



PROFIT ANALYSIS OF WHOLESALERS AND RETAILERS OF SESAME IN NASARAWA STATE, NIGERIA.

¹Anzaku, T.A.K. and ²*Onuk, E.G

¹College of Agriculture, Department of Agriculture Extension and Management, P.M.B 33, Lafia.

²Faculty of Agriculture, Department of Agricultural Economics and Extension,
Nasarawa State University, Keffi.

*Corresponding Email: galadima1954@gmail.com

Manuscript Received: 10/02/2017 Accepted : 16/06/2018 Published : December 2018

ABSTRACT

Profit analysis of wholesalers and retailers of sesame was addressed in the study. The respondents consisted of 40 wholesalers and 60 retailers randomly selected from the three agricultural zones of Nasarawa State. Data collected by use of questionnaire included the socio-economic characteristics of the respondents, prices of the product, and cost of marketing. Descriptive statistics, marketing margin model, and regression technique were employed in the analysis of data. Results showed that the mean marketing margin value of the consumer price for wholesalers was 15.2% while the mean value for retailers was estimated at 11.4% of the consumer price. The mean net marketing margin of ₦23/kg for wholesalers and ₦19.8/kg for retailers accrued to them as profit. Output price significantly and positively affected the profit of wholesalers and had some positive effect on the profit of the retailers. Purchase price, storage, transportation, and packaging costs as well as interest on borrowed capital had varying effects on the profit of the middlemen. Efforts at reducing cost of marketing, access to more appropriate financing, and increased scale of operation are possible means of improving the profit of the middlemen.

Keywords: Wholesalers, retailers, sesame, profit, marketing margin, marketing cost.

INTRODUCTION

The key players in the marketing system of sesame are farmers and middlemen. Unless middlemen earn profit in excess of what they require to pay for the interest on borrowed capital and cater for the risk they take, their morale to continue to invest will be dampened (Abbott and Makeham, 1986). Normal profit making by middlemen is necessary but not sufficient condition for efficiency. The use of net revenue function (pseudo-profit function) also accounts for possible imperfection in the marketing system (Foltz, 2004).

Expenses incurred in handling, assembling, transporting, storing, preparing and packaging of farm produce have been identified as marketing costs (Olukosi and Isitor, 1990; Crawford, 1997; Ezedinma and Tshiunza, 2000). Product losses, purchases for resale, interest on borrowed capital, promotion, taxes/levies, marketing fees, commission, tips and travel expenses for traders are other expenses involved in the flow of products from farms to ultimate consumers (Downey and Erickson, 1987; Crawford, 1997; Gabre-Madhin 2001; Yakubu, Idumah and Anamayi, 2005). Costs applicable in the marketing of any produce at any time period depend on the nature of the product, location and value additions desired by the consumers. The knowledge of costs helps in the understanding of profit regimes and enables the determination of whether profits are excessive or not, possible. High costs which are not justified are indications of marketing inefficiency and consequently poor performance. Prohibitively high cost of marketing could lead to market failure (Gabre-Madhin, 2001).

Farmers and middlemen are indispensably interdependent and marketing margin is the critical determinant of returns to them as well as retail food prices. Marketing margin is the difference in price paid for a commodity at different stages of the marketing system (Olukosi and Isitor, 1990; Mejeha, Nwosu and Efenkwe, 2000; Gabre--Madhin, 2001; Alamu, Bichi and Ahmed, 2004). Marketing margins reflect both the costs of marketing and profits of marketing agents (Minot and Goletti, 2001). The major components of the analysis of marketing margin consist of gross marketing margin, net marketing margin and farmer's share. The net marketing margin (gross marketing margin minus total cost of marketing) accrues to the middlemen as profit (Anuebunwa, 2006) while farmer's share is the proportion of the consumer price that goes to the farmer (Mejeha, Nwosu and Efenkwe, 2000).

Marketing margin analysis is useful in

determining profit of middlemen, economic power of farmers and efficiency of the marketing system (Ejiga, 1979; Barallat, McLaughlin and Lee, 1987; Gabre-Madhin, 2001; Minot and Goletti, 2001). The marketing system is said to be efficient if the difference in the marketing margin values between similar farm produce is significantly small (Ejiga, 1979). Relatively low marketing margin values of primary farm produce under competitive pressure are expected to be indications of marketing efficiency as well (Minot and Goletti, 2001; Gabre-Madhin, 2001).

Nasarawa State is one of the major producers of sesame in Nigeria with annual output exceeding 41570 metric tonnes (NADP, 2010). Apart from the domestic and industrial uses of sesame, it is an export crop which earns foreign exchange for the country. The emphasis of Nasarawa State government in promoting the production, processing, and utilization of sesame is often centred on production issues. Holistic efforts should be extended to include the activities of wholesalers and retailers in the marketing channel of sesame. Wholesalers and retailers play critical roles in the offerings desired at the levels of the farmers, processors, exporters, and other consumers. In particular, there has been scanty empirical information on profit analysis of wholesalers and retailers of sesame in Nasarawa State. The study addressed this gap.

MATERIALS AND METHODS

The study area is Nasarawa State, created out of former Plateau State in October, 1996. It lies between latitudes 7° 45' and 9° 25' N and longitudes 7° and 9° 37' E of the Greenwich meridian, and has a land area of 27,137.8 square kilometres with a population of 1,863,275 people (Marcus and Binbol, 2007). Mean annual rainfall in the State ranges from 1100 – 1600 mm and temperature could rise as high as 39°C and fall as low as 17°C (Binbol, 2007). Nasarawa State shares boundary with Kaduna State in the north, Plateau State in the east, Taraba and Benue States in the south and Kogi and the Federal Capital territory in the west. The thirteen Local Government areas that make up the state are Akwanga, Awe, Doma, Karu, Keana, Keffi, Kokona, Lafia, Nasarawa, Nasarawa – Eggon, Obi, Toto and Wamba. Major crops produced in the State are rice yam, cassava, sesame, egusi, groundnut and cowpea. Sesame has been a major cash crop produced in commercial quantities in Doma, Lafia and Nasarawa Local Government Areas of the State.

Sampling was preceded by a reconnaissance survey

to determine the sampling frame. The sampling procedure involved a simple random selection of 40 wholesalers and 60 retailers of the produce. The wholesalers and retailers were proportionately drawn from urban and rural sesame markets in the three agricultural zones of Nasarawa State. Each sample size was determined from a sampling frame of 112 wholesalers and 213 retailers provided by Nasarawa Agricultural Development Programme (NADP) and listed during the reconnaissance survey.

Primary data was collected by administering questionnaires to the middlemen. Trained enumerators were used to administer them so that information on sales, marketing costs, prices, and socio-economic characteristics were elicited for sesame produced in 2009, in duration of about three months.

Marketing margin and net marketing margin values were first estimated for wholesalers and retailers. A profit function, which used net marketing margin as a dependent variable and marketing costs and prices as independent variables, was estimated for wholesalers and retailers as separate samples as well as one sample. The means of variables used in the function were computed to further facilitate the understanding of marketing efficiency. The marketing margin model is stated mathematically as:

$$GMM(\text{₦}) = SP - PP$$

or

$$GMM(\%) = \frac{SP - PP}{SP} \times 100$$

and

Net marketing margin stated by Gabre-Madhin (2001) as:

$$\text{Net marketing margin} = (SP - PP) - \sum_{i=1}^n X_i$$

where:

- GMM = gross marketing margin
- SP = selling price (₦)
- PP = purchase price (₦)
- $\sum X_i$ = sum of marketing cost of sesame (₦).

((SP - PP) - $\sum_{i=1}^n X_i$ = net marketing margin (₦).

(a) Profit function of wholesalers and retailers of sesame.

This is expressed explicitly as:

$$y = a + b_1 x_1 + \dots + b_6 x_6 + e$$

where:

- y = net profit (₦),
- x₁ = output price (₦),
- x₂ = purchase cost (₦),
- x₃ = storage cost (₦),
- x₄ = interest on capital (₦),

x₅ = transportation cost (₦),

x₆ = packaging cost (₦),

e = error term,

a = intercept, and

b's = coefficients of independent variables

With the exception of output price, all the other explanatory variables are expected to relate negatively to the dependent variable.

RESULTS AND DISCUSSIONS

Education, marketing experience and age represent the human capital acquired by the wholesalers and retailers. Table 1 shows the age of 41.1 years, 9.1 years in school, 13.9 years of marketing experience, value of equipment of ₦8472.5, value of investment of ₦877622.0 and sales income of ₦1025096.1, all in mean values for wholesalers. These were in all cases higher than the age of 34.9 years, 3.9 years in school, 10.3 years of marketing experience, value of equipment of ₦1961.7, value of investment of ₦219171.8 and sales income of ₦276829.3, all in mean values for retailers. These variables, consisting of human capital (education, experience and age), physical capital (equipment, investment funds) and earnings (income) affect market performance

Table 1: Socio-economic characteristics of wholesalers and retailers

Variables	Wholesalers		Retailers	
	Mean	Standard deviation	Mean	Standard deviation
Education (years)	9.1	4.4	3.9	3.9
Marketing experience (years)	13.9	5.9	10.3	4.9
Value of equipment used (₦)	8472.5	8220.5	1961.7	958.3
Age in years	41.1	5.9	34.9	4.7
Value of investment (₦)	877622.0	656113.9	219171.8	145145.8
Sales income (₦)	1025096.1	736593.7	276829.3	218139.2

Marketing margin

There were variations in the mean values of marketing margin, marketing cost, net marketing margin and farmer's share between wholesalers and retailers of sesame in Nasarawa State. Table 2 shows that the mean values of marketing margin, marketing cost and net marketing margin of wholesalers were greater than those of retailers. The relatively low values of marketing margins are in conformity with previous study by Achike and Anzaku (2010), characteristic

of undifferentiated primary products and indication of the existence of competitive pressures (Gabre-Madhin, 2001; Minot and Goletti, 2001). The high and favourable mean values of farmer's share of 84.8% for wholesalers and 88.6% for retailers are incentives for farmers to produce. It is observed that as a component of the marketing margin, farmer's share decreases with increasing marketing margin and vice versa.

Table 2: Estimates of mean marketing margin, marketing costs and net marketing margin of wholesalers and retailers per kilogramme of sesame in Nasarawa State.

Components of marketing margin	Wholesalers	Retailers
Marketing margin (₦)	30.0	24.1
Marketing margin (%)	15.2	11.4
Marketing cost (₦)	7.0	4.3
Net marketing margin (₦)	23.0	19.8
Farmer's share (%)	84.8	88.6

Table 3 shows the coefficient of the profit functions of wholesalers and retailers considered as separate samples as well as one sample. The linear and logarithmic forms were fitted. Based on the coefficients of multiple determination (R²), the level of significance of each coefficient and the sign of the

Table 3: Regression coefficients of the profit function for wholesalers and retailers of sesame

Independent variables	Dependent Variables		
	Wholesalers Coefficients	Retailers coefficients	Wholesalers and retailers as one sample coefficients
Constant	- 4.336**	- 3.258	- 1.001
Purchase price	- 1.963(- 0.227)***	- 0.812(- 2.182)	- 4.539(- 0.875)*
Output price	4.137(0.789)*	0.809(2.043)	5.215 (0.924)*
Storage	3.641(0.230)***	4.270 (0.033)	1.797 (0.128) ***
Transportation	- 1.160(- 0.344)***	0.423(0.023)	- 0.282 (-0.088)
Packaging	0.615(0.152)	0.476(0.024)	1.644 (0.434) *
Interest on borrowed capital	- 1.207 (-0.085)	1.312 (0.007)	- 3.406 (-0.223) **
R ²	0.580	0.897	0.520
Adjusted R ²	0.504	0.886	0.489
Durbin Watson	1.549	2.109	1.782

Significant at ≤ 1%

Significant at ≤ 5%

Significant at ≤ 10%

Standardized coefficients in parenthesis.

The mean prices, marketing costs and net marketing margin used in the profit function are shown in Table 4. The magnitude of each of the variables and how they differed were examined. The efficiency of the marketing system can be further enhanced if output price increases or marketing cost including purchase price decrease (Olukosi and Isitor, 1990). Marketing intervention involving price appreciation and reduction in the cost of marketing can go a long way in improving the performance of the marketing system of sesame.

coefficients relative to the a priori expectation, the best regression fit for retailers was the linear function while that of wholesalers and the sample consisting of wholesalers and retailers was double-log. Net marketing margin is the residual after marketing costs are deducted from the gross marketing margin and accrues to the middlemen as profit. Although the computed net marketing margin did not take into consideration, depreciation costs and payments to capital, family labour, management and possibly land, it is useful in accounting for possible imperfections in the marketing system of sesame.

While purchase price, storage, transportation and packaging costs were expected to negatively and significantly affect profit, the reverse was expected in the case of output price. As expected, the effect of the coefficients of purchase price was negative and that of output price was positive in the three cases but the coefficients were not significant for retailers. Similarly, transportation cost and interest on borrowed capital affected wholesalers and wholesalers/retailers as one sample negatively and significantly. Positive contribution of storage and packaging costs shown in Table 3 could be due to the value additions consumers were willing to pay for. Where transportation costs are not incurred and capital not borrowed, as in the case of retailers, their effects may not be felt.

Table 4: Mean marketing cost, net marketing margin and prices of wholesalers and retailers per kilogramme of sesame in Nasarawa State.

Variables	Wholesalers		Retailers		Wholesalers and Retailers together	
	mean	Standard deviation	mean	standard deviation	mean	standard deviation
Net marketing margin (₦)						
margin (₦)	23.00	12.36	19.80	8.64	20.80	10.40
Purchase price (₦)	167.90	14.73	187.80	23.22	179.87	22.42
Output price (₦)	197.90	24.13	211.90	21.85	207.16	23.42
Storage cost (₦)	0.43	0.08	0.33	0.07	0.37	0.08
Transportation Cost (₦)	1.73	0.62	1.22	0.48	1.43	0.59
Packaging cost (₦)	1.33	0.41	1.09	0.43	1.19	0.44
Interest on Borrowed Capital (₦)	0.09	0.07	1.02	0.05	0.65	0.46

CONCLUSION

Wholesalers and retailers are important in the value chain of sesame in Nasarawa State. Their performance can affect farmers, processors, exporters, other consumers and the economy negatively if they make excessive profits. Although they operated competitively under the prevailing circumstances, their background indicated that many need more basic and functional education, higher levels of technology and investment to increase their scope to compete regionally, nationally, and globally. Besides, improved profits can be achieved through reduction in the costs of marketing of sesame in the area of study.

REFERENCES

- Alamu, J. F, Bichi, A. M. and Ahmed, B. (2004). Marketing of agricultural inputs in Nigeria: The case of agro-chemicals in Niger State. Paper presented at the 2004 annual conference of the Nigerian Association of Agricultural Economists, held at Ahmadu Bello University, Zaria, Nigeria, 3 - 5 November.
- Anuebunwa, F. O. (2006). Economics of rice marketing in Ebonyi State of Nigeria. In: G. N. Asumugha, A. O. Olojede, J. G. Ikeorgu, and U. Herbert (Ed). *Repositioning agriculture for sustainable Millennium Development Goals in Nigeria* (pp. 87-89). Preceedings of the 40th annual conference of the Agricultural Society of Nigeria, National Root Crops Research Institute, Umudike, Nigeria.
- Barallat, J. E, McLaughlin, W., and Lee, D. R. (1987). Alternative methods for modeling potato marketing margin behaviour in Spain: Private and public implications. *ISHS Acta Horticulturae 203: IX Symposium on Horticultural Economics*, XXII IHC, Box 500, Leuven, Belgium.
- Binbol, N. L. (2001). Climate. In: V. L. Akwa, N. L. Binbol, K. I. Samaila, and N. D. Marcus, (Ed). *Geographical perspective on Nasarawa State* (pp.35-43). Department of Geography, Nasarawa State University, Keffi, Nigeria: Onaivi Printing and Publishing Co.
- Crawford, I. M. (1997). *Agricultural and food marketing management*. <http://www.foo.org/docrep/004/w3240E/w3240E00.htm>. Retrieved 12/09/09.
- Downey, W. D and Erickson, S. P. (1987). *Agribusiness management*. Singapore: McGraw Book Company.
- Ejiga, N. O. O. (1979). The efficiency of the indigenous food grain marketing system in Nigeria. *Savanna: A Journal of Environmental and Social Sciences*, 8(2), 70 – 84.
- Ezedinma, C. I and Tshiuza, M. (2000). Production and marketing of desert banana in Owerri area of South-East Nigeria. *The Nigerian Agricultural Journal*, 31, 114 – 124.
- Foltz, J. D (2004). Credit market access and profitability in Tunisian agriculture. *Agricultural Economics: The Journal of the International Association of Agricultural Economists*, 30, 229 – 240.
- Gabre-Madhin, E. Z. (2001). *Market institutions, transaction costs, and social capital in the Ethiopian grain Market*. Research Report 124. International Food Policy Research Institute (IFPRI). Washington.
- Marcus, N. D. and Binbol, N. L. (2007). Introduction. In: V. L. Akwa, N. L. Binbol, K. L. Samaila, and N. D. Marcus (Ed). *Geographical perspective on Nasarawa State* (pp. 1-2). Department of Geography, Nasarawa State University, Keffi, Nigeria: Onaivi Printing and Publishing Co. Ltd.

- Mejeha, R. O., Nwosu, A. C. and Efenkwe, G. E. (2000). Analysis of rice marketing in Umuahia zone: Policy implications for food security in Umuahia Urban, Abia State. In: L. D. Bursary, A. C. Wada, E. D. Emolehin, A. A. Idowu, and G.N. Asumugha, (Ed). *Agricultural production and strategies for meeting Nigeria's food demand in the next millennium* (pp.45-49). Proceedings of the 33rd annual conference of the Agricultural Society of Nigeria held at National Cereals Research Institute, Baddegi, Niger State, Nigeria.
- Minot, N and Goletti, F. (2001). *Rice market liberalization and poverty in Viet Nam* International Food Policy Research Institute, Washington DC. Research Report 114.
- Nasarawa State Agricultural Development Programme (NADP) (2010). *NADP Newsletter: A House Journal of Nasarawa A.D.P*, 4 (1). March Edition, Lafia, Nigeria.
- Olukosi, J. O. and Isitor, S. U. (1990). *Introduction to agricultural marketing and prices: Principles and applications*. Abuja, Nigeria: Living Book series.
- Yakubu, F. B., Idumah, F. O. and Anamayi, E. S. (2005). Cost and returns of local leafy vegetables in Ibadan metropolis. *Nigerian Journal of Horticultural Science (NJHA)*, 10, 7 – 11.