

Marketing of Timber in Selected Sawmills in Ibadan North Local Government Area of Oyo State Nigeria

O.O. Babatunde^{1*}; K.O. Babatunde²; T.O. Babatunde¹; A.T. Ademigbuji¹; S.O. Okeleke¹; and A.A. Ekaun¹

¹Federal College of Forestry Jericho, Nigeria.
²Federal College of Wildlife, New Bussa, Nigeria.

*E-mail: oluyemisibabaunde@gmail.com

ABSTRACT

The study focused on the marketing of timber in selected sawmills in Ibadan north local government area of Oyo state. Data were collected by means of primary and secondary sources. The instrument used for the collection of primary data was set of questionnaires. A multistage sampling technique was also used in sample enumeration. Descriptive statistical methods and budgetary analysis were employed in analyzing the data in the study.

The findings showed that 33.8% of the timber marketers were retailers and 31.5% were wholesalers and 44.6% of the marketers mobilized ₦500,001-₦1,000,000 as their operational capital while 40% realized ₦500,001-₦1,000,000 as their annual income. The budgetary analysis revealed that the total annual profit of the marketers ranged between ₦883,500.86-₦1,748,716.52 for 2010-2019. High cost of energy, inadequate credit facilities, and high cost of transportation, inadequate credit facilities, and Government policy were some of the constraints faced by timber marketers in the study area. The level of access to credit facilities should be improved upon by encouraging the marketers to form cooperative societies so that they can mobilize enough working capital for their business. The use of modern equipment and machines were needed to replace the outdated equipment in order to increase the output and profit.

(Keywords: profitability, marketing, timber, Ibadan NGA, sawmills)

INTRODUCTION

Forests have arguably played a bigger role in the development of human societies than any other resource. The prime direct or marketable product of most forests today is wood used as timber, fuelwood, pulp, and paper. Globally, about 3.4 billion cubic meters of timber equivalent are provided from the forest yearly. After a 60% increase between 1960 and 1990, global wood consumption fluctuated but rose no further during the 1990s largely due to the more efficient use of timber and paper recycling (FAO, 2004).

Wood is the most versatile raw material the world has ever known (Douglas, 1995). Throughout history, people relied on wood for needs varying from farming tools to building materials, from fuel to weapons of hunting and warfare. Wood remains virtually the most predominant material used for construction and energy generation until the last half of the 19th century (Douglas, 1995). People used timber in the construction of houses, barns, fences, bridges, furniture items, and musical instruments. In contemporary times, wood is still widely used for constructional purposes. It is also a valuable industrial raw material for the production of pulp, paperboard, rayon, cellophane, photographic films, tannin, methanol, ethanol, wood adhesives and chemical derivatives. The ubiquitous nature of wood has made it a valuable material in every stage of human development, thus man depends on wood right from the cradle to the grave (Douglas, 1995).

Sawmills account for 93.32% of the total number of wood-based industries in Nigeria in 1997 (Fuwape, 2001). The sawmill industry is characterized by small scale operation which constitutes more than 90% of the entrepreneurs in the sector. A major characteristic of the

subsector is increasing number of operatives and decreasing performance. The capacity utilization in the industry is averaged 37% and the lumber recovery rate 40-60% respectively as a result of old equipment. According to Olorunnisola (2000), the annual rate of return is between 15.2% and 44.3%. Sawmills use outdated technologies while only less than 10% use advanced technologies. Although sawmill industry has grown from the pit sawing to circular saw head rigs, French manufactured CD4, CD5, CD6 horizontal band saws, Mighty Mite, Brenta vertical, Kernali brand, Antiglo machine, Jevo machine, Primultini vertical and Forestor (Omoluabi, 1994). There are only few established sawmills that use the Numeric Controlled (NC) devices. Technological improvements in this industry will impact significantly on log to plank conversion efficiency.

Changes in the raw material characteristics such as decrease in log diameter in Nigerian forests also have a strong influence on conversion efficiency. Apart from energy supply, another major factor limiting growth in sawmill industry is scarcity of economic timber resources (Larinde, 2010; RMRDC 2003).

Nigeria's forests are naturally endowed with plant and animal species (flora and fauna) and for this reason it has been protected for timber production. Timber can be described as wood in a form suitable for construction or carpentry, joinery or reconversion to manufacturing purpose. 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 Cummingham *et al.* (2005) timber accounts for about half of worldwide wood consumption.

Forest designation commenced in Nigeria as organized sub-sector after Nigeria had established a formal ecology framework (Sambe *et al.*, 2016, Orimogunje, 2013). Specific natural forest reserves were established to conserve forest resources for the benefit of the local community and prevent the whole sale exploitation of these resources, to provide economic benefits including increased revenue for the rural communities, through preservation of immature trees (Popoola *et al.*, 2001). In Nigeria, round wood processing has reached the limits of available forest resources such that the future

increase in wood production and revenue could be derived from further processing of saw wood rather than expansion in sawmill and exploitation of wood resources (Larinde, 2010, Olukosi *et al.*, 2005). Consequently, Omoluabi (1985), Oyegade (1997), and Larinde (2008) recommended that efforts should be geared towards having most of the wood-based industries in Nigeria integrated to enable the utilization of wood waste or wood materials which are not suitable for sawmills for other value-added products. The objective of this study was to assess the marketing analysis of timber in selected sawmills in Ibadan north of Oyo State.

MATERIALS AND METHODS

Study Area

The study was carried out in Oyo State, Nigeria. Oyo State was carved out of former Western State. The state is situated in the South Western part of the country on latitude 7° 23'N and longitude 3° 54'S. Ibadan North has an area of 27 km² and a population of 856,988 according to the Oyo State Government in 2017. It also has bustling academic and economy activities with the presence of the First Premier University in Nigeria, the University of Ibadan founded in 1948, and The Polytechnic, Ibadan in 1970. Ibadan North is a Local Government Area in Oyo State Nigeria. Its headquarters is located at Agodi in Ibadan. The postal code of the area is 200. The study was carried out at Bodija and Sango sawmills.

Types and Sources of Data

Primary and secondary data were used in this study. The primary data was collected through the use of a 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.

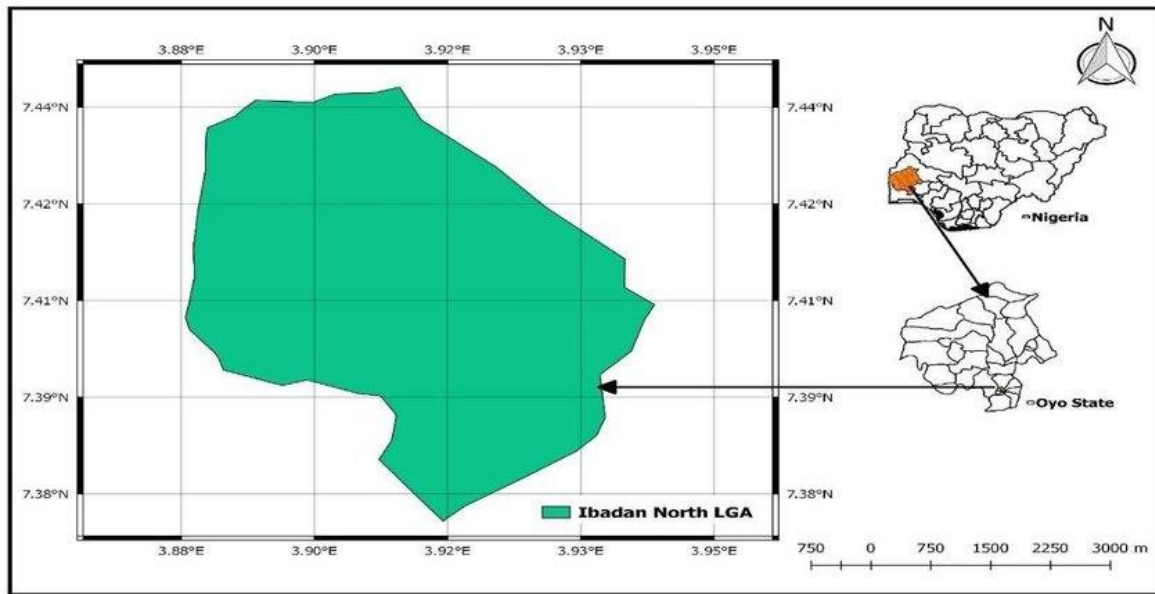


Figure 1: Map of Study Area.
Source www.researchgate.net uploaded by Taiwo Hammed Babatunde.

Sampling Technique

Multistage sampling technique was used for sampling, in the first stage Ibadan North Local Government was selected because it housed major sawmills in the area and based on the popularity of timber market in the study area. Secondly, Bodija and Sango sawmills were randomly selected from the area, in the third stage. Sixty-five (65) timber marketers from Bodija sawmill and sixty-five (65) timber marketers from Sango sawmill were randomly selected. A total number of one hundred and thirty (130) questionnaires were administered.

Methods of Data Analysis

Descriptive statistical method and budgetary analysis 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. Profitability was calculated using budgetary analysis the following profitability were calculated.

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

$$RRTI = 100 \left(\frac{RMCF}{TC} \right) \quad 2$$

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

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

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.

I Rate of Return (ROR%)

$$TR \times 100 / TC$$

II Rate of Return on investment (RORI%)

$$100(TR - TC) / TC$$

Where;

RMCF = Return to management capital and family labor or net income

TVP = Total value product

TVC = Total variable cost

RRTI = Rate of Return on Investment

TC = Total cost

RESULTS AND DISCUSSIONS

Socioeconomic Characteristics of the Respondents

Table 1 presents the results of the socioeconomic characteristics of the selected sawmill. About 33.8% of the timber marketers were retailers while 31.5% were wholesalers and 26.9% were producers and 7.7% operate both types of business. This result shows that the majority of the respondents were retailers in the study area. The results further show that 91.5% of the industry had regular supply while 8.5% of the timber marketers had no regular supply of their products. This implies that the timber business is not a seasonal business.

About 61.5% and 36.9% transport their products by truck and lorry respectively, while 1.6% transported their products by car. Based on ownership of truck, the result revealed that 71.5% of respondents own lorry/truck while 28.5% 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 33.8% of the selected sawmills were established between 7-9 years ago, 24.6% were established above 10 years ago while 23.1% and 18.5% of timber markets were established between 4-6 years and 1-3 years back.

The results showed that 44.6% had access to ₦1,000,000 - ₦ 5,00,001 as working capital and 35.4% could mobilize ₦ 5,000,000 – ₦ 1,000,001, 15.4% had access to more than ₦ 5,000,000 while 4.6% of the timber marketers had access to less than ₦ 500,000 as working capital. This result is in agreement with Akanni and Adetayo (2011) and Babatunde et al. (2020) when they 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 53.8% had between 1-3 workers, 38.5% had 4-5 workers while 7.7% had more than 6 workers working for them.. This result implies that the majority of the marketers had between 1-3 workers and this could contribute to the output of their production. The table also revealed that 34.6% earned ₦1,000,001 - ₦ 2,000,000 per annum, 40.0% earned ₦ 500,001 – ₦ 1,000,000 per annum, 7.7% earned more than ₦ 2,000,000 per annum while 15.4% earned less than ₦ 500,000 per annum. This result implies that the timber marketing are more profitable in the study area. This result agreed with Babatunde and Babatunde (2020) when they found out that timber business in Oluyole Local Government are more profitable but the 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.

COST RETURN STRUCTURE OF TIMBER MARKET IN THE STUDY AREA

The Table 2 shows the budgetary analysis of timber market in selected sawmills in Ibadan North. The average revenue for year 2010-2019 ranged between ₦ 1,910,916.67- ₦2,906,789.71. The average fixed cost of the market ranged between ₦ 484,833.17- ₦ 544,129.60. The average total variable cost ranged between ₦542, 582.67- ₦ 694,700.59 The net profit ranged between ₦ 883,500.6 – ₦ 1,748,716.52.

The rate of return on investment were 17.9%, 18.1%, 18.6%, 23.1%, 23.2%, 23.9%, 24.6%, and 25.1%. This implies that rate of return on investment was high in the timber market in the study area. This result indicates that for every naira invested (also known as return to capital) ₦18- ₦ 25 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 the study area.. This result agreed with Babatunde *et al.* (2017) and Babatunde *et al.* (2020) who found out that the timber industries in Ijebu Ode and Ife East were more profitable.

Table 1: Socioeconomic Characteristics of Timber Marketers in the Study Area.

Variables	Frequency	Percentage
Sawmill		
Bodija	70	50.0
Sango	60	50.0
Total	130	100.0
Nature of Business		
Wholesales	41	31.5
Retailers	44	33.8
Producers	35	26.9
Both	10	7.7
Total	130	100.0
Supply of Product		
Regular supply	119	91.5
Not regular	11	8.5
Total	130	100.0
Means of Transportation		
Truck	80	61.5
Lorry	48	36.9
Cars	02	1.6
Total	130	100.0
Ownership of Lorry/Truck		
Own	93	71.5
Hire	37	28.5
Total	130	100.0
Year of Establishment		
1-3 yrs	24	18.5
4-6yrs	30	23.1
7-9 yrs	44	33.8
Above 10 yrs	32	24.6
Total	130	100.0
Business Operation Capital		
Less than ₦500,000	06	4.6
₦ 5,00,001- ₦ 1,000,000	58	44.6
₦ 1,000,001- ₦ 5,000,000	46	35.4
Above ₦ 5,000,000	20	15.4
Total	130	100.0
Numbers of Workers		
1-3 workers	70	53.8
4-5 workers	50	38.5
Above 6 workers	10	7.7
Total	130	100.0
Annual Income		
Less than ₦500,000	20	15.4
₦ 500,001 – ₦ 1,000,000	52	40.0
₦ 1,000,001 – ₦ 2,000,000	45	34.6
Above ₦ 2,000,000	10	7.7
Total	130	100.0
Nature of Business Ownership		
Private	130	100.0
Public		
Total	130	100.0

Source: Field Survey 2019

Table 2: Budgetary Analysis of Timber Market in the Study Area.

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Variable Cost										
Transportation	38,161.12	40,427.10	30,214.2	33,323.5	37,282.7	33,525.32	30,631.44	29,562.33	31,220.00	35,655.00
Labour	13,651.24	29,808.3	12,035.4	15,512.8	15,632.0	10,605.70	15,090.67	13,762.05	10,112.60	10,102.31
Taxes	11,691.30	11,110.73	10,670	10,065.0	12,775.77	12,130.05	14,113.54	15,038.46	12,008.46	5,000.38
Fuel & power	49,023.52	40,901.3	39,015.7	51,110	50,709.4	40,200.50	33,160.59	31,203.80	39,733.08	39,042.01
Processing cost	221,930.20	232,423.0	232,720.7	297,515	255,428	232,210.00	235,538.46	242,207.69	275,076.92	253,615.38
Maintenance	20,323.13	29,761.1	30,587.5	33,273	38,676.2	31,771.15	32,107.31	29,080.76	20,336.57	29,307.3
Rent	185,709.20	200,251.09	194,906	250,701	198,105	236,213.85	270,725.10	209,461.54	239,444.00	238,320.31
Membership due	2,092.96	2,982.81	3,001.44	3,200.27	3,900.27	3,005.77	3,890.85	4,561.54	3,090.40	2,900.90
Total variable cost	542,582.67	587,665.43	553,150.94	694,700.57	612,509.34	599,662.34	635,258.06	574,878.17	631,022.03	613,943.59
Fixed Cost										
Depreciation cost of saw machine	390,117.60	390,117.60	390,117.60	390,117.60	390,117.60	430,000.10	430,000.10	430,000.10	430,000.10	430,000.10
Depreciation cost of furniture, machines, and tools	30,000.50	30,000.50	30,000.50	30,000.50	30,000.50	40,000.48	40,000.48	40,000.48	40,000.48	40,000.48
Machine & Tools										
Deprec. On generating set	35,215.05	35,215.05	35,215.05	35,215.05	35,215.05	40,500.02	40,500.02	40,500.02	40,500.02	40,500.02
Deprec. On vehicle	29,500.02	29,500.02	29,500.02	29,500.02	29,500.02	33,629	33,629	33,629	33,629	33,629
Total fixed cost	484,833.17	481,833.17	481,833.17	481,833.17	481,833.17	544,129.60	544,129.60	544,129.60	544,129.60	544,129.60
Total cost	1,027,415.84	1,069,298.16	1,034,984.11	1,176,533.74	1,094,342.51	1,456,114.09	1,179,291.41	1,119,007.77	1,175,151.63	1,158,073.19
Total revenue	1,910,916.67	1,986,900.56	1,927,876.80	2,132,989.07	2,537,713.09	2,599,906.09	2,898,679.07	2,679,230.01	2,709,651.90	2,906,789.71
Profit	883,500.86	917,602.40	892,926.69	956,455.33	1,443,370.58	1,143,792.00	1,719,387.66	1,560,222.24	1,534,500.27	1,748,716.52
Profitability Indicator										
Rate of return on investment	1.86	1.86	1.86	1.81	2.32	1.79	2.46	2.39	2.31	2.51
Rate of return on fixed cost	3.94	4.12	4.00	4.43	5.27	4.78	5.33	4.92	4.98	5.34

Source: Field Survey 2019

Constraints Facing the Timber Industry

Table 3 shows that timber market in Bodija and Sango sawmills encountered several constraints. About 25.4% of the timber business operators complained high cost of energy, 23.8% incurred high transportation cost, 18.5% encountered inadequate credit facilities while about 13.8% complained of unfavorable government policy and high transport cost, 6.2% had unfavorable government policy, and 4.6% complained about inadequate facilities in the market. The result implies that the constraints facing the timber industry were obvious.

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. These results corroborate the position of Akanni and Adetayo (2011) and Babatunde et al. (2017) when they observed that access to credit facilities and high cost of energy affected the sawmilling timber industries in Ijebu division.

Table 3: Constraints Facing the Timber Marketers.

Constraint	Frequency	%
Government Policy	8	6.2
Inadequate facilities in market	6	4.6
High cost of energy and power	33	25.4
Inadequate credit facilities	24	18.5
High transportation cost	31	23.8
Government policy and high transport cost	18	13.8
Inadequate credit facilities and high transport cost	10	7.7

Source: Field Survey 2019

CONCLUSION AND RECOMMENDATION

In the context of the result obtained from this study, timber market 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 market need to be addressed if the industry must move forward. For instance the problem of inadequate credit facilities may be addressed by coming together of the timber marketers' 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 in the study area 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.

REFERENCES

1. Agbonlahor, M.U. 2010. "Productivity Dispersion and Resources of Technical in Efficiency Smallholder Timber Mills in Ogun State Nigeria". *Journal of Humanities, Social Sciences and Creative Arts*. 49-60.
2. Akanni, K.A. and A.O. Adetayo. 2011. "Estimation of Cost Return Structure and Technical Efficiency in Sawmilling Industry in Ijebu Division Ogun State, Nigeria". *Journal of Forestry Research and Management*. 8: 64-79.
3. Akerele, E.O. 2013. "Consumption, Savings and Investment Pattern among Rural Farming Household in Abeokuta North Local Government Area Ogun State", Nigeria College of Agricultural Sciences Olabisi Onabanjo University. *Journal of Agricultural Management and Rural Development (JAMARD)*. 4(1): 42-49.
4. Babatunde, T.O. and O.O. Babatunde. 2020. "Structure, Conduct and Performance of Timber Market in Ife East Local Government of Osun State, Nigeria". *Journal of Science and Environment*. 24(6): 1093-1098.
5. Babatunde, T.O., A.F. Aderounmu, and O.O. Babatunde. 2020. "Market Structure and Economic Analysis of Timber Business in Oluyole Local Government of Oyo State, Nigeria". *Journal of Agriculture, Food and Environment*. 16(2): 42-50.
6. Babatunde, T.O., O.O. Babatunde, A.A. Adejumo, and S.O. Okeleke. 2017. "Cost and Return Structure in Sawmill Industry in Ijebu Ode, Ogun State, Nigeria". *Journal of Research in Forestry, Wildlife & Environment*. 9(3) September, 2017.
7. Cunningham, P.W., M.A. Cunningham, and B. Saigo. 2005. *Environmental Science: A Global Concern. 8th edition*. McGraw Hill: New York, NY. 600p.
8. Douglas, W.M. 1995. "America's Forest: A History of Resiliency and Recovery". *Forest Products Journal*. 45(10): 18 – 28.
9. FAO. 2004. "Assessing Forestry Project Impact: Issues and Strategies". FAO: Rome, Italy. 4-6.
10. Fuwape, J.A. 2001. "The Impact of Forest Industry and Wood Utilization on the Environment". *Journal of Tropical Forest Resource*. 17(2): 6-10.
11. Fuwape, J.A. 2001. "The Impacts of Forest Industries and Wood Utilization on the Environment". ODSG-Fan Consults Workshop on Forest industries, Environment and Sustainable Development. *JTFR*. 17(2): 78-90.
12. Larinde, S.L. 2008. "Techno-Economic Analysis of Secondary Processing of Saw Wood into Furniture Part in a Vertically Integrated Sawmill in Ibadan Nigeria". Unpublished Ph.D. Thesis.
13. Larinde, S.L. 2010. "Secondary Processing and Nigerian Saw Mill Industry: Issues, Challenges and Opportunities". In: S. Kolade Adeyoju and S.O Bada (Eds). *Readings in Sustainable Tropical Forest Management*. 277-291.
14. Olorunnisola, A.O. 2000. "Workshop Structure in the Small Scale Furniture Industry in Ibadan Metropolis". *Journal of Tropical Forest Resources*. 16(1): 46-57.
15. Omoluabi, A.C. 1985. "Development of the Nigerian Particle Board Industry". Ph.D. Thesis Department of Forest Resources Management, University of Ibadan. 317.
16. Omoluabi, A.C. 1994. "Trade in Timber and Non-Timber Forest Products in Cross River State of Nigeria." A Report Prepared for the Cross River State Forestry Project (ODA Assisted), Forestry Department Headquarters, Calabar. 6 (4): 191-205.
17. Oyagade, A. 1997. "Nigeria Rainforest Conservation: The Challenge to the Wood-Base

Sector.” *Proceedings of 25th Annual Conference of Forestry Association of Nigeria*. pp 299-304.

18. RMRDC. 2003. “Multi-Disciplinary Committee Report of the Techno Economic Survey on Wood and Wood Products”. Raw Materials Research and Development Council Publications, 2003.
19. Olukosi, J.O., S.U. Isitor, and M.O. Ode. 2005. *Introduction to Agricultural Marketing and Pies: Principles and Applications. 3rd Edition*. Living Books Series. GU. Pub Locations: Abuja, Nigeria, pp.20-47.
20. Orimoogunje, S. 2013. “For Over 15 Years, Prices of Our Products have Remained Unchanged”. *The Sun News Online*.
<http://www.punchontheweb.com/article2print.aspx?theatric=art20085050680> Retrieved October 7 2011.
21. Popoola, L.M., M. Rahji and P.O. Adesoye. 2001. “Analyses of Spatial and Temporal Variations in Prices of some Sawn Wood in South Western Nigeria”. *Ghana Journal of Forestry*. 10: 35-41.
22. Sambe, L.N., N.T. Tee and B. Dagba. 2016. “Profitability Analysis of Timber Trade: Potentials for Growth and Development of the Nigeria Sawmilling Industry”. *Nigeria Journal of Forestry*. 23(1): 85– 90.
23. Taiwo, Babatunde H. 2019. “Novel Method of Plastics Wastes Management among Students of Secondary Schools in Ibadan, Nigeria”.
www.researchgate.net
24. Tee, T.N. 2010. “Practical Issues In Forest Products Marketing”. 132- 152. In: Ijeomah, H.M. and Aiyeloja (eds.). *Practical Issues in Forest and Wildlife Resources Management*. Green Canopy Consultants: Port Harcourt, Nigeria.

SUGGESTED CITATION

Babatunde, O.O., K.O. Babatunde, T.O. Babatunde, A.T. Ademigbuji, S.O. Okeleke, and A.A. Ekaun. 2021. “Marketing of Timber in Selected Sawmills in Ibadan North Local Government Area of Oyo State Nigeria”. *Pacific Journal of Science and Technology*. 22(1): 99-106.

