cost of Okra (sold) = ₦597,000

Variable cost

Transportation cost = ₦77,400

Tax (monthly) = ₦8,933.33

Rent (monthly) = ₦5,533.33

Therefore;

GM = TR – TVC

Where;

TR = ₦813,000

TVC= Total cost+ Transport cost+ Tax monthly+ Rent

597,000+77,400+8,933.33+5,533.33

= ₦688,866.66

GM= 813,000- 688,866.66= ₦124,133.33

Averagely = ₦1,773.33

BCR= $\frac{TR}{TVC}$

BCR (Benefit cost ratio) =

$\frac{TR}{TVC} = 813,000/688,866.66$

BCR = 1.18

Benefit cost ratio (BCR)

The total revenue was ₦813,000 and total variable cost was ₦688,866.66 while the gross margin was ₦124,133.33 and benefit cost ratio was 1.18. This indicated that Okra marketing was a profitable agric business in the study area. The BCR (1.18) revealed that for every ₦1 invested by the okra marketers there will be a return of ₦1.18 from the sales of okra in the study area. This is in line with the finding of Oladejo, (2016) on cassava tuber marketing in Oyo State.

3.4 Problem Affecting Okra Marketing

The table 4 shows problems affecting okra marketing. It indicated that majority of the respondents (62.9%) stated that lack of finance is their major problem which is affecting okra marketing while few stated that lack of transportation is the problem affecting okra marketing. The table also shows the possible solution which can enhance okra marketing and it was found that majority of the respondents (95.7%) stated that government intervention will solve the problem that is affecting okra marketing while few of the respondents (4.3%) stated that standard storage facilities will help okra marketing. (100%) of the respondents were belong to an organization and they were not paying any amount for the organization. Also, 100% of the respondents agreed that the business is profitable. From the study it was revealed that majority of the respondents (72.9%) have access to credit while the least percentage (27.1%) of the respondents does not have access to credit. This table also shows the credit source of the respondents. It was found that majority of the respondents (87.2%) credit source is personal savings while few of the respondents (1.4%) source of credit is government.

IV. CONCLUSIONS AND RECOMMENDATIONS

Based on this study it was concluded as follows:

The study showed that most of the respondents in the study area were marketers and engaged in Okra marketing. It also revealed that all of the okra marketers were females and they found the business profitable. The study also revealed that most problems that affect okra marketing were lack of finance and transportation.

Recommendations

Extension education can be intensified to eradicate the major constraints to okra marketing so as to increase the net income.

Effort should be made by the government to implement standard storage, transportation and finance for okra marketers, as this will in turn reduce the spoilage of okra and also enhance okra production.

REFERENCES

- [1] Adeboye, O.C and Oputa, C.O. (1996): Effects of Galex on growth and fruits nutrient composition of okra (*Abelmoschus esculentus*). *Ife Journal of agriculture*. 18 (1&2), 1-9.
- [2] AVRDC, (2004a). AVRDC Medium-term plan: 2004-2006. Highlights. AVRDC – The World Vegetable Center, Shanhu, Taiwan.
- [3] Babatunde, R.O., Omotesho, O.A. and Sholotan, O.S. (2007): Socio-economic Characteristics and Food security status of farming household in Kwara State, North – Central Nigeria. *Pakistan Journal of Nutrition* Vol. 6, No. 1, p.16.
- [4] Bakhru, H.K. (2003): Foods that heal. The Natural way to good health. Orient paperbacks, Delhi, pp82 – 90.
- [5] Bamire, A.S. and Oke, J.T. (2003): Profitability of vegetable farming under rainy and dry season production in Southwestern Nigeria. *Journal of Vegetable Crop Prod.*, 9: 11-18.
- [6] Burkil, H.M. (1997). The useful plant of West Tropical Africa. 2nd Edition. Vol 4, families M-R, Royal Botanic Gardens, Kew. United Kingdom. 969 pp.
- [7] Central Bank of Nigeria (CBN) (2004): Annual Report and Statistical Bulletin, Vol. 6, No. 12, December 2004.
- [8] Central Bank of Nigeria (CBN) (1996): Annual Report and Statement of Account, Nigeria.
- [9] Christo, E.I and Onuh, M.O. (2005): Influence of plant spacing on the growth and yield of Okra (*Abelmoschus esculentus* L) Moench. Proceedings of the 39th conference of the Agricultural Society of Nigeria (ASN) held at Benin, 9th – 13th October, PP 51 – 53.
- [10] Eke, K.A., Essien, B.A. and Ogbu, J.U. (2008): Determination of Optimum Planting Time of Okra (*Abelmoschus esculentus*) cultivars in the derived Savannah. Proceedings of the 42nd Annual Conference of Agricultural Society of Nigeria (ASN). October 19th to 23rd at Ebonyi State University. Pp 242-245.
- [11] Farinde, A.J., Owolarafe, O.K. and Ogungbemi, O.I. (2001): An Overview of Production, processing, marketing, and utilization of Okra in Egbedore
- [12] Katung, M.D. and Kashina, B.D. (2005): Time of partial Defoliation and Gas Effect on Growth Indices and yield of Okra (*Abelmoschus esculentus*(L) Moench). Proceeding of the 39th Annual Conference of the Agricultural Society of Nigeria (ASN) held at Benin, 9th - 13th October, PP 210 – 213.
- [13] Markose, B.L. and Peter, K.V. (1990): Okra, review of research on vegetable and tuber crops. Technical Bulletin, 16. Kerala Agricultural University Press, Mannuthy Kerala, pp.109
- [14] Norman, J. C. (1992). *Tropical Vegetable Crops*. Arthur H. Stockwell Ltd. Great Britain. 187pp.
- [15] National Research Council (NRC) (2006): Lost Crops of Africa: Volume 11: Vegetable, National Academic Press
- [16] Oladejo, J. A. (2016) Profitability Analysis of Cassava Tuber morality in Oyo state, Nigeria; implication for sustainable development goals. *Scientia Agriculturae*. 16 (2):67-73.
- [17] Schippers, R.R. (2000): Africa Indigenous Vegetables, an overview of the Cultivated Species. Natl. Res. Inst. Tech. Center Agric. Rural Cooperation, Chathan UK., pp.89 – 98.
- [18] Siemonsma, J.S (1982). The cultivation of okra (*Abelmoschus spp.*), tropical fruit]- vegetable (with special reference to the Ivory coast).D.H.O. thesis Wageningen Agricultural Wageningen, the Netherland.297 pp.
- [19] Udoh, D.J., Ndon, B.A., Asuquo, P.E and Ndaeyo, N.U. (2005): Crop production techniques for the tropics. Concept publisher, Lagos, Nigeria. PP.2 23–247

Table 1: Socio economic characteristics of the respondents

Characteristics	Frequency(N = 70)	Percentage (mean)
Gender		
Female	70	100.0
Total	70	100
Age		
30 – 40	24	34.4
41 – 50	23	32.8
51 – 60	22	31.5
61 and Above	1	1.4
Total	70	100
Marital status		
Married	48	68.6
Divorced	7	10.0
Widowed/Widower	15	21.4
Total	70	100
Religion		
Muslim	28	40.0
Christian	42	60.0
Total	70	100
Educational background		
No formal education	2	2.9
First school leaving certificate	60	85.7
Tertiary education	8	11.4
Total	70	100
Household size		
1 – 5	55	78.6
6 – 10	15	21.4
Total	70	100
Occupation		
Farming	37	52.9
Civil servant	5	7.1
Trading	28	40.0
Total	70	100
Marketing experience		
1 – 5	50	71.4
6 – 10	19	27.1
11 and Above	1	1.4
Total	70	100

Table 2: respondents marketing activities

Variables	Frequency	Percentage
Initial amount		
500-1500	63	90.0
1501- 2500	7	10.0
Total	70	100
Cost of a basket		
1000- 2000	40	57.2
2001- 3000	29	41.5
3001- 3500	1	1.4
Total	70	100
Amount sold (a basket)		
1500- 2500	28	40.0
2501- 3500	41	59.5
3501- 4000	1	1.4
Total	70	100
No of basket sold (month)		
1-4	52	74.3
5-6	18	25.7
Total	70	100
Profit in total		
1000- 2000	53	75.7
2001- 3000	16	23.8
3001- 3500	1	1.4

Total	70	100
Transport cost		
500- 1000	36	51.5
1001- 1500	33	47.1
1501- 1600	1	1.4
Total	70	100
Storage facility response		
No	70	100
Shop rent		
No	20	28.6
Yes	50	71.4
Total	70	100
Shop payment		
500- 1000	14	20.0
1001- 1500	49	70.1
1501-2500	7	10.0
Total	70	100
Tax payment		
Yes	70	100
Amount paid as tax		
1000-1500	19	27.1
1501-1600	51	72.9
Total	70	100

Source: Field survey, 2019

Table 3: cost and return of okra marketing

Variable	Amount (₹)
Total revenue	813,000
Fixed cost	597,000
Variable cost	
Transportation cost	77,400
Rent (monthly)	5,533.33
Tax (monthly)	8,933.33
Total variable cost	688,866.66
Gross margin	TR-TVC= 124,133.33
Benefit cost ratio (BCR)	TR/TVC
Benefit cost ratio (BCR)	1.18

Source: Author analysis, 2019.

Table 4. Problem Affecting Okra Marketing

Variables N= 70	Frequency	Percentage
Regular supply		
Yes	69	98.6
No	1	1.4
Total	70	100
Supply rate		
Daily	3	4.3
Week	67	95.7
Total	70	100
Problem		
Lack of storage facilities	7	10.0
Lack of finance	44	62.9
Pest	14	20.0
Lack of transportation	5	7.1
Total	70	100
Solution		
Government intervention	67	95.7
	3	4.3

Standard storage facilities	70	100
Total		
Organization		
No	70	100
Organization amount		
0	70	100
Profit		
Yes	70	100
Access to credit		

No	19	27.1
Yes	51	72.9
Total	70	100
Credit source		
Loan	2	2.9
Government	1	1.4
Cooperative	6	8.6
Personal savings	61	87.2
Total	70	100

Source: Field survey, 2019