

Analysis of Structure, Conduct and Performance (SCP) of Palm Oil Market Intermediaries in Edo State, Nigeria

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ABSTRACT

Purpose: The specific purpose of this study was to investigate the degree of concentration, pricing mechanisms, market performance, entry barriers and challenges faced by palm oil market intermediaries in Edo State, Nigeria. Cost factors affecting profitability across the intermediaries were explored, providing insights to improve regulation, infrastructure and collaboration thereby streamlining the supply chain and reducing inefficiencies across the intermediaries.

Research Method: This research was conducted in Ovia North East Local Government Area, Edo State, purposively selected for its agricultural production, including palm oil. A multistage sampling technique was used in selecting 90 respondents from three communities based on high palm oil marketing activity. Data was obtained using a structured questionnaire from processors, wholesalers and retailers. The market structure was analyzed using the Gini coefficient, while market conduct examined pricing, grading, and trade association influence. Market performance was assessed through profitability measures, and descriptive statistics highlighted socioeconomic characteristics and limitations affecting participants.

Findings and Values: The palm oil market structure is highly concentrated, with processors (0.87) and wholesalers (0.70) dominating sales, while retailers (0.49) operate competitively. Trade associations restrict entry, limiting competition. Price determination relies on personal or institutional negotiation rather than pure market forces (8.9%), reducing consumer control. Quality-based product differentiation ensures a structured approach to market segmentation and pricing strategies. High transportation and storage costs (23.8% of TVC) affect profitability especially, for processors. Wholesalers capture a disproportionate profit share (63.16%) versus processors (46.71%) and retailers (20.79%), reflecting market inefficiencies. Poor infrastructure, storage, levies, and transportation hinder efficiency, requiring regulatory interventions for market improvements.

Keywords: Barriers to entry, Degree of concentration, Market intermediaries, Market performance, Palm oil, Pricing mechanisms

INTRODUCTION

Palm oil is an edible vegetable oil extracted from the ripened mesocarp of the fruits of the oil palm. Shimizu & Desrochers (2012) described palm oil as one of the most flexible commodities because of its numerous domestic and industrial benefits and versatility in daily usage. Palm oil has an exponential demand from the food, beverage,

biofuel, energy, personal care, and cosmetics

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industries (Masiga 2020). Palm oil is an edible vegetable oil extracted from the ripened mesocarp of the fruits of the oil palm. Shimizu & Desrochers (2012) described palm oil as one of the most flexible commodities because of its numerous domestic and industrial benefits and versatility in daily usage.

Palm oil has an exponential demand from the food, beverage, biofuel, energy, personal care, and cosmetics industries (Masiga 2020). Businessday (2025) reported that Nigeria is the 78th largest exporter of palm oil in the world.

The main destinations of Nigeria's palm oil exports are the United States, Canada, the United Kingdom, South Africa, and Spain (Shehu & Salleh 2020). Although the country was the 164th most exported product in Nigeria in 2021, exporting about \$1.11 million in palm oil, the palm oil export trade has no significant impact on the economic growth of Nigeria because of the low export quantity (Afolayan *et al.* 2024).

One would expect that the low export quantity of palm oil might be a result of satisfying the domestic market rather, the country imports palm oil from Malaysia, India, China, Indonesia, and Singapore (Masiga 2020) and even from the neighbouring West African countries, especially Côte d'Ivoire (Gourichon 2013), to fill the domestic demand-supply lacuna.

By 2021, palm oil had become the 14th most imported product in Nigeria, with about \$568 million spent on its importation; thus, Nigeria became the 21st largest importer of palm oil in the world (PIND 2011, Oyebamiji *et al.* 2022). Oyebamiji *et al.* (2022) explained that by 2018, palm oil constituted 44.7% of the fats and oils consumed in Nigeria, highlighting a significant reliance on imports despite the country's potential to meet global demand.

Factors such as smallholder oil palm farmers, rudimentary methods and facilities of palm oil production that cause significant wastages, poor investment and training in the sector, and increasing human population putting severe pressure on the domestic consumption of palm

oil, have been adduced by Pricewaterhouse Coopers Limited (2019) for this widening demand-supply gap in domestic palm oil in Nigeria. PIND (2011) and Gourichon (2013) agreed that poor or inadequate storage facilities, postharvest losses, and poor road networks and infrastructure contributed to the domestic demand-supply deficit of palm oil in Nigeria.

Other contributing factors include the counterfeiting or adulteration of palm oil and the smuggling of the product out of the country's borders because the local prices offered in the domestic retail market were lower than the border prices (Gourichon 2013).

Market intermediaries have been discovered to be critical in defining the market structure-conduct-performance of agricultural commodities. Oluwadare *et al.* (2009), Tiku *et al.* (2012) and Nse-Nelson *et al.* (2021) observed that the palm oil market structure in Abia, Cross River and Ondo States, Nigeria, was perfectly competitive and profitable. On the contrary, Ojo *et al.* (2014) findings revealed that in Kogi State, though the market was profitable, but highly inefficient income distribution among the marketers and the structure of the market was not perfectly competitive.

Due to the contradictions observed by the researchers, there is a need to determine how closely the actual situation in the palm oil industry approximates the conditions of perfect competition since it differs across the States. Researchers like Osondu *et al.* (2024) have looked at the palm oil market as holistic without looking at the activities of the market intermediaries, which may affect the marketing of palm oil or have created the demand-supply gap.

This study, therefore, analysed the Structure, Conduct and Performance (SCP) of palm oil market intermediaries in Edo State, Nigeria. This study specifically described the socioeconomic characteristics of the respondents, examined the SCP of palm oil market intermediaries, and identified the factors influencing the SCP of palm oil market intermediaries in the study area.

MATERIALS AND METHODS

Study area

The study was carried at Ovia North East Local Government Area of Edo State. The local government area, which sits on approximately a land area of 2,301 km, is one of the 18 local government areas in Edo State, Nigeria (Edo State Government, 2012). The local government consists of twelve wards for easy administration; the wards are Egheta, Utese, Uhen, Oghese, Olumoye, Okada, Emma, Isiuua, Egbarha, Ovbiogie, Utekan, Iguegho. Okada is the administrative headquarters of Ovia North East Local Government Area.

It has a population of about 155,344 people (80,433 males and 74,911 females) (National Population Commission 2006, Ahmadu & Okoror 2019). The area is positioned in the rainforest zone of South-South Nigeria, with an average annual rainfall of 2500 mm and mean annual minimum and maximum temperature of about 25°C in the rainy season and 28°C in the dry season and 83% relative humidity (Edo State Government, 2012).

The occupations of inhabitants are diverse, majorly farming, trading, crafting and civil service jobs. The major crops produced in the area are plantain, cocoa, rubber, oil palm, maize, yam, cassava and pineapple, while livestock production includes poultry, fishery, snailery, rabbitry and goat production.

Sampling technique

Primary data were obtained from three categories of respondents, palm oil processors, wholesalers and retailers, using a structured questionnaire. A multistage sampling procedure was adopted in selecting the respondents. The first stage was the purposive selection of three communities in the study area – Okada, Oluku and Adolor – due to high palm oil marketing activities in the communities.

The second stage was the purposive selection of one major market in each community based

on the relatively large volume of palm oil marketing activities. The third stage was the random selection of 10 processors using the snowball method as they were not located in a designated area; and the random selection of 10 wholesalers and 10 retailers from each market, totalling 90 respondents.

Analytical techniques

The socioeconomic characteristics of the respondents were profiled using descriptive statistics. The market Structure-Conduct-Performance (SCP) was analyzed as follows:

i. The market structure

1. The degree of concentration of sellers was assessed using the Gini Coefficient specified in line with Tiku *et al.* (2012) as:

$$GC = 1 - \sum XY \quad (\text{Equation 1})$$

Where,

GC = Gini coefficient

X = number of sellers

Y = cumulative quantity of sales

Σ = Summation

The values of the Gini coefficient range from 0 to 1, with 0 implying a perfect market situation (perfect equality) and 1 implying an imperfect market (perfect inequality).

2. The barriers to entry and exit and the compulsion of membership to trade associations were determined using descriptive statistics.

ii. The market conduct

The market conduct of market participants was determined using the following variables: pricing strategy, price determination, grading of palm oil, basis of grading, price variations based on grade, and degree of adulteration.

iii. The market performance

The market performance of the palm oil market intermediaries was estimated using profitability measures.

The gross margin was calculated as:

$$GM = GI - TVC \quad (\text{Equation 2})$$

The net margin was computed with the following formula:

$$\text{Net margin} = GM - TFC \quad (\text{Equation 3})$$

The marketing margin – which is the difference between prices at two different points in a marketing channel – was calculated thus:

$$MM = \frac{TR - TC}{TR} \quad (\text{Equation 4})$$

Where,

GM = Gross margin (₦/season)

GI = Gross income (₦/season)

TVC = Total variable cost (₦/season)

MM = Marketing margin

TR = Total Revenue

CP = Total Cost

The factors influencing the SCP of the palm oil market intermediaries were identified using a three-point Likert scale, categorized in terms of severity ranging from 1 (not severe) to 3 (highly severe), and interpreted using descriptive statistics of mean and standard deviation (SD) as follows: if the mean ≥ 2.5 and SD < 0.5 , the factor was categorized as being highly severe; if the mean ranged from 1.51 – 2.40, the factor, severe; while if mean ranged from 0.01 to 1.50, the factor, not being severe.

RESULTS AND DISCUSSION

Socioeconomic characteristics

The socioeconomic characteristics of the respondents displayed in Table 1 show that although females were more involved in the palm oil marketing enterprise, the palm oil

processors in the study area were predominantly men, 100%, while the females were majorly into wholesale and retail sale of the product.

This may be a result of labour-intensive nature of palm oil processing, especially for the traditional method of processing. This result contradicts the findings of Tiku *et al.* (2012), which concluded that females were more than males among palm oil processors. This high involvement of women in the wholesale and retail marketing of palm oil conforms to the findings in other areas in Nigeria by researchers like Nwalieji & Ojike (2018) and Nse-Nelson *et al.* (2021).

Most of the palm oil processors (86.7%) reside in the study area and most of the wholesalers (53.3%) were non-residents, while 83.3% of the retailers reside within the community. This implies that some of the wholesalers travel to the study area to buy the merchandise from the processors.

These wholesalers can therefore be called the palm oil merchants described by PIND (2011). About 93.3% of the respondents were married. The majority of palm oil processors (73.3%) are aged from 40 to 59 years, while the majority of the palm oil retailers (63.3%) were younger people aged from 20 to 39 years.

The mean household size of the respondents was 8 people. The respondents had an appreciable level of formal education as 40% of them attained 6 to 12 years of formal education. The majority of the respondents (46.7%) have been in the palm oil business for less than 5 years, possibly because they have been involved in other commodity marketing as about 52.2% confirmed that they had about 6 to 10 years of trading experience.

This shows that the respondents have had long experience in trading and are likely to be successful in palm oil marketing. About 84.4% of the respondents are in full-time palm oil marketing business, and it explains the reason for about 87.8% of the respondents not having a secondary occupation.

Table 1. Socioeconomic characteristics of respondents.

		Processors (n=30)	Wholesalers (n=30)	Retailers (n=30)	Total (n=90)
Gender	Male	100.0%	23.3%	6.7%	43.3%
	Female	0.0%	76.7%	93.3%	56.7%
Residence in the community	Yes	86.7%	50.0%	83.3%	72.2%
	No	13.3%	53.3%	16.7%	27.8%
Marital status	Monogamous marriage	53.3%	43.3%	60.0%	52.2%
	Polygamous marriage	40.0%	46.7%	36.7%	41.1%
	Single	3.3%	3.3%	3.3%	3.3%
	Widowed/divorced/ separated	3.3%	6.7%	0.0%	3.3%
Age range (years)	20–39	23.3%	36.7%	63.3%	41.1%
	40–59	73.3%	63.3%	36.7%	57.8%
	≥ 60	3.3%	0.0%	0.0%	1.1%
Household size (persons)	≤ 2	0.0%	3.3%	0.0%	1.1%
	3–6	30.0%	26.7%	26.7%	27.8%
	7–10	60.0%	60.0%	60.0%	60.0%
	≥ 11	10.0%	10.0%	13.3%	11.1%
Mean 8; Mode 8; Std. Deviation 2.30; Minimum 1; Maximum 16					
Formal education (years)	None	20.0%	20.0%	10.0%	16.7%
	1–5	33.3%	43.3%	33.3%	36.7%
	6–12	40.0%	33.3%	46.7%	40.0%
	13–18	6.7%	3.3%	10.0%	6.7%
Mean 5; Mode 5; Std. Deviation 4.23; Minimum 0; Maximum 16					
Trading experience (years)	≤ 5	3.3%	46.7%	53.3%	12.2%
	6–10	46.7%	40.0%	6.7%	52.2%
	11–16	13.3%	6.7%	13.3%	11.1%

		Processors (n=30)	Wholesalers (n=30)	Retailers (n=30)	Total (n=90)
17–22		10.0%	3.3%	3.3%	12.2%
≥ 23		26.7%	3.3%	23.3%	12.2%
Mean 12.11; Mode 7; Std. Deviation 8.13; Minimum 2; Maximum 13					
Years of trading in palm oil	≤ 5	30.0%	46.7%	63.3%	46.7%
	6–11	33.3%	40.0%	20.0%	31.1%
	12–17	13.3%	6.7%	13.3%	11.1%
	18–23	20.0%	3.3%	3.3%	8.9%
	≥ 24	3.3%	3.3%	0.0%	2.2%
Mean 8.39; Mode 5; Std. Deviation 6.03; Minimum 1; Maximum 31					
Type of participation	Full time	73.3%	93.3%	86.7%	84.4%
	Part time	26.7%	6.7%	13.3%	15.6%
Type of market place	Own shop	86.7%	36.7%	26.7%	50.0%
	Rented shop	13.3%	63.3%	73.3%	50.0%
Number of shops in this market	None	3.3%	0.0%	0.0%	1.1%
	1	70.0%	83.3%	90.0%	81.1%
	2	26.7%	16.7%	10.0%	17.8%
Number of shops in other markets	0	23.3%	13.3%	90.0%	42.2%
	1	33.3%	53.3%	10.0%	32.2%
	2	43.3%	33.3%	0.0%	25.6%
Other sources of income	Farming	13.3%	6.7%	0.0%	6.7%
	None	83.3%	93.3%	86.7%	87.8%
	Teaching	3.3%	0.0%	13.3%	5.6%

This shows that the business may be so rewarding to the respondents that they do not feel the need to augment their income by diversifying their income sources; 57.8% of the respondents also have stalls in other markets where they sell palm oil.

Market structure-conduct-performance

Market structure: degree of concentration

Table 2, shows that the values of the Gini coefficient varied across different levels of concentration of the marketing participants. Market concentration measures how much of the market's total sales, production, or revenue is controlled by leading firms or participants. In a highly concentrated market, only a few companies are responsible for a large portion of the total market share. A Gini coefficient values close to 1 indicates high concentration (i.e., a few participants hold a large share of total sales), while a Gini coefficient values closer to 0 implies a more even distribution of sales among participants.

The Gini coefficient values for palm oil processors, wholesalers and retailers were 0.87, 0.70 and 0.49, respectively. Statistics generated by the United Nations Development Programme (UNDP) suggest that the Gini coefficient range of 0.5 and 0.7 implies greater inequality within the market (UNDP, 1992). In line with these, the retailers had the lowest Gini coefficient (0.49). This implies that there was competition among the retailers and no single individual could influence the market. Thus, the palm oil retail market is a competitive environment, attributed to the closeness of the retailers to the end consumers.

Among the palm oil processors and wholesalers, the Gini coefficient values were relatively very high (0.87 and 0.70 respectively). The palm oil processor and wholesale markets had high market concentration. The high Gini coefficient of the processors (0.87) may result from factors like capital intensity, technology, and scale of operations, where only a few processors can operate efficiently enough to dominate sales, the moderately high Gini Coefficient of the

wholesalers could be reflective of the wholesale nature of the trade, where market access and distribution networks play a key role.

Table 3 below shows that 33.3% of the respondents belonged to a palm oil trader's association. This figure was made up of 33.3% respectively of palm oil processors, wholesalers and retailers.

Table 4 shows the entry and exit behaviour in the market. The result shows that there are variations in market openness across the three communities, In Adolor community, market entry and exit appear restricted, with 33.33% of respondents reporting compulsory association membership called Ewi, and existing barriers.

In contrast, Iyowa and Obarere communities demonstrate more liberal market conditions, where membership is non-compulsory (33.33% each) and no entry or exit barriers exist (33.33% each), suggesting greater ease of participation.

Overall, 66.67% of respondents report no barriers and non-compulsory membership, indicating a general trend toward freer market access. However, the restrictions observed in Adolor may hinder competition and discourage new entrants. This may impose restrictions on the operation of a perfect market in the Adolor community, and weaken inclusivity, price determination and fair market dynamics.

All market intermediaries recognize and apply grading, with nearly all respondents (96.7%) reporting that they differentiate between at least two quality grades. The grading criteria are predominantly based on colour (over 90% overall) and other factors such as purity, smell, freshness, and the extent of adulteration. Although nearly all respondents (96.7%) indicate that customers do differentiate between grades, a small segment of retailers (10.0%) do not adjust prices based on these differences. This clear segmentation in product quality supports differentiated pricing strategies across market channels. These findings suggest that palm oil consumers in the study area

Table 2. Estimate of Gini coefficient of palm oil market participants in the study area.

Sales (N/annum)	Number of participants	Proportion of participants (X)	Cumulative proportion of participants	Total sales (N/annum)	Proportion of total sales (Y)	Cumulative proportion of total sales	XY
PROCESSORS							
<100,000	0	0.00	0.00	0.00	0.00	0.00	0.00
100,000–199,000	2	0.07	0.07	385000.00	0.02	0.02	0.00
200,000–299,000	6	0.20	0.27	1110000.00	0.06	0.08	0.01
300,000–499,000	9	0.30	0.57	2650000.00	0.15	0.23	0.04
500,000–599,000	8	0.27	0.83	4750000.00	0.26	0.49	0.07
≥600,000	5	0.17	1.00	9235600.00	0.51	1.00	0.08
Total	30	1.00		18130600.00	1.00		0.13
Gini Coefficient = $GC = 1 - \sum XY = 0.87$							
WHOLESALEERS							
<100,000	0	0.00	0.00	0.00	0.00	0.00	0.00
100,000–199,000	1	0.03	0.03	185000.00	0.01	0.01	0.00
200,000–299,000	2	0.07	0.10	570000.00	0.08	0.09	0.01
300,000–499,000	5	0.17	0.27	2710000.00	0.20	0.29	0.03
500,000–599,000	11	0.37	0.63	5910000.00	0.32	0.61	0.12
≥600,000	11	0.37	1.00	9092231.00	0.40	1.01	0.15
Total	30	1.00		23597231.00	1.01		0.30
Gini Coefficient = $GC = 1 - \sum XY = 0.70$							
RETAILERS							
<100,000	2.00	0.07	0.00	256000.00	0.04	0.04	0.00
100,000–199,000	6.00	0.20	0.20	910000.00	0.15	0.19	0.03
200,000–299,000	10.00	0.33	0.53	1810000.00	0.30	0.49	0.16
300,000–499,000	5.00	0.17	0.70	910000.00	0.15	0.64	0.11
500,000–599,000	5.00	0.17	0.87	1050000.00	0.17	0.82	0.14
≥600,000	2.00	0.07	0.93	1100000.00	0.18	1.00	0.07
Total	30.00	1.00		6036000.00	1.00		0.51
Gini Coefficient = $GC = 1 - \sum XY = 0.49$							

Table 3. Membership in palm oil sellers' association.

	Processors (n=30)	Wholesalers (n=30)	Retailers (n=30)	Total (n=90)
Palm oil sellers' association				
Member	33.33%	33.33%	33.33%	33.33%
Non-member	66.67%	66.67%	66.67%	66.67%

Table 4. Freedom of entry and exit in the palm oil market.

	Adolor	Iyowa	Obarere	Total
Compulsion of membership				
Compulsory	33.33%	0.0%	0.0%	33.33%
Non-compulsory	0.0%	33.33%	33.33%	66.67%
Barriers to entry and exit				
Not existing	0.0%	33.33%	33.33%	66.67%
Existing	33.33%	0.0%	0.0%	33.33%

Table 5. Market conduct of palm oil marketing.

	Processors (n=30)	Wholesalers (n=30)	Retailers (n=30)	Total (n=90)
Price Determination				
Individual trader	23.3%	40.0%	63.3%	42.2%
Traders' association	33.3%	33.3%	33.3%	11.1%
Haggling	36.7%	10.0%	0.0%	15.6%
Demand and supply	6.7%	16.7%	1.1%	8.9%
Grading of product				
Yes	100.0%	100.0%	100.0%	100.0%
No	0.0%	0.0%	0.0%	0.0%
Basis for grading (multiple responses)				
Colour	100.0%	83.3%	90.0%	91.1%
Purity	73.3%	60.0%	70.0%	67.8%
Smell	86.7%	93.3%	56.7%	78.9%
Freshness	70.0%	70.0%	90.0%	76.7%
Extent of adulteration	33.3%	43.3%	20.0%	32.2%
Price variations based on grade				
Yes	100.0%	100.0%	90.0%	96.7%
No	0.0%	0.0%	10.0%	3.3%
How many grades sold				
1	0.0%	46.7%	30.0%	25.6%
2	100.0%	53.3%	70.0%	74.4%
Customers differentiate the grades				
Yes	100.0%	100.0%	90.0%	96.7%
No	0.0%	0.0%	10.0%	3.3%

Table 6. The market performance (market participant/per annum).

	Average oil (N/annum)	palm processor (N/annum)	Average wholesaler (N/annum)	Average retailer (N/annum)
Variable Cost, VC (N)				
Palm fruit bunches	722,400.00		0.00	0.00
Palm oil	0.00		1,036,000.00	425,416.66
Transportation	28,000.00		36,183.35	37,150.00
Storage	181,076.19		121,330.02	10,500.00
Processing	254,625.00		0.00	0.00
Packaging	0.00		2,333.35	19,015.89
Market charges	0.00		14,566.66	1,586.66
Rent	0.00		14,566.66	6,317.08
Wages	48,633.39		11,433.35	30,928.75
General expenses	23,290.89		10,000.00	4,317.08
Agent's commission	0.00		19,250.00	0.00
Total Variable Cost, TVC (N)	1,258,025.47		1,291,163.39	554,482.12
Fixed Cost, FC (N)				
Knives	12,915.54		0.00	0.00
Jerry cans	39,557.28		37,183.35	18,308.71
Pots	34,619.04		0.00	0.00
Drums	43,387.26		0.00	0.00
Total Fixed Cost, TFC (N)	130,479.12		37,183.35	18,308.71
Total Cost (TC) (N)	1,388,504.59		1,328,346.74	572,790.83
Total Revenue (TR) (N)	2,605,546.20		3,605,546.20	723,166.66
Gross Margin, GM (N)	2,475,067.08		2,314,382.81	168,684.54
Net Margin (N)	1,217,041.61		2,277,199.46	150,375.83
Marketing margin (MM)	46.71%		63.16%	20.79%

Table 7. Factors limiting the market SCP of palm oil.

Factors	Mean	Std. Dev	Interpretation
Seasonal price variation	2.38	0.47	Severe
High cost of transportation from place of purchase	2.61	0.67	More severe
Inadequate storage facilities	2.72	0.62	More severe
Government levies and market charges	2.77	0.50	More severe
Low number of customers	1.29	0.50	Not severe
Location of the market	1.54	0.72	Severe
Lack of accessible roads to the market	2.57	0.81	More severe
Inadequate supply	2.02	0.21	Severe
High cost of purchase	2.47	0.69	Severe
High cost of storage	2.99	0.81	More severe
High handedness of the trade association	1.78	1.19	Severe
Ways of price determination in the market	1.70	1.11	Severe

tend to be price takers -accepting prices set by individual negotiations—while market participants maintain a consistent approach to quality differentiation, which reinforces market segmentation.

Market performance

The market performance of the market participants displayed in Table 6 shows that palm fruit bunches recorded the highest cost item (₹722,400.00) at the processors' market, palm oil recorded the highest cost item (₹1,036,000.00) at the wholesalers' market as well for the retailer (₹425,416.66).

Apart from the major intermediate cost item (palm fruit bunch), storage constituted about 23.8% of the TVC. This confirms Ojo *et al.* (2014) and Nse-Nelson *et al.*, (2021) who also identified the same as the third major cost in palm oil. This shows that there is a need for cheaper but reliable storage techniques for palm oil processors.

The marketing margin shows that an average

palm oil processor, wholesaler and retailer had marketing margins of 46.71%, 63.16% and 20.79% respectively, implying that the wholesale market is uncompetitive and inefficient because of the huge difference in the marketing margin between the processor and wholesaler.

Limitations of the market SCP of palm oil

As displayed in Table 7, the high cost of storage (SD = 2.99), inadequate storage facilities (SD = 2.72), government levies and market charges (SD = 2.77), high cost of transportation (SD = 2.61), were identified as the most severe constraints faced by the palm oil market intermediaries. The high cost of transportation was also identified as a limitation by Oladejo *et al.* (2020) and Shehu *et al.* (2021). Storage challenges remain a major obstacle, affecting product preservation and profitability.

Akinola *et al.* (2020) findings confirmed that the inadequate storage of palm oil under the influence of sunlight resulted in a significant increase in iodine value, indicating oxidative instability of the palm oil.

Storage costs (23.8% of total costs) of the respondents in this research remain a major challenge, particularly for processors, necessitating investment in affordable storage solutions.

CONCLUSION

This study examined the structure, conduct and performance (SCP) of palm oil market intermediaries in Edo State, Nigeria. Three market intermediaries studied were the palm oil processors, wholesalers and retailers. The processors dominate production, wholesalers control pricing and supplied the product to the retailers, while the retailers serve as the final consumer link.

The study shows that palm oil processing was predominantly a masculine activity, while the females were majorly into wholesale and retail sales of the product. The degree of concentration, as measured by the Gini coefficient, indicates that processors (0.87) and wholesalers (0.70) have high market concentration, whereas retailers (0.49) operate in a more competitive market environment. Market barriers such as trade association membership requirements impact entry and exit, particularly in Adolor community, where price determination is influenced by traders' associations rather than competitive forces. Palm oil market conduct reveals that price determination differs across intermediaries.

However, generally, pricing largely depends on personal or institutional negotiation rather than pure market forces. These findings indicate limited consumer price control and structured product differentiation affecting pricing strategies. Market performance analysis shows that palm fruit bunches, processing, and storage costs dominate expenses.

Wholesalers enjoy the highest profitability (63.16% margin), though this reflects market inefficiencies, while processors (46.71%) and retailers (20.79%) face tighter margins. Transportation costs, government and market levies, inadequate storage infrastructure, high cost of transportation, and lack of accessible roads pose severe challenges across all intermediaries, affecting efficiency and market access, thus requiring strategic interventions to enhance competitiveness.

Recommendations

1. The palm oil marketer's association should be monitored by the government to reduce trade association barriers and exploitative marketing strategies, and ensure fair price competition and open market entry, especially in the Adolor community.
2. The provision of cheaper and efficient processing and storage solutions is a necessity for improving market efficiency and profitability, preventing spoilage and lowering costs across all intermediaries. The processors are encouraged to leverage modern technology and improved extraction methods to enhance processing efficiency and competitiveness.
3. Collaborative efforts are encouraged among processors, wholesalers, and retailers to streamline the supply chain and reduce inefficiencies.
4. The market intermediaries should advocate for policy reforms to reduce government levies, improve market infrastructure, better transportation and logistics, and enhance ease of doing business, especially in agricultural trade.

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