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## Value Addition and Consraint of Hardwood Timber Industry in Ijebu Division of Ogun State, Nigeria

**Babatunde Taiye Oluwasola**

Lecturer, Department of Forestry Technology,  
Federal College of Forestry, Nigeria

**Babatunde Kehinde O**

Lecturer, Department of Basics Science,  
Federal College of Wildlife Management, Nigeria

**Babatunde Olujemisi O**

Lecturer, Department of Wood and Paper Technology,  
Federal College of Forestry, Nigeria

**Okeleke Sunday O**

Lecturer, Department of Forestry Technology,  
Federal College of Forestry, Nigeria

### **Abstract:**

*The study focused on the value addition and constraint of hardwood in timber industry in Ijebu Division in Ogun State. The study made use of both the primary and secondary data. The instrument used for collecting the primary data was a set of structured questionnaires. A multistage sampling technique was used in sample enumeration. Descriptive and inferential statistical methods were employed in analyzing the data for the study.*

*The finding showed that 32.6% of the industries were retailers and 30.4% were wholesalers of timbers and also had regular supply of the products. The operational capital among the timbers traders was ₦3, 641,905.6 and the average annual income was ₦1, 682,064.2. The value-added sales ratio was 31% for door, 34% for table, 53% for pupil chair and 39% for benches. Pupil chair with 53% added more value to timber industries in Ijebu Division. Government policy, high cost of transportation, inadequate credit facilities and high cost of energy and power were some of the constraints faced by timber industries in the study area. The use of modern equipment and machines are needed to replace the outdated equipment in order to increase the output and profit. The level of access to credit facilities should be improved upon by encouraging the respondent to form cooperative societies so that they can mobilize enough working capital for their business.*

**Keywords:** Value addition, hardwood, timber, industry, constraint

### **1. Introduction**

The Nigerian government policy on forest industries currently, is meant to increase the domestic value in the processing of wood products and has thus put a ban on the export of logs, rough sawn and clean sawn wood except processed wood. These measures were put in place to make raw materials locally available for secondary processing mill to achieve the desired value-addition for export. Further processing of timber will ensure economic value of timber and other forest products to be fully harnessed (Larinde *et al.*, 2010). It will also reduce the ecological impacts of utilization on the forests for sustainable management. The wood-based industry in Nigeria suffers from production inefficiency as a result of poor integration, poor cost and returns database and non-reinvestment of profit (Larinde, 2008).

The manufacture further processed product is an instrument for economic development, capable of mobilizing latent resources and promoting the expansion of forest industries because of its foreign exchange earnings and savings potential. This is because the product of this industry has wide market in Europe. Jukka (2001) stated that a vibrant, high-value timber processing is the only panacea for tropical forestry's strong presence in export market. Furniture component manufacturing are gradually being integrated with existing sawmills in Nigeria to increase value addition to sawn timber as well as provide essential material for the furniture and building industry. Unfortunately, techno-economic appraisal of value addition to sawn timber is scanty because of few numbers of producers. Many sawmills could not rationalize the investment outlay for further processing. Nevertheless, information is required on factors leading to the best operating performance mode within existing laws and regulations.

Timber has been estimated to account for about one-third of the value of all domestically produced timber, both hardwood and softwood. One reason for the difficulty in estimating hardwood timber production is the fragmented nature

of the industry. Some mills are part of major forest products corporations, but most are independent operations. With a few exceptions, most hardwood sawmills are small operations which draw resources from a relatively small area.

In Nigeria, state and federal lands may be used for logging via a bidding process for the right to timber. Standing timber is usually purchased in one of the following ways: Outright purchase of the land and related timber, purchase at a specified rate per unit of timber actually cut (Pay-as-cut), or purchase for a set total amount or lump sum. For tax purposes, timber is the wood in standing trees that is available and suitable for exploitation and use by the forest industries. "Stumpage," a commonly used term in forestry, has similar meaning i.e. the wood expected to be recovered from the forest on harvest of trees. Further processing of timber will ensure economic value.

#### 1.1. Economic Values of Timber in the Forest

- Providing a source of income;
- Serving as a place of employment;
- Providing renewable resources for production and household consumption; – being a local and renewable source of energy;
- Provision of recreation and social provision;
- Supplying materials for high quality wood products.

#### 1.2. Environmental Values of Timber in the Forest

- Being a valuable ecosystem containing a diversity of species;
- A landscape element providing ecological stability and integrity;
- Serving a protective function for water resources;
- Providing protection from flooding events;
- Mitigating the effects of climate change through carbon sequestration being an important element for ecological stability in mountainous regions, especially in safeguarding against avalanches and landslides;
- Preventing and stopping soil erosion;
- Providing nitrogen filtration; combating desertification;
- Purifying the air;
- Preserving the historic environment;
- Reducing fossil fuel greenhouse gas emissions when used for energy or to replace materials with higher embodied energy.

#### 1.3. Social Values of Timber in the Forest

- Providing relief and amenities to urban inhabitants;
- Providing recreational and preventive healthcare opportunities.

#### 1.4. Furniture Industries

The history of furniture industry is closely related to the history of human culture for thousands of years all the furniture was designed to accommodate the taste of royalty, the nobility and other wealth people used furniture as a symbol of their power and rank than practical necessity. Beginning in the AD 1500's, a middle class of people gradually developed in Western country who wanted furniture that was comfortable, and suited to the buyer home by the 1800's, the taste of the middle-class buyers set the standard for furniture styles (Larinde, 2008), most furniture made today is designed to be practical, comfortable easy to maintain, and cheap to produce. Much use of it is fabricated in factories and large workshop that make use of the latest and modern technology. And some furniture was available in form of kit that can be assembled by the purchaser.

According to Omoluabi (1994) furniture consists of chair, table, bed, couches, door and windows (wooden) and so on. They provide comfort and convenience in our homes, school and offices. We relax on chair and couches and we store various types of belonging in chest dresser, and bookcases. Most furniture is made of wood or wood product but furniture markets also use glass metal, plastic and varieties of other materials for examples furniture, such as desk and filling cabinets are designed to be practical and study and is often made of steel certain pieces of fine furniture are regarded as great work of art over the year. The actual process of furniture construction is in wood work's workshop using different types of hand tool and machine to measure, cut and shaped using hand or machine cutting tool such as

- Circular saw: it is used for cutting and ripping timber
- Jointer: it is used for planning surface and edges of timber
- Moulding machine: it is used for shaping each furniture part to require shape

The furniture industry is strategic in the use of planks from the saw mills. It forms the major market for wood products in Nigeria and protects the continued existence of primary wood industries such as sawmills and ply mills. The capacity utilization of the furniture industry was 217,700m in 1988. This increased to 250,714m<sup>3</sup> in 1992. In 2010, capacity utilization of the industry was 326,172m<sup>3</sup> of round log equivalent. More than 400 furniture companies of various sizes exist in the country. (Arowosoge, 2010) The shortfall in large furniture companies is made up by the numerous cottages and small-scale furniture makers which numbers more than 10,000 outlets. This category of furniture makers usually operates in the informal sector and are found in the rural and urban areas where middle- and low-income earners reside. Wooden furniture parts and components are now being manufactured and exported by a few large companies in

Nigeria. Wooden furniture represents the major market for wood products in Nigeria. Many of the industries suffer from high cost of production due to energy cost and lack of patronage. One of the major specialties of furniture makers in Nigeria is wooden door; which is very popular in the country. Handmade carved doors are frequently seen exhibited along the roadside by carpenters. (Adeyoju, 2001) This amounts to 65,810 m<sup>3</sup> with a current production level of 6580m<sup>3</sup> representing 10% capacity utilization.

### 1.5. Sampling Technique

Multistage sampling techniques were used in sample collection. In the first stage, Ijebu division in Ogun East Senatorial District was purposively chosen. The reasons being that it has the largest forest coverage area. In the second stage three Local Government Areas were randomly selected from the division which are: Ijebu-Ode, Sagamu, and Ijebu North. These three local governments were chosen because they house the highest number of saw-mills and forest reserves in the area. In the third stage, ten saw-mills were randomly selected from Ijebu-ode and Ijebu-north Local Governments while five saw mills were randomly selected from Sagamu all in Ijebu division. The study sampled a total number of 150 respondents as follows: 60 respondents were randomly selected from the saw mills at Ijebu-Ode and Ijebu-North and 30 respondents were selected from saw mills at Sagamu. 138 completed and return their questionnaire.

Ijebu ode	Ijebu North	Sagamu
Arowosegbe Agba Saw Mill, Ejirin Road	Temidire cooperative Saw Mill, Station road Oru.	MC Saw Mill at Ijoku
Bolajoko Saw Mill, Ejirin Road.	The Lord Saw Mill, Station road Oru.	Sofowora Saw Mill at Eleja.
Araromi Saw Mill, Ejirin Road.	Simple Saw Mill, Station road Oru.	Ojumeke Saw Mill, at Aiyegbami, Sagamu /.
Akeem Oshin Saw Mill, Before bridge.	Popoola Saw Mill, Station road Oru.	Araromi Saw Mill at, Shotubo
Osoba Saw Mill, After bridge	Wood Embassy Saw Mill, Station road Oru.	Mayegun Saw Mill, at Sagamu-Abeokuta toll gate.
Titilayo Saw Mill, Oke Owa	Orimisan Saw Mill, Station road Oru.	
Kuku Saw Mill, Oke Owa	P and P Saw Mill, Station road Oru.	
Agbomola Saw Mill, Ejirin Road.	Shina Saw Mill, Station road Oru.	
Obileye Saw Mill, at Oke-Owa.	Arsenal Saw Mill, Station road Oru.	
Asimolowo Saw Mill, After Bridge.	Alhaja Popoola Saw Mill, Station road Oru.	

Table 1: Selected Saw Mills in the Study Area

## 2. Methods of Data Analysis

Descriptive and inferential statistical methods were employed in analyzing the data for the study. Descriptive statistical tools such as percentage, frequency distribution table, measure of central tendencies among others were used to analyzed in assessing the value addition in timber industry the value added–sales ratio estimation was done. Value added is defined as sale revenue minus all purchases (raw material component, supply energy and services from one enterprise to other enterprise). Purchases from another enterprise in the same saw mill was treated as outside purchases. The value added as a percentage of sales is given thus:  $(VA) = 100 (S-P/S)$

Where VA = Value added

S = Sales

P = Purchase.

Value-added sales ratio of 100% implies that 100% on sales is their contribution or value addition to the processed woods. (Bamiro *et al.*, 2009)

## 3. Results and Discussion

Table 2 presents the results of the socio-economic characteristics of the timber industry. The results show that 39.9% of the respondents were from Ijebu Ode, 19.6% from Sagamu and 40.5% from Ijebu North. The result shows that Ijebu North had the highest number of respondents. About 30.4% of the industries were wholesalers while 32.6% were retailers and 27.6% were producers and 9.5% operate both types of business. This result shows that the majority of the respondents were retailers in the timber industry in Ijebu division. The results further show that 89.1% of the industry had regular supply in the timber industry while 10.9% of the industry had no regular supply of their products. This implies that the timber business is not a seasonal business. About 60.9% and 37.7% transport their products by truck and lorry respectively, while 1.4% transported their products by car. Based on ownership of truck, the result revealed that 71.0% of respondents own lorry/truck while 28.9% hire truck/lorry to transport their products. The result shows that majority of the respondents owned lorry/truck to transport their product. This result is in agreement with Agbonlahor (2010) who found out that majority of smallholder timber mills in Ogun state owned their trucks for transport purposes. The results again show that 33.3% of the industries were established between 7-9years ago, 26.8% were established above 10years ago while 21.7% and 18.1% of timber industries were established between 4-6 years and 1-3years back. The mean year of establishment of timber industry in Ijebu division was found to be 5.8years. The results showed that 34.8% had access to ₦1,000,000 - ₦ 5,000,000 as working capital and 42.0% could mobilize ₦ 5,000,000 – ₦ 1,000,000, 18.8% had access to more than ₦ 5,000,000 while 4.3% of the industry had access to less than ₦ 500,000 as working capital. The mean business operation capital for timber industry was ₦ 3,641,905.6. This result is in agreement with Akanni and Adetayo (2011) which found out that the amount of working capital for business enterprises often determines the level of output

and the accruable profit margin. The results showed that 54.3% had between 1-3 workers, 36.2% had 4-5 workers while 9.4% had more than 6 workers in the timber industries. This result implies that the majority of the industry had between 1-3 workers and this could contribute to the output of their production. The table also revealed that 34.8% earned ₦1,000,001 - ₦ 2,000,000 per annum, 41.3% earned ₦ 500,001 – ₦ 1,000,000 per annum, 9.4% earned more than ₦ 2,000,000 per annum while 14.5% earned less than ₦ 500,000 per annum. The mean annual income for the industries was ₦ 1,682,064.2. This result implies that the timber industry is more profitable in the study area. This result is in contrast to Akerele (2013) which found out that annual income earned by rural farmers household in Abeokuta north Local government was well below the federal government approved minimum wage.

Variables	Frequency	Percentage	Standard Mean Error
Local government			
Ijebu ode	55	39.9	
Sagamu	27	19.6	
Ijebu North	56	40.5	
Total	138	100.0	0.21764
Nature of Business			
Wholesales	42	30.4	
Retailers	45	32.6	
Producers	38	27.5	
Both	13	9.5	
Total	138	100.0	0.24099
Supply of product			
Regular supply	123	89.1	
Not regular	15	10.9	
Total	138	100.0	0.0721
Means of Transportation			
Truck	84	60.9	
Lorry	52	37.7	
Cars	02	1.4	
Total	138	100.0	0.12512
Ownership of lorry/truck			
Own	98	71.0	
Hire	40	28.9	
Total	138	100.0	0.61591
Year of establishment			
1-3 yrs	25	18.1	
4-6yrs	30	21.7	
7-9 yrs	46	33.3	
Above 10 yrs	37	26.8	
Total	138	100.0	0.2488
Mean of Year of establishment	5.8yrs		
Business operation capital			
Less than ₦500,000	06	4.3	
₦ 5,000,001- ₦ 1,000,000	58	42.0	
₦ 1,000,001- ₦ 5,000,000	48	34.8	
Above ₦ 5,000,000	26	18.8	
Total	138	100.0	0.20001
Mean of business operation capital	₦ 3,641,905.6		
Numbers of workers			
1-3 workers	75	54.3	
4-5 workers	50	36.2	
Above 6 workers	13	9.4	
Total	138	100.0	0.14369
Annual income			
Less than ₦500,000	20	14.5	
₦ 500,001 – ₦ 1,000,000	57	41.3	
₦ 1,000,001 – ₦ 2,000,000	48	34.8	
Above ₦ 2,000,000	13	9.4	
Total	138	100.0	0.81698
Mean of Annual Income	₦ 1,682,064.2		
Nature of business ownership			
Private	138	100.0	
Public			
Total	138	100.0	0.0000

Table 2: Social Economic Characteristics of Timber Industries in the Study Area

Source: Field Survey

### 3.1. Level of Value Addition in Timber Industry

Table 3 shows the value-added sales ratio for hardwood timber industry since the furniture industry add value to timber industry and output of sawmill is input in furniture industry. From the table, value added sales ratio was 31% for door, 53% for pupil chair, 34% for table and 39% for benches. This result implies that all the above produce added value to the timber industries but the pupil chair with 53% added more value sales ratio to the timber industry.

Product	Average Sales (₦)	Average Purchase (₦)	Value Added/Sales Ratio
Doors	9,500.00	6,538.46	0.37
Pupil chair	5,550.00	2,598.46	0.53
Table	2,134.62	1,411.54	0.34
Bench	1,246.15	765.38	0.39

Table 2: To Examine the Value Addition in Timber Business Value Added Sales Ratio Estimation Was Done  
Source: Field Survey, 2015

### 3.2. Constraints facing the Timber industry

Table 6 shows that timber industries in Ijebu division encountered several constraints. About 38.4% of the timber business operators had inadequate credit facilities, 21.7% incurred high transportation cost while about 3.6% complained of unfavorable government policy about timber business.

The result implies that the constraints facing the timber industry were significant. The timber industries encountered with high cost of energy and power. This is due to the epileptic power supply and invariably high cost of procuring diesel and petrol to power their machine and also their access to credit facility was poor due to high interest rates charged by the commercial banks high cost of transportation was also a major constraint resulting from bad road network in many rural areas and cities where they source their timbers and the available transport tend to exploit the respondents by charging exorbitant fare. This result corroborates the position of Akanni and Adetayo (2011) who observed that access to credit facilities and high cost of energy affected the sawmilling timber industries in Ijebu division.

Constraint	Frequency	%
Government Policy	5	3.6
Inadequate facilities in market	7	5.1
High cost of energy and power	53	38.4
Inadequate credit facilities	43	31.2
High transportation cost	30	21.7
Government policy and high transport cost	30	21.7
Inadequate credit facilities and high transport cost	27	19.6

Table 3: Constraints Facing the Timber Business  
Source: Field Survey, 2015

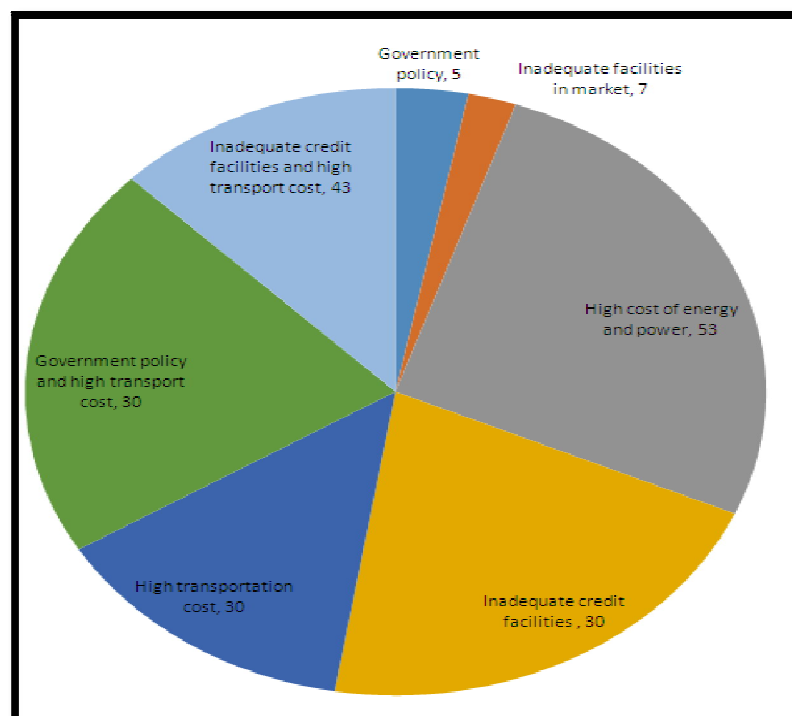


Figure 2: Pie Chart Showing Constraints for Timber Industries

#### 4. Conclusion

In the context of the results obtained from this study timber and furniture industry are important sources 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 be mobilized for their business operations.

Adequate investment should also be made in the energy and power sector so that the timber industry operators can profitably and sustainably keep on operating their businesses. This will also lower the cost of operation and unit cost of the production.

#### 5. Recommendations

Based on the findings and conclusion drawn from this study, the following recommendations were made; To improve the market equilibrium price and supply levels of timber business in Ijebu division of Ogun State, there is need to improve on the supply of energy and power for production processes in the study area this position was corroborated by Akanni and Adetayo (2011) which noted that to improve the market equilibrium price of the wood products in Ijebu division of Ogun State there is need to improve on the energy supply for the production. Furthermore, Nigeria government should put a policy on forest timber industries to increase the domestic value in the processing of wood product and this will put a ban on the export of logs, rough sawn and clean sawn wood expect process wood. This measure will make raw material locally available for secondary processing mill to achieve desired value addition for export and further processing of timber will ensure economic value of the timber and other forest product to be fairly harnessed.

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