**FINANCIAL PERFORMANCE OF WOOD MARKETING AND FAMILY AGROFOREST BUSINESS IN DELTA STATE, NIGERIA**

**Abstract**

The Nigerian forestry sector plays a significant role in rural development. This study focused on the evaluation of the financial performance of wood marketing and its effect on the survival of family agroforest business in Delta State. Both multistage and purposive sampling techniques were used to draw samples from the different wood markets in the State capital with the aid of structured questionnaires. Mean age of wood marketers was 51years, majority were males (90%), with average household size of 7 persons and only 30 per cent had a tertiary education. Budgetary analysis showed that wood marketing is profitable, with an annual net profit of ₦879,026.80, a Rate of Return on Investment, RORI of 42.9 per cent and a current ratio of 2.9 indicating liquidity. The R2 of 0.537 (54%) shows that the financial performance indicators were able to predict the survival of family wood business by 54% with rate of return on investment (β = 0.610; p<0.01) and net profit (β = 0.822; p<0.01) positive and statistically significant at 1% probability level. The study revealed that the cost of energy and power was the most serious constraint faced by wood marketers in the study area.

**Key Words: Financial performance, Family Business, Wood Marketing**

**1.0 Introduction**

In Nigeria, the forestry sector offers employment opportunities for many individuals. Additionally, it plays a variety of vital roles in rural development through provision of food and fodder, medicine, fuel wood, timber, game and wildlife and raw materials for industries (Idumah et al., 2020). Nigeria has therefore profited greatly from forests and forest products, with respect to trading in wood and wood products and this has contributed immensely to the Nigerian economy both in exports and also domestically as a source of raw materials to wood-based industries like furniture, match, pulp and paper, and the saw-milling industries etc. (Idumah and Awe, 2017).

The wood industry ranks among the highest revenue and employment generating sectors in Nigeria and has contributed significantly to its socio–economic development, (Idumah et al., 2020). It has also been a major contributor to the national gross domestic product (GDP) (Ofoegbu, 2014). Kalu and Okojie (2009) observed that the forestry sector contributes at least two-thirds of the GDP in addition to providing employment for thousands of Nigerians in the 1970s while Bichi (2011) affirmed that wood trade is profitable and thus a formidable tool for poverty alleviation. The export value earnings from wood are obtained from products like log, sawn wood, veneer and pulpwood (Kalu and Okojie, 2009). Sawn wood is used for numerous purposes throughout the country, Out of the semi processed and processed wood categories, sawn-wood has the highest production and demand and it is the most widely distributed in Nigeria, making its price a fundamental pre–requisite for socio-economic development in the country, (Aiyeloja, et al., 2013). The demand for sawn wood in Nigeria is estimated at about 200,000m3 per annum (Oladele et al., 2017).

The abundant nature of wood has made it a valuable material in every stage of human development such as building construction, marine and sea applications, railway, domestic appliances and musical instruments (Aiyeloja, et al., 2013). Wood marketing like every other marketing enterprise involves the exchange between a buyer and a seller at a given price (Fuwape, 2005). The price is such that the seller meets the total cost as well as profit margin hence, it is the sum total of all business actions involved in the movement of commodities from point of production until the commodities are received by the ultimate consumer (Olukosi, and Isitor, 1990).

In Nigeria, the forest output markets as with her other African neighboring countries are characterized by poor transport network, inadequate capital, high handling costs, inadequate market information system, weak bargaining power of farmers as well as underdeveloped industrial sectors as observed by Delorme et al., (2012). Most forest products in Nigeria are faced with the challenge of poor information with respect to market conduct, structure and performance and Delta State is inclusive. As a result, there has been a decrease in revenue from wood marketing. This study focused on the evaluation of the financial performance of wood marketing together with its effect on the survival of family agroforest business in Oshimili South Local Government Area, Delta State. This will provide stakeholders with proper knowledge of the wood market business in order to militate against the risks involved in it. It will also provide information on the related marketing choices by the marketers and others. In addition, it will also add to the extant body of knowledge on wood marketing.

**1.2 Objective of the Study**

The study evaluated the financial performance of wood marketing and its effect on the survival of family agroforest business in the Delta State capital (Oshimili South Local Government Area), Nigeria. Specifically, it is to:

1. examine the financial performance of family wood business;
2. determine the effect of financial performance on the survival of family wood business; and
3. identify the constraints to family wood business.

**2.0 Methodology**

**2.1 Study Area**

The research was conducted in Oshimili South Local Government Area of Delta State, Nigeria. It covers an area of 5,776 km which population of 149,603 people (NPC, 2006). It lies between latitude 6°12N of the equator and longitude 6°43E and is located in the North of the State, with annual rainfall of about 206.5 cm and 190.5 cm in the coastal area. Temperature ranges between 28°C and 34°C but 31°C on the average. Main occupation of the people are farming, fishing and hunting (Delta Association of Chamber of Commerce, Industry, Mines and Agriculture, 2018). The local government is made up 3 communities namely; Asaba, Okwe and Oko.

**2.2 Sampling Technique**

Both multistage and purposive sampling techniques were used. The three (3) main communities were purposively selected in the first stage. Secondly, one (1) major wood market was purposively selected from each of the three (3) communities to give three (3) wood markets in total. Thirdly, from each of the wood markets 20 wood marketers were randomly selected, giving rise to 60 respondents. Well-structured questionnaires was used to collect primary data and data was evaluated using budgetary analysis for objective (i), ordinary least square regression for objective (ii) and a 4 points Likert type scale for objective (iii).

**2.3 Model Specification**

1. **Financial Performance**

The various financial performance indicators as used by Babatunde (2019); Aditya and Ashok (2016); Aiyeloja, (2013); Odum, Ugwuja and Ikenga (2024) were adopted for this study. The financial performance indicators are;

1. Current Ratio (CR) = ……………………………………………… (1)
2. Rate of Return on Investment (RORI) =
3. Net Profit (NP) = Total Revenue - Total Cost
4. **Ordinary Least Square (OLS) regression**

This is implicitly specified as;

Y= f(X1, X2, X3)………………………….(3)

The model is explicitly presented and tested in four functional models:

1. Linear model

Y = b0 +b1 X1 +b2 X2 +b3 X3 + e

2. Semilog

Y= logb0 +b1 logX1 +b2 logX2 +b3 logX3 + e

3. Double log

Log Y = logb0 +b1 logx1 +b2 logX2 +b3 logX3 + e

4. Exponential

Logy = b0 +b1 X1 +b2 X2 +b3 X3 +b3 X3 + e

Where Y= survival (years)

X1 = Current Ratio

X2 = Rate of Return on Investment

X3 = Net Profit

bo = constant

b1 – b3 = coefficients

e = error term

**3.0 Results and Discussions**

**3.1** **Demographic Features of Wood Marketers**

The results of the demographic characteristics of the wood marketers is presented in Table 1. A larger proportion (53.2%) of marketers were between the age of 31 to 50 years with 51 years as the mean age. This indicates that older people are more involved in wood marketing business than young people in the study area. 90.0 per cent of maketers were male and 10.0 per cent females. 25.0 per cent had primary education, 26.7per cent had secondary school education, 18.3 per cent had no formal education and 30.0 per cent had tertiary education. The mean house hold size was 7 persons. This result supports the opinion of Olukosi and Erhabor (2004) who stated that marketing activities are labour intensive and large households can provide labour at least or no cost. Wood marketers operated as wholesalers (30%), retailers ( 50%) and both (20.0%). The results further showed that most (46.6%) of the wood businesses were established between 9-10 years ago, 38.3% were set-up between 7 – 9 years ago while 10.0% and 5.0% were set up between 4 – 6 years and 1 – 3 years ago respectively. This confirms the study of Babatunde (2019) who stated that majority of wood marketers have been in the business for more than 9 years.

**Table 1. Demographic characteristics of Wood Marketers**

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Frequency | Percent (%) | Mean |
| Age |  |  |  |
| 19 – 30 | 10 | 16.8 | 51 years |
| 31 – 50 | 32 | 53.2 |  |
| 51 and above | 18 | 30.0 |  |
| Gender |  |  |  |
| Male | 54 | 90.0 |  |
| Female | 6 | 10.0 |  |
| Marital Status |  |  |  |
| Single | 12 | 20.0 |  |
| Married | 39 | 65.0 |  |
| Widowed | 4 | 6.7 |  |
| Divorced | 5 | 8.3 |  |
| Education |  |  |  |
| No Formal Education | 11 | 18.3 |  |
| Primary | 15 | 25.0 |  |
| Secondary | 16 | 26.7 |  |
| Tertiary | 18 | 30.0 |  |
| Household size |  |  |  |
| 2 – 5 persons | 22 | 36.7 | 7 persons |
| 6 – 10 persons | 28 | 46.6 |  |
| 10 and above | 10 | 16.7 |  |
| Year of establishment |  |  |  |
| 1 – 3 years | 3 | 5.0 | 8 years |
| 4 – 6 years | 6 | 10.0 |  |
| 7 – 9 years | 23 | 38.3 |  |
| 10 years and above | 28 | 46.6 |  |
| Nature of business |  |  |  |
| Wholesale | 18 | 30.0 |  |
| Retail | 30 | 50.0 |  |
| Both wholesale and retail | 12 | 20.0 |  |

**3.2 Average annual financial performance of family wood marketing**

The result of the average annual financial performance of family wood marketing in the area is shown in Table 2. The various cost variables examined in the study were unprocessed logs, transportation, labour, taxes, rent, processing cost, fuel and power, maintenance and membership dues. While the fixed cost variables were saw machine, diesel engine, depreciation on saw machine and depreciation on generating set. The estimation showed that the average total variable cost was ₦1,625,746.30; the fixed cost total was ₦424,860.00 which summed up to ₦2,050,606.30 as total cost. The average annual revenue was ₦2,929,633.10 while the net profit was ₦879,026.80. The result further showed that the average annual current ratio was 2.9, meaning that that family wood business is able to pay its current debts or obligations since it is greater than 1. The rate of return on investment, (RORI) was 42.9% which indicates profitability as the business has capacity to generate 42.9% its total cost annually. This result agrees with the report of Babatunde *et al.,* (2007) who reported that wood marketing is profitable with great economic efficiency. This result also confirms Aiyeloja et al., (2013) who stated that wood business is a profitable venture.

**Table 2. Average annual financial performance of family wood marketing**

|  |  |  |  |
| --- | --- | --- | --- |
| Items | Quantity | Unit price (₦) | Amount (₦) |
| Unprocessed wood logs | 128 | 4,962.7 | 635,221 |
| Transportation |  |  | 152,946 |
| Labour | 3 | 26,246.8 | 78,740.5 |
| Taxes |  |  | 31,094.7 |
| Rent |  |  | 243,745 |
| Processing cost |  |  | 213,498.1 |
| Fuel and power |  |  | 201,843 |
| Maintenance |  |  | 62,118 |
| Membership due |  |  | 6,540 |
| Total variable cost |  |  | **1,625,746.3** |
| Saw machine | 2 | 105,000 | 210,000 |
| Diesel engine | 1 | 176,430 | 176,430 |
| Depreciation on saw machine |  |  | 21,000 |
| Depreciation on generating set |  |  | 17,430 |
| Total fixed cost | **12 months** | **35,405.0** | **424,860.0** |
| Total cost | **12 months** | **170,883.9** | **2,050,606.3** |
| Total revenue | 12 months | 244,136.1 | 2,929,633.1 |
| Net profit | 12 months | 73,252.2 | 879,026.8 |
| \*Current ratio |  |  | 2.9 |
| Rate of return on investment |  |  | 42.9% |

**\*Assets and Liabilities**

**Current Assets**

Unprocessed log 635,221

Accounts receivables (credit sales) 82,350

**Total Current Assets 717,571**

**Current Liabilities**

Taxes 31,094.7

Membership Due 6,540

Accounts Payable (Processing cost) 213,132.8

**Total Current Liabilities 251,132.8**

**3.3 Effect of financial performance on survival of family wood business**

Table 3 presents the result on the effect of financial performance on survival of family wood marketing in the study area. Data was fitted into four (4) different functional forms. Based on the normal econometric and statistical criteria, the lead equation was chosen. The double log model gave the coefficient of multiple determination of 0.537 and was selected as the lead equation and used for presenting the result. The R2 of 0.537 (54%) shows that the financial performance indicators were able to predict the survival of family wood business by 54%. The adjusted R2 of 0.461 indicated that 46% of the variance in the survival of family wood business was accounted for by the financial performance indicators of the business.

It could be seen from the table that rate of return on investment (β = 0.610; p<0.01) and net profit (β = 0.822; p<0.01) were positive and statistically significant at 1% probability level. The Beta coefficient has a positive value whic indicates that increase in rate of return on investment and net profit will lead to an increase in the survival of family wood business. This result is in line with that of Aiyeloja *et al.,* (2013) who reported that survival of wood marketing positively correlated with its financial performance.

**Table 3. Effect of financial performance on survival of family wood business**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable |  | Linear | Double log | Exponential | Semi-log |
| Constant | Beta Coeff | 5.114 | 0.043 | 0.000 | 0.545 |
|  | t-value | 6.946\*\*\* | 6.447\*\*\* | 6.346\*\*\* | 3.898\*\*\* |
| Current ratio (X1) | Beta Coeff | 1.995 | 0.136 | 0.038 | 0.700 |
|  | t-value | 0.462 | 1.180 | 0.879 | 1.221 |
| RORI (X2) | Beta Coeff | 6.403 | 0.610 | 0.003 | 8.425 |
|  | t-value | 1.662 | 4.195\*\*\* | 1.275 | 1.599 |
| Net profit (X3) | Beta Coeff | 0.535 | 0.822 | 0.036 | 1.871 |
|  | t-value | 1.105 | 7.125\*\*\* | 1.442 | 1.770 |
| R2 |  | 0.441 | 0.537 | 0.318 | 0.319 |
| Adjusted R2 |  | 0.382 | 0.461 | 0.265 | 0.274 |
| F-ratio |  | 6.113\*\*\* | 8.895\*\*\* | 6.632\*\*\* | 6.782\*\*\* |

**3.4 Constraints to family wood marketing**

The various constraints connected with wood marketing is shown in Table 4. Constraints were analyzed by matching the calculated mean scores of the variables with the critical mean of 2.50 obtained using a 4-point Likert type scale. Three (3) of the four (4) constraints examined in the study were found to be serious constraints. These constraints include; high cost of energy and power (mean = 3.0), inadequate credit facilities (mean = 2.9) and high transportation cost (mean = 2.6). Among the serious constraints examined in the study, high cost of energy and power was found to be the most serious limitation in the study area. This is due to inconsistency in the supply of power, estimated electricity tariff and the high cost of buying diesel and petrol to run their machines. In line with this study, Akanni and Adetayo (2011) stated that access to credit facilities and high cost of energy affected the sawmilling timber industries in Nigeria.

**Table 4. Constraints to family wood marketing**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Constraints | VS (4) | S (3) | FS (2) | NS (1) | Score | Mean | Remark |
| Inadequate facilities in market | 9 (15.0) | 12 (20.0) | 4 (6.7) | 35 (58.3) | 115 | 1.9 | Disagree |
| High cost of energy and power | 26 (43.3) | 14 (23.3) | 11 (18.3) | 9 (15.0) | 177 | 3.0 | Agree |
| Inadequate credit facilities | 17 (28.3) | 26 (43.3) | 13 (21.7) | 4 (6.7) | 176 | 2.9 | Agree |
| High transportation cost | 13 (21.7) | 22 (36.7) | 15 (25.0) | 10 (16.7) | 158 | 2.6 | Agree |

Note: VS = Very Serious, S = Serious, FS = Fairly Serious, NS = Not Serious

Mean ≥ 2.5 = Serious; < 2.5 = Not Serious

**4.1 Conclusion**

This study has shown that wood marketing has great prospects for sustaining livelihoods by serving as an alternative source of employment in a developing economy such as Nigeria that is saddled with high unemployment rate. The viability of this sector is not in doubt as shown in this study. Results on financial indicators point out the potential the sector has to increase marketers’ income. Therefore, providing training and enlightenment on improved marketing efficiency will aid the survival wood marketing business.

**4.2 Recommendations**

Recommendations were made based on the findings and conclusion drawn from this study.

1. The market equilibrium price and supply levels of wood business in the study area can be improved on by increase the supply of energy for production processes.
2. Wood marketers should be encouraged to form cooperative societies as a way of access to credit facilities so that they can mobilize sufficient working capital for new businesses.
3. Local government authorities and other stakeholders should engage the marketers with trainings and workshops that are aimed at producing maximum return at minimal cost, i.e. improved marketing efficiency.
4. Government should invest in tree planting and regeneration of forests to ensure sustainability of wood businesses in general.

**References**

Aditya, R. K. & Ashok, K. M. (2016). Trends and determinants of rural residential solid waste collection services in China. *China Agricultural Economic Review*, 8(4), 698-710.

Agbugba, I.K & Obi, A. (2013). Market Structure, Price Formation and Price Transmission for Wood Charcoal in Southeastern Nigeria. *Journal of Agricultural Science,* 5(10), 77-86

Aiyeloja, A.A, Oladele, A.T. & Furo, S.B. (2013). Sustaining livelihood through sawn wood marketing in Port Harcourt, Nigeria. *International Journal for Science and Nature* 4(1), 84-89.

Akanni, K.A. & Adetayo, A.O. (2011). Estimation of cost-return structure and technical efficiency in sawmilling industry in Ijebu division Ogun State, Nigeria. *Journal of forestry research and management,* 64-79.

Aremu, F.J, Olugbire, O.O, Adebayo, D.A & Apata, O.V. (2015). Socio-Economic Characteristics of Bodija Sawn Wood Market in Ibadan, Oyo State, Nigeria. *Journal of Social Sciences and Public Policy,* 7(2), 94-103.

Babatunde, T.O, Babatunde, O.O, Adejumo, A.A, & Okeleke, S.O. (2007). cost and return structure in sawmill industry in Ijebu Ode, Ogun state, Nigeria *journal of research in forestry, wildlife & environment,* 9(3) *september, 2017.*

Babatunde, T. O. (2019). Profitability and value addition of sawmills industry in Ijebu division of Ogun State Nigeria.*Journal of Research in Forestry, Wildlife & Environment,* 11(2), 1-10.

Bichi, A.M. (2011). Timber and non-timber products as tools for the eradication of poverty: A millennium development goal approach. Proceedings of the 38th annual conference of forestry association of Nigeria held in Osogbo, Osun State, Nigeria. (ed) L. Popoola; 147-155.

Delorme, C.D., Kelin, P.G., Kamershen, D.R. & Voeks, L.F. (2012). Structure, conduct and performance: a simultaneous equations approach. *Appl. Econ*. 35, 2135-2141.

Esinulo, A.C., Kelle, I.A. & Ogbuagu, D.H. (2016). Bioaccumulation of Zn in Muscle and Brain Tissues of the African Catfish—*Clarias gariepinus*. *Journal of Geoscience and Environment Protection*, 4, 12-20.

Fuwape, A.J. (2005). Forest management for products and services in Nigeria’s Ecological zone. (In) Sustainable Forest Management in Nigeria: Lessons and Prospects**.** *Proceedings of the 30th Annual Conf. of FAN*, Popoola, L, Mfon, P.and Oni, P,I (eds), Kaduna, pp164-178.

Idumah, F.O. & Awe, F. (2017). Contribution of Timber Exports to Economic Growth in Nigeria: An Econometric analysis. *Journal of Research in Forestry, Wildlife & Environment*, 9(4), 46-55.

Idumah, F.O., Awe, F. & Orumwense, L.A. (2020). Dynamics of wood export in Nigeria (1962-2017): An econometric analysis. *Russian Journal of Agricultural and Socio- Economic Sciences,* 1(97), 1-7.

Izekor, D.N. & Izekor, O.B. (2011). Analysis of sawn timber enterprise in Benin metropolis, Edo State, Nigeria. *Nigerian Journal of Agriculture, Food and Environment*. 7(2),19- 23.

Kalu, C. & C. Okojie, (2009). Economic contributions of forests in Nigeria 1970-2000. *Research Journal of Social Sciences, 2009, INSInet Publication*, 4, 69-73.

Odum, F. N., Ugwuja, V.C., and Ikenga, V.U. (2024). Concept of Financial Performance and

Financial Analysis in Agribusiness Manangement. Readings in Agricultural Economics and

Extension, First Edition. Department of Agricultural Economics and Extension, Dennis

Osadebay University, Asaba, Delta State. Page 14-21. ISBN: 978-978-771-789-9.

Ofoegbu, C. (2014). An analysis of the role of green economy in promoting innovative forest development in Nigeria: A synthesis from the literature. *International Journal of Research in Earth and Environmental Sciences (IJREES),* 1(5)1-2.

Oladele, A. T., Aiyeloja, A. A., Choko, O. P. & Ngoyougha, E. E. (2017). Socio-economics of sawn wood retailing in Port Harcourt, Nigeria. *African Journal of Agriculture, Technology and Environment,* 6(2), 1-13.

Olugbire O.O, Aremu F.J, Opute O.H & Ojedokun C.A. (2016). Economic Profitability of Marketing Fuel Wood in Ibadan Town of Oyo State, Nigeria. *Environment and Forestry****,*** *Elixir Environ. & Forestry* 93C: 39588-39593

Olukosi, J. O. & Erhabor, P. O. (2004). Introduction to farm management Economic, 77-85.

Olukosi, S.O. & Isitor, U.S. 1990. Introduction to Agricultural Marketing and Prices, *Shereef Salam Press, Samaru, Zaria*. 1st Edition, pp, 156.

Taru, V. B. & Ndaghu, A.A. (2013). Evaluation of fuel wood marketing in Adamawa State, Nigeria. *African Journal of Agricultural Research,* 8(47),5978-5981