Profitability, Marketing Efficiency and Value Addition of Timber Industry in Ife East Local Government of Osun State, Nigeria

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ABSTRACT: The study focused on marketing and value of additions of timber in Ife East Local Government, Osun state Nigeria. Specifically, the study examined the market efficiency, determined the profitability of the timber business, examine the level of value addition and the constraints facing the timber industry. Data were collected with the use of primary and secondary data. Primary data needed for the study were generated from structured questionnaire. Fifteen sawmills were randomly selected and one hundred and fifty questionnaires were distributed to the timber marketer and furniture m firm. One hundred and forty eight were retrieved. The data collected were analyzed using descriptive and budgetary analyses. The result showed that males had the highest percentage (89.2%). Majority of the respondents were within the age range of 40 -50 years (83.8%) and most were married (81.8%) it was further revealed that (67.6%) had regular supply of their product and the means of transportation was lorry (44.6%). The study also revealed that benches with 42% added more value addition to the industry. It showed that the year 2013 had the highest efficiency with 2.6. The budgetary analysis showed that the average revenue for the industry for the year 2012-2018 ranged between N2, 285,108.45, 889,107.12. It also revealed that the total profit for the timber ranged between 7, 340, 54.59 and 2,304,897.47.government policy, inadequate facilities in the market, inadequate facilities in the market, inadequate credit facilities, inadequate power supply and high cost of transportation were some of the constraint faced by the timber industry in Ife East Local Government.

A forest is a large area dominated by trees. Hundreds of more species definitions of forest are used throughout the world, incorporating factors such as tree density, tree height, land use, legal standing and ecological function (Johnson, 2013) food and agricultural organization definition, forest covered 4billion hectares(9.9) (15 million square miles) or approximately 30 percent of the world's land area in 2006. Timber has been used as a building material for over 400,000 years and it is very common and best known material for house construction including ramming of floors, walls and roofs. According to (cumming ham *et al.*, 2005) timber accounts for about half of worldwide wood consumption Timber marketing is an asset in the economy of timber. According to (Lintu, 2005) marketing provides a means through which people can create efficient economic value for their resources and products. Consequently, efficiency in timber marketing is an economic asset to the forestry sub-sector for a sustained resource production, distribution and consumption. 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. (Agustion and Poopola, 2011). Marketing efficiency is the provision of the best services to producers and consumers consistent with the prices both are willing to accept (Tee, 2007). It is the achievement of the highest return of the resources employed. The efficiency of marketing is therefore a function of what comes out from it structure, conduct and performance. Thus, (Popoola and Rahji, 2001) posited that 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. This therefore helps in appraising the extent to which

interaction between buyers and sellers in the market stimulate outcome that are consistent with profit levels, sales volume, utilization and sustainability (Olukosi, 2005). Furniture is one of the most important home accessories because it adds style and elegance beside their primary functional designs. Wooden furniture are usually present in homes, offices and social infrastructure buildings such as schools, hotels, hospitals, etc. They contribute to the beautification and aesthetics of the place. Furniture are in various forms, such as, doors, tables, chairs, decorations, cabinets and shelves, cupboards, beds, etc. (Ngui et al.,2011) opined that furniture has the highest value-added component among the major wood-based products. This study wish to examine profitability, marketing efficiency and value addition of timber industry in Ife-east Local government of Osun State Nigeria.

MATERIALS AND METHODS

Study Area: The study was carried out in Ife East of Osun state, Nigeria. Ife East is a local government area in Osun state, with headquarters in Oke Ogbo in Ile Ife. The local government area is in Osun East senatorial district. Ife East local government area also forms a federal constituency alongside Ife Central, Ife North and Ife South local government areas.

Ife East local government area covers an area of 172km2. The local government area is bounded to the north by Ife Central local government area, to the east by Atakumosa west local government area, to the south by Ife South local government area, and to the West by Ife north Local government area.
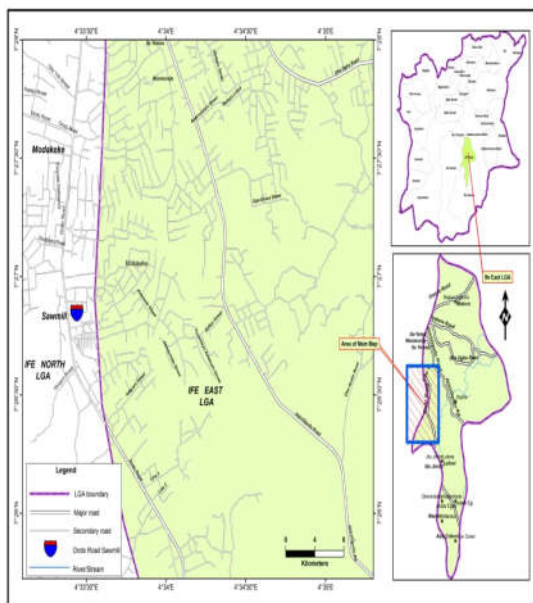

Fig 1. Map Showing the Study Area

Latitudes 7°28′N and 7°45′N and longitudes 4°30′E and 4°34′E. Ife East is a rural area with settlements where agriculture is occupied by most. Ife has an undulating terrain underlain by metamorphic rocks and characterized by two types of soils, deep clay soils on the upper slopes and sandy soils on the lower parts. Within the tropical savanna climate zone of West Africa, It has average rainfall of 1,000–1,250 mm (39–49 in) usually from March to October and a mean relative humidity of 75% to 100%. Ife is east of the city of Ibadan and connected to it through the Ife-Ibadan highway; Ife is also 40 km (25 ml) from Osogbo and has road networks to other cities such as Ede, Ondo and Ilesha. There is the Opa River and reservoir that serves as a water treatment facility for O. A. U

*Types and Sources of Data***:** Primary and secondary data were used in this study. The primary data was collected through the use of structured questionnaire to obtain pertinent information in social economic characteristics involved in timber processing and marketing such as nature of business, ownership of business, business operation capital, number of workers, annual income, income level, expenditures etc. Secondary data was obtained from Osun state ministry of forestry, National Bureau of statistics, internet facilities and published journals and articles.

Sampling technique: Multistage sampling was used in this study. In the first stage, Ife east local government was purposively chosen. The reason being that it has the largest forest coverage area and housed the highest saw-mills and forest reserves in the area. Secondly, fifteen saw-mills were randomly selected from the local government. Thirdly, six (6) timber marketers (sellers) and four (4) furniture (maker) firms were randomly selected from each sawmill. Altogether one hundred and fifty (150) questionnaire were administered but one hundred and forty eight (148) were retrieved.

Method of data analysis: Data was analyzed using descriptive statistics, marketing efficiency was analyze using: Market efficiency index (MEI) as used by (Olokosi and Isitor, 1990); (Ekunwe *et al*., 2008)

$$M.E = TR/TMC$$

Where TR = total revenue and TMC = total marketing cost.

Profitability was calculated using budgetary analysis the following profitability were calculated

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$$RMCF = TVP - TC \qquad 1$$

$$RRTI = 100(\frac{RMCF}{TC} \qquad 2$$

$$GM = TR - TVC \qquad 3$$

$$RRFC = 100 \left(\frac{RFC}{TFC}\right) \qquad 4$$

Profitability Ratios: Rate of Return (ROR) and Rate of Return on investment (RORI) are two alternative profitability used in comparing the level of profitability in the study area.

$$\%ROR = TR \times 100/TC$$

$$RRTI = 1OO(TR - TC)/TC$$

Where; RMCF = Return to management capital and family labour or net income, TVP = Total value product, TVC = Total variable cost, RRTI = Rate of Return on Investment, TC = Total cost, ROR = rate of return, RFC = Return on fixed cost (Gross margin), RRFC = Rate of return on fixed cost. Value addition in the timber industry in the study area. This was analyzed using value addition.

Value added is define as sale revenue minus all purchases. (Raw material component, supply energy and services from one enterprise to other enterprise). Purchase from another enterprises in the same sawmill was reacted as outside purchases. The value added as a percentage of sales is given thus:

$$VA = \frac{100 \, (S - P)}{S}$$

Where: VA = Value added and S = Sales

Table 1. Selected Sawmaills in the study Area

Sawmills	Timber Marketers	Furniture Firms	Total
Ifesowapo sawmill opa road,Ile ife	6	4	10
Orisunmibare sawmill Ondo road, Ile ife	6	4	10
Ajowa sawmill Ondo road, Ile ife	6	4	10
Atagijere sawmill ondo road, Ile ife	6	4	10
Olowoibadan sawmill ondo road, Ile ife	6	4	10
Alubarika sawmill ondo road, Ile ife	6	4	10
Alalamole sawmill ondo road, Ile ife	6	4	10
All is well sawmill Owo eye ondo road, Ile ife	6	4	10
Oyebolami sawmill ondo road, Ile ife	6	4	10
Ademiju sawmill ondo road, Ile ife	6	4	10
Oluwatoyin sawmill ondo road, Ile ife	6	4	10
Omo olu sawmill ondo road, Ile ife	6	4	10
Omo olu sawmill ondo road, Ile ife	6	4	10
Alfa wasiu sawmill ondo road, Ile ife	6	4	10
Alahji Taofeek ondo road, Ile ife	6	4	10
Arowo sawmill ondo road, Ile ife	6	4	10

RESULTS AND DISCUSSIONS

Table 2 present the result of the socio demographic characteristics of the respondent. The result revealed that 83.8% are of age 40-50 while 3% are of age 50-60 and 21% are of age 30-40. The result showed that majority were adult. This result corroborate the findings of (Okumadewa *et al*.,2000) which stated that those in the age range of 40-50 years of age were productive and have the power to produce work and not in agreement with the result from the market performance of *irvingia wombulus* (Usman *et al.,*2015) who said that majority were of age 30-40. The result revealed that most of the timber marketers and furniture makers were male (89.2%), which means majority of the respondent were male and they have more energy to carry out the task. This result is in agreement with (Olawumi and Okunlola, 2015) when they stated that majority of the respondent in Ondo sawmill were male and the result disagree with (Alfred and Akitade, 2002) when they opined that sawn wood marketing were dominated by female. The result further revealed that 81.8% were married while 21% were widower 3% were widow and 3% were single. Marital status determine the level of household size which by extension may indicate the available labor supply, family, income composition and savings pattern(Mafimimisebi *et al.,*2000) opined that marital status of a person determines the degree of responsibility of that person in the society and further submit that, marital status distribution is very important as it helps to have an idea of a marketing participant's devotion to the marketing process and the likely outcome of this on his or her business activities. Marriage confers responsibility (Akinbile, 2007). Furthermore 55.4% of the respondent had secondary education, 33.1% and 11.5% have tertiary and primary education respectively. Formal education for most market stake holders confers a wide range of

opportunities and advantages for success in life compared with illiteracy. Based on a prior, it is expected that higher levels of educational attainment by a markets dynamics and thus better profit from use of sound business principles and wise business decisions. Education enhances the efficiency of trade business (Oluyole and Usman, 2006). This study contradicts earlier study by (Alfred and Akinade, 2002) on wood marketing where majority of the sellers were illiterate.

The table revealed that 2.0% realized ₦1, 000, 01-₦ 200,000 per annum, 14.2% realized N 2000, 001- ₦ 4000,000 per annum and 83.8% realized above ₦ 4000,000 as annual income. This result implies that majority of respondent realized ₦4, 000,000 as annual income. The mean annual income for the industry was ₦ 2,700,000.5. The result agreed with (Babatunde,2018) who found that annual income earned by timber industry in Ijebu North Local Government was well above the Federal Government approved minimum wage.

The result also shows that 0.7% had access to less than ₦ 500,000 to start their business, 1.4% had access to above ₦ 500,000, 16.2% had access to ₦100,001-₦ 500,000 e.t.c. the mean business operational capital for timber industry was ₦ 3,025,005. This result is in agreement with (Akanni and Adetayo, 2011) which found out that amount of working capital for a business enterprise often determines the level of output and accruable profit margin.

Table 2: Socio-demographic characteristics of respondent / saw-millers in the study area

Variables	frequency	percentage
Gender		
Male	132	89.2
Female	16	10.8
Total	**148**	**100**
Education		
Primary	17	11.5
Secondary	82	55.4
Tertiary	49	33.1
No formal	-	-
Total	**148**	**100**
Age		
30-40	21	14.2
40-50	124	83.8
50-60	03	2.0
60above	-	-
Total	**148**	**100**
Marital status		
Single	03	2.0
Married	121	81.8
Window	03	2.0
Widower	21	14.2
Divorced	-	-
Total	**148**	**100**
Supply of product		

Table 2 continued		
Variables	frequency	percentage
Regular supply	100	67.6
Not regular	48	32.4
Total	**148**	**100**
Means of transportation		
Truck	67	45.3
Lorry	66	44.6
Car	15	10.1
Total	**148**	**100**
Years of establishment		
1-3years	10	6.7
4-6years	17	11.5
7-9years	21	14.2
Above10years	100	67.6
Total	**148**	**100**
Main occupation		
Saw mailers	17	11.5
Furniture	49	33.1
Timber sellers	82	55.4
Total	**148**	**100**
No of Workers		
1-3workers	7	4.7
4-5workers	33	22.3
Above6workers	100	73.0
Total	**148**	**100**
Annual income		
Less than 500,000	-	-
1,000001-2,000000	3	2.0
2,000000-4,000000	21	14.2
Above 4,000000	124	83.8
Total	**148**	**100**
Mean annual income		
Nature of business ownership		
Private	148	100
Public	-	-
Total	**148**	**100**
Ownership of lorry/truck		
Yes	132	89.2
No	16	10.8
Total	**148**	**100**
Business operation capital		
Less than 500,000	1	0.7
500,001-100,0000	121	81.8
100,0000-500,0000	24	16.2
Above 500,0000	2	1.4
Mean business capital	**3,025,00.5**	
Total	**148**	**100**
Nature of business		
Retailers	38	25.7
Wholesalers	11	7.4
Both	99	66.9
Total	**148**	**100**
Type of business ownership		
Corporation	30	20.3
Co-operative society	13	12.2
Partnership	20	13.5
Sole proprietorship	80	54.0
Total	**148**	**100**

The table 2 shows the budgetary analysis of timber industries in Ife east of Osun state. The average revenue for the industry for year 2012-2018 ranged between ₦ 2,285,108.45- ₦3, 889,107.12. The

average fixed cost of the industry ranged between ₦1, 257,781.64- ₦1,257,781.64. The average total variable cost ranged between ₦ 287,703.71 to ₦ 326,428.08. The net profit ranged between ₦7,340,54.59 and ₦ 2,304,897.47.The rate of return on investment were 10.6%, 14.5%, 0.67%, 13.1%, 13.9%, 0.47% and 0.10%. This implying that rate of return on investment was high in the timber industry

in Ife east. This result indicates that for every naira invested (also known as return to capital) 10-₦ 15 was realized and the rates of return on fixed cost follow the same trend. On the basis of this, it can be said that sawmill industries were more profitable in Ife east of Osun state. This result agreed (Babatunde *et al* 2017) who found out that the timber industries in Ijebu ode were profitable.

Table: 3. Budgetary Analysis of timber industry in the study area.

	2012	2013	2014	2015	2016	2017	2018
				Variable Cost			
Transportation (₦)	38,898.37	35,972.63	33,557.69	37,480.77	32,932.08	30,480.77	31,989.18
Labour (₦)	15,878.32	17,057.72	12,832.69	10,385.00	14,148.55	18,442.31	16,911.64
Fuel and power (₦)	36,858.10	45,209.88	33,157.33	39,157.69	40,373.08	48,979.02	35,503.85
Tax (₦)	100	1000	1000	1000	1000	1000	1000
Processing cost (₦)	133,890.18	167,391.99	140,344.77	144,816.41	132,996.02	129,856.49	150,918.04
Membership due (₦)	4,391.89	4,391.89	4,391.89	4,391.89	4,391.89	4,391.89	4,391.89
Rent (₦)	22,442,31	22,442,31	22,442,31	22,442,31	22,442,31	22,442,31	22,442,31
Maintenance (₦)	35,344.49	32,961.66	40,803.76	37,449.56	35,966.76	37,679.43	31,405.55
			Total Variable Cost (₦) Fixed Cost Depreciation On;				
Band saw (₦)	124,5833.33	124,5833.33	124,5833.33	124,5833.33	124,5833.33	124,5833.33	124,5833.33
Circular saw (₦)	61,708.33	61,708.33	61,708.33	61,708.33	61,708.33	61,708.33	61,708.33
Planning machine (₦)	94,7961.66	94,7961.66	94,7961.66	94,7961.66	94,7961.66	94,7961.66	94,7961.66
Buildings (₦)	86,616.66	86,616.66	86,616.66	86,616.66	86,616.66	86,616.66	86,616.66
Generating set (₦)	36,911.66	36,911.66	36,911.66	36,911.66	36,911.66	36,911.66	36,911.66
				Total Fixed Cost(₦)			
Total cost (₦)	1,542,093.46	1,584,209.72	1,546,312.08	1,554,905.27	1,542,905.27	1,542,062.33	1,551,053.86
Total revenue (₦)	3,189,979.96	3,889,107.19	2,584,206.33	3,595,401.05	3,689,462.65	2,285,108.45	3,225,678.21
Profitability indicator on investment	1.06	1.45	0.67	1.31	1.39	0.47	0.10
Rate of return on fixed cost	2.37	2.83	1.83	2.62	2.70	1.58	2.33

Source: Field survey 2019

Table: 4 Market efficiency of timber industries in Ife east

	2012	2013	2014	2015	2016	2017	2018
Total cost ₦	1,542,093.46	1, 546,209.08	1,546,312.08	1,554,905.27	1,542,062.33	1,551,053.86	1,552,344.1
Total revenue ₦	3,189,979.96	3,889,107.19	2,58,206.33	3,595,401.05	3,689,462.63	2,285,462.65	3,225,678.21
Efficiency	2.1	2.6	1.7	2.4	2.4	1.5	2.1

Source: Field survey 2019

Table 5. Value added sales ratio for the timber industry

Product	Average purchase	Average sales	Value added/sales ratio
Set of chair	119833.33	164666.66	0.27
Office chair	36083.33	56166.66	0.35
Doors	8400	12533.33	0.32
Bookshelf	11883.33	18016.66	0.34
Pulpit	10950	16000	0.31
Prayer desk	11250	16883.33	0.33
Wardrobe	37383.33	52583.33	0.28
Pupils chair	4533.33	7366.66	0.38
Kitchen cabinet	17850	29216.66	0.38
Lectern	8133.33	13758.33	0.40
Office Tables	7480	11983.33	0.37
Benches	1181.66	2041.66	0.42

The table above shows the market efficiency of the business from year 2012 – 2018 was 2.1, 2.6, 1.7, 2.4, 2.4, 1.5 and 2.1 respectively. The result implies that the market was efficient. The year with the high

efficiency was 2013 with the value 2.6. This result is in line with (*Sambe et al*, 2015) who stated that sawmill market in Benue is efficient with high financial returns on the investment by the marketers.

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According to (Kydd, 1992) and (Ozogwu, 2002), the value of marketing efficiency ranges from 0% to infinity. If marketing efficiency is 100% (unity), it shows that the market is efficient, whereas if marketing efficiency is greater than 100% then there is excess profit. Also if marketing efficiency is less than 100% there is inefficiency.

Table 5 shows the value added sale ratio for timber industry; since furniture industry added value to timber industry and output of sawmill input in furniture industry. From the table value added sales ratio of 27% for set of chair, 35% for office chair, 32%for doors, 34% for bookshelf's, 31% for pulpit, 33% for prayer desk, 28% for wardrobe, 38%puplis chair, 38% for kitchen cabinet, 40% for lectern, 37% for office tables and 42% for benches. This result implies that all the produce added value to the timber industries but benches with 42% added more value sales ratio to the timber industry in Ife east.

Table 5. Constraints Facing the Timber Business

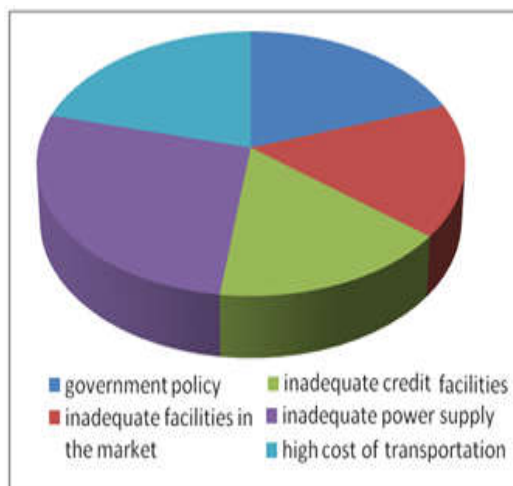| Constraint	Frequency	Percentage
Government policy	29	19.6
Inadequate facilities in market	24	16.2
Inadequate credit facilities	24	16.2
Inadequate power supply	48	27.0
High cost of transportation	31	20

Source: field survey, 2019

Fig 2. Constraints

The table 6 shows that timber industries in the study area encountered several constraints. 27.0% are faced with inadequate power supply, 20.9% incurred high cost of transportation, 19.6% complained of unfavorable government policy and 16.2% with inadequate facilities in the market and credit facilities. The timber industries faced with high cost of energy and power supply due to epileptic power supply and the demand for diesel and petrol to power their machine is high. And also high cost of transportation due to the bad roads where they sourced their timber and available transport tend to exploit the respondent by charging exorbitant fee. These results corroborate the prospect of (Akanni and Adetayo, 2011) who observed that high cost of energy affected sawmilling timber industries in Ijebu Ode.

*Conclusion***:** In the context of the result obtained from this study, timber business is an important source of income to many households in Nigeria and the study area in particular, it is however experiencing major setbacks. The identified constraints to the development of timber industry need to be addressed if the industry must move forward. For instance problem of inadequate credit facilities may be addressed by coming together of the timber business men and women to form cooperative societies so that they can have access to sufficient credit facilities that could mobilized for their business operations. Based on the findings and conclusions drawn from this study, the following recommendations were made, to improve the supply level of timber business in Ife East there is need to improve on the supply of energy and power for production processes in the study area. Government should encourage on private tree plantation so as to make available more trees since the demand for timber is at increase.

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