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PERFORMANCE OF SELECTED SAWN TIMBER MARKETING IN OREDO LOCAL GOVERNMENT AREA OF EDO STATE, NIGERIA.

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ABSTRACT

Timber marketing constitutes a reliable source of livelihood for many Nigerians. It is an economic asset to the forestry sub-sector for sustained resource production, distribution and consumption. Hence, this paper examined the performance of selected sawn timber marketers in Oredo Local Government Area of Edo State, Nigeria with the view to help stakeholders have a proper perspective of the business and thus reduce the risks involved in it while maximizing the profit. Primary data were obtained from 240 respondents by adopting multi-stage sampling technique. Data collected were analyzed using descriptive statistics, Marketing margin, and marketing efficiency. Results showed that the mean age of the respondents was 45years, both males and females were involved in timber marketing. Half of the respondents had primary education while 53.3% were married and majority (86.7%) of the marketers sourced for capital through personal savings. The dimensions: Breadth (B) and Width (W) were measured in Inches while the Length (L) is measured in Feet (F). The sawn timber dimensions (BxWxL) considered in this study were: 2x2x12 (5.08cm X 5.08 X 365.76cm); 2x4x12 (5.08 X 10.16cm X 365.76cm) and 3x4x12 (7.62cm X 10.16cm X 365.76cm). Marketing margin results showed that Iroko species was ₦350 while mahogany and Teak was ₦100 which has the least margin. Marketing efficiency of Agba, Mahogany and Iroko had the highest efficiency of 1.38. There was high high performance of sawn timber marketing among the marketers. The most important constraints that militated against sawn timber marketing include: Inadequate supply of desired species high cost of transportation and inadequate credit facilities. It was recommended that utmost priority should be given to the plantation establishment by the Local Government especially where the exploitation of these timber species are designated. Private enterprises and other relevant stakeholders (e.g. marketers) should be co-opted to sustainable management.

Keywords: Sawn-timber, marketing margin, marketing efficiency

Introduction

Nigeria is endowed with abundant flora and fauna species hence, the forests are protected for timber production (Jayeola *et al*., 2009). A timber is a wood in the form suitable for construction or carpentry, joinery or for reconversion for manufacturing purposes, used as a building material for over 4000 years and is a very common material for house construction (Aiyeloja *et al.*, 2013). According to Cunningham *et al.* (2005), timber accounts for about half of worldwide wood consumption in which the consumption of sawn wood accounts for 4.704 million/m^3 and wood based panels accounts for 688million/m^3. It also accounted for a large proportion of total agricultural share of international economics (Toledo, 2006). The preference for timber among other alternatives such as plastics and iron is reported by Lucas *et al.* (2006) to be connected with its renewability, abundance, accessibility, versatility, less energy input

required for processing and relative cheapness. Timber products are used throughout the world for many tasks from simple structural application to highly finished and ornate decoration and it is the dominant industrial material in Nigeria (Fuwape, 2000). It remains an important construction material today as research and improved technologies have led to a better knowledge of the material behaviour.

This has helped manufacturers to use timber more efficiently and safely and in more challenging and exciting applications. Other important attributes of timber include its texture and attractive appearance hence its usage for internal finishing as well for the main structure (Harte, 2009). It is easy to work with and can be produced in a wide range of shapes and sizes. Timber can be used compositely with concrete and steel and are categorized as either 'softwood' or 'hardwood'. Softwood is obtained from coniferous trees and hardwood comes from broad-leaved trees. Softwood and hardwood are botanical terms and do not necessarily refer to the density or hardness of the wood. There are approximately 200,000 hardwood species and 1,000 softwood species in Nigeria and of the total number, only 2,300 tree species are said to be commercially important (Oluyege, 2007). Nigeria benefitted immensely from timber products trade before the commercial exploitation of petroleum (Kalu and Okojie, 2009).

Timber marketing is pertinent in the economy of timber. According to Lintus (1995), marketing provides a means through which people can create efficient economic value of their resources and products. Consequently, efficiency in timber marketing is an economic asset to the forestry sub-sector for sustained resource production, distribution and consumption. Timber marketing for instance constitutes a reliable source of livelihood for many of the Nigerian poor in rural and urban areas; it provides employment and income derived from a diverse range of timber marketing activities such as loading, offloading, transportation, processing among others (Larinde, 2010; Agustino *et al.*, 2011 and Adebara *et al.*, 2014). An efficient marketing system of timber will provide a means for maximizing products' values and also stimulating equitable distribution of its economic benefits among the different actors in the market (Popoola, 2001;Agustino *et al.*, 2011). Olukosi *et al*., 2005) defined Market performance as the appraisal of the extent to which the interactions of buyers and sellers in a market stimulate results that are consistent with social purposes. Market performance can be evaluated by analyzing the costs and margins of marketing agents in different channels. A commonly used measure of system performance is the marketing margin or price spread. Margin or spread can be a useful descriptive statistics if it is used to show how the consumer's price is divided among participants at different levels of marketing system (Getachew, 2002). According to Delorme *et al*. (2002), the Nigerian forest output markets as with her other African counterparts are characterized by inadequate transport network, limited number of traders, inadequate capital facilities, high handling costs, inadequate market information system, weak bargaining power as well as underdeveloped industrial sectors. However, understanding the price of a common will assists in understanding the working of a free enterprise economy; provides the analytical tools for assessing the economic policies of a country; spells out the standards and norms of a welfare state; compare the actual economic condition with the ideal and reveals how far off the ideal state is with the economic conditions; analyze

efficiency with which productive resources are employed and the efficiency of allocation of the output of productive efforts; maximize economic welfare from available resources and stimulate production through appropriate pricing of resources and output (Jhinghan, 1973). The benefits of the aforementioned theory can be made possible through efficient marketing system and according to Popoola and Rahji (2001) an efficient marketing system is a prerequisite for increased and sustained production, and so, it is relevant in stimulating and producing forestry development and economic growth. As it is with most other forest products in Nigeria, there is insufficient information on the market performance of sawn timber in Oredo, Local Government Area, Edo State. Relevant information on sawn timber marketing and its efficiency is important in resource and income management for effective market performance, policy and economic development hence, there is need for the study on performance of sawn timber marketing in Oredo LGA of Edo State.

Methodology

The study was carried out in Oredo Local Government, Edo State Nigeria. is located at latitude 6°17′N and longitude 5°35′E. The area has a land mass of 249 km^2. It has an annual mean temperature of 27.5^{0}C (Ikhuoria, 1987) and an annual mean rain fall of about 2095mm (Ikhile and Olorode, 2011). It has a population of 374,671 at the 2006 census and population projection 490,600 at the 2016 by National Population Commission (NPC). Oredo is arguably the richest among the 18 Local Government Areas where traders in timber business are well known.

Study Area

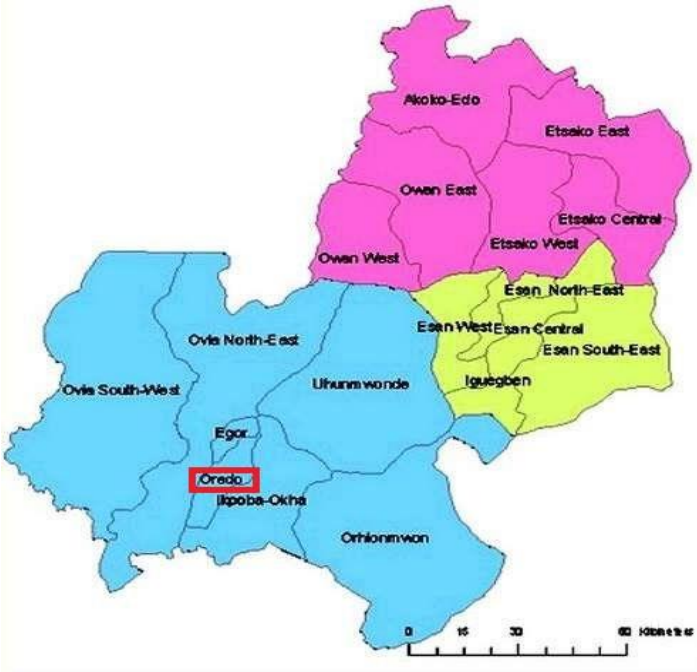

Fig 1: Map of Edo State with Oredo Local Government Area indicated in red rectangle. (Green White Green, 2019)

Sampling procedure, data collection and analytical techniques

Data were collected using a structured questionnaire. Five sawn wood timber markets were randomly selected among the nine markets identified in the study area while forty-eight (48) questionnaires were randomly distributed among the marketers in each market. This is above the average number of marketers in each market. Therefore, a total of two hundred and forty (240) questionnaires were utilized for this study. Descriptive statistical tools were used to analyze the socio-economic characteristics of the respondent while Marketing Margin (MM) and Marketing Efficiency (ME) were equally calculated.

Marketing Margin

Marketing Margin (MM) is a function of Gross Revenue (GR) an equivalent of Total Income (TI) less Total Marketing Cost (TMC)

$MM = TI - TMC$..... 1

Where TI is the income generated from timber species x quantity sold

TMC comprises purchase cost of each timber species in naira and other cost of marketing. These cost of transportation, taxes and association dues, loading and offloading.

Marketing Efficiency: Efficiency is measured as the ratio of output to input. Marketing input includes the resources (labor, packaging, machinery, energy and so on) necessary to perform the marketing functions while marketing comprises of the time, form, place, and possession utilities that provide satisfaction to consumers.

Determination of Marketing Efficiency (ME)

Marketing efficiency refers to maximization of the ratio of output in marketing. This study adopted Olukosi and lsitor (1990), following sambe et al., 2016 technique in marketing efficiency. This is represented by equation as:

Marketing Efficiency = $\frac{Total\ Revenue}{Cost\ of\ Marketing}$ X 100% …….2

Results and Discussions

Socio- Economic Characteristics of the Respondents

Socio-economic characteristics of the markers are revealed in Table 1. The age distribution shows that about 42% of the sawn timber marketers' age ranged between 41-60 years, 40% of the marketers was between 21 – 40 years of age. A few (3.3%) were less than 20 years of age while 15% were above 60 years of age, the average age of the respondents was 45 years. These denote that they were in their active age brackets hence their ability to cope with any stress involved in the business. This finding is similar to the findings of Sambe *et al.* (2016) on profitability analysis of timber trade, where 56.3% fell within the age range of 31 and 50 years and Adedokun *et al.* (2017) where about 50% of the respondents were between the ages of 31-40 years. The gender distribution indicated that 53.3% were males while 46.7% were females, this shows that both gender were involved in timber trading in the study area. This is different from the findings of Adedokun *et al.* (2017) which stated that the marketing activity of sawn timber was female dominated. A larger percentage (53.3%) of the marketers were married, 26.7% were single, 16.7% divorced while 3.3% were widowed. This is paralleled by the findings of Sambe *et al.* (2016) on profitability analysis of timber trade in Benue State. Having a family to cater for could trigger the drive to be more hardworking and become involved in this kind of business because of the possible financial implication (Mafimimisebi *et al.*, 2000). Almost 27% of

timber traders had no formal education while half (50%) of the total respondents had primary education. Those with secondary education constitute 18.3% and only a few (5%) had tertiary education. Alfred and Akintade (2002) also reported in their study that majority of the sellers of timber products were illiterates. This implies that education is of less importance as regards sawn timber marketing however, acquisition of higher education could enhance efficiency and higher income. The years of experience revealed that a larger proportion (88.3%) of the respondent had 1 to 15 years of trading experience while only 11.7% of the marketers had more than 15 years of experience in sawn timber trade. These contradict the findings of Sambe *et al*. (2016) which revealed that 69.4% of the respondents had ≤10 years of experience. Nevertheless, Adedokun *et al.* (2017) posited that timber processing and marketing provide socio-economic support for the stakeholders.

Table 1: Socio Economics Characteristic of the Respondents in the Study Area

Demographic	Frequency	Percentage (%)
Age		
≤20	8	3.3
21-40	96	40.0
41-60	100	41.7
60 above	36	15.0
Mean = 45		
Total	240	100
Gender		
Male	128	53.3
Female	112	46.7
Total	**240**	**100**
Marital Status		
Single	64	26.7
Married	128	53.3
Divorced	40	16.7
Widowed	8	3.3
Total	**240**	**100**
Educational Qualification		
No formal education	64	26.7
Primary education	120	50.0
Secondary education	44	18.3
Tertiary education	12	5.0
Total	**240**	**100**
Years of Experience		
1-5	56	23.3
6-10	68	28.3
11-15	88	36.7
≥15	28	11.7

Mean = 10.5		
Total	**240**	**100**

Source: Field survey, 2019

The result in Table 2 shows the distribution of respondents based on their marketing activities. It was revealed that the largest proportion (86.7%) of the respondents obtained capital through their personal savings, some (10%) had access to loans while a few (3.3%) acquired financial assistance From family and friends. This implies that majority of the respondents finance their businesses through personal savings. The Table further revealed that nearly half (53.3%) of the sawn wood marketed were supplied by sawmills while 46.7% were directly from the forest. This finding is substantiated by Ede and Okundaye (2014) that timbers for building construction are easily made available by sawmills.

The result also shows that 61.7% belonged to the marketers association while 38.3% were not member of any association. This indicated that to some extent, membership of timber trader association is optional. The quantity of sawn wood sold per day revealed that 45% of the marketers sold between 21 – 40 planks per day however, 43.3% sold less than 21 planks per day. A fewer proportions of 6.7% and 5% sold between 41 – 60 planks and above 60 planks per day respectively. The largest proportions (63.3%) of the marketers were able to re-stock the products sold on weekly basis whereas 36.6% re-stock on monthly basis.

Table 2: Distribution of Respondents based on their Marketing Activities

Source	Frequency	Percentage
Source of capital		
Personal saving	208	86.7
Loans	24	10.0
Financial assistance	8	3.3
Total	**240**	**100**
Source of wood		
Sawmills	128	53.3
Direct from bush	112	46.7
Total	**240**	**100**
Membership of Association		
No	96	40
Yes	144	60
Total	**240**	**100**
Quantity sold daily		
1-20	104	43.3
21-40	108	45.0
41-60	14	6.7
60 and above	12	5.0
Total	**240**	**100**

Frequency of Restock		
Weekly	152	63.3
Monthly	88	36.7
Total	**240**	**100**

Source: Field survey, 2019

Sawn timber species and selling price analysis

The sawn timber species and their selling prices are described in Table 3. Most of the sawn timbers were indigenous tree species which include; Iroko (*Milicia excelsa*), Mahogany (*Mahogany sp*), Obeche (*Triplochyton scleroxylon*), Afara (*Terminalia superba*), Mansonia (*Mansonia ultissima*) and Agba (*Prioria balsamifera*). Teak (*Tectona grandis*) is the only exotic tree species amongst them. These timber species are very popular and are valued for their inherent characteristics relished by the consumers. Aiyeloja *et al.*(2013) alluded to the fact that indigenous tree species are relished locally while Jayeola (2009) substantiated the fact that most of the few timbers exploited in the forests are large trees and are among the highly prized hardwood timbers of Tropical Africa well known all over the world. However, wood of some tree species, by reasons of its inherent properties is of no value as timbers; others because of their scarcity or their inaccessibility (Jayeola, 2009). Furthermore, this result is synonymous to the report of International Tropical Timber Organization ITTO (2006) in Central African Republic where out of 15 to 18 timber species, only five species make up 90% of production while in Northern Congo five species accounted for nearly 80% of production.

The dimensions: Breadth (B), Width (W) is measured in Inches while the Length (L) is measured in Feet (F). The sawn timber dimensions (BxWxL) considered in this study are: 2x2x12 (5.08cm X 5.08 X 365.76cm); 2x4x12 (5.08 X 10.16cm X 365.76cm) and 3x4x12 (7.62cm X 10.16cm X 365.76cm). Among the2x2 dimensions, Afara and Mansonia had the highest price (₦950) per unit followed by Agba (₦900), Obeche (₦800), and Mahogany (₦600) while Teak had the least prices of ₦400**.** Among the 2x4 dimensions, Afara had the highest price (₦1500), followed by Mansonia (₦1450), while the least price is Mahogany (₦950). Among the 3x4 dimensions, Iroko had the highest price of ₦1750per unit, followed by Afara (₦1700), while the species with the least price is Teak (₦1400). Afara had the highest prices of ₦1500 and ₦1700 in two (2x4 and 3x4 respectively) of all the three dimensions.

Table 3: Dimension of Sawn Timbers Marketed and Average Price (₦)/Unit

Species	2x2x12	2x4x12	3x4x12
Iroko (*Milicia excelsa*)	650	1100	1750
Mahogany (*Mahogany sp*)	600	950	1450
Obeche (*Triplochyton scleroxylon*)	800	1300	1600
Afara (*Terminalia superba*)	950	1500	1700
Mansonia (*Mansonia ultissima*)	950	1450	1600
Agba (*Prioria balsamifera*)	900	1350	1500
Teak (*Tectona grandis*)	400	1250	1400

NB: 1 feet = 30.48cm

Marketing Margin of Sawn Timber in the Study Area.

The marketing margin shows that among the 2x2 dimensions, Agba had the highest marketing margin of ₦250 followed by Afara and Mansonia with marketing margin of₦200 each. Iroko (*Milicia excelsa*) and Teak (*Tectona grandis*) had the least marketing margin of ₦100 each. In the 2x4 category, Afara (*Terminalia superba*) had the highest marketing margin of ₦300, followed by Mahogany *(Mahogany sp)* and Iroko with ₦250 each. Agba (*Prioria balsamifera*) and Teak had the least marketing margin of ₦150 each. The marketing margin among the3x4 dimension of the various species indicated that Iroko had the highest margin (₦350), followed by mahogany ₦250, while Obeche, Agba and Teak had the least marketing margin of ₦150 each.

Table 4: Marketing Margin of Sawn Timber Products in the Study Area

	2x2			2x4			3x4		
Species	**Cost price**	**Selling price**	**Marketing margin**	**Cost price**	**Selling price**	**Marketing margin**	**Cost price**	**Selling price**	**Marketing margin**
Iroko	550	650	100	850	1100	250	1400	1750	350
Mahogany	500	600	100	700	950	250	1200	1450	250
Obeche	650	800	150	1100	1300	200	1450	1600	150
Afara	750	950	200	1200	1500	300	1500	1700	200
Mansonia	750	950	200	1250	1450	200	1400	1600	200
Agba	650	900	250	1200	1350	150	1350	1500	150
Teak	300	400	100	1100	1250	150	1250	1400	150

Source: Field survey, 2019

Marketing efficiency of sawn timber in the study area

Marketing Efficiency (ME) of sawn timber is revealed in Table 5. Among the 2x2 dimension of sawn wood products, Agba had the highest ME (138.46%) followed by Teak (133.33%). Mansonia and Afara had ME of 126.67% each while Obeche and Mahogany

had ME of 123.08% and 120% respectively. Iroko had the least ME of 118.18%.Hence, for every ₦100 spent on Iroko, Mahogany, Obeche, Afara, Mansonia, Agba and Teak there were return of ₦18.18, ₦20, ₦23.08, ₦26.67, ₦26.67, ₦38.46 and ₦33.33kobo respectively. Among the 2x4 sawn wood products, mahogany had the highest ME of 135.71% followed by Iroko (129.41%), Afara (125%), Obeche (118.18%), Mansonia (116%), Teak (113.64%) while Agba had the least ME of 112.5%. This shows that there were return of ₦25, ₦20.83, ₦10.34, ₦13.33, ₦14.29, ₦11.11 and ₦12 for every ₦100 invested in the marketing of Iroko, Mahogany, Obeche, Afara, Mansonia, Agba and Teak respectively. Also, among the3x4 dimensions, Iroko (125%) had the highest ME followed by Mahogany (120.83%), Mansonia (114.29%), Afara (113.33%), Teak (112%), Agba (111.11%) and Obeche had the least (110.34%). This further indicates that for every ₦100 invested in the marketing of these products there were returns of ₦25, ₦14.29, ₦13.33, ₦12, ₦11.11 and ₦10.34 respectively. Furthermore, the Table shows that among the various timber species and products, the 2x4 products of Mahogany and Iroko and 2x2 products of Agba, Teak, Mansonia, Afara and Obeche were more efficient than the others. The same trend of marketing efficiency was observed by Sambe *et al*. (2016) in timber marketing in Benue State. This implies that the enterprise is reasonably profitable hence, a veritable means of livelihood sustainability.

Table 5: Marketing Efficiency (ME) of the various Timber species in the study area

	2x2			2x4			3x4		
Species	**Selling price**	**Cost of marketing function**	**ME**	**Selling price**	**Cost of marketing function**	**ME**	**Selling price**	**Cost of Marketing function**	**ME**
Iroko	650	550	118.18	1100	850	129.41	1750	1400	125
Mahogany	600	500	120	950	700	135.71	1450	1200	120.83
Obeche	800	650	123.08	1300	1100	118.18	1600	1450	110.34
Afara	950	750	126.67	1500	1200	125	1700	1500	113.33
Mansonia	950	750	126.67	1450	1250	116	1600	1400	114.29
Agba	900	650	138.46	1350	1200	112.50	1500	1350	111.11
Teak	400	300	133.33	1250	1100	113.64	1400	1250	112

Source; Field survey, 2019

Problems Encountered by Timber Traders in the Study Area

Problems encountered by timber traders are shown in Table 6. The Table indicated that 31.25% of the respondents expressed their concern about the inadequate supply of desired timber species while some (25%) complained about the difficulty in transportation. Others (15.63%) experienced high Government charges while a few (3.13%) complain about the instability in price as their main problem. This is an implication that all the respondents experienced one or more challenges in their trading activities.

Table 6: Frequency Distribution of Problem encountered in wood business

Problems	Frequency	Percentage	Rank
Financial	80	12.5	4th

Inadequate store	40	6.25	5th
Transportation	160	25.0	2nd
Government charges	100	15.63	3rd
Inadequate supply of desired species	200	31.25	1st
Poor quality	40	6.25	5th
Price fluctuation	20	3.13	6th
Total	640*	100	

Source: field survey, 2019
*Multiple responses

Conclusion

The marketing of timber species; Iroko, Mahogany, Obeche, Afara, Mansonia, Agba and Teak were efficient however, the 2x2 species of Agba, Teak, Mansonia, Afara and Obeche including the 2x4 of mahogany and Iroko were more efficient than the others because they generated higher profits and could promote livelihood sustainability. Immediate attention and utmost priority should therefore be given to establishing them in plantation by the Local Government especially where the exploitation of these timber species are designated. Private enterprises and other relevant stakeholders (e.g. marketers) should be co-opted to plantation establishment.

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