



Market Concentration and Performance of Dry Tomato (*Solanum Lycopersicum L*) Wholesalers in Bade Local Government Area of Yobe State, Nigeria

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ABSTRACT

*The study was conducted on market concentration and performance of dry tomato (*Solanum lycopersicum L*) wholesalers in Bade local government area of yobe. Middlemen enjoy the benefits at the cost of disability, of the poor agriculturist; the price paid by buyers reaches the farmers while the big part is engulfed by the middlemen. Farmers are suffering mainly in securing the reasonable price for their produce. Therefore this study was conducted to assess the market concentration and performance of dry tomato wholesalers in the study area. A sample of 52 wholesalers was selected for the study using purposive and random sampling techniques, and the data were collected with the help of a questionnaire. The data collected were analysis using Gini-coefficient/Lorenz curve, Gross margin and Marketing margin analysis. The result of the study revealed a market concentration of 0.62 and the Lorenz curve was far away from the line equal distribution of income and few 9.62% of the marketers are controlling 31.38% of the total market share. These indicated the presence of oligopolistic market structure in the study area. The study also revealed a positive average gross margin of ₦720,484.59 per month, and marketing margin of 9.49%. Government and non-Governmental organization was recommended to discourage the oligopolistic market structure in the study area by supporting wholesalers with low marketing share with loan in order to allow free market competition in the study area.*

Key words: Market, Concentration, Performance, Wholesalers, Dry Tomato

INTRODUCTION

Tomato has its origin in the South American Andes; the cultivated tomato was brought to Europe by the Spanish conquistadors in the sixteenth century and later introduced from Europe to southern and eastern Asia, Africa and the Middle East. More recently, the wild tomato has been distributed into other parts of South America and Mexico (Suleiman *et al.*, 2016), it is one of the world most important vegetable crops. It is an edible, often red fruit or berry. It is herbaceous annual crop scientifically known as *Lycopersicum esculentum* belonging to the nightshade family *Solanum lycopersicum*, commonly known as a tomato plant. The tomato is consumed and used in diverse ways, including raw as an ingredient in the preparation of household dishes, salads, and drinks (Suleiman *et al.*, 2016)

The tomato plant is one of the most important vegetable crops grown in Nigeria both in commercial quantity and in subsistent form. Even some local industries engage in commercial production of the crop to ensure immediate supply of their raw material. One good aspect of the crop is that it can be grown in large quantity in any part of Nigeria, the only limitation in the south is the high intensity of rainfall usually observed in the area, and this will be detrimental to tomato production, as most of the diseases that attack the crop require damp situation or condition, though dry season farming with irrigation have been an alternative in the South. Apart from this, the tomato is an ideal crop as it has been found to grow in wide soil and environmental variations (Nnabude *et al.*, 2015). It is a major vegetable crop and commonly grown by both poor and rich farmers and it is used worldwide as vegetable or as a spice in food preparation. Currently, it is one of the main vegetables used for hawking by small-scale entrepreneurs in the informal sector. (Kirithiga *et al.*, 2015).

The existence of markets makes possible the existence of specialized production since people can exchange what they can produce with what they cannot produce through the marketing process they are encouraged to concentrate on a particular line of production where they gain more skill and efficiency. The mechanism by which people can exchange what they can produce with what they cannot produce is a marketing system (Olukosi *et al.* 2012). The extent of specialization in an economy depends on exchange and the rate at which the exchange economy emerges depends upon the performance of its marketing system, and the marketing process becomes complex, more and more steps come between the producer and consumer, agencies or individuals appear whose only business is to facilitate the process. These agencies are the middlemen or marketing intermediaries (Olukosi *et al.*, 2012).

According to Karthikeyan (2016), middlemen enjoy the benefits at the cost of disability, illiteracy of the poor agriculturists. He further explained that the price paid by buyers reaches the farmers while the big part is engulfed by the middlemen. This shows that farmers are suffering mainly in securing the reasonable price for their produce. Therefore this study was conducted to assess the market concentration and performance of dry tomato wholesalers in Bade local government area of Yobe state, Nigeria.

METHODOLOGY

The Study Area

The study was conducted in Bade local government area of Yobe State, Nigeria. The local government area lies between latitude 12° 52'N and 10° 58'E. It has a total area of 772KM² (298 sq miles), it is located along the Yobe River, it lies near the Nguru – Gashu'a wetland, a few miles below the convergence of Hadejia and Jama'are River, average elevation is about 299m. The hottest Months are March and April with a temperature range of 38 - 40° Celsius. In the rainy season, June to September the temperature falls to 23 – 28°Celsius with rainfall range between 500 to 1000mm. The local government shares boundaries' with Jakusko, Bursari, Karasuwa local government areas, and Bauchi State (Grema *et al.* 2015).. The population of Bade local government area was 166,540 projected from the 2006 National Population Census National Population Commission (2011). Major occupation of the people in the study area is farming and fishing. The crops commonly cultivated include millet, rice, sorghum, cowpea, and sesame. Vegetables are grown in large quantity which includes tomato, pepper, and onion (Grema *et al.*, 2015).

Sources and Method of Data Collection

Primary data was collected from the respondents through the use of semi-structured questionnaires design of in line with the objectives of the study.

Sampling Techniques and Sample size

Purposive and random sampling techniques were employed in selecting the respondents in the study area. Gashua general market and vegetable market were the two markets purposively selected for the study and this was due to the high number of buyers and sellers of tomato in the markets. The respondents were selected using a simple random sampling technique. A Sample size of 52 dry tomato wholesalers was considered for the study.

Methods of Data Analysis

Gini coefficient/Lorenz curve, marketing margin and gross margin analysis were employed for the data analysis.

Gini coefficient/lorenz curve and percentage

Gini coefficient was employed to determine the extent of the seller's concentration in the study area. The Gini coefficient is expressed as follows as used by (Iheanacho, 2005).

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

Where: GC = Gini coefficient, X = Percentage share of each class of seller

Y = Cumulative percentage of sales.

Marketing margin and gross margin

Marketing margin and Gross margin analysis were employed to analyze the market performance of the respondents

Marketing margin

Marketing margin is the difference between the price paid by consumers and that received by the producer (Olukosi *et al.*, 2012). It is expressed as follow:

$$MM = \frac{CP-SP}{CP} \times 100 \dots \dots \dots (2)$$

Where: MM = Market margin, CP = Consumers price, SP = Supply price

The existence of high marketing margin can be detrimental to producers (in the form of

Low prices) to the consumers (in the form of high prices) and such high margins result from the imperfectly competitive market condition.

Gross margin analysis

Gross margin (GM) is the difference between the gross incomes and the total variable cost (TVC) (Olukosi and Erhabor, 2015). Gross margin can be expressed as: $Gm = GR - TVC$ - - - - - (3) Where: GM = Gross margin in naira, GR = Gross revenue in naira, TVC = Total variable cost in naira'

RESULTS AND DISCUSSION

Dry tomato wholesalers market concentration

Table 1 show the monthly sales distribution and Gini coefficients of dry tomato wholesalers in the study area. The analysis revealed that 44.23% of the respondents had monthly sales of less than ₦5,000,000 while 32.69% had a monthly sales ranging from ₦5,000,001 – ₦10,000,000, few (3.85%) of the respondents had a monthly sales between ₦25,000,001 – ₦30,000,000. Also 5.77% had monthly sales between ₦15,000,001-₦20,000,000 and ₦20,000,001-₦25,000,000 and 7.69% had a monthly sale of ₦10,000,001 - ₦15,000,000. The average monthly sale of the dry tomato wholesalers in the study area is estimated as ₦7,590,385.

The analysis further revealed that 9.62% of the respondents that had a monthly sale between ₦20,000,001 to ₦30,000,000 had 31.38% of the total market share. This shows that few marketers are controlling the market in the study area. Therefore oligopolistic exist in the study area.

The Gini coefficients of the dry tomato wholesalers in the study area was 0.62 and the Lorenz curve of the dry tomato wholesalers (Figure 1) is far away from the line of equality in the distribution of income and these indicated that the market is highly concentrated and hence less competitive. This implies that there is inequality in the distribution of earning among dry tomato wholesalers in the study area. The result is similar to the finding of Isshaku *et al.* (2012) on market structure analysis for retailers in Ghana which revealed a Gini coefficient of 0.64.

Table 1: Dry Tomato Wholesalers' Market Concentration

Sales in Naira	Frequency	Percentage	Proportion (X)	Cumulative Proportion	Monthly Sales in Naira	Percent age	Proportion of Sales	Cumulative proportion (Y)	$\sum XY$
1-5,000,000	23	44.23	0.442308	0.442308	61,260,000	15.52	0.155206	0.155206	0.068649
5,000,001-10,000,000	17	32.69	0.326923	0.769231	113,580,000	28.78	0.287763	0.442969	0.144817
10,000,001-15,000,000	4	7.69	0.076923	0.846154	47,180,000	11.95	0.119534	0.562503	0.043269
15,000,001-20,000,000	3	5.77	0.057692	0.903846	48,840,000	12.37	0.12374	0.686242	0.039591
20,000,001-25,000,000	3	5.77	0.057692	0.961538	67,840,000	17.19	0.171877	0.85812	0.0495070
25,000,001-30,000,000	2	3.85	0.038462	1	56,000,000	14.19	0.14188	1	0.038462
Total	52	100	1		394,700,000	100	1		0.384294

Gini coefficients: $1 - 0.384294 = 0.615706$

Mean Monthly Sales = ₦7,590,385

Source: Field Survey, 2018

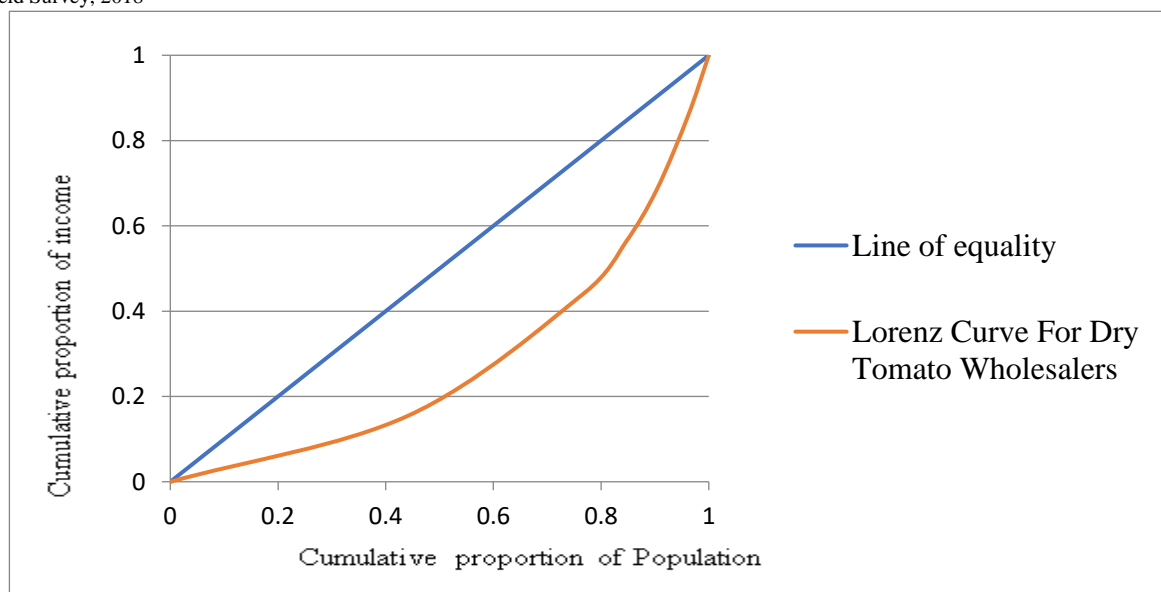


Figure 1: Lorenz Curve

Source: Field Survey, 2018

Average cost and returns

Table 2 revealed that average gross margin of dry tomato wholesalers was estimated to be ₦720,484.59 per month with an average total variable cost of ₦6,869,900.01 per month and average total revenue of ₦7,590,384.60 per month. However, 95.43% of the average total variable cost accounted for the cost of purchasing dry tomato per month, 1.32%, 0.35%, 0.24%, and 1.43% of the average total variable cost accounted for transportation cost, taxation, labor cost, and commission, respectively. While 0.31% and 0.92% of the average total variable cost constituted the cost of preservation and loading/offloading, respectively per month.

Therefore, the analysis indicated that dry tomato marketing is profitable among dry tomato wholesalers in the study area, given the positive sign of the gross margin. The finding is the same with that of Grema *et al.* (2015) who study marketing analysis of onion in Bade and Geidam Local Government area of Yobe, Nigeria also pointed out that marketing of onion was profitable for both categories of middlemen (wholesalers and retailers) throughout the periods of onion supply.

Table 2: Average Cost and Returns

Items	Amount (₦)/person	Percentage
Variable Cost		
Dry Tomato (purchases)	6,555,769.23	95.43
Transportation Cost	90,661.54	1.32
Tax	24,192.31	0.35
Labor	16,323.08	0.24
Commission	98,392.31	1.43
Cost of preservation	21,153.85	0.31
Cost of Loading/Uploading	63,407.69	0.92
Total Variable Cost	6,869,900.01	100
Fixed Cost		
Rent	1,795.67	
Total Fixed Cost	1,795.67	100
Returns		
Total Revenue (Sale)	7,590,384.60	
Gross Margin	720,484.59	

Source: Field Survey, 2018

Marketing margin

Marketing margin analysis of the respondents was presented in Table 3. The table revealed that the wholesalers had a marketing margin of 9.49%. The result indicated that dry tomato wholesalers in the study area had a low marketing margin; this implies that they do not make an excessive profit from the sales of dry tomato in the study area. The result of the analysis is lower than the finding of Isshaku *et al.* (2012), which revealed that the marketing margin of tomato wholesalers was 44.2%.

Table 3: Average Marketing Margin in Naira

Items	Wholesalers
Supply price	6,869,900.00
Consumer price	7,590,384.60
Market margin	9.49%

Source: Field Survey, 2018

SUMMARY AND CONCLUSION

The study was conducted on market concentration and performance of dry tomato (*Solanum lycopersicum L*) wholesalers in Bade local government area of Yobe, Nigeria. Middlemen enjoy the benefits at the cost of disability of the poor agriculturists; the price paid by buyers reaches the farmers while the big part is engulfed by the middlemen. This shows that farmers are suffering mainly in securing the reasonable price for their produce. Therefore this study was conducted to assess the market concentration and performance of dry tomato wholesalers in the study area. A sample of 52 wholesalers were selected using purposive and random sampling techniques, where Gashu'a general market and vegetable market were purposively selected and the respondents were selected using random sampling techniques from the two market selected. The data were collected through the use of semi-structured questionnaires administered to the respondents. The data were analysed using Gini-coefficient/Lorenz curve, Gross margin and marketing margin analysis.

The analysis revealed the presence of oligopolistic market structure in the study area with a gini-coefficient 0.62 and a lorenze curve far away from the line of equality, these shows that dry tomato wholesales marketing is concentrated in the study area. In addition few 9.62% of the marketers are controlling 31.38% of the total market share. Gross margin analysis revealed a positive sign of ₦720,484.59 per month with an average total variable cost of ₦6,869,900.01 per month and average total revenue of ₦7,590,384.60 per month. And the marketing analysis revealed 9.49%, this shows that wholesalers does not make excessive profit from the sale of dry tomato in the study in the study area.

RECOMENDATIONS

- i. Government and non-Governmental organization should discourage the oligopolistic market structure in the study area by supporting wholesalers with low marketing share with loan in order to allow free market competition in the study area.
- ii. More research should be conducted on the other vegetables in the study area for more informs decision.

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