



ANALYSIS OF STRUCTURE AND PERFORMANCE OF GROUNDNUT MARKETING IN NIGER STATE, NIGERIA

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ABSTRACT

The study analyzed the structure and performance of groundnut marketing in Niger State, Nigeria. Multi-stage sampling technique was used to sample 92 marketers and data was collected with the aid of a well-structured questionnaire. The data were analyzed using descriptive statistics, Gini coefficient, and gross margin analysis. The result revealed that the mean age of groundnut marketers was 35 years; 54.3% of respondents were female; 73.9% married; 38.0% had no formal education and 10.59 mean years of marketing experience. The result further revealed a Gini coefficient of 0.66 which is an indication of high level of concentration in the market; and gross margin of ₦7,929.63 was realized per 100kg bag of groundnut marketed. The study also found lack of credit facilities as the major problem encountered by marketers. Recommendations made include, formation of cooperative organizations among traders and price regulatory agencies should be strengthen and enlighten on the need to stabilize the price of groundnut.

Keywords: Gini coefficient, Gross margin, Groundnut marketing, Performance, Structure.

INTRODUCTION

Groundnut (*Arachis hypogaea L.*) is a leguminous oilseed crop cultivated in the semi-arid and subtropical regions of the world. Developing countries in Asia, Africa and South America account for over 97% of world groundnut area and 95% of total production (Food and Agricultural Organization Statistics [FAOSTAT], 2014). Groundnut is the 13th most important food crop of the world. It is the world's 4th most important source of edible oil and 3rd most important source of vegetable protein Taru *et al.* (2010). Globally, 50% of groundnut produce is used for oil extraction, 37% for confectionary use and 12% for seed purposes, the leading producing States in Nigeria include Niger, Kano, Jigawa, Zamfara, Kebbi, Sokoto, Katsina, Kaduna, Adamawa, Yobe, Borno, Taraba, Plateau, Nasarawa, Bauchi, and Gombe States (National Agricultural Extension Research and Liaisons Service [NAERL], 2011)

Groundnut is a highly valuable legume crop in Nigeria, it is processed in many ways such as boiling, roasting, homogenizing and toasting (Saleh *et al.*, 2015). Groundnut production, market and trade served as a major source of employment, income and foreign exchange especially before Nigeria became independent, it also provides basis for agro-allied industry development (Taphee and Jongur, 2014). The objectives of the study were to:

1. describe the socio-economic characteristics of the groundnut marketers;
2. determine the marketing structure and performance of marketing; and
3. identify the constraints of groundnut marketing.

Groundnut production in Nigeria has suffered major setback from epidemics, diseases and also lack of sufficient and consistent supply of improved seed varieties and this significantly affected productivity and thus subsequently led to loss in its share in domestic, regional and international markets (Ajeigbe *et al.*, 2015). Therefore there is need to critically



look at the conduct and performance of the market, as the commodity is been transferred from the farmers through the marketers to the final consumers.

MATERIALS AND METHODS

The study was conducted in Niger State (North Central) Nigeria. The State lies between Latitudes 8°20' and 11° 30' North and Longitudes 3°30' and 7° 20' East (National Bureau of Statistics [NBS], 2009). The 2006 population census shows that the state has a population of 3,950,249 with an annual growth rate of 3.4% (National Planning Commission [NPC], 2006). The projected population at 3.4% annual growth rate gives a population of 5,293,333 by 2016, Niger State is among the largest States in Nigeria covering about 86,000km² (about 8.6 million hectares) representing about 9.3% of the total land area of the country (Development Action Plan for Niger State [DAPNS], 2008) and about 95% of the land is arable and serve as source of employment for the predominantly rural population whose primary occupation is farming. The state experience distinct dry and wet season with annual rain fall varying from 1100mm - 1600mm with temperature ranging from 29.4°C - 39.2°C (Niger State Government Diary [NSGD], 2008).

Sampling Techniques and Sample Size

Multistage sampling technique was use for thie study. The first stage involve selection of Agaie and Bida Local Government Area (LGA) from zone A of the State. In the second stage, two (2) markets were randomly selected from Bida (Small Market in Bida South, and Etsu Musa market in Bida North) and central market Agaie was selected from Agaie LGA. In the third stage, a random sampling was used to select respondent based on the proportion of marketers in the selected markets, thus, 40 respondents were selected randomly from Bida LGA and 52 from Agaie LGA which gave a total of 92 respondents.

Method of Data Collection

The data for the study was obtained from primary source through the use of well-structured questionnaire which was designed and administered through interview schedule to the respondents. The questionnaire was based on the socio economic characteristics of the respondents, market structure and performance, constrains of groundnut marketing and level of profitability of groundnut through marketing and gross margin among others.

Analytical Techniques

The tools used in analyzing the data are descriptive statistics, farm budgeting techniques (gross margin, and gross ratio), Gini coefficient and marketing margin. Descriptive statistics was used to achieve objective i and iii. Gini coefficient and gross margin were used to address objective ii. Gini coefficient was used to determine market structure which is an indication about competitiveness of market. Mathematically, the gini coefficient is expressed as:

$$GC = 1 - \sum XY \quad \dots (1)$$

where;

GC = Gini coefficient

X = proportion of sellers

Y = cumulative proportion of sales

Σ = summation sign

The value of GC ranges 0-1 the higher the coefficient the higher the level of concentration consequently, the higher the level of efficiency in market and vice versa.

1). A low Gini-coefficient indicates more equal income or wealth distribution, while a high Gini-coefficient indicates more unequal distribution. Zero (0) corresponds to perfect equality, while one (1) corresponds to perfect inequality



Gross margin analysis (partial budgeting) was used to address objective iii of the study. The partial budget consists of gross margin (GM) and net income (NI) analysis. GM is a very useful planning tool in a situation where fixed capital forms a negligible portion of the farming enterprises as in the case of subsistence agriculture (Olukosi and Erhabor, 2008). In this study gross marketing margin (GMM) was used. GMM is calculated as follows:

$$\text{GMM} = \text{TR} - \text{TVC} \quad \dots (2)$$

where;

GMM = gross marketing margin

TR = total revenue

TVC = total variable cost

Gross ratio measures the overall financial success of a business. A less than 1 ratio is desirable for any business; the lower the ratio, the higher the profit (Olukosi and Erhabor, 2008). It is stated as:

$$\text{GR} = \text{TC}/\text{TR} \quad \dots (4)$$

where;

GR = Gross ratio

TC = Total cost

TR = Total revenue

RESULTS AND DISCUSSION

Table 1 revealed that more than half of the marketers were women (54.3%), which implies that women are more into the activities of marketing. The study also revealed a mean age of 34.7 years this indicates that the marketers in the study area were in their active age and therefore, they are at the stage of being more productive and more alert to carry out marketing activities. Also, they adopt new agricultural innovation faster than old people (Taphee *et al.*, 2005). This finding is in line with Abdalla (2000) who stated that at age more than 50 years the propensity to manual effort could be expected to decrease. The findings further revealed that majority of the marketers (73.9%) were married with mean household size of 6 children which implies that they have helping hand that can assist them in their marketing activities. Table 1 also disclosed that about 62% of the respondent have various level of education which implies that their level of understanding of marketing may differ, this statement is in agreement with Nwanosike (2011) who discovered that variations in educational background are usually responsible for the difference in their ability to evaluate and manage risk.



Table 1: Socio-economic Characteristic of the Respondents

Variable	Frequency	Percentage	Mean
Sex			
Male	50	54.3	
Female	42	45.7	
Age			
21 – 30	28	30.4	
31 -40	44	47.8	
41 – 50	18	19.6	
> 50	2	2.2	34.7
Marital status			
Single	15	16.3	
Married	68	73.9	
Divorced	5	5.4	
Widowed	4	4.4	
Level of education			
Non-formal	35	38.0	
Primary	22	23.9	
Secondary	29	31.5	
Tertiary	6	6.5	
Household size			
1 – 5	48	52.2	
6 – 10	37	40.2	
11 – 15	3	3.3	
> 15	4	4.3	6
Years of experience			
1 – 5	14	15.2	
6 – 10	42	45.7	
11 – 15	21	22.8	
> 15	15	16.3	10.6
Total	92	100	

Source: Field survey, 2016

As revealed in Table 2, the result of computed Gini-coefficient was 0.66 implying that there was a high level of concentration in the market structure for groundnut marketing in the study area. Also the computed Gini-coefficient in this finding is moving towards 1 which implies unequal wealth distribution. The implication of this kind of market was that the consumer will always suffer exploitation from the middlemen which consequently will depress the consumer motive for maximum utility. This is in line with the findings of Nwanosike (2011) who revealed a Gini coefficient value of 0.53 in his study, indicating imperfect market in competitiveness and high inefficiency in the market structure which might be as a result of dishonest practice in buying and selling activities in the study area.



Table 2: Gini-coefficient of the Respondents based on their Market Structure

Income	Freq.	Proportion of sellers (X)	Cumm. proportion of sellers	Total sales (X)	Proportion of sales	Cumm. proportion of Sales (Y)	XY
1 - 100,000	70	0.76	0.76	2405080	0.26	0.26	0.20
100,001 - 200,000	7	0.08	0.84	814000	0.09	0.35	0.03
200,001 - 300,000	8	0.09	0.93	1982250	0.21	0.56	0.05
300,001 - 400,000	1	0.01	0.94	342000	0.04	0.60	0.01
400,001 - 500,000	1	0.01	0.95	499500	0.05	0.65	0.01
> 500,000	5	0.05	1.00	3263400	0.35	1.00	0.05
	92	1.00		9306230	1.00	ΣXY	0.34

Note: Gini-coefficient = $\Sigma XY = 1 - 0.34 = 0.66$

Source: Field Survey, 2016

As revealed in Table 3, the cost of purchasing groundnut appeared to constitute the highest share (91.4%) of the total variable cost in the study area. A gross margin of ₦7,929.63 was realized per 100kg bag of groundnut in the study area, indicating that groundnut marketing is profitable in the study area. This is further justified by the value of the gross ratio (0.78) which is less than, this profitable further serve as proxy for performance of the market.

Table 3: Marketing Margin (Performance) of the Respondents

Variables	Average Cost per marketers (₦)	% of Total Cost
Cost of purchasing groundnut	25,785.33	0.914
Cost of transportation	1,607.07	0.057
Cost of packaging	356.63	0.013
Cost of loading/off-loading	317.61	0.011
Middlemen charges	50.43	0.002
Taxes/levy	98.92	0.004
Total variable cost	28,215.99	
Revenue	36,145.67	
Gross marketing margin	7,929.63	
Gross ratio	0.78	

Source: Field Survey, 2016

Table 4 shows that majority (85.9%) of the marketers have inadequate access to credit facilities ranking 1st among the constraints, this is in line with the findings of Adinya (2009) who find out that lack of capital as the number constraint facing marketers. Also, majority (81.5%) of the marketers have insufficient storage facilities ranking 2nd among the constraints. This constraint highlights the inability of the marketers to enjoy possible high prices during off peak period. Furthermore, majority (77.2%) of the marketers encountered the problem of price fluctuation ranking 3rd among the constraints. This is probably due to seasonality nature of agricultural commodity or insufficient storage facilities as earlier stated to store enough produce and stabilize supply in the market. Other constraints stated by the marketers include



high level of competition (45.7%), high cost of purchasing groundnut (40.2%), poor grading (34.8%) and produce deterioration (22.8%).

Table 4: Constraints Associated with Groundnut marketing

Constraints	Frequency*	Percentage	Rank
Inadequate Credit Facilities	79	85.9	1 st
Inadequate Storage facilities	75	81.5	2 nd
Price Fluctuation	71	77.2	3 rd
High Level of Competition	42	45.7	4 th
High Cost of Purchasing Product	37	40.2	5 th
Poor Grading	32	34.8	6 th
Deterioration	21	22.8	7 th
Middle Men Exploitation	13	14.1	8 th
High Cost of taxation	1	1.1	9 th

*Multiple responses exists

Source: Field Survey, 2016

CONCLUSION AND RECOMMENDATION

The study found that both male and female were involved in groundnut marketing, and their mean age was 35 years; and majority were married with low level of education. The mean household size was 6 persons and average years of experience in marketing was 10.6 years. The structure indicated a high level of concentration of marketers in the market, and that groundnut marketing was profitable. The major constraints faced by the marketers include inadequate credit facilities and storage facilities as well as fluctuation in price of groundnut. It was recommended that more stores should be provided in the markets and marketers should be assisted with credit facilities to further boost their marketing activities.

REFERENCES

- Abdalla, A. A. (2000). *The Economics of Groundnut Production and Marketing: A Case Study of the Farmers of Nyala Province, South Darfur State*; Pp. 28-29.
- Adinya I. B. (2009). Analysis of Costs>Returns Profitability in Groundnut Marketing In Bekwarra Local Government Area Cross River State, Nigeria. *The Journal of Animal & Plant Sciences*, 19(4): 212-216 ISSN: 1018-7081.
- Ajeigbe, H. A., Waliyar, F., Echekwu, C. A., Ayuba, K., Motagi, B. N., Eniayeju, D. and Inuwa, A. (2015). *A Farmer's Guide to Groundnut Production in Nigeria*. Patancheru 502 324, Telangana, India. International Crops Research Institute for the Semi-Arid Tropics. 36Pp.
- DAPNS (2008). *Development Action Plan for Niger State, 2008*.
- FAOSTAT (2014). Retrieved from <http://www.faostat.fao.org> on 23/1/2016, at 4:23pm.
- NAERL (2011). *Agricultural survey for 2011 wet seasons*. National Agricultural Extension Research and Liaisons Service.
- National Bureau of Statistics [NBS] (2015). *Niger State Information*. Retrieved Oct., 2016.
- National Population Commission [NPC], (2006). *Nigeria Population Census Report*.
- Niger State Government Diary [NSGD] (2008). *Information on Niger State of Nigeria*.
- Nwanosike, M. R. O. (2011). Economic Analysis of Groundnut Marketing in Rafi Local Government. *International Research Journal of Applied and Basic Sciences*, 2(4): 155-162.



- Olukosi, J. O. and Erhabor, P. O. (2008). *Introduction to farm management economics: principles and Application*. Agitab publisher limited, Zaria; Pp.169.
- Saleh, A., Kolo, A., Idi, S., Sani, M. H. and Ochi, J. E. (2015). *Profitability and Marketing Efficiency of Small-scale ground oil processing in Gambe Metropolis, Gombe State Nigeria*. Proceedings of the 29th annual conference of the Farm management Association of Nigeria, Faculty of Agriculture federal University Duste, Jigawa state. 23rd -26th. Pp. 237-248.
- Taphee, G. B. and Jongur, A. A. U. (2014). Productivity and efficiency of groundnut Farming in Northern Taraba State, Nigeria. *Journal of Agriculture and Sustainability*, **59**(1): 45-56.
- Taphee, G. B., Dengle, Y. G, Jungur, A. A. U. and Ephraim, I. J. (2015). Analysis of Profitability of Groundnut Production in Northern Part of Taraba State, Nigeria. *International Journal of Computer Applications (0975 – 8887)*, **125**(1): 34-39.
- Taru, V. B., Kyagya, I. Z. and Mshelia, S. I. (2014). Profitability of Groundnut Production in Michika Local Government Area of Adamawa State, Nigeria. *Journal of Agric. Sci.*, **1**(1): 25-29.