

Palm Oil Marketing in a Contemporary Social Environment: Implications for Achieving Food Security through Science and Technology in Isoko North Local Government Area, Delta State, Nigeria

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Abstract: The study was carried out to assess the impact of science and technology on palm oil marketing towards achieving food security in Isoko North Local Government Area, Delta State. Multi stage sampling technique was employed in selecting respondents. First stage involves the random selection of ten communities from the study area; in the second stage one town was randomly selected from each of the ten communities; and third stage involve the random selection of five respondents from each of the towns making a samples size of 50. Data was collected through primary and secondary sources. Primary source was through questionnaire while secondary source include text books, journal, internet etc. Data was subjected to descriptive statistics. Hypothesis was tested with chi-square and regression analysis.. Result of the study revealed that majority of the respondent fall within the age bracket of 41- 50 years (50%) the rest were 20- 30 years (50%), 31-40 years (9%) and 51 years above (11%) respectively. The study also reviewed that there were more females (70%) than males (30%) involve in palm oil marketing in Isoko North LGA. Most of the respondents were married (60%).Those single were 26% while divorced and widows were 8% and 6% respectively. The results show that the modern method processes more Fresh Fruit Bunches (FFB) per worker per year than the traditional method. Modern mills process a total of 1.8 tons of FFB per worker per year, compared to the traditional method of 0.98 tons/worker/year. The average quantity of palm oil sold per week per respondent was 156 litres and the prices vary from one marketer to the other; from N250 to N270 per litre. The regression analysis showed significance at 5% with p value < 0.05 with the socio economic factors such as age, marital status, education, price of palm oil among others having significant effect on the income of palm oil marketing in the study area. Therefore, palm oil marketers and processors should take advantage of the modern technology in order to improve their income, market efficiency and achieve food security.

Keywords: Palm oil Marketing Income Traditional Modern Technology.

1. INTRODUCTION

In the 1950s and 1960s, Nigeria was a leading nation in the word palm oil market, the production of palm oil exceeded the domestic consumption and the excess was exported to the word palm oil market (Shamsudin, 2008). However, the fortunes of palm oil production changed adversely as a result of three major factors firstly was the discovery of crude petroleum deposit in commercial quantity, secondly was the over reliance on traditional palm oil processing techniques, and thirdly was the effects of Nigerian civil war which was pronounced in Nigeria oil palm belt. Thus, the oil palm sub-sector of the economy was neglected and relegated to the background while crude oil exploration and exploitation took the centre stage. Consequently, Nigeria lost its pride of place as a world leader in palm oil production to Malaysia and Indonesia so; the

trend has been that of increasing domestic consumption not matched by a rather slow growth in production (Shamsudin, 2008).

Omoti (2001) emphasized that Nigeria has enormous potential to increase her production of palm oil and palm kernel primarily through application of improved processing techniques. In the opinion of Agboola (1993) improved techniques that meet both growth and sustainability goals can be effectively used by oil palm processor. Jalani, et al (2000) stressed the need for oil palm processors to embrace well integrated capital intensive and high extraction rate in their processing method.

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. Marketing of palm oil in Nigeria takes place in homes, road sides, local and periodic market centre and stalls. These can be both wholesale and retail types in both rural and urban centers. Generally, palm oil is transported from the supply region of southern Nigeria to the demand region of northern Nigeria. Lagos which is the center of economic activities of Nigeria receives most of the palm oil shipped from the supply region for onward delivery for export activities (Shamsudin, 2008). Prices of palm oil are largely affected by production or output of the palm oil within the year and general inflation rate in the country (Zuhaimy, 2007).

Statement of Problem:

Major distribution points for palm oil ranges from market stall, wholesale point, palm oil depots or beaches and supermarket, each of these points is characterized by activities of trading association or unionism which does not permit free entry into the business of palm oil marketing. This compels palm oil distributors to register with large sum of money to join the union before being allowed to sell his goods. Kei et al (1997) opined that the problem of the oil palm sector in Nigeria was influenced by the overall agricultural policies that could be classified into three: First was the independence from 1960-1970, industrialization which was financed by export taxes through commodity marketing board which monopolized commodities such as cocoa, groundnut, palm oil, cotton and rubber. Second was the resulting producer price which had a damaging effect on the production of export crops; and the third was the civil war from 1967 to 1970 which did not help matters.

According to Okoh, (2005) the paucity of physical infrastructure such as storage facilities transports channels and inadequacy of economic data for planning and research are some factor identified as source of inefficiency. Other include a high level of intermediaries in the marketing\distribution chain, high concentration of food stuff high erratic price which will further depress the level of agricultural production .

Thus, the study contends that the imbalance in demand and supply of palm oil exists primarily due to inefficiency in distribution of this commodity across the region different parts of the country. The study therefore investigated the optimal pattern of palm oil shipment that minimize total cost of transportation in the study area

Purpose of the study:

The study focused mainly on assessing the impact of science and technology on palm oil marketing towards achieving food security in Isoko North Local Government area Delta State. Specifically the study

- 1 describe the socio economic characteristics of palm oil marketers
- 2 determine whether an improved palm oil processing and storage technology has a positive effect on the marketing efficiency of palm oil marketing and food security
- 3 volume and income of palm oil marketing in Isoko North Local Government Area, Delta State

Hypothesis:

- 1 There is no significant relationship between the socio economic factors of palm oil marketers and the income of palm oil marketing

- 2 There is no significant impact of science and technology on the volume and income of palm oil marketing.

2. RESEARCH METHODOLOGY

The study was carried out in Isoko North local Government area Delta State, the area lies between latitude 5° 12'N and 6° 30'N and 5°8'E and 6°14' longitude respectively its has annual rain fall of 120ml and mean temperature range of 29^oc to 32^oc. The area is moderately swampy with forest containing different trees and highly favorable for agrarian activities which include oil palm marketing; processing and storage are quite predominant in the area.

Sampling Techniques:

Multi stage sampling techniques was employed in selecting the respondent. Ten communities were randomly selected from the study area. The second stage involved the random selection of 5 respondents from each of the communities making sample size of 50 respondents

Data Collection:

For effective data collection both primary and secondary sources were used to generate information for the study. The primary sources comprise of questionnaire and personal interview. The questionnaire was systematically designed to elect empirical data from the 50 respondent. The personal interviews were employed to assist in obtaining information from illiterate marketers

Data Analysis:

Data collected were subjected to descriptive statistic such as simple percentage and frequency count and mean. Regression analysis were used to test the hypothesis 1 and 2

Multiple Regressions:

Multiple regressions model express as

$$Y = a + b_1 x_1 + \dots$$

Where

Y= the dependent variable (income measured in naira)

a= constant

b= coefficient

e= error term

X = independent variable

The variable in the model are measured as follows

X1 = market size (ha)

X2 = age of marketer (years)

X3 = number of palm oil

X4 = selling price (₦)

X5 = total cost

3. RESULT AND DISCUSSION OF FINDINGS

Table 1: Socio- economic characteristic of Respondent

Age distribution	Frequency	Percent
20 – 30	5	10.0
31 – 40	9	18.0
41 – 50	25	50.0
51 above	11	22.0
Total	50	100.0

Sex		
Female	35	70.0
Male	15	30.0

Marital Status		
Single	13	26.0
Married	30	60.0
Divorced	4	8.0
Widow	3	6.0
Total	50	100.0

Full and part time marketing		Percent
Full time	16	32.0
Part time	34	68.0
Total	50	100.0

Other occupations	Frequency	Percent
Farming	20	40.0
Civil servant	7	14.0
Teaching	4	8.0
Other specify	3	6.0
Total	34	68

Education background		
No formal education	5	10.0
Primary	10	20.0
Secondary	26	52.0
Tertiary	9	18.0
Total	50	100.0

Source of finance		
Personal saving	30	60.0
Family/friends	10	20.0
Cooperatives	5	10.0
Money lenders	5	10.0
Total	50	100.0
Source of palm oil supply		
Processor	38	76.0
Wholesale	12	24.0
Total	50	100.0
marketing record		
Yes	34	68.0
No	16	32.0
Total	50	100.0

Field data 2014

This table above indicates that 10.0% of the marketers were between the age 20 – 30 years, 18.0% were 31 – 40 years, 50.0% were 41 – 50 years, while 22.0% were between 51 years and above. About 70.0% of the marketers are females, 30.0% male as shown above. The result also showed that 26.0% were single, 60.0% married, 8.0% and divorced, 6.0% widows. The table further revealed that 32% of the respondents were into part time marketing, while 68.0% were into fulltime marketing. The table above also showed that 10% of the marketer had no formal education, 20% had primary education, 52% had secondary education and 18% had tertiary education.

60% finance their marketing through personal savings 20% were through loan from family /friends, 10% were through cooperatives and 10% were through loan from money lenders. This table indicates that 76% of the marketer gets their supply from the processor and 24% from the wholesalers. The tables above further reveal that 68% of the marketers kept marketing record while 32% do not keep marketing records

Table 2: Quantity of palm oil sold

	Frequency	Percent
3	4	8.0
4	10	20.0
5	6	12.0
6	15	30.0
7	7	14.0
8	4	8.0
9	4	8.0
Total	50	100.0

Source: Field data 2014,

8.0% of the marketer had quantity of palm oil sold, 20% had quantity of palm oil, 30% had quantity of palm oil, 14% had quantity of palm oil 8% had quantity of palm oil while 8% also had quantity of palm oil table

Table 3: Average quantity sold per week

	Frequency	Percent
2	15	30.0
3	22	44.0
4	9	18.0
5	4	8.0
Total	50	100.0

Source: Field data 2014

This table reveals that 30% of the respondent had average quantity of 15, 44% had average quantity of 22, 18% had average quantity of 9 and 8.0% had average quantity of 4

Table 4: Current price of palm oil

	Frequency	Percent
4200	16	32.0
4300	13	26.0
4400	12	24.0
4500	9	18.0
Total	50	100.0

Source: Field data 2014

This table indicates that 32% of the marketers get the current price of 4200, 26% get the current price of 4300, 24% get the current price of 4400 and 18% get the current price of 4500

Table 4.13: mode of payment to the supplier

	Frequency	Percent
Credit	8	16.0
Cash	30	60.0
Part of payment	12	24.0
Total	50	100.0

Source: Field data 2014.

The analysis in this table indicates that 16% paid credit, 60% paid cash while 24% part of payment

Table 4.14: mode of transportation to the market

	Frequency	Percent
Motorcycle	25	50.0
Bicycle	12	24.0
Lorry	3	6.0
Wheel barrow	10	20.0
Total	50	100.0

Source: Field data 2014

Majority of the marketers transport their palm oil through motorcycle and bicycle (74%), transportation with vans/lorries was 6%, through wheel barrow was 20%

Table 5: Cost of Daily Transport per 50 litres of palm oil

	Frequency	Percent
200	11	22.0
300	10	20.0
400	9	18.0
500	20	40.0
Total	50	100.0

Source: Field data 2014.

This table reveals that 22% of the respondent get 200 as their daily cost of transport 20% get 300 as their daily cost of transport 18% get 400 as their daily cost of transport and 40% get 500 as their daily cost of transport

Table 6: Major customers to the sellers

Customers	Frequency	Percent
Food vendor	13	26.0
Retailers	22	44.0
Final consumer	10	20.0
Industrial user	5	10.0
Total	50	100

Source: Field data 2014.

This table indicates that 26% of the marketers their major customer are final consumer while 10% their major customer are industrial user.

Discussion of Finding:

The findings revealed that the palm oil marketer in the studied area had an average of 45.5% years and majorities were female, more than average of them (60%) were married whose main occupation was sound education of which 90% were adequately educated. By implication the marketers with this level of their education could accept innovation that will put their market in a productive means. The marketers were run with personal savings and loan from family/friends and cooperative which may not be enough to market at large quantity and this therefore has drastic effect an expansion. This could be the main reason why palm oil marketing is at small scale level in the area.

The result reveal that 68% keep record of their marketing activities while 32% did not. This fraction could be liken to those who had poor education and market at subsistence level and this was why they did not see reason of keeping marketing records The results also showed that the modern method processes more Fresh Fruit Bunches (FFB) per worker per year than the traditional method. Modern mills process a total of 1.8 tons of FFB per worker per year, compared to the traditional method of 0.98 tons/worker/year.

4. SUMMARY

The study was carried out to determine the socio –economic factors affecting the income of palm oil marketing In Isoko North LGA, Delta State. Multi stage sampling technique was employed in selecting respondents. Ten communities was randomly selected from the study area, the second stage involve the selection of one town from each of the ten communities. The third stage involve the random selection of five respondents from the towns making samples size of 50. Data was collected through primary and secondary sources. Primary source was through questionnaire while secondary

source was collected by text books journal, internet etc. Data was subjected to descriptive statistics. Hypothesis (i) was tested with regression analysis. The gross margin analysis was used for hypothesis (II)

The study revealed that majority of the respondent fall within the age bracket of 41- 50 years (50%) the rest are 20- 30 years (50%) 31-40 years (9%) and 51 years above (11%). the study also reviewed that there are more females (70%) to males (30%) in palm oil marketing in Isoko North LGA. Most of the respondent are married (60%). Those that are single are 26% while those divorced and widows were 8% and 6% respectively.

The average quantity palm oil sold per week per respondent is 156 litres and the prices vary from one marketer to the other. The average price per litre is N 1400 the gross margin analysis shows positive value (income greater than cost palm oil marketing) . This implies that the enterprise profitable.

The regression analysis showed significance at 5% with p value < 0.05 which means that the socio economic factors significantly affect the income of palm oil marketing

5. CONCLUSION

The socio-economic factors which include age marital status, education, price of palm oil among others have significant effect on the income and volume of palm oil marketing. Therefore palm oil marketers and processors should take advantage of the modern technology in order to improve their income, market efficiency and achieve food security in isoko north LGA.

6. RECOMMENDATION

The following recommendation have been advocated to enhance a better marketing of palm oil by that marketers in the study

- 1) The government should encourage and train extension worker to render assistance to small scale marketers in establishing their palm oil marketing enterprise.
- 2) The government should provide credits facilities with low interest rate to palm oil marketers to enable them increase the market size
- 3) Marketers are encouraged to embrace the modern method of palm oil marketing in order to increase efficiency and generate higher income
- 4) The government should also provide modern machines and equipment at affordable prices for palm oil processing/storage and marketing.

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