

Structure of Red Pepper Marketing in Adamawa State, Nigeria

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Abstract

This study aimed at analyzing the structure of red pepper marketing in Adamawa State, Nigeria. The study was based on primary data collected with the aid of questionnaires administered to one hundred and four (104) respondents using purposive and simple random sampling procedure. The analytical tools for analysis were Descriptive statistics to describe the marketing channels and inferential statistics (Gini coefficient) to examine the market structure. The study revealed that the marketing channels were much shorter with red pepper marketing and retailers are typically playing the key role in marketing related activities in the study area. The concentration of market sales among red pepper marketers was high as Gini coefficient value was 0.71535. This is an indication that there is red pepper marketer's exercising control over the market price. In other words, there is a reflection of high level of income inequality from sales among the marketers in the study area. The study concludes that there is a reflection of high level of income inequality from sales among the marketers in the study area. The study therefore, recommended that there is need to reduce the oligopolistic market structure in the study area.

I. INTRODUCTION

Agricultural Marketing deals with the performance of all business activities which directs the forward flow of agricultural goods and service to customers in order to accomplish the producer's objectives (Olukosi and Isitor, 1990). It involves all the legal, physical and economic services which are necessary to make product from the farm available in the form, place and time required by the consumers. Usman, *et al.* (2008) also describe marketing as the process of planning and executing the conception, pricing, promotion and distribution of ideas, products and services to create exchange that will satisfy the needs of individuals and organization. Good marketing system reduces the marketing costs, ensures high level of income to the producers, provides good quality of agricultural produce at affordable price to the consumers and minimizes the number of intermediaries (Raj, *et al.*, 2007).



Red pepper is believed to have originated in Central and South America. Peru and Mexico might have been the second centers of origin, after which it spread into the New World Tropics before its subsequent introduction into Asia and Africa in 1493 (Bosland and Votava, 2000). Over 48% of the world pepper is produced in Asia, China being the leading country. However, India is the major exporter of dry chill peppers, followed by China, and the major importing countries are the U.S.A. and Germany (Berke, 2002). Nigeria is known to be one of the major producers of pepper in the world accounting for about 50% of the African production and the major area of production is Northern Nigeria (Business day, 2007; Erinle, 1989). The nutritional value of hot pepper merits special attention. It is a rich source of vitamin A and E. Both hot and sweet peppers contain more vitamin C to prevent flu colds than any other vegetable crop (Bosland and Votava, 2000). In many households, pepper provides the only needed flavor to enhance intake of otherwise bland diets. In addition to having major role in Nigerians daily dish it also plays an important role in the national economy. It is an important cash crop today, as its exportation in Nigeria has once been reported to be a lucrative business (Idowu-agida *et al.*, 2010).

In Nigeria, red pepper marketing is constrained by perishability and variable seasonal conditions. As a result, the variation in its supply on rural and urban market is considerable. Besides, storage facilities, transportation, linkages with traders; quality controlling mechanisms, market information and price settings are weak in the region and need to be further investigated. Hence, to benefit producers and other marketing agents involved in the production and marketing of red pepper there is a need to have a well-developed infrastructure to keep the product until it reaches the final consumer. Producers face so many interlinked problems such as poor market information and infrastructural problems (storage, transport and processing). Furthermore, the demand side is also highly characterized by skyrocketing price of red pepper for consumers. Furthermore, red pepper marketing channels and their characteristics have not yet been studied and analyzed for different parts of the country, especially Adamawa state, which specialize in the production and marketing of red pepper. Therefore, this study has the purpose of investigating the red pepper marketing and reducing the information gap on the subject and by contributing to work better understanding on improved strategies for reorienting marketing system for the benefit of small farmers development and traders.

II. METHODOLOGY

Description of the Study Area

The study was carried out in Adamawa State, it is located at the North-Eastern part of Nigeria. It lies between latitude 7 and 11° N and between Longitude 11° and 14° E. It shares boundary with Taraba State in the south and west, Gombe State in its North-west and Borno state to the North. The State has an international boundary with the Cameroon Republic along its eastern side. It has a land area of about 38,741 km² (Adebayo, 1999). The state is divided into 21 local government areas. Adamawa State has a tropical wet and dry climate. Dry season lasts for a minimum of five months (November-March) while the wet season spans April to October. Mean annual rainfall in the state ranges from 700mm in the North-west, to 1600mm in the extreme southern part of the state (Adebayo, 1999). The state is naturally divided into two ecological zones; the guinea and Sudan savannah zones. In general, the distribution of vegetation reflects the combined control of rainfall, topography and to a lesser extent, that of soils. Agriculture is the mainstay of about 80% of the inhabitants of the State (Adebayo, 1997). The ecological condition of the state permits cultivation of root crops, cereals, vegetables and rearing of livestock in large numbers as well as trading.

III. Methods of Data Collection

Primary data was used for the study. It was obtained through administration of well-structured questionnaire to pepper traders in the study area. The questionnaire contained pertinent questions which focus on socio-economic characteristics, marketing channel, source of finance as well as sales and expenditure of marketing (marketing structure).



Sample size and Sampling Technique

One hundred and four (104) red pepper marketers in the study area were selected using purposive and simple random sampling procedure. Using four (4) Agricultural zones by the Adamawa State Agricultural Development program (AD. ADP) Six (6) local governments were purposively selected from the four zones given their prominence in red pepper marketing; Six (6) major markets from each selected local government areas (LGA) were also purposively selected based on red pepper market arrival. Respondents from each market were proportionately selected using Cocranformula as follows (Cocran, 1997).

$$nh = \frac{Nh \times n}{N}$$

Where:

nh = number of respondent from sampled market

Nh = number of marketers in each of the sampled market

N = total number of marketers in all sampled markets

n = total number of questionnaire to be distributed

and simple random sampling procedure was employed for the selection of the respondents in each market. Thus, the total of 104 marketers of red pepper were observed and used as a sample size for the study.

Table 1: Proportionate Selection of the Respondents

S/N	Markets	Number of Marketers in each of the sampled Market	Number of Respondents from each Market
1	Mubi Market	80	26
2	Loko Market	70	20
3	Jimeta Modern Market	85	27
4	Numan Main Market	50	14
5	Ganye Market	40	11
6	Fofure Market	30	9
	Total	355	104

Source: field survey, 2018

Analytical Tools/Techniques

The following analytical tools were employed for the analysis.

- (i) **Descriptive statistics:** Descriptive statistics such as frequencies and percentages were used to describe the marketing channels of red pepper in the study area,
- (ii) **Inferential statistics:** *Gini* coefficient was used to examine the market structure *Gini* coefficient refers to a number or an index varying between zero and one; zero signifying perfect equality and one perfect inequality.

Mathematically, *Gini* coefficient is represented below:

$$G = 1 - \sum_{k=0}^{k=n-1} (\partial Y_{k-1} + Y_k)(\partial X_{k-1} - X_k)$$

where;

G = *Gini* coefficient;

X = Number of red pepper marketers;

Y = Trade volume or total sales;

∂X = Cumulate percentage or proportion of the marketers;

∂Y = Cumulated percentage or proportion of total sales or trade volume; and

k = Number of marketers minus 1 (i.e. k = x-1).

RESULTS AND DISCUSSION

Channels of Red Pepper Marketing

A marketing channel is a business structure of interdependent organizations that reach from the point of product origin to the consumer with the purpose of moving products to their final consumption destination (Kotler and Armstrong, 2003). The analysis of marketing channels revealed the alternative routes the product follow from the point of origin to final destination. The analysis of the study identified four (4) marketing channels. This study is in agreement with that of Aparna and Hanumanthaiah (2012) who identified 3 red pepper marketing channel Based on the findings of this research, the main marketing channels was found to be much shorter (Channel-1: Producer →Retailer →Consumers) with red pepper sold in the markets. It is also, in line with the study of Rehima(2006) who reported that, the main marketing channels of red pepper markets in terms of quantity flow of pepper in 2004/05 is short (i.e. from producer to consumer). Retailers play the key role in marketing related activities in the study area. In this case, producers sell the produce to consumers and retailers as well as to wholesalers based in the markets. The channels identified from the point of production until the product reaches the final consumer through different intermediaries were:

Channel-1: Producer →Retailer →Consumers

Channel-2: Producer →wholesalers →Retailer →Consumers

Channel-3: Producer →Rural Assemblers →Retailers →Consumers

Channel-4: Producers →collectors →Wholesalers →Retailers→Consumers

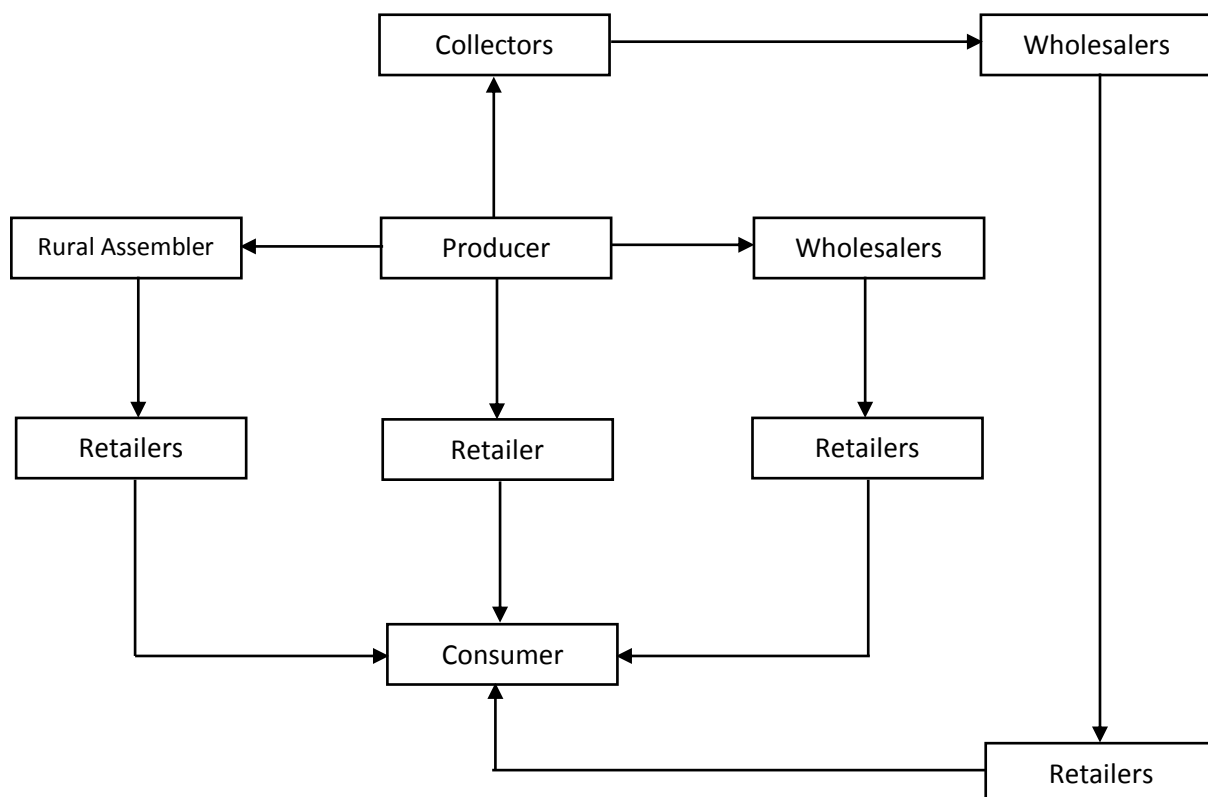


Fig. 1: Red Pepper Marketing Channels

Source: Field Survey, 2018.

Structure of red pepper marketing

This section sought to analyze the structure of red pepper marketing. The distribution of the respondents by their income or sales and the volume of sales in bags were also presented. Sales volume on the other hand, refers to the value of red pepper sold by the marketers at each level of the chain. Table 2 shows *Gini* coefficient value of 0.71535, implying that the concentration of market sales among red pepper marketers was high due to the small



number of wholesalers competing with each other. This is an indication that, red pepper marketer's is exercising control over the market price. In other words, there is a reflection of high level of income inequality from sales among the marketers in the study area. This study is in disagreement with that of Mekdes, *et al.* (2017) who reported that the concentration ratio (CR4) of the four largest traders for red pepper is found to be Weak (low). Indicating that no single trader or a group of few traders have big impact on marketing of red pepper (Kohls and Uhl, 1985).

Table 2: Gini Coefficient for Red Pepper Marketers in Adamawa State

Income	Population freq.	Cumulative population	Cum % of population	Cumulative income	Cum.% of income
<4,000	0	0	0	4000	0
4,000 – 20,000	69	69	66.4	24000	5.4
21,000 – 40,000	15	84	80.8	84000	18.9
41,000 – 60,000	11	95	91.4	144000	32.4
61,000 – 80,000	5	100	96.2	224000	5.1
81,000 – 100,000	1	101	97.2	324000	72.9
101,000 – 120,000	3	104	100	444000	100

*Gini coefficient = $1 - \sum XY = 1 - 0.28465 = 0.71535$; XY = % of marketers multiplied by cumulative % of total sales

Source: Field Survey, 2018

IV. CONCLUSION AND RECOMMENDATION

The study concludes that, red pepper marketing channel is short and the concentration of market sales among red pepper marketers was high, which is an indication that red pepper marketer's is exercising control over the market price. This implies that there is potential for raising red pepper marketing systems in order to improve customer's satisfaction and for traders to make more profit. In order to enhance red pepper producers' and marketers bargaining power and cooperatives are the best measure that should target at reducing the oligopolistic market structure in the study area. Such measure also facilitates the regular supply of pepper at reasonable price to consumers. Also research effort should be intensified to develop market channels that can improve customer's satisfaction and increase income generating capacity of red pepper marketers.

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