

Full Length Research Paper

The structure, conduct and performance of palm oil marketing in Cross River State, Nigeria

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The business of palm oil in Nigeria has undergone successive marketing arrangements, each with its inherent deficiencies. The paper examined the structure, conduct and performance of palm oil marketing in Cross River State, Nigeria. The study adopted the multi-stage sampling techniques in the selection of 6 local Government Areas, 18 Villages, 180 processes, 90 commissioned agents, 90 retailers and 30 merchants for the study. The descriptive statistics, the Gini-co-efficient combined with the Lorenz curve was used to determine the degree of market concentration among the participants; the marketing margin analysis was employed to measure the performance of palm oil marketing in Cross River State. The result reveals that the Gini Value for processors, commissioned agents, Merchants and retailers was 59, 54, 65 and 32% respectively. The over all performance of the market was 41.43%, while the processors received 37.17% of the market share, while merchant 29%, retailers 26% and commissioned agent 7.8%. Generally, the market was observed to be a pure market competition as no individual trader has market power to influence the market prices. The paper recommended that more research should be conducted to improve the reddish colour of hybrid palm oil to avoid marketer adding colour substances to the palm oil in attempt to improve the colour to attract customers.

Key words: Palm oil market structure, conduct and performance.

INTRODUCTION

The business of palm oil has undergone successive marketing arrangement firstly, under the traditional system of marketing agricultural products in Nigeria, as in other tropical African countries. The system was described as being inefficient, disorganized, and unresponsive and oligopsonistic in nature (Abu, 1996). Secondly, arising from this, Commodity Marketing Board (CMB) was established to organize the markets for efficiency. The CMB became exploitative of the primary producers because the prices they paid were low relative to cost of production, average world prices of other crops (Olukosi and Isitor, 1990). The CMBs had almost destroyed the very foundation and superstructure of the nation's

agricultural economy (Olatunbosun and Olayide, 1971). This hampered the farmers' income levels, the incentives and abilities to expand production under the CMBs arrangement. Oil palm farmers suffered all sorts of frustrations such as transport difficulties, extortion by market functionaries, under-payment and delay in payment among others (Olukosi and Isitor, 1990). By 1986, it became Obvious that if measures were not taken to address the problems, palm oil products and related industries would collapse.

Nwawe and Edokpayi (2005) observed that after 1965, Nigeria seized from being the leading producer and exporter of palm oil, falling from 43% in 1980s to 7% in the 1990s of the total global output. Informed by this, the government abolished the commodity board system and established a free and competitive marketing system. Thereby changing the structure, conduct and perfor-

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mance of the palm oil marketing in the Nigeria. It is based on implementing this policy for twenty-three years that it is necessary to as-sess the extent to which the deficiencies of the previous monopsony marketing system have been eliminated.

Conceptual framework

Several studies in agricultural marketing based on the assessment of the free-market system have been conducted using this approach. William (1971) gave the assumption of this approach to be that of the performance of any market is the result of the conduct of participants, which in turn is determined by the marketing structure. Nyong (1990) further stressed that the structure-conduct-performance (SCP) hypothesis, is a basic paradigm of individual organization maintains that the structure of an industry (that is organization characteristics such as concentration ratio, market share, and the condition of entry) influences the conduct of firms in their decisions regarding prices sales, employment, and technological innovations. It insists that the conduct of firms in turn, influences performance, particularly the profit earned in the industry. In the views of some analyst, they to argued that the chain relationship is not necessary unidirectional. It may also be bi-directional in the sense of reverse causation. That is, the performance of the industry may influence the structure of the industry (performance-conduct-structure approach) (Pickering, 1974; Nyong, 1990).

Because of these contradictions, recently the structure-conduct-performance hypothesis has received more detail analysis resulting into the decomposition of the hypothesis into four main contrasting versions. There are the traditional view of structure-conduct and performance hypothesis, the relative market power hypothesis, the x-efficiency or managerial efficiency hypothesis and the scale efficiency hypothesis. The emergence of misleading results from these approaches because of the parameter estimates are most times biased and in consistency arising from the neglect of a feedback mechanism. Nyong (1990) suggested that market researches should adopt a system of estimation procedure that takes into consideration the interdependence or interactions among structural, conduct in explanation, prediction and control of the market. Kriesel (1969) observed that the basic purpose of analyzing a market is to determine how well the system is performing the necessary marketing functions, and how this performance can be improved. Among the variables considered important in determining market structure are number and relative size of buyers and sellers, the degree of product differentiation, the ease of entry and exist of buyers and sellers into and out of the market. Also important are the status of knowledge about costs, prices, and market conditions among the participants in the market (Olukosi and Isitor, 1990; Nyong, 1990; Maiangwa et al., 2004).

Identifying variables in studying market structure, Okereke and Anthonio (1988) opined that market concentration is the most important element, since it depicts a situation in which a few large firms have the largest share of the business. They developed an index of concentration to reflect the interplay between the few large firms in retail industries and the many small ones. His concentrations index is expressed as:

$$C = \frac{D}{P}$$

Where C = industry concentration index, D = percentage of industry employment sales or other assets held by the largest firms, P = percentage of all firms in the smallest size class in the array.

The ratio is roughly that of economic power of the largest firm in the industry. At any rate, the assumption of the exercise of political power by the smallest firms in the industry may not always be true because the smallest firms may be so weak that they are incapable of organizing themselves to exercise any political power (Okereke and Anthonio, 1988). Due to the deficiency in the above method, analyst recommend the combination of Lorenz curve and the Gini coefficient to determine market concentration. Several analysts have adopted this method (Okereke and Anthonio, 1988; Abu, 1996; Tiku, 2001). The researcher ob-served that since 1986, the policy of privatization and deregulation of the economy is being vigorously pursued by government at all levels, it is pertinent to study the structure, conduct and performance of the palm oil marketing in Cross River State, being a major palm oil producing state in Nigeria.

The objectives of the work are to:

- 1) Determine the degree of the market concentration among the market participants in other to classify the structure of palm oil market in Cross River State.
- 2) Analysis the conduct of palm oil market state.
- 3) Ascertain the performance of palm oil markets in the state.

The finding of this work shall help to provide relevant information for adjustment and management of palm oil marketers in Nigeria as millions of Nigerians depends on palm oil in one form or the other. It is also expected that this work shall be useful to investors in the palm oil industry.

METHODOLOGY

The study was conducted in Akamkpa, Biase, Etung, Boki Ogoja and Bekwarra Local Government Areas of Cross River State. The six LGAs are evenly spread across the state. Cross River State is at the south zone of Nigeria. It has eighteen LGAs with a population of about 28 m people (NPC, 2006). The climate of the area is controlled by two tropical air masses namely the equatorial maritime (MT) air mass that originates from the south-west and the tropical continent (CT) air mass that originates from North East (Alobi, 1992). Average annual rainfall in Cross River State is about 2,298.7

mm (CBN Statistical bulletins, 2005). The relatively moderate rainfall, long wet season and high humidity favoured the growth of tree Crops like Cocoa and Oil Palms and non-tree Crops such as maize, cassava, melon etc.

Information for the study was from primary sources. The primary data were from Cross-sectional data. Personal interviews using structured questionnaires were used to conduct interview among the processors, palm oil buyers' agents in 18 villages in the six selected LGAs. The study adopted the multi-stages sampling technique. The first stage was the grouping of the 18 LGAs that constituted the state into three districts; each district is composed of six LGAs. The second stage is the selection of two LGAs per district using random sampling method to select six LGAs used for the study. The third stage was the random selection of three villages per LGA to give a total of 18 villages. The proportionality factor was introduced to select 180 processors, 30 palm oil merchants, 90 commissioned agents and 90 retailers for the study.

The proportionality factor used is stated as follows:

$$S = P/p \cdot n$$

Where; p = the number of respondents sampled from a district; P = the number of respondents in all the districts in the state; n = the desire numbers of respondents to selected for study.

Analytical tools

The study adopted the descriptive statistics, the Gini Co-efficient and Lorenz curve to measure the degree of concentration. The Gini Co-efficient model is given by:

$$G = 1 - \sum xy$$

Where: G = value of the Gini coefficient, X = percentage of market participants, Y = cumulative of purchase (palm oil), \sum = summation sign.

Gini coefficient is equal zero when there is perfect equality in the size and distribution of buyers or sellers, and $G = 1$ when there is perfect monopoly in the market. Generally, Gini coefficient value range from zero to one and expresses the extent to which market is concentrated. The Gini coefficient is a numerical representation of degree of inequality in the distribution that is derived directly from Lorenz curve.

The marketing margin (Table 1) analysis was also employed. This is an indicator of market performance. The model given as:

$$MM = \frac{SP - CP}{SP} \times 100$$

Where: MM = Marketing margin, sp = Selling price of palm oil, cp = supply price of palm oil.

RESULTS AND DISCUSSION

The socio-economic characteristics of the market participants revealed that 60% of the processors were females while 40% were males. The combination of other market participants (merchants, commissioned agents, and retailers) shows that 69.5% of the market participants constituted the females and 30.5% males. The finding agrees with FAO (2007) report that culturally men cultivate or produce oil palm while women process and sell. Traditionally, women decide the form in which the pro-

duced is traded and determine the degree of processing they are willing to undertake. The study also revealed that 69% processors were married, 25% merchant, 60% commissioned agents and 72% retailers are married men and women. The study showed that the age bracket between 35 and 45% constituted the highest number of palm oil marketers. In term of educational qualification, 56% of the respondents were secondary certificate holders. The implication is that majority of the marketers could read and write. The distribution of marketers by income shows that personal savings represented 47% of the total source of capital and merchants are the major financiers of the oil palm business other personal saving.

The Gini coefficient and the Lorenz curve were employed to measure the degree of market concentration. The Gini values for processors, merchants, commissioned agent and retailers were 59, 65, 54 and 32% respectively. The implication of the result is that there is sufficient competition among the processors and no single individual or organization can influence the market. In addition, there exist a healthy competition among the commissioned agents and retailers. The merchants Gini-Coefficient values of 65% were rather high; this is because few firms in the business control the trade at the merchant level. The result is true because the "big merchant" do backward integration by advancing money to the farmers, processors and commissioned agents. They do this to guarantee supply of the products. The study also revealed that there is no barrier to entry into palm business in the study. It was observed since the palm oil marketing board was abolished, individuals and corporate organizations are allowed to buy and sell palm oil. What seems to be a restriction are the activities of the trade unions in some Local Government Areas. Prospective buyers were adding to register for membership at a cost of N5, 000.00 (five thousand Naira only). Technically, oil palm yield is distributed over the entire year. Cross River State experience bimodal rainfall seasons. The oil palms bear fruit in response to the rainfall pattern and hence there are two peaks of harvesting periods in the state.

The nature of product differentiation is influenced by both the field and market factors. The field factors that affect the composition and final quality of palm oil in the study area are genetic, age of the tree, agronomic, environmental, harvesting technique, handling and transport. Many of these factors are beyond the control of small-scale processors (FAO, 2005).

The market factors are that of market participants adding colour substances to the product to attract customers to facilitate sales. The marketers do this because local breed of oil palms produces palm oil that is more reddish in colour and better flavoured than the hybrid that produce less reddish palm oil. Customers tend to patronized Local breed palm oil than hybrid oil. Because of this, most marketers add colour substances to the hybrid palm oil to make it appear reddish and attractive to

Table 1. Marketing margin for palm oil in Cross River state (₦1 ton, 2007/2008).

Participant	Item	Average cost (₦)	Average sale	Margin	Percentage (%)
Processors	FFB/tonne	14,000			
	Splitting the bunches	600.00			
	Transportation to processing site	1,500			
	Sorting	300			
	Water	150			
	Fire wood	100			
	Removing the boiled nuts to the milling machine	200			
	Milling and pressing/the extract oil	400			
	9 empty rubbers	2700			
	Conveying the 160 L is to the store from the processing site	160			
	Others	200			
	Total	N20,310	24,000	15.4	37.17
Commissioned agent	Purchases commission	24,000			
		800	24,800	3.33	7.80
Merchant	Supply price	24,000			
	Commission	800			
	Containers	2,800			
	Transportation	400			
	Storage	200			
	Security	80			
	Insurance	-	4800 x 8		
	Handling	160	rubbers		
	Administration	200			
	Association dues	20			
	Buying permit	20			
	National palm produce	160			
	Hoilage	80			
	LGA	400			
	Total	29,400	33,480	12.0	28.96
Retailers	Supply price	33,480			
	Handling	160			
	Transportation	400			
	Insurance	-			
	Storage	200			
	Association fees	-			
	Registration with LGA	-			
	Security	-			
	Total	34,240	38,400	10.8	26.07
Total marketing margin				41.43	100

Source: Survey data (2008).

customers. The study revealed that palm oil buyers and sellers had prior knowledge of the prevailing prices before they either sold or bought palm oil, as well as

knowledge about the cost of processing and marketing input. Agents of information dissemination were the merchant, processors, commissioned agents; local

assembles retailers market information was not obtain from public information media and extension agents.

The conduct of the market participants, which reflects the behaviour of the firms, or the decision that firms make relating to their pricing and output policy and other competitive tactics, revealed that palm oil sold in three major ways: cash sales, credit sale and advance sale. It was statistically revealed that 80% of the respondent sold on cash and carry basis, 10% on credit to customers they considered reliable, and 10% in advance to finance processing activities. The other minor method of sale is by barter system. The barter systems simply involve processors exchanging palm kernel nut for cost of milling and sorting out the fibre from the palm kernel nuts. The owners of processing plants prefer this method because the value of the palm kernels- most cases out strip the cash to be paid for the processing activities. Apart from the merchant engaging in vertical integration in order to secure the supply of palm oil from the producers, other market participants do not engage in any other tactics to influence market prices. No advertisement, no research and development among marketers to create differentiated products to enhance profit. All the marketers adopt the same market system of buying and selling homogenous product and facing the same industrial curve determined by the invisible forces of demand and supply making palm oil business in the state very elastic.

The marketing margin was determined as a measure of market performance. This was done by calculating the average cost of market for each participant in the various stages involved in the transaction of palm oil business. The major participants are processors commissioned agents, merchants and retailers. The result revealed a marketing margin of 41.43% which is the overall performance of the palm oil business in the state. Of this value, it shows that processors received 37.17%, merchant 28.96%, retailers 26.07%, and commissioned agent 7.80%. The implication is that the highest share of the marketing margin is received by the processors followed by the merchants. However, the share of the margin corresponds to the services provided by the various market agents and the financial involvement of the market participants. Table 1 shows the schedule of the marketing margin.

CONCLUSION AND RECOMMENDATIONS

The socio-economic characteristics of the study revealed that more females are involved in palm oil marketing than the males. In addition, Gini co-efficient values showed sufficient evidence that palm oil market structure in the study area is pure market competition as the market concentration index ranges from 32 to 65%. The overall

performance of the market was 41.43%. This means that the present market condition is better than the defunct monopsony system institutionalized by the then government where product prices could not cover cost of production.

It is therefore, recommended that more research should be carried over to eliminate the problem of genetic variations in terms of colour of edible palm oil. A deliberate policy on palm oil market research and development should be formulated to remove market distortions and promote market efficiency in terms of quality control, stable supply of product and reduced price fluctuation in the system.

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