

Structure, Conduct and Performance of Sawn Wood Market in Ibadan, Oyo State, Nigeria

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ABSTRACT

This study examines the structure, conduct and performance of sawn wood market in Ibadan, Oyo state, Nigeria. Primary data obtained from 150 marketers was used and analyzed with descriptive statistics, budgetary analysis and Gini- Coefficient. The result of the analysis revealed that sawn wood market in Ibadan was not concentrated and there is free entry and exit. Marketing of sawn wood in the study area is a profitable business as the benefit-cost ratio was 1.11. Cost of acquisition (48.67%) determines the price; open display method is mostly used to attract buyers. There are wide differences in the sawn wood present in the market especially in terms of quality and sources. Sawn wood market association is functional and effective in the study area as 91.33% of the marketers claimed to be active members. The market similarly has strong legal back up with stand-by market police, guards and legislation. Social/emotional (29.33%), financial (16.67%) and settling of disputes among members are among what members enjoy from the association. Business colleagues and association meetings are the main sources of market information in the study area.

Keywords: Market structure, Conduct, Performance, Sawn wood, Market, Oyo State.

Introduction

Many research studies opined that the performance of firm was associated with market structure and firms' strategic behavior. The (S-C-P) model is an analytical approach used to study how the structure of the market and the behavior of sellers of different commodities and services affect the performance of market,

and consequently the welfare of the country as a whole [1]. The model examines the causal relationships between market structure, conduct, and performance, and is usually referred to as the structure, conduct, performance (S-C-P) model. Market structure includes the characteristics of the organization of a market that appear to exercise a strategic influence on the nature of competition and pricing within the market [1]. Market concentration is the number and relative size distribution of buyers/sellers in a market. It is generally believed that higher market concentration implies non-competitive behavior and thus inefficiency. Concentration ratio is a numerical index widely used by industrial organizations for measuring the size of firms in market [3]. Kohl and Uhl [4] suggested that as rule of thumb, a four largest enterprises concentration ratio of 50 percent or more is an indication of a strong oligopolistic industry, 33-50 percent, a weak oligopoly, and less than that, indicates non-concentrated industry. The greater the degree of concentration is the greater the possibility of non-competitive behavior existing in the market. For an efficient market, there should be sufficient number of buyers and sellers. Marketing margin was explained in two ways (1) as the difference between the price paid by consumers and that obtained by producers (2) as the price of a collection of marketing services that is the outcome of the demand for and the supply of such services [6]

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 of farmers as well as underdeveloped industrial sectors as reported by Delorme et al., [4]. As it is with most other forest products in Nigeria, there is inadequate information on the market structure, conduct and performance of sawn wood in Oyo state. These challenges have brought about falls in revenue from sawn wood marketing. Hence, this study therefore examines the structure, conduct and performance of sawn wood market in Ibadan, Oyo state. This study will help participators in sawn wood business to have proper understanding of the business and thus reduce the risks involved in it. It will also help to make appropriate marketing decisions by the producers, consumers, traders, investors, and others. Similarly, it will be an addition to knowledge on the works that already exist on sawn wood marketing.

Conceptual Framework

Market structure is the characteristics of the markets. It can be organizational characteristics or competitive characteristics or any other features that can best describe a goods and services market [5]. The major characteristics that economists have focused on in describing the market structure are the nature of competition and the mode of pricing in that market. Market structures can also be described as the number of firms in the market that produce identical goods and services. The market structure has great influence on the behavior of individual firms in the market [2]. The market structure will affect how firm price their product in the industry. For example in a competitive market, the firms are price takers while the industry has the sole duty of price setting. A market structure will affect the supply of different commodity in the market. When the competition is high, there is a high supply of commodity as different companies tend to dominate the market. A market structure will affect the barrier to entry for companies that tend to join that market [6]. Market conduct is the patterns of behavior that enterprises followed in adapting to the market in which they sell or buy. The main dimensions of market conduct are regarded as price setting, the manner in which the value and quality ranges of products are determined, advertising and marketing strategy, research, development planning, implementation, and legal tactics [7; 8]. There are many means of studying market conduct since the elements can be analyzed differently hence, the existence of formal and informal producing and marketing groups; the availability of price information and its impact on prevailing prices; and the feasibility of using alternative market outlets pricing, buying and selling practices were assessed. Market performance as well as the integration of markets is the result of the actions of traders and of the operating environment determined by the infrastructure available for trading and policies affecting the price transmission from one market to another [9]. Market performance refers to the composite of end results which firms in the market arrive at by pursuing whatever lines of conduct they use that results in the dimensions of price, output, production and selling cost, product design, and so forth [10].

Methodology

Study Area

The study area is Ibadan in Oyo State, Nigeria and is located on Lat. 7^o 23¹N and Long. 3^o 55¹. Ibadan is the capital of Oyo State and the third largest metropolitan area in Nigeria, with a population of 2, 338,659 [17]. Ibadan is located in

southwestern Nigeria but in the southeastern part of Oyo State. It is about 120 km east; bordered with the Republic of Benin in the forest zone and is also close to the boundary between the forest and the savanna. The total area is 1,190sq mi (3,080 km²). It has tropical wet and dry climate with average temperatures range of 21.42°C-26.46°C throughout the year. It has two peak annual rain fall of 1420.06 mm falling in approximately 109 years. Ibadan is noted for the concentration of forest and non forest timber products followed by sawmills in different locations. This therefore makes Ibadan suitable for the study.

Data Analysis

Data were analyzed using Gini-coefficient and budgetary analysis. The market structure was analyzed with Gini-Coefficient while budgetary analysis was used to analyze the profitability. To estimate profitability of marketing sawn wood , all variable costs for marketing sawn wood were considered. Simple calculation of value-cost-ratio (VCR) was also used as in Oluwasola [11]. For this study the gross margin/gross profit was calculated by deducting the total variable cost (TVC) from the total revenue (TR) as follows:

$$\text{Gross profit} = \text{TR} - \text{TCV} = \text{PQ} - \sum P_i X_i$$

Where;

TR = Total Revenue

P = price of sawn wood

Q= Total quantity of sawn wood bought

p_i = price of input i

x_i = quantity of input i

Results

Analysis of Market Structure and Conduct of Sawn Wood

The analysis of sellers' concentration of sawn wood market showed that the Gini-coefficient as computed from table 1a was 0.8539 and very high. This showed that the market was not concentrated. It therefore shows the possibility of high competitive behavior and inequality in earnings among the marketers. Variation in earning from sawn wood is high as various sawn wood market institutions are disposed to different risks. This confirms Oluwasola [11] who stated that inequality in earning is a partial reflection of differences in the risk of investment. People that always avoid risk in business will involve in less profitable investment. This in returns will lead to less profit. The result in table 1b revealed that 40.00% of sawn wood marketers used open display method to attract customers. 28.67%

used persuasive effort and quality product while only 3.33% used discounted price to attract and keep their customers. This agree with Adejobi *et al.*, [12] which states that open display method and persuasive efforts are the main methods of attracting customers by most marketers in Nigerian urban markets. The result analysis in table 1b also shows that cost of acquisition (48.67%) is the chief factor that determines price of sawn wood in the study area. This was followed by forces of demand and supply (21.33%), quality of product (15.33%), ability of buyers to bargain (10.00%) while quantity of sawn wood in the market (4.67%) has the least influence on the price of sawn wood in the market. The result in table 1b further showed that there are several differences in the types of sawn wood sold in the market. Some of the differences were found to be differences in sources of sawn wood, differences in species/ types, differences in quality and sizes. The results also showed that some of the marketers specialized in the selling of some specific species and sizes while others who operate on large scales, combined the sales of different types, species and sizes of sawn wood. 99.3% of the marketers claimed that there is a functional sawn wood trade association in the study area. 91.3% were active members, 38.00% reported that investors can engage in the market without being a member of the association but 61.33% said that though new entrants are allowed into the business, they must join the association for continuity in the business. This implies that sawn wood market in the study area has free entry and exists. This therefore agrees with Aiyeloja *et al.* [13] who reported that market association is a tool used by marketers to gain market control. Table 1b also showed that 72.67% of the marketers are aware of the legal back up for the sawn wood market in the study area while only 27.33% were not aware. 34.67% said that the market has government registration. 44.00% said there are association police while 21.33% said the market is a member of sawn mill association of Nigeria.

Profitability Analysis of Sawn Wood

The result in Table 2 revealed that acquisition cost accounted for 82.45% of the total sales revenue while cost of transportation accounted 5.66%. The cost of labour gulped 0.16 %, association levy also accounted for 1.42 % and cost of storage was 15.66% of the total sales revenue. The table also showed that acquisition cost accounted for 91.91% of the total variable cost while cost of transportation accounted for 6.30% of the total cost. The cost of labour gulped 0.18% of the total cost while storage cost accounted for 6.30% of the total cost. The association levy accounted for 1.58% of the total cost. The low storage cost

among the marketers may be due to the fact that the sheds/ shops used are owned by the local government who collect just stipends from the marketers for maintenance only. The sheds were constructed for the marketers by the government as service to the community. Moreover, since there is high demand for sawn wood in the market, there is no need for expensive storage facilities. The table also revealed that an average marketer incurred a total variable cost of ₦158,634.01 per month but earned average revenue of ₦176,833.35 per month. This indicates that an average marketer earned ₦18,199.32 as gross margin per month. This further signifies that marketing of sawn wood is a profitable business in the study area. The Benefit-Cost ratio of 1.11 indicates that marketing of sawn wood is profitable in the study area as every ₦100 invested in the enterprise yields ₦11 over and above the amount invested. This result confirms Aiyeloja *et al.*, [14] which stated that sawn wood business is a profitable venture.

The result of data analysis in table 3 showed the benefits sawn wood marketers obtained by joining the sawn wood market association in the study area. The result showed that emotional support to happy and grieved members of the association was the major benefit that members derived from the association. 16.67% of the marketers claimed that financial support and settling of disputes among disagreeing members were the benefits they derived from joining the association. 12.67% said maintenance of law and order in the market by the association police was the benefit they enjoyed in joining the association. 14.67% claimed that the association was their representative to the government while 10.00% enjoyed assistance in the collection of debts from the debtors offered by the association. This therefore implies that sawn wood market in the study area is a well organized market where buyers and sellers could not behave anyhow but follow a well laid down rules and regulations of the market. This agrees with Jamala *et al.*, [16] who stated that any market that is organized into association have high tendency of performing better than those that are not. The result of data analysis in table 4 showed the various sources of market information to the marketers in the study area. The result revealed that majority of the marketers (39.33%) get market information from the association meetings. 35.33% obtained market information among their business colleagues and partners. 10.00% obtained market information from media especially through radio and television. Online/ internet (5.33%) was found to be the method rarely used by the marketers in the study area. This may be due to the low level of education of the marketers. This reveals that there is possibility of market communication breakdown especially during holidays and

festival when association meetings could not hold and when business colleagues were not around.

Conclusion and Recommendation

There is no doubt that sawn wood business is a profitable. It has large numbers of buyers and sellers. There is high competitive behavior and inequality in earnings among the marketers. Open display method and persuasive efforts are means of attracting customers. Functional trade associations where almost all the marketers (91.3%) are active members exist for sawn wood in the study area. Acquisition cost accounted for 82.45% of the total sales revenue while cost of transportation accounted 5.66%. The cost of labour gulped 0.16 %, association levy also accounted for 1.42 % and cost of storage was 15.66% of the total sales revenue. Similarly, the acquisition cost accounted for 91.91% of the total variable cost while cost of transportation was 6.30% of the total cost. The cost of labour was 0.18% of the total cost and storage cost accounted for 6.30% of the total cost. An average sawn wood marketer incurred a total variable cost of ₦158,634.01 per month and earned average revenue of ₦176,833.35 per month. This indicates that an average marketer earned ₦18,199.32 as gross margin per month. The Benefit-Cost ratio of was 1.11 indicates that sawn wood business is profitable in the study area as every ₦100 invested in the enterprise yields ₦11 over and above the amount invested. Emotional support, financial support and settling of disputes among disagreeing members, maintenance of law and order in the market, the collection of debts from the debtors are the benefits members enjoy from the association. Majority of the marketers (39.33%) get market information from the association meetings. 35.33% obtained market information among their business colleagues and partners. 10.00% obtained market information from media especially through radio and television. Online/ internet (5.33%) was found to be the method rarely used by the marketers in the study area.

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Table 1b: Market Structure and Conduct of Sawn wood

Characteristics	Frequency	%
Price determination		
Forces of demand and supply	32	21.33
Cost of acquisition	73	48.67
Quality of product	23	15.33
Quantity of sawn wood in the market	7	4.67
Ability of buyers to bargain	15	10.00
Total	150	100.0
Methods of attracting customers		
Open display	60	40.00
Persuasive effort	43	28.67
Quality product	42	28.00
Discounted price/ extra	5	3.33
Total	150	100.0
Differences in the Sawn wood sold in the market		
Yes	142	94.67
No	8	5.33
Total	150	100.0
Nature of differences in sawn wood in the study area		
Species of wood source	54	36.00
Quality of sawn wood	59	39.33
Sizes	37	24.67
Total	150	100.00
Existence of sawn wood Association.		
Yes	149	99.33
No	01	0.67
Total	150	100.0
Membership of the association		
Yes	137	91.33
No	13	8.67
Total	150	100.0
Can someone engage in the business without being a member of the association?		
Yes	57	38.00
No	92	61.33
Total	150	100.00
Is there legal back up		
Yes	109	72.67
No	41	27.33
Total	150	100.00
Nature of legal back up		
Registration with government	52	34.67
Presence of association police	66	44.00
Membership of saw mill association of Nigeria	32	21.33
Total	150	100.00

Source: Field survey, 2014

Table 2: Profitability of Sawn Wood Marketing

<i>Items</i>	<i>Amount (N)</i>	<i>% of TC</i>	<i>% of Total Sales</i>
Acquisition cost	21,870,000	91.91	82.45
Transportation cost	1,500,000	6.30	5.66
Storage cost	42,000	0.18	0.16
Cost of labour	375,601	1.58	1.42
Association levy	7,500	0.03	0.03
Total Variable Cost (TVC)	₦23,795,101		
Total Revenue (TR)	₦26,525,000		
Gross Margin (GM)	₦2,729,899		
Total Variable cost per seller	158,634.01		
Total Revenue per seller	176,833.33		
Gross Margin per seller	18,199.32		
Benefit-Cost Ratio (TR/TVC)	1.11		

Source: Field survey, 2014

Table 3: Benefits Members obtained from the Sawn Wood Association

Benefits	Frequency	Percentage
Debts collection from debtors	15	10.00
Financial support for members	25	16.67
Members' interests representation	22	14.67
Maintenance of law and order	19	12.67
Disputes resolvement among members	25	16.67
Social support	44	29.33
Total	150	100.00

Source: Field survey, 2014

Table 4: Sources of Market Information to the Marketers

Sources	Frequency	Percentage
Business colleagues	53	35.33
Association during meetings	59	39.33
Media (Radio & TV)	15	10.00
Online/ Internet	8	5.33
Forest report magazine/ bulletins	15	10.00
Total	150	100.00

Source: Field survey, 2014

Table 1a: Gini-Coefficient of Sawn Markets in Ibadan, Oyo State.

Monthly Income/ of sellers(₦)	No of sellers	Proportion of sellers(X)	Cumulative proportion of sellers(ΣX)	Total sales	Proportion of	Cumulative sales sales (Y)	XY proportion of total
< 50,000	4	0.0267	0.0267	320,000	0.0121	0.0121	0.0003
50,001-75,000	5	0.0333	0.0600	375,000	0.0141	0.0262	0.0005
75,001-100,000	23	0.1533	0.2133	1,940,000	0.0731	0.0993	0.0112
100,001-125,000	11	0.0733	0.2866	1,350,000	0.0509	0.1502	0.0037
125,001-150,000	12	0.0800	0.3666	1,800,000	0.0678	0.2180	0.0054
150,001-200,000	20	0.1333	0.4999	3,920,000	0.1478	0.3658	0.0197
200,001-225,000	47	0.3133	0.8132	4,480,000	0.1689	0.5347	0.0529
225,001-250,000	4	0.0267	0.8399	7,240,000	0.2730	0.8077	0.0216
250,001-300,000	24	0.1600	1.0000	5,100,000	0.1923	1.0000	0.0308
Total	150	1.0000		26,525,000	1.0000		0.1461

Source: Field survey, 2014

Mean value of sales = ₦ 176,833.33

$$\begin{aligned} \text{Gini-Coefficient} &= 1 - \sum XY \\ &= 1 - 0.1461 \\ &= 0.8539 \end{aligned}$$

References to this paper should be made as follows: Aremu, F.J, et al., (2015), Structure, Conduct and Performance of Sawn Wood Market in Ibadan, Oyo State, Nigeria. *J. of Agriculture and Veterinary Sciences*, Vol. 7, No. 2, Pp. 15 - 27.
