

Palm oil marketing and financing in Oyigbo local government area of Rivers state

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Abstract: The study examined financing and marketing of palm oil in Oyigbo local government area of Rivers State, Nigeria. The objectives were to: describe the socio economic characteristics of the palm oil marketers; determine marketing efficiency of palm oil; examine the sources of finance for oil palm farmers; determine marketing channels of oil palm; examine the challenges of oil palm financing and marketing and determinants of oil palm funding by various funding sources. Data were collected through the use of a questionnaire. A total of fifty (50) respondents were purposively selected from two communities out of seventeen (17) communities, the selection of the two communities was based on the presence of oil palm processors. Data were analysed with the use of frequency, percentage, mean scores, marketing efficiency and ordinary least square (OLS) multiple regression. Findings showed that majority (63.0%) were male, (46.0%) were between 31 – 40 years, were married (66.0%), had secondary education (56.0%), were not cooperative members (80.0%), have household size of 5-8 persons (50.0%), have been in palm oil marketing between 6 - 10 years (40.0%) and had farm size between 1 – 10 (100.0%). Marketing efficiency of palm oil was 2.72. Majority (26%) of the marketers sourced finance from friends/relatives. Majority (70%) of palm oil marketing channel was Producer → Wholesaler → Retailer → Consumer. The major challenges of palm oil financing and marketing were: incompatibility of modern technology to local conditions (\bar{x} = 3.16), lack of storage facilities (\bar{x} = 3.14), lack of processing facilities (\bar{x} = 3.12), lack of access to credit and loans (\bar{x} = 2.90), low returns (\bar{x} = 2.72) and exploitative taxes and charges (\bar{x} = 2.64). The major (64%) determinant of palm oil marketing and funding was size of land. The result of the linear regression analysis showed that sex, marital status, farm size and cooperative membership were socio-economic characteristics that affect marketing efficiency at $P \leq 0.05$. The study recommends that palm oil marketers should have access to credit facilities from lending institutions in order to expand and improve their scale of operation.

Keywords: Palm Oil, marketing, financing, Oyigbo

INTRODUCTION

The oil palm (*Elaeis guineensis*) is one of the important economic crops in the tropics (Anyanwu; Anyanwu and Anyanwu, 1982). It belongs to the family *palmae* (having 225 genera with over 2600 species), and the subfamily *cocoideae* of which it is the most important member (Opeke, 1987). Generally, the oil palm tree is considered a "Complete plant" because all the products and by-products derived from the tree possess commercial importance. Hence, "No part of the tree is wasted". The principal product of oil palm is the palm fruit, which is processed to obtain three commercial products. These include palm oil, palm kernel oil and palm kernel cake.

The development of the economic oil palm had continued to attract the attention of various administrations in Nigeria since the colonial period to date. This was not unconnected with its economic importance as a very important source of edible and technical oils of a huge National revenue earning potentials. Palm oil and palm kernel oil, the major products of oil palm, were once very vital to Nigeria's export trade as Nigeria was a leading producer of oil palm produce in the world. In economics, production is never regarded as complete until the product gets to the final consumer, thus the importance of marketing. Olagunju (2008) reported that because of the increase in demand of palm oil, resulting from an increase in population and income growth relative

to the low productivity of the oil palm sector, Nigeria has become a net importer of palm oil.

There are indeed several factors that impede the efficient marketing of palm oil and they will need to be addressed because the potentials of the sector are too enormous to be neglected. Also, oil palm production in the state may have been largely affected by lack of financing, poor marketing, under investment in new technology, slow adoption of existing improved technology, limited land for oil palm cultivation and unavailability of skilled and unskilled labour. Again, there exist in the state, low production/output as well as low yielding varieties of palm seedlings planted at high maintenance cost (FMARD 2006).

Also, according to Carrere (2010), low provisions of market information standard and quality control constitute constraint to palm oil marketing. There are indeed several factors that impede the efficient marketing of palm oil and they will need to be addressed because the potentials of the sector are too enormous to be neglected.

This study is therefore designed to highlight the challenges of financing and marketing of palm oil in Oyigbo Local Government Area of Rivers State. The study answered the following research questions; what are the socio-economic characteristics of the palm oil marketers in the study area? What are the factors that influence marketing efficiency? What are the sources of finance available to oil palm farmers in the study area? What are the challenges affecting palm oil

financing and marketing in the area? What are problems being encountered by the palm oil marketers in the study area?

The broad objective of the study is to examine the financing and marketing of palm oil in Oyigbo Local Government Area of Rivers State.

The specific objectives of the study are to:

1. describe the socio economic characteristics of the palm oil marketers in Oyigbo Local Government area.
2. determine marketing efficiency of palm oil in the study area;
3. examine the sources of finance for oil palm farmers in the study area;
4. determine marketing channels of oil palm;
5. examine the challenges of oil palm financing and marketing in the area; and
6. determinants of oil palm funding by various funding sources.

The hypothesis was stated as follows: There is no significant difference between socio-economic characteristics and marketing efficiency of oil palm.

METHODOLOGY

This study was conducted in Oyigbo Local Government Area, one of the Upland areas of Rivers State in Nigeria where agriculture is predominant and constitutes the mainstay of the economy of the LGA, providing employment for the inhabitants. Oyigbo LGA is made up of a total of seventeen (17) villages which are divided into two parts namely Asa and Ndoki which share boundaries with Abia and Cross River States respectively (Iyagba and Anyawu, 2012).

The population of the study constitutes all smallholder oil palm processors and palm oil marketers.

A purposive sampling was used to select the respondent for this study. Out of the seventeen (17) communities in the local government, only two (2) were purposively selected. The selection was based on the presence of oil palm processor in the local government. The communities selected are Egberu and Kom kom respectively. Twenty five (25) oil palm marketers sampled randomly from each community of the local government above, giving a total sample size of fifty (50) respondents out of 75 that formed the sampling frame.

Data for the analysis was collected from primary source. The primary data was collected through the use of structured questionnaires administered to the 50 selected respondents.

Data collected from the respondents was analyzed using descriptive statistics such as mean score, table, percentage and frequency, while the ordinary least squares (OLS) regression technique will be used to test the stated hypotheses at 0.05 level of significance.

Objectives 1, 3 and 4 was analysed using frequency, tables and percentages. Objective 2 was analysed using marketing efficiency index. Objective 5 was analysed using a four point Likert type scales with options; Strongly Agreed (4), Agreed (3), Disagreed (2), Strongly Disagreed (1). The values assigned was added to get ten (10) which will be divided by 5 to get 2.5. This will serve as cut-off point.

The multiple regression model was implicitly specified as follows:

$$Y=f(X_1, X_2, X_3, X_4, X_5, X_6, \dots, X_n)$$

Where;

Y= Market Efficiency

X₁ = Sex (female = 0; male = 1)

X₂ = Age (years)

X₃ = Marital status (married = 1, Otherwise = 0)

X₄ = Household size (persons)

X₅ = Educational level (years in school)

b = Regression coefficient

u = error term

The explicit representation of the model were in three functional forms: the linear, double-logarithm function and semi-log form.

RESULTS AND DISCUSSION

Socioeconomic characteristics

The socio-economic characteristics of respondents are presented in Table 1. Table 1 shows that majority (62%) of the respondents were males, while 38% of them were females. This agrees with the study of Enwelu *et al* (2013) that palm oil production activities are mostly dominated by men. The male dominance could be attributed to drudgery nature and physical energy demand, and large financial investment needed for plantation establishment which discouraged women. The table shows that 66% of the respondents were married and therefore would have greater family responsibility, while 20% of the respondents were single and 14% were Divorced/Separated. This finding agrees with Ibitoye (2011) which confirmed that Nigerian farmers were mostly married.

The table also shows that majority (46%) of the marketers are within the age of 31 to 40 years. Those within the age of 21 to 30 years are 20%. About 22% of the marketers are within the age of 41 to 50 years, 10% fall within 51-60 years of age. Only 2% were above 70 years of age. The average age of the marketers was 45 years. This implies that palm oil marketing need able bodied men and women to carry out tasks such as loading, offloading, boiling of the palm oil in the drums which are some of the activities carried out in palm oil marketing. The age distribution among farmers in this study tends to agree with Ekong (2003) and Solomon (1994) which confirmed that Nigerian farmers are within the age bracket of 40-60 years. In relation to level of formal education attainment,

the table shows that a fair percentage (56 %) of the respondents had secondary education. About 24% of the respondents had primary education while 10% had adult literacy. Only 10% had no formal education. These results imply that majority of the marketers had one form of education or the other. (47%) of the respondents had HND/BA/Bed/B.Sc., 24% had ND/NCE, 23% had SSCE/WAEC, while only 6% of them had no formal education. Educated marketers may have better access to market information compared to non-educated marketers thereby increase marketing efficiency. This result contradicts that of Ukwuteno (2011) which confirmed that only 50 percent of the oil palm producers in the study area have up to primary six or seven as the highest level of education attained.

In terms of years of experience, majority (40%) of the respondents had between 6- 10 years of marketing experience. This was followed by 30% of the respondents which have had 11 - 15 years of experience. Then 16% of the respondents had 1 - 5 years of experience while 10% had 16 – 20 years of experience. Only 4% had marketing experience between 21 to 25 years. This shows that palm oil business had been an age long business and also those that have between 1 to 10 years of

business experience implies that more people are recently entering the business because of its profitability. The table also shows that a good percentage (50%) of the respondents had a household size of 5 – 8 persons, 30% of them had a household size between 1 - 4 persons, 16% of them had a household size of 9 - 12 while only 4% had over 13 persons in their household. This implies that the larger the family size, the more of labour component usage on the farm and the more mouths to feed but less farm income to be realized by the farmer. Tijjani (2006) noted that the major reason why farmers keep large family members is for the provision of farm labour during peak production periods. The table further shows that that most respondents (80.0%) do not belong to any cooperative(s) while only 20.0% do. Non-membership in farmers' cooperatives probably may have affected palm oil production negatively since palm oil marketers that do not belong to any cooperative(s) are likely to have less knowledge on palm oil production while those who have membership are likely to adopt innovation faster as they will have opportunity to mix with other adopters which may enhance exchange of ideas, attitudes, skills and knowledge among others

Table 1: Socioeconomic characteristics of respondents (n =50)

Variables	Frequency	Percentage (%)	Mean (\bar{x})
Age (years)			
21 – 30	10	20	
31 – 40	23	46	
41 – 50	11	22	50.5 years
51 – 60	5	10	
61 – 70	-	-	
71 – 80	1	2	
Sex			
Male	31	62	
Female	19	38	
Marital status			
Married	33	66	
Single	10	20	
Divorced/Separated	-	-	
Widow/Widower	12	14	
Educational Level			
No formal Education	5	10	
Primary Education	-	24	
Adult literacy	4	10	
Secondary Education	4	56	
Tertiary Education	8	-	
Farm Size			
1 - 10	50	100	
11 – 20	0	0.0	15.5 hectares
21 – 30	0	0.0	
Household size			
1 – 4	15	30	
5 – 8	25	50	10.25 persons
9 – 12	8	16	

Variables	Frequency	Percentage (%)	Mean (\bar{x})
13 – 16	2	4	
Cooperative membership			
Yes	10	20	
No	40	80	
Years of Experience			
1 – 5	8	16	
6 – 10	20	40	
11 – 15	15	30	13 years
16 – 20	5	5	
21 and above	2	4	
Total	50	100	

Source: Field survey, 2020

Marketing efficiency of palm oil

TC = Variable Cost + Fixed Cost + Other Cost = N350,440.00

TR = N 953,760.00

Marketing Efficiency (ME)

$$ME = \frac{\text{Total Revenue}}{\text{Total Cost}}$$

$$\text{Therefore ME} = \frac{953,760}{350,440}$$

ME = 2.72

From the result of cost and return analysis, it was shown that total revenue was N953,760.00 and total cost was N350,440.00. Therefore, the marketing efficiency of 2.72 shows that the marketers were efficient in the business having spent less of their sales revenue on cost. This

agrees with (Oladejo, 2014) who reported M-E of 1.17 for goat in Oyo State as profitable. (Mafimisebi *et al*, 2013) also reported a similar result as being profitable.

Sources of finance for palm oil marketers

From the result on table 3, majority of the palm oil marketers indicated that personal saving (40%) was the major source of their credit facilities. This was closely followed by friends and relatives (26%). Both cooperative societies (Esusu) and friends and relatives accounted for 66%. Only 10 respondents (20%) got credit from cooperative societies (Esusu) and 5 respondents (10%) indicated that they got credit from commercial banks.

Table 3: Percentage Distribution of sources of micro credit acquisition in the study area

Sources of micro credit	Frequency	Percentage (%)
Commercial banks	5	10
Cooperative societies (Esusu)	10	20
Money lenders	2	4
Friends/Relatives	13	26
Personal saving	20	40
Total	50	100

Source: Field survey, 2020

Palm oil marketing channels

Table 4: Percentage Distribution of palm oil marketing channels in the study area

Marketing Channel	Frequency	Percentage
Producer → Middleman → Wholesaler → Retailer → Consumer	8	16
Producer → Wholesaler → Retailer → Consumer	35	70
Producer → Retailer → Consumer	7	14
Producer → Consumer	0	0
Total	50	100

Source: Field survey, 2020

Figure 1 as shown below represents the marketing channel of palm oil from the producer to final consumer within the study area. The wholesalers often buy from the producers found at oil mills or

those that come to the markets. In turn, the wholesalers sell to wholesalers and retailers. The retailers then sell to the final consumers.

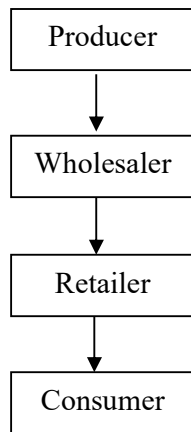


Figure 1 Flow chart showing oil palm marketing channel in Oyigbo LGA
Source: Field survey, 2020

Challenges of palm oil financing and marketing

Result on table 5 showed that the challenges affecting palm oil financing and marketing were incompatibility of modern technology to local conditions with mean score as 3.16, lack of storage facilities with mean of 3.14, lack of processing facilities with mean of 3.12, lack of access to credit and loans with mean of 2.90, low returns with mean response of 2.72, and exploitative taxes and charges with mean score of 2.64. Each of them

were above 2.5. This is an indication that each problem had positive effect on the respondents since most of the problems had a mean score higher than the cut off mark of 2.5. On the other hand, lack of improved materials seed/seedlings (M=2.06), lack of market (M=2.32), infestation of pest and diseases (M=1.94) and lack of infrastructure (roads, communication etc) (M=2.48), were not seen as challenges affecting oil palm financing and marketing in the study area.

Table 5: Response on challenges of oil palm financing and marketing in the study area

Challenges	SA (4)	A (3)	D (2)	SD (1)	Total Score	Mean Score	Remark
1 Lack of access to credit and loans	20	10	15	5	145	2.90	Agreed
2 Lack of improved planting materials seed/seedlings	10	6	11	23	103	2.06	Disagreed
3 Lack of storage facilities	17	23	10	0	157	3.14	Agreed
4 Lack of processing facilities	15	28	5	2	156	3.12	Agreed
5 Incompatibility of modern technology to local conditions	20	18	12	0	158	3.16	Agreed
6 Lack of market	10	8	20	12	116	2.32	Disagreed
7 Low returns	8	25	12	5	136	2.72	Agreed
8 Infestation of pest and diseases	7	6	14	23	97	1.94	Disagreed
9 Lack of infrastructure (roads, communication etc.)	10	12	20	8	124	2.48	Disagreed
10 Exploitative taxes and charges	8	23	12	7	132	2.64	Agreed

Source: Field survey 2020

Multiple Responses ≥ 2.5- Agreed; ≤ 2.5-Disagreed; SA= Strongly Agreed; A= Agreed; D= Disagreed; SD = Strongly Disagreed

Determinants of palm oil marketing funding

Table 6 shows that the respondents' size of land (64%), membership of cooperative (60%) and financial records (48%) as the major determinants of oil palm funding. This implies that the higher the farm size, the greater chances of acquiring funding for oil palm marketing. A second determinant of funding was membership of cooperative, this

implies that chances of obtaining funding from formal sources was to be a cooperative member since most formal sources don't fund individuals but only cooperatives, as such there is need for the marketers to be members of cooperatives so as to obtain funding and thereby increase their marketing efficiency.

Table 6: Percentage Distribution of determinants of oil palm funding

Determinants	Frequency	Percentage (%)
Size of land	32	64
Membership of cooperative	30	60
Provision of reputable guarantor	22	44
Financial records	24	48
Repayment capacity	22	44
Total	50	100

Testing Hypothesis

The research hypothesis was statistically tested for significance using the t-test (table 4.3.1). The test of significance of socio-economic characteristics and market efficiency was statistically significant at 5% level. Since the p-value of most of the variables is less than the probability value of 0.05, the alternative

hypotheses was accepted. This implies that the null hypothesis (H_0) which states that there is no significant difference between socio-economic characteristics and marketing efficiency is rejected; while accepting the alternative that states a significant difference between socio-economic characteristics and market efficiency.

Table 7: T-test Results of socio-economic characteristics and market efficiency

Variables	Mean	T	p-value
Market_Efficiency - Sex	1.15420	11.333	.000
Market_Efficiency - Age bracket	.23420	1.383	.173
Market_Efficiency - Years of Experience	.07420	.463	.646
Market_Efficiency - Cooperative membership	-.73420	7.227	.000
Market_Efficiency - Marital Status	.45420	2.974	.005
Market_Efficiency - Household size	.59420	4.206	.000
Market_Efficiency - Educational level	-.58580	-3.139	.003

Regression result of the socio-economic characteristics on marketing efficiency

Table 8 shows the result of multiple regression analysis determining the significance of socio-economic characteristics perceived to affect market efficiency in the study. The perceived factors (independent variables) are selected personal characteristics, sex, age, marital status, educational level, farming experience, farm size, cooperative membership and household size. The linear functional form was chosen as the lead equation based on the coefficient of determination (R^2) and the significant level of the F -ratio. The linear functional form had R^2 value of 0.541, which indicates that the independent variables can explain 54.1% of the variations in the dependent variable.

It was observed further that farming experience, sex, age, marital status and cooperative membership were significant at p-values ≤ 0.05 and ≤ 0.01 respectively. Thus, farming experience, sex, age, marital status and cooperative membership had effects on marketing efficiency of oil palm in the study area. The remaining four socio-economic characteristics namely, household size, farm size, educational level and age on the other hand were not significant since the significant values exceeded the conventional p-value ≥ 0.05 and ≤ 0.01 .

Sex was positively significant at 1%. This implies that male marketers are more efficient than their female counterpart in the study area.

Cooperative membership had the expected negative sign and was significant at 1%. Therefore belonging to an association reduces efficiency of small scale palm oil marketers in the study area. This finding disagrees with Kadurumba *et al.* (2009) and Ojo (2005) who reported that membership of association positively influenced technical efficiency levels of small scale palm oil processors in Nigeria.

Farming experience had a positive sign and was significant at 5%. This implies that increase in farming experience would increase the efficiency of palm oil marketing.

Marital status was positively significant at 5%. Therefore, married marketers had high efficiency compared to the single marketers.

Age) was negatively significant at 5%. This implies that the older a marketer gets, the lower his efficiency. This agrees with *a priori* expectation and can be attributed to various factors. As postulated by Onyebinama (2004), the age of a business manager is likely to influence his attitudes, motivation, behavioural patterns and capacity to adopt new innovation and his sensitivity to risk. Older marketers seem to be less receptive of innovative ideas and this affects their efficiency negatively. Also, old marketers are not always able to do a lot by themselves and may need to employ helps and this increases overhead cost which in turn, affects efficiency negatively.

The following regression equation was built from the lead equation.

$$Y=1.691+2.381(X_1)-0.820(X_2)+1.130(X_3)+0.583(X_4)-0.327(X_5)-0.504(X_6)+5.254(X_7)-4.256(X_8)$$

Table 8: Regression result of the socio-economic characteristics on marketing efficiency

Variables	Linear	Semi log	Double log
Constant	1.691 (.544)	4.919 (3.280)	.545 (4.610)
Sex	2.381*** (2.601)	7.495*** (2.438)	.430 (1.773)
Age	-.820** (-1.906)	-4.995 (-2.195)	-.093 (-.519)
Marital Status	1.130 ** 2.139	5.123** (1.913)	.129** (.609)
Educational Level	.583 (1.289)	4.099 (1.514)	.102 (.478)
Farming Experience	-.327** (-.678)	-2.373 (-.889)	-.116** (-.552)
Household Size	-.504 (.391)	-.591 (-.234)	.002 (.008)
Farm size	5.254 (4.127)	16.879 (4.032)	1.122** (3.396)
Cooperative membership	-4.256*** (-3.626)	-14.224 (-3.645)	-.704*** (-2.287)
R square (R ²)	0.541	0.531	0.348
F-Value	6.029	5.800	2.733

Source: Field survey, 2020, SPSS 23.0. Numbers in parenthesis are the *t*-ratio.
****significant at 5%, ***significant at 1%**

CONCLUSION AND RECOMMENDATIONS

The finding of the study revealed oil palm marketing in the study area was carried out mostly by married males who had one form of formal education or the other with large household size and still in their productive years. The major source of finance for the marketers was from personal saving. The result of the multiple regression analysis revealed that the socio-economic characteristics that have effect on marketing efficiency were sex, marital status, farm size and cooperative membership.

The farmers encountered problems of incompatibility of modern technology to local conditions, lack of storage facilities, lack of processing facilities, lack of access to credit and loans, low returns, high cost of land and exploitative taxes and charges. An attempt at solving these problems at the national and state levels will actually be a way forward in the drive for food security and poverty alleviation through palm oil marketing. Government must be seen to be actively involved in the procurement and distribution of essential resources such as storage facilities, processing facilities and also assist the farmers financially.

In line with the finding of this study, it is recommended that there should be provision of financial assistance to marketers through formation

of cooperative groups which would help ease their marketing inefficiency.

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