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Spatial Price Analysis of Palm Oil in Enugu North Zone of Enugu State, Nigeria

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The spatial spread of markets in Enugu State necessitated the study on spatial price analysis of palm oil in Enugu North Zone of Enugu State, Nigeria. The study was specifically guided by the following objectives: description of the socio-economic characteristics of the palm oil marketers; analysis of the factors that influence spatial price of palm oil price; determination of the pricing efficiency of palm oil marketing in the identified markets; analysis of costs and returns of palm oil marketing in the identified markets; and analysis the constraints to effective and uniform palm oil price mechanism in the area. The study employed the combination of descriptive and inferential statistics to realise the objectives. Results of the analysis shows that spatial price exist in the marketing of palm oil in the area. The result further showed that spatiality exist in the price of palm oil due to the quantity of palm oil demanded, cost of production, cost of transportation, weather, quantity supplied, storage cost, processing technology, changing needs of consumers and consumers' preference. Despite the fact that price of palm oil differ across the markets, palm oil marketing in the sampled Local Government's markets were efficient. The result equally identified endogenous and exogenous factors as the challenges to effective palm oil marketing in the area. Based on the findings, the following study recommended that marketers of palm oil should form cooperative societies so as to be able to access credit facilities from financial institutions and other government agencies, marketing infrastructure such as good roads, storage facilities etc should be provided in the area to ease smooth marketing and reduce marketing cost, regular training and retraining programme should be provided for the marketers to equip them with necessary marketing and market information.

Keywords: spatial, price, palm oil, efficiency, marketing

INTRODUCTION

Oil palm (*Elaeis guineensis*) has been described as one of the most important economic oil crops in Nigeria (Nwauwa, 2011; Abayomi and Canedo, 2011). According to World Rain-forest Movement (2005), oil palm is indigenous to the Nigerian coastal plain though it has migrated inland as a staple crop. Palm oil is extracted from the oil palm fruit. Red palm oil gets its name from its characteristic dark red colour, which comes from carotenes such as alpha-carotene, beta-carotene and lycopene the same nutrients that give tomatoes, carrots and other fruits and vegetables their characteristic red colour (Basiron and Weng, 2004).

The economic importance of palm oil cannot be under scored as it serves several industrial purposes both in the food and non-food industries. In the food industry, it is a major component of shortenings and margarines, and is commonly used in products such as reduced fat spread, ice cream, coffee whiteners, whipping cream, filled milk, mayonnaise and salad dressings, palm-based cheese and coconut milk powder (Basiron and Weng 2004). Natural palm oil is trans-fat free and hence is often blended with other oils producing trans-fatty acid-free formulations (Gee, 2007). According to Basiron and Weng (2004), the non-food application of palm oil is only about 20% but adds a high economic value. They further posited that palm oil can be used in soap and other personal care products such as cosmetics and toiletries; and is also used in lubricants and greasers, printing ink,

drilling mud and as an inert ingredient in pesticide formulations. Furthermore, palm oil is used as bio fuel.

Palm oil unlike most agricultural products is both storable and relatively homogeneous (Jeffrey and Andrew, 2009). The determinants of prices for palm oil and other agricultural commodities have always fallen predominantly in the province of microeconomics. Nevertheless, there are periods when so many commodity prices are moving so far in the same direction at the same time that it becomes difficult to ignore the influence of macroeconomic phenomena on price variation of commodity such as palm oil (Jeffrey and Andrew, 2009).

The marketing of palm oil serves as a means of livelihood for many rural families; and indeed it is in the farming culture of millions of people in the Nigeria. Palm oil marketing is concerned with all stages of operation that aid movement of the produce from the producer to the final consumer. These include: assemblage, storage, transportation, grading and financing. According to Nwauwa (2012), marketing of palm oil in Nigeria takes place in homes, road sides, local or periodic market centres and stalls. These can be both wholesale and retail types in both rural and urban centres. However, the often referral of oil palm as a crop of multiple value underscores its economic importance; as its essential components namely, the fronds, the leaves, the trunk and the roots are used for several purposes ranging from palm oil, palm kernel oil, palm wine, broom, and palm kernel cake (Daramola, Igbokwe, Mosuro and Abdullahi, 2002). Laying credence to the economic value of oil palm, the International Potash Institute (1957) identified the principal products of oil palm to be the palm fruit, which is processed to obtain three commercial products: namely palm oil, palm kernel oil, and palm kernel cake. According to Malaysian Palm Oil Council (MPOC, 2011), palm oil is highly suitable as edible oil because of its many nutrients and vitamins. Basiron and Weng (2004) opined that about 80% of the world's produced palm oil is used for food purposes. Since palm oil is resistant to oxidative deterioration, it is good for frying potato chips and doughnuts (Sumathi, Chai, and Mohamed, 2008).

Under normal circumstances, price is determined by the forces of demand and supply which act in opposite directions. Price determined in this way is referred to as equilibrium price. Schnepf (2006) opined that price represents the equilibrium point where buyers (demand) and sellers (supply) meet in the marketplace. Determinants of price such as new market information (e.g., crop failure, disease outbreak, climate change impact, etc.) can alter the expectations of market participants and lead to a new equilibrium price as sellers revise their offer prices and buyers revise their purchase bids based on the new information. For a transaction to take place via price, a rational consumer

obviously must perceive the utility in the goods or service to be greater than the utility he must give up to acquire the offering and the seller on the average must anticipate net revenue exceeding the net value of retaining the offering. This has to be so in order for each party to build into the price, explicit and implicit expenditure of scarce resources towards the transaction. In essence, therefore, the price represents the bundle of utility of goods or service plus the demander's scarce resources (Onyeabor, 2009). He further identified the functions of price to include; transmission of information, creating compromise between producers and consumers of goods and services, gives incentive to producers and consumers for efficient decision making, gives impartial and fair treatment to buyers and sellers where it is competitively determined, guides and regulates production, consumption and marketing decisions and coordinates marketing decisions.

According to Olagunju (2008), due to increased demand for palm oil as a result of increasing population and income growth relative to the low productivity of the oil palm sector, Nigeria has becomes a net importer of palm oil. At the same time, the rapid devaluation of the Naira combined with high transportation costs from ports to local markets put imported oil in a competitively disadvantaged position. However, the price of palm oil has been steady in Nigeria in the last decades. For instance, the prices of palm oil from 1999 to 2004 jump from N60,000 to N100,000 per metric ton (Osan, 1993; RMRDC, 2008); and on the International Market, price for the corresponding years was $436 to $437.5 per metric ton. While the prices of crude palm oil on the international market dipped from 1999 to 2001, the local prices held steady for the period. From 2001, the prices have been on the increase on both the local and international markets. Again, the price of palm oil in Nigeria between 2010 – 2011 was about N100,000 (USD 758) per metric ton while current International price is USD 438 (N57,816) (Nwauwa, 2011). Most recent, from 2012 to 2013 the price of palm oil in Nigeria has jump to US $1,560 – 1,900 per metric ton (Alibaba, 2014).

Previous studies on the marketing and pricing of food stuffs in different parts of Nigeria have concluded that the marketing and pricing information transmission mechanism are inefficient, although there are many buyers and sellers in the market (Dittoh, 1994). The paucity of physical infrastructure such as storage facilities, transportation system, access to roads, communication channels and inadequacy of economic data for planning and research are some of factors identified as source of this inefficiency (Nwauwa, 2012). However, despite the importance of price in palm oil marketing, it seems there is dearth of empirical knowledge on the determinants of price and pricing mechanism of palm oil marketing in the study area. It

Table 1: Distribution of Respondents Selected per Market

Selected LGA	Name of Market	Respondents (N = 120)
Nsukka	Afor Opi	15
	Eke Ede	15
Udenu	Afor Obolo	15
	Orie Oba	15
Igboeze South	Orie Igboeze	15
	Nkwo Ibeagwa	15
Igbo Etiti	Ngwo Ogbede	15
	Orie Ohuodo	15

Source: Field Survey, 2014

was based on this premise that the study analyzed the following specific objectives: describe the socio-economic characteristics of the palm oil marketers in the area; analyze factors that influence spatial price palm oil price in the area; determine the pricing efficiency of palm oil marketing in the identified markets; analyze costs and returns of palm oil marketing in the identified markets; and analyze the constraints to effective and uniform palm oil price mechanism in the area.

METHODOLOGY

Study Area

The study area is Enugu North senatorial Zone of Enugu State. The area is made up of seven Local Government Areas viz: Nsukka, Igbo-Etiti, Igbo-Eze North, Igbo-Eze South, Udenu, Isi-Uzo, and Uzo-Uwani. The area has an estimated population of 1,377,001 people (NPC, 2006) and a land area of 4,566 Km^2.

The area is influenced by two main type of wind, these are: the South-west and North-east trade winds. These winds types gave rise to two different seasons – the rainy and dry seasons. The rainy season begins in March and ends in October while the dry season prevails from November to February. Although there maybe variation in these seasons as the year goes by, this is probably due to climate change and variability. The people of the area are predominantly Ibo speaking people with agricultural activities being their major occupation. This is because of the rich soil type that supports agricultural activities. Apart from agricultural activities, the people of this area are also engaged in secondary occupation such as trading, artisan, palm wine tapping, craft etc. The area also boast of major markets such as Afor Obollo, Afor Opi, Eke Ede, Orie Oba, Orie Igboeze, Nkwo Ibeagwa, Afor Ibeagwa, Orie Ohuodo, among others. These markets support the trading and marketing activities such as palm oil marketing in the area. The major staple crops grown by the people are; cassava, yams, cocoyam, ground nut

etc. Vegetables such as okra, melon, water leaf, *Telfalia occidentalis* (Ugu). Cash crops include cashew, oranges, banana, plantain, mango and oil palm.

Sampling technique and data collection

A combination of purposive and multistage random sampling techniques was used in selecting the respondents used for the study. Stage I: From the seven (7) local government areas in the zone, four (4) LGAs were purposively selected. They include; Nsukka, Udenu, Igboeze South and Igbo Etiti LGAs. The selection of these LGAs was based on the availability of viable palm oil markets in the area. Stage II: involves the purposive selection of 2 (two) major markets from all the 4 (four) selected LGAs in the area giving a total of 8 (eight) markets. Stage III: Out of the 8 (eight) purposively selected markets, fifteen (15) palm oil marketers were randomly selected, thus, a total of one hundred and twenty (120) respondents were selected and used for the study. Data were collected mainly from primary source using structured questionnaires (Table 1).

Data Analysis

Both descriptive and inferential statistics were used in analyzing the data. Descriptive statistics such as mean, frequency tables, percentages were used in analyzing objective (i), and (ii), while objective (iii) was actualized using pricing efficiency while objective (iv) was analyzed using gross margin analysis. Finally, objective (v) was realized using principle factor analysis (PFA).

Model Specifications

Model for Pricing Efficiency

Pricing Efficiency: $PM_2 - PM_1 \approx Ct$
Where:

PM$_2$= Price in market two
PM$_1$= Price in market one
Ct= Cost of transfer
Thus, if PM$_2$ – PM$_1$ > Ct, seller is gaining more than buyer,
If PM$_2$ – PM$_1$ < Ct, buyer is gaining more than seller.
Decision Rule: The closer the price differential over space is to the cost of transfer, the more price efficient is the marketing system.

Model for Gross Margin

GM= TR – TVC
I= GM – TFC
Where:
GM = gross margin
TR = Total Revenue
TVC = Total variable cost
I = Profit
TFC = Total fixed cost

Model for Test of Hypothesis

The null hypothesis was tested using Chi-square statistics.
Mathematically, the standard Pearson chi-square statistic is stated as:
$$X^2 = \Sigma \frac{(O-E)^2}{E}$$
Where:
X^2= Chi-square
O= Observed frequency
E= Expected frequency

RESULTS AND DISCUSSION

This section deals with the analysis and discussion of data collected from field survey based on the specific objectives of the study and arranged in sub- sections.

Socio-economic characteristics of the respondents

This section examined the socio-economic characteristics of the respondents. Analyzed socioeconomic variables include the following: age, gender, marital status, household size, educational qualification, annual income and marketing experience (Table 2).
The result of analysis of the socio-economic characteristics of the marketers as presented in Table 2 indicates a mean age of 38 years which corresponds to the active economic productive age in Africa and thus, farmers within this age category have been proven to have the strength to carry out tasking activities such as packaging, grading, transportation, etc that are involved in palm oil marketing (Nwibo and Aja, 2013). This shows that age is important variable in making managerial decision. This is in line with the report of Ada-Okungbowa Oghorodi and Omofonmwan (2013) who reported that (86%) of the palm oil marketers in Ethiope East Local Government Area of Delta State were of age group more than 31 years.

The result equally shows that majority (53.3%) of the respondents are females, while males accounted for the rest. This implies that more females than males are involved in palm oil marketing in the area. Similar finding was reported by Ada-Okungbowa, *et al.* (2013). Consequently, majority (80%) of the respondents are married. This is attributable to the constant engagement of married couples in economic activities such as palm oil marketing in order to earn income for their family upkeep. This is in consonant with the findings of Nwauwa (2012), who reported that 85% of palm oil marketers in Imo State were married.

However, the analysis of household size indicates a mean household size of 4 persons. This is an indication that the marketers had a small household size in the area. Similar findings was observed by Ada-Okungbowa et al. (2013) who reported an average of three (3) people per household among palm oil marketers in Ethiope East Local Government Area of Delta State. This finding ran contrary to that of Nwibo and Alimba (2013) who reported a mean household size of seven (7) persons among the agribusiness entrepreneurs in Southeast, Nigeria.

Education is an important socio-economic factor that influences people decision because of its influence on people's awareness, perception, reception and adoption of innovations that can bring about increase in their income. The educational level of the respondents indicates that majority (60%) have attended secondary school, followed by 18.3% who have completed primary education, and a few (15%) have obtained OND/ND certificate. This implies that majority of the marketers have acquired formal education. This suggests that new technology can be easily transferred to this area as most of them are literate.

People gain more expertise with the length of time they spent in their business activities and this also influences their perception and understanding of socio-economic policies and factors that affect their activities over the years (Abdulsalam, 2004). The average marketing experiences of the respondents were found to be 8 years. This is an indication that the marketers have spent a considerable length of time in palm oil marketing; hence palm oil marketing is practically done by well experienced traders. This is in line with the findings of Ada-Okungbowa et al. (2013), who reported that about 49% of the palm oil marketers in Ethiope LGA of Delta State had eight years marketing experience.

Table 2: Percentage Distribution of the Respondents According to Socio-Economic Characteristics

Socio-economic Variables	Description of Variables	Frequency (N = 120)	Mean
Age	20 – 30	20(16.7)	38
	31 – 40	48(40.0)	
	41 – 50	28(23.3)	
	51 and above	12(10.0)	
Gender	Male	56(46.7)	
	Female	64(53.3)	
Marital Status	Single	21(17.5)	
	Married	96(80.0)	
	Widowed	3(2.5)	
Household size	1 – 4	72(60.0)	4
	5 – 8	48(40.0)	
Education Qualification	No formal education	86(6.7)	
	Primary	22(18.3)	
	Secondary	72(60.0)	
	OND/ND	18(15.0)	
Annual Income (₦)	100,000 – 200,000	5(4.2)	371,443
	200,001 – 300,000	36(30.0)	
	300,001 – 400,000	28(23.2)	
	400,001 – 500,000	36(30.0)	
	500,001 & above	15(12.5)	
Marketing Experience	1 – 5	48(40.0)	8
	6 – 10	44(36.6)	
	11 – 15	20(16.7)	
	16 and above	8(6.7)	

Source: Field Survey, 2014

Table 3: Factors Influencing Differences in Palm Oil Price

Factors	Frequency (N = 120)	Likert mean	Decision
Consumers preference	64(53.3)	2.4	Rejected
Changing needs of consumers	69(57.5)	2.9	Accepted
Processing technology	72(60.0)	2.1	Rejected
Weather	112(93.3)	2.5	Accepted
Cost of production	116(96.7)	3.0	Accepted
Prices of substitute oil	42(35.0)	2.0	Accepted
Policies of government on palm oil	27(22.5)	1.8	Rejected
Cost of transportation	114(95.0)	3.4	Accepted
Storage cost	108(90.0)	3.1	Accepted
International market competition	18(15.0)	1.0	Rejected
Quantity supply	110(91.7)	2.5	Accepted
Quantity demanded	120(100.0)	2.9	Accepted

Source: Field Survey, 2014.
*Multiple responses

However, the result of annual income distribution of the marketers shows a mean annual income of ₦371,440. This implies that the palm oil marketing is profitable venture in the area.

Factors influencing spatiality in palm oil price

Several factors has been adduce for being instrumental to differences in price of agricultural products. Palm oil like every other agricultural products tends to be affected be similar factors. It is in view of this that factors that influence differences in palm oil price were investigated in this section. The data collected were analyzed and result presented in Table 3.

The analysis in Table 3 shows that the quantity of palm oil demanded (100%), cost of production (96.7%), cost of transportation (95%), weather (93.3%), quantity supplied (91.7%), storage cost (90%), processing technology (60%), changing needs of consumers

Table 4: Distribution of the Respondents Based on the Price Efficiency in the Sampled Markets

LGA markets sampled	Transfer cost (₦)	PM2 (₦)	PM1 (₦)	PD (₦)	Remark
Nsukka	3000	5500	4500	1,000	Efficient
Udenue	2850	6000	5300	700	Efficient
Igobeze South	2400	5000	4600	400	Efficient
Igbo Etiti	2600	5500	4400	1,100	Efficient

Source: Computed from Field Survey, 2014
Note:
PD   = Difference in Price
PM1 = Price in Market one
PM2 = Price in Market two

(57.5%) and consumers' preference (53.3%) are the main factors influencing differences in palm oil price in Enugu North zone of Enugu State Nigeria. This finding is justified by the four-point likert values of the factors that ran concurrently with the percentages. This finding is in consonant with the finding of Schnepf (2006) who identified local supply and demand conditions, consumer preferences and the changing needs of end users, the production processes, weather, and relative prices of substitute products as being responsible for changes in the prices of agricultural products.   The fact that international market competition is not influencing spatial price of palm oil in Udi L.G.A. can be justified on the ground that international market conditions are determined by the trade "openness" of a country's domestic market to international competition, and the degree to which a country engages in international trade. The cost of transportation has been identified as a key factor that influences spatial price in palm oil marketing. This is justified as price changes at any point along the chain can result in shifts to alternate transport modes or routes as marketers search for the lowest-cost method of moving palm oil between buyer and seller. Again, in competitive markets, transfer costs – loading or handling and transportation charges – are usually the most important factors in determining spatial (i.e., location-based) price differentials. In the international marketplace, transfer costs include barriers to trade such as tariffs and quotas.

Price efficiency of palm oil

Price efficiency as it is used in this section is concerned with how effectively the prices reflect costs of moving the product through the marketing systems. Data on the prices of palm oil in the selected markets where the study was carried out were collected, analyzed and result presented in Table 4.
   From the result in Table 4, it was observed that palm oil marketing in the sampled local government's markets

were efficient. The most (N1,100) efficient price differential was recorded in Igbo Etiti's markets, followed by Nsukka markets with N1,000 price differential while in Udenue's markets N700 was obtained as the price differential and least (N400) efficiency in price differential was recorded in Igboeze South's markets. The transfer cost for palm oil were: N2,600, N3,000, N2,850 and N2,400 for Igbo Etiti, Nsukka, Udenue and Igboeze South LGAs respectively. This is predicated on the assumption of the model that when price differential between two markets is greater than transfer cost, it represent *price inefficient* otherwise it is *efficient*. The result indicated that the price differentials for the sampled markets are less than the transfer cost, thus efficient.

Costs and Returns of Palm Oil Marketing

This section aimed at determining the costs and returns of palm oil marketing in the area. The analysis was done for each of the sampled five markets. Each market represents a Local Government Area of the zone. This was done with the view of determining in the sampled markets where palm oil marketing was most profitable. The summary of the analysis is presented in Table 5.
   The result in Table 5 shows that with 15 gallons of palm oil which was used as a benchmark for assessing the profit performance of the marketers in the different markets marketers in Afor Opi market made an average profit of ₦30,500.00. This was followed by marketers in Afor Obollo who realized ₦29,450 and Ngwo Ogbede marketers with ₦26,300 as profit. Others are Orie Oba marketers that made a profit of ₦24,900, Orie Igboeze marketers ₦22,300, Nkwo Ibeagwa marketers ₦19,550, Eke Ede marketers ₦18,650 and Orie Ohuodo marketers had the least profit of ₦18,500. The implication is that the profit levels of palm oil marketing in the sampled markets vary across the markets. The profit level tends to be higher in urban and peri-urban markets and appear to be lower in the rural markets.

Table 5: Average Monthly Costs and Returns of Marketing Palm Oil in Selected Markets of Enugu North Zone of Enugu State

Items	Qty	Afor Opi Market Total cost (₦)	Eke Ede Market Total cost (₦)	Afor Obollo Market Total cost (₦)	Orie Oba Market Total cost (₦)	Nkwo Ibeagwa Market Total cost (₦)	Orie Igboeze Market Total cost (₦)	Ngwo Ogbede Market Total cost (₦)	Orie Ohuodo Market Total cost (₦)
VARIABLES COST									
Purchasing of Palm oil	15	37,500	36,000	45,000	40,500	37,500	34,500	41,250	36,000
Electricity bill		400	300	500	400	300	300	300	200
Transportation cost	15	900	600	1,050	750	900	750	1200	600
Storage cost	15	600	450	750	600	600	600	600	600
Security level	1	150	100	100	100	100	100	100	100
Shop/stall rent	1	300	250	350	300	250	300	300	200
On and off loading fee	15	300	300	450	600	600	300	600	450
Miscellaneous Cost		6,500	5,500	7,000	6,000	4,500	4,500	6,500	4,000
A. Total Variable Cost		**46,650**	**43,500**	**55,200**	**49,250**	**44,750**	**41,350**	**50,850**	**42,150**
FIXED COST									
Palm oil container	15	5,250	5,250	5,250	5,250	5,250	5,250	5,250	5,250
Funnel(s)	1	100	100	100	100	100	100	100	100
B. Total Fixed Cost		**5,350**	**5,350**	**5,350**	**5,350**	**5,350**	**5,350**	**5,350**	**5,350**
C. Total Cost		**52,000**	**48,850**	**60,550**	**54,600**	**50,100**	**46,700**	**56,200**	**47,500**
REVENUE									
Sells from palm oil	15	82,500	67,500	90,000	79,500	75,000	69,000	82,500	66,000
D. Total Revenue		**82,500**	**67,500**	**90,000**	**79,500**	**75,000**	**69,000**	**82,500**	**66,000**
E. Gross Margin (D–A)		35,850	24,000	34,800	30,250	24,900	27,650	31,650	23,850
Profit (E – B)		30,500	18,650	29,450	24,900	19,550	22,300	26,300	18,500
Benefit Cost Ratio (D/C)		1:1.59	1:1.55	1:1.49	1:1.46	1:1.50	1:1.48	1:1.47	1:1.39

Source: Computed from Field Survey, 2014
Note: A Gallon = 25 litres

This may be due to presence of marketing infrastructures and market unions which in most cases influence many of the activities of the markets. Such activities include not allowing non-registered members to sell their palm oil, fixing of price, among -others. The values of BCR further buttressed the profitability of palm oil marketing in the sampled markets. For every one naira invested in palm oil marketing, a profit of 0.59k, 0.55k, 0.49k, 0.46k, 0.50k, 0.48k, 0.47k and 0.39k were made in Afor Opi, Eke Ede, Afor Obollo, Orie Oba, Nkwo Ibeagwa, Orie Igboeze, Ngwo Ogbede and Orie Ohuodo respectively.

Constraints to palm oil marketing

This section analyzed the constraints to palm oil marketing in the area. Factor analysis was used to identify those factors that militate against palm oil marketing. The extraction was done in line with the simple thumb rule developed by Kaiser (1958) and used by Nwibo and Aja (2012), that variable with coefficient of (0.40) will be used in naming a factor that will be favourable to issue in question. Summary of the result is presented in Table 6.

From the result obtained in Table 6, it was observed that two (2) major constraints were extracted based on the responses of the respondents. The component factors were named based on the variables that loaded high. The component factors were endogenous and exogenous constraints. Component I was named endogenous constraints because variables that loaded high were related to it and as such were within the control of the marketer. These variables are: inadequate production (0.621), poor quality of product (0.444) and lack of market information (0.482).

Component II was named exogenous factors because the variables that loaded high here were not within the control of the manager. These variables are: lack of market information (0.446), inadequate marketing

Table 6: Varimax Rotated Factor Matrix on Constraints to Palm Oil Marketing

Constraints	Endogenous	Exogenous
Inadequate production	0.621	0.306
Inadequate buyers	0.159	0.781
Inadequate capital	-0.422	0.530
High cost of transportation	-0.195	0.443
Poor quality of product	0.444	0.136
Lack of ready market	0.331	0.177
Lack of market information	0.482	0.246
Theft and insecurity	-0.152	-0.384
Inadequate marketing infrastructure such, storage facilities, motorable road etc.	-0437	0.481
Weather	-0.660	0.490
Price fluctuation	-0.669	0.515

Source: Computed from Field Survey, 2014.

infrastructure (0.481), weather (0.490), price fluctuation (0.515), inadequate buyers (0.781), high cost of transportation (0.443) and inadequate capital.

Consequent upon the finding, Ada-Okungbowa, *et al.* (2013) in their justification reported that palm oil marketers in Ethiope LGA of Delta State were constrained by problem of inadequate capital, inadequate market structure, high cost of transportation and price instability. Similarly, the finding is in consonant with Ibitoye (2014) who identified poor market information as one of the major constraints to effective palm oil marketing.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of this study, it was concluded that palm oil marketing in Enugu North Zone of Enugu State was efficient. Although, spatiality exist in the markets as a results of cost of production, cost of transportation, weather, quantity supply, storage cost, processing technology, among others. However, the efficiency of palm oil marketing in the area was constrained by endogenous and exogenous constraints. These factors constitute serious hindrance to efficient palm oil marketing. Hence, it is important that these component factors identified by the marketers should be adequately address so as to create good atmosphere that will bring about healthy and competitive palm oil marketing in the area.

In view of the findings, the following policy recommendations were put forward: the marketers should form cooperative societies so as to be able to access credit facilities from financial institutions and other government agencies, marketing infrastructure such as good roads, storage facilities etc should be provided in the area to ease smooth marketing and reduce marketing cost, regular training and retraining programme should be provided for the marketers to equip them with necessary marketing and market information.

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