



Socio-cultural determinants of timber marketing contribution to income of timber marketers in Bodija sawn wood market, Ibadan, Nigeria

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ABSTRACT

Despite timber marketing's income potential, income disparities exist among marketers in Bodija sawn wood market, and the impact of socio-cultural factors on income generation is unclear. This study was designed to assess socio-cultural determinants affecting income from timber marketing in Bodija sawn wood market. One hundred copies of structured questionnaire were administered randomly in five zones of the market to obtain information on the socio-cultural backgrounds and the contribution of timber trade to marketers' income. The results revealed that 99.0% of the respondents were male, while females constituted only 1.00%. Seventy-five percent of the marketers had post-primary education, and 25% had primary education. Regarding marketing experience, 2% of the marketers had < 10 years, 26% had between 11 and 20 years, 57% had between 21 and 30 years, and 15.00% had >30 years. Income-wise, 58% of the respondents earned between ₦10,000 - ₦60,000, 31% earned between ₦60,001 and ₦110,000, while 11% earned from ₦110,001 up to above ₦160,000 per month. Chi-square test of association between the socio-cultural characteristics of the respondents and income generation at $\alpha = 0.05$ showed ethnicity (0.001) and experience (0.009) significantly influenced income, while the level of education (0.101), age (0.122), and religion (0.745) had no significant impact. The study highlights the importance of experience in sawn wood marketing and its significant role as a determinant of the contribution of timber marketing marketers' income in Bodija sawn wood market. Further recommendations are provided on strategies to improve the market performance, effectiveness, and livelihood contribution of timber marketing.

Keywords: Sawn wood; Socio-cultural; Timber marketing; Forest enterprise

INTRODUCTION

Timber plays a significant role in the socio-cultural development of Nigeria (Usman and Adefalu, 2010). Before the discovery of oil in the late 50s and early 60s, the agricultural

sector was the mainstay of Nigerian economy, contributing over 80% of the total national Gross Domestic Product (Idumah and Awe, 2017). More specifically, timber-based industry was recognized as one of the top sectors in the country with respect to revenue generation and employment opportunities, according to the FAO (2004) report. However, since the oil boom in the 1970s, the level of timber industry contribution has dwindled due to the undue reliance on oil and resultant neglect and less infrastructural and policy support. Despite this, the timber industries still play a vital role in Nigeria's economic growth, particularly in rural economies, which form a fundamental aspect of the overall national development.

Timber trading offers important opportunities for fostering socio-cultural and livelihood development. Timber industry in Nigeria, as in other countries, helps in providing industrial raw materials which contribute to various sectors, including infrastructure development, manufacturing industries, trade and exports, and renewable energy, among others. It provides employment and income and can help reduce poverty for stakeholders involved in forest management, logging, wood processing, manufacturing, transport, and marketing (Belcher, 2005; Affia *et al.*, 2023). The demand for timber in construction drives the growth of the construction industry, where it is used in housing, commercial structures, and other construction projects. Timber products are essential trade commodities, contributing to foreign exchange earnings and overall economic growth. Although Nigerian sawn wood export volumes experienced a decline in the past, around \$400 million worth of timber was still exported between 2011 and 2015 (Eno-Abasi, 2017; Idumah and Awe, 2017). Additionally, timber residues like sawdust briquettes offer an alternative energy source, reducing dependence on fossil fuels and pressures on forests, while promoting sustainable forest management (Uzoma, 2011; Ogunwusi, 2014; Odetola and Etumnu, 2013).

The benefits from timber are further evidenced in its direct applications in manufacturing and value-added industries for interior and exterior decorations in homes and industries, production of electric poles, plywood, pulpwood, veneers, and planks (Adebara *et al.*, 2014). This creates a positive impact on raw material production and supply for construction, furniture making, and packaging (Larinde, 2010). The common timber products in Nigeria include industrial round wood, sawn wood, wood-based panels, and pulp and paper, of which sawn wood holds the highest market relevance (Affia *et al.*, 2023). Sawn wood, also known as lumber or timber planks, shows a high degree of diversification, and has the largest base for processing (i.e., sawmills) and more rapid financial returns; being widely utilized for building, construction, furniture, and other secondary wood products. Sawmills make up over 93% of all wood-based industries in Nigeria, and sawn wood accounts for 70% of the country's domestic wood consumption (Aiyeloja *et al.*, 2013)

Forest enterprises in Nigeria have been recognized as a means of generating income for forest-dependent communities (Aiyeloja *et al.*, 2013). When assessing poverty reduction solely in terms of income generation, the comparison between small and large forest enterprises may vary (Macqueen *et al.*, 2007). However, considering multiple dimensions of well-being, small forest enterprises play a vital role in improving the quality of life and lifting forest-dependent people out of poverty (IIED, 1996; Nkwera 2010). Measuring the socio-cultural development impact of timber industries goes beyond mere economic and production expansion to encompass their impact on the (local) welfare and economies of people and the country (Westoby, 1979; Wear, 1994). Just as per capita gross domestic product provides limited insight into the socio-cultural contribution of timber production to national economic growth, direct income generation only partially captures the socio-cultural impact of

sustainable timber production and trading on the livelihoods of small forest industries and local communities.

The concept of socio-cultural livelihoods, as adapted from the DFID Sustainable Livelihood Framework, encompasses different outcomes beyond increased incomes, such as overall well-being, reduced vulnerability, improved food security, increased household assets, sustainable natural resource use, among others (Carney, 1988; Adekugbe *et al.*, 2020; Kimengsi *et al.*, 2020). In the context of environmental impact assessments, social impact assessments are essential for evaluating the social and economic consequences of development programs on the well-being, economy, culture, and livelihoods of affected populations (Larinde and Olasupo, 2011). However, in many socio-cultural analyses within natural resource management contexts, income generation has predominantly been used as the primary measuring yardstick, both in Nigeria and globally (Larinde and Olasupo, 2011; Adedokun *et al.*, 2017; Adekugbe *et al.*, 2020; Okunlola *et al.*, 2023; Loaiza *et al.*, 2015; Shrestha *et al.*, 2020). This preference for income generation as a measure can be attributed to its tangibility, quantifiability, market valuation, direct link to economic growth, poverty reduction, and policy relevance.

Timber marketing is an enterprise that provides opportunities for people to fulfil their needs and supports individuals from different social strata (Belcher, 2005; Famuyide *et al.*, 2012). However, there are observed disparities in income generation among timber marketers in various trading contexts and scenarios in Nigeria, including the Bodija sawn wood market. Several fundamental factors can influence the income-generating potential of timber marketers. Adedokun *et al.* (2017) conducted an assessment in a southwestern town; Oyo and found that years of experience and marital status have an impact on income generation from marketing timber. Additionally, other socio-cultural factors that affect the revenue realized from sales of forest-based products include gender, family size, level of education, and costs involved in processing (Larinde and Olasupo, 2011; Aremu *et al.*, 2015; Okunlola *et al.*, 2023). Although, there have been a few assessments on timber markets, the socio-cultural characteristics of timber marketers, and their influence on the market, income, and marketing information in Nigeria (Aremu *et al.*, 2015; Ajewole and Fasoro, 2013; Sambe *et al.*, 2022), the direction of influence varies. Specifically, there is limited information on the socio-cultural factors that influence income generation among plank marketers in the Bodija sawn wood market. This study aimed to provide baseline information on the socio-cultural characteristics of the marketers in the market and how these characteristics influence income derived from timber marketing. The findings would help current and prospective marketers enhance their income generation from the marketing of timber products by improving on characteristics that contribute significantly to income while also informing policy support for the timber-based industry in the country. By understanding the factors that influence income generation in timber marketing, stakeholders can implement strategies to improve livelihoods and promote sustainable economic growth in the sector.

MATERIALS AND METHOD

Study Area

The study was conducted in Bodija sawn wood market, situated in Ibadan, the capital city of Oyo State, Nigeria. The market is located between Longitudes 3°54'56''E and 3°55'12''E and Latitudes 7°26'2''N and 7°26'16''N (Fig. 1). Covering over 10 ha in size,

Bodija sawn wood market is the largest timber market in Ibadan and comprises up to nine zones. It is a significant part of the larger Bodija market in the densely populated and commercially active area (Bodija) of Ibadan (Filani, 2005). Ibadan is in the southeastern part of Oyo State, within southwestern Nigeria. Being the third largest metropolitan area in the country, it is well-known for its concentration of timber and non-timber product markets, along with numerous sawmills spread across different locations (Olugbire *et al.*, 2015).

Bodija sawn wood market is a bustling and dynamic marketplace where various types of timber and wood products from different species are traded for diverse purposes, including construction projects, furniture making, and other applications in the area. Some of the most prominent timber species traded in the market encompass, but not limited to, *Milicia excelsa*, *Terminalia superba*, *Terminalia ivorensis*, *Triplocyton scleroxylon*, *Khaya ivorensis*, *Mansonia altissima*, and *Tectona grandis*, comprising both native and exotic species. The availability of sawn wood from diverse species in the market can be attributed to the presence and proximity of large forest ecosystems and forest reserves like Gambari Forest Reserve, enhancing regular access to timber supply. Besides, the area experiences tropical rainy and dry climate with average temperatures ranging from 21.42 - 26.46°C throughout the year and two peak annual precipitation of 1420 mm, providing suitable conditions for the growth of rainforest and derived savannah trees and optimal product yields. While the primary sources of the sawn wood traded in the market come from Oyo State, other southwestern states, including Osun, Ondo, Ogun, and Ekiti States, also supply timber to the market (Aremu *et al.*, 2015). The market serves as a hub for timber marketers, retailers, wholesalers, and consumers not only within Ibadan but also from neighbouring areas. As a result, the economic significance of Bodija sawn wood market extends beyond Ibadan and plays a pivotal role in supporting timber-based industries and contributing to the overall economy of the region and the country. Additionally, the market provides livelihood opportunities for many people involved in timber trading, processing, and retailing.

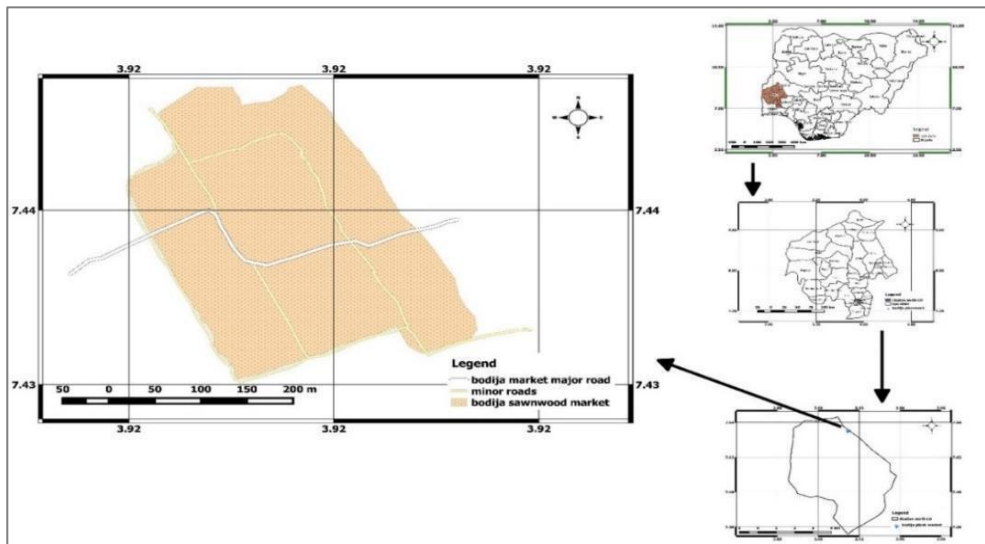


Figure 1: Map of Bodija sawn wood market, Ibadan, Nigeria

Data Collection

The study involved the collection of primary data through structured questionnaire administered to selected timber marketers at Bodija sawn wood market. The market comprises nine zones and following the methodology of Ajewole and Fasoro (2013), five zones were randomly selected out of the nine. In each of the selected zones, 20 respondents were sampled at random, resulting in 100 copies of the questionnaire being administered to gather information on the socio-cultural characteristics of the respondents. To ensure the effectiveness and reliability of the questionnaire, a pre-test was conducted involving 10 respondents from the study area. Based on the results and recommendations from Ham (2007), the questionnaire was revised to enhance its quality and relevance.

Data Analysis

Descriptive statistics, Spearman's correlation and Chi-square analysis were employed to analyze the data obtained. The descriptive statistics was used to summarize the socio-cultural characteristics of the timber marketers, providing a comprehensive overview of their variables. On the other hand, the Spearman's correlation and Chi-square test were used to determine the association between the socio-cultural variables and the contribution of timber marketing to the income of the respondents, following the approach of Keller and Warrack (2003), as adopted by Adebayo *et al.* (2022) and Oluwajuwon *et al.*, (2023). The Spearman's correlation was used to test for the relationship between two continuous variables while Chi-square was used for categorical variables. Microsoft Excel™ 2016 was used for the statistical analyses.

RESULTS AND DISCUSSION

Age Distribution of the Respondents

Figure 2 provides insight into the age distribution of respondents in Bodija sawn wood market. It reveals that the majority (52%) of the respondents were between 41 and 50 years of age, indicating a predominance of middle-aged individuals in the market. Following this age class, the oldest group (over 50 years) accounted for 27% of the marketers. Meanwhile, 21% of the respondents were between 20 and 40 years old, while the youngest age group (adolescents below 20) had no representation among the marketers. The age range of the marketers varied, with the minimum age 22 years and the oldest being 84 years old. On average, the respondents were 47 years old, reflecting the sustainable nature of the timber-based industry. The findings highlight that middle-aged people are more actively engaged in sawn wood marketing than both older and younger age groups, and this is likely due to the stressful and energy-demanding nature of the work. Furthermore, the low percentage of the younger age group poses a threat in succession, especially when the marketers in the middle-aged group become old.

These results are consistent with observations made by Sekumade and Oluwatayo, (2011) and Okunlola *et al.*, (2023) with both studies reporting a similar distribution in age of sawn wood traders. Despite this, the presence of a considerable proportion of older individuals (over 50 years) in our study challenges the perception that aged people may not have the physical capacity required for timber-based value chains, compared to non-timber

forest products that are considered less physically demanding. This age inclusion and diversity in our study market demonstrate that even older marketers can contribute significantly to their livelihoods through timber marketing activities.

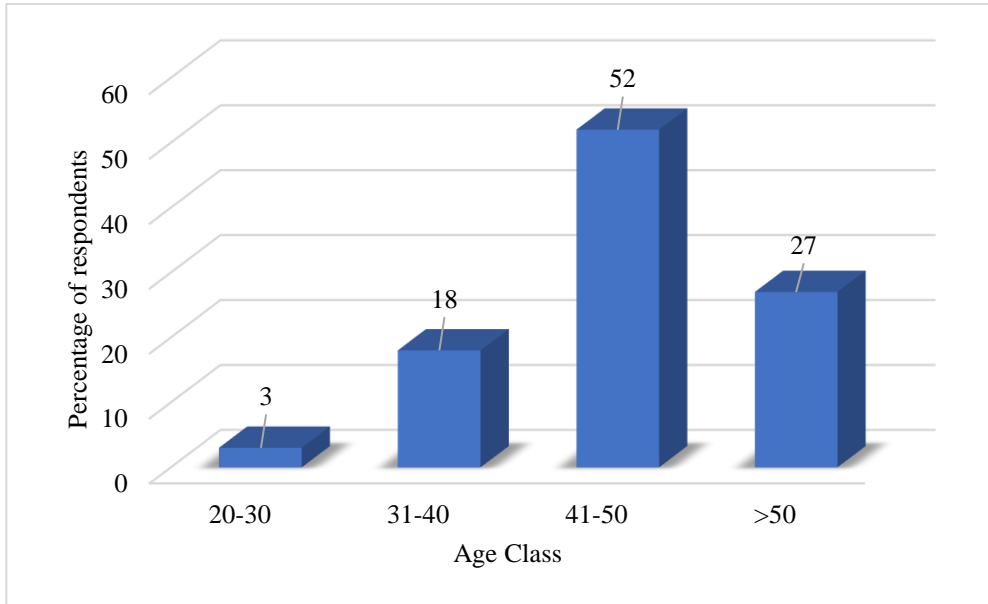


Figure 2: Age distribution of respondents in Bodija sawn wood market

Level of Education of Respondents

Figure 2 provides a summary of the educational level of the respondents in Bodija sawn wood market. It was found that all the respondents were literate to varying extents. Respondents with primary education accounted for 25%, 64% had completed secondary education, and 11% already attained education up till the tertiary level. The majority of the respondents were secondary school certificate holders, which is notably contrasting to the common reports in many studies that evaluated the educational levels of various actor groups in both timber and non-timber forest-based value chain activities (Larinde and Olasupo, 2011; Aremu *et al.*, 2015; Okunlola *et al.*, 2023).

Although, formal education is not a prerequisite for venturing into the sawn wood business, it can provide an added advantage to those who possess it. Adedokun *et al.* (2017) argued that that the level of education does not directly influence timber marketing, but it may contribute to enhanced productivity and better management practices. Education plays a key role in facilitating the adoption of innovations by marketers (Achoja and Okoh, 2014). Therefore, the marketers with formal education are more likely to readily learn and embrace new technologies that can improve their marketing abilities, potentially leading to increased revenue generation and profit maximization in the timber market. This view is supported by several other studies, such as those conducted by Ajewole (2005), and Faleyimu (2014)

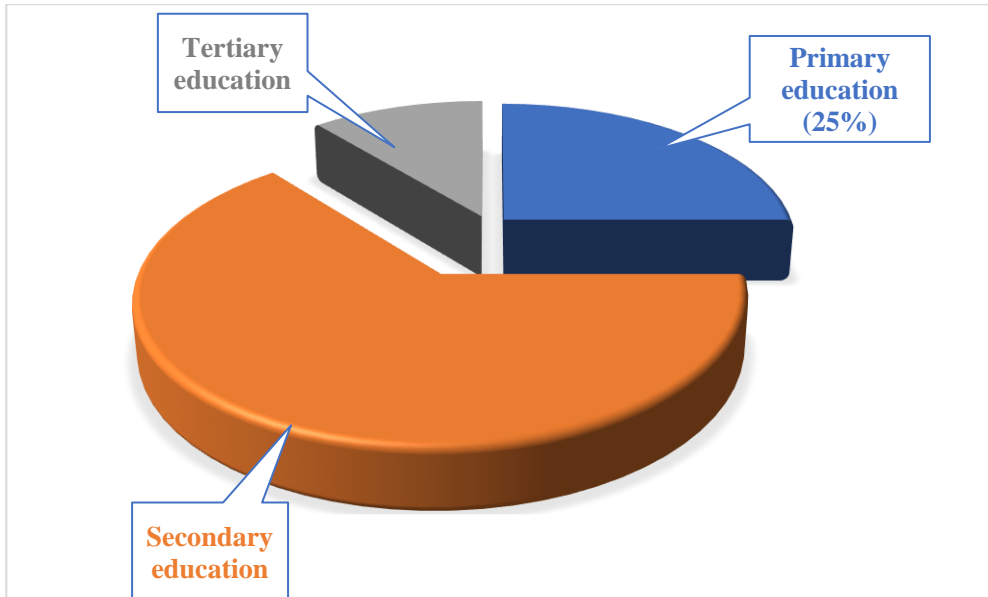


Figure 2: Levels of education of the respondents in Bodija sawn wood market

Degree of Marketing Experience of the Respondents

In this study, we evaluated the level of experience among timber marketers based on the number of years they have been in the marketing business. As shown in Figure 3, respondents' years of experience varied greatly, but the majority had substantial and long-standing experience in the timber industry. Fifty-seven percent of the respondents had 21-30 years of experience, 26.0% had 11-20 years of experience, 15% had more than 30 years of business experience, and 2.0% had 1-10 years of experience. The variation in experience reflects different start-up times and indicates that there is no restriction to entry and exit, as the market operates on a free-market economy principle. Marketing experience is a vital attribute that prospective sawn wood marketers must take into consideration before venturing into the business. It provides valuable insights into the intricacies of trade as well as the activities involved, allowing them to reap the full benefits of their investments. This confirms Busari *et al.* (2012) and Aremu *et al.* (2015) findings in this area.

The prevalence of respondents with very high levels of experience, even exceeding 30 years, in Bodija sawn wood market is remarkable and not a common trend in many other studies. For instance, Aremu *et al.* (2015) observed a maximum of about 20 years of experience among the timber marketers they assessed, while Okunlola *et al.* (2023) reported a predominance of approximately 10 years of experience among some forest product-based marketers in five markets in Akure, another southwestern state of the country. The presence of experienced timber marketers in Bodija sawn wood market is beneficial in several ways. These experienced traders possess a wealth of knowledge and expertise, which contributes to the market's efficient functioning and reliability. Their long-standing presence also instills confidence in buyers and suppliers, leading to increased business opportunities and better market stability.

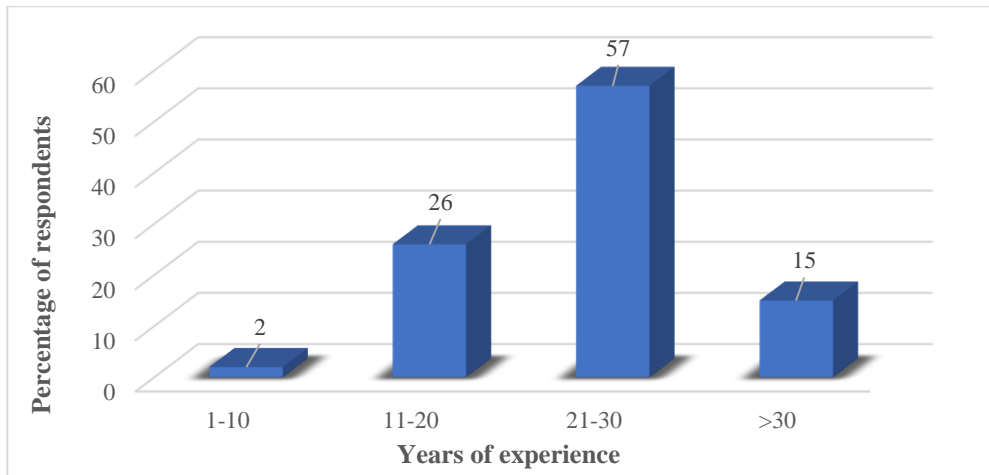


Figure 3: Years of experience of the respondents in Bodija sawn wood market

Sex, Ethnicity, and Religion Distributions of the Respondents

Figure 4 presents the distribution of sex, ethnicity, and religion among the respondents, which are crucial demographic factors to understand market dynamics and may mirror market outcomes. It reveals a marked dominance of males in Bodija sawn wood market, comprising 99% of the respondents. This finding aligns with previous studies, such as Aremu *et al.* (2015), who reported a considerably lower percentage of female respondents when compared to males. Conventionally, women are more involved and engage more actively in marketing non-timber forest products and other forest-related livelihood activities (Larinde and Olasupo 2011; Kimengsi *et al.*, 2019; Okunlola *et al.*, 2023) rather than in timber marketing. The relatively low representation of females in the timber industry could be attributed to the physically demanding nature of the business and the lack of modern technologies for transferring of planks from one area to another. Ndaghu *et al.* (2011) also emphasized that that livelihood activities involving strenuous labour tend to be dominated by males. They can better cope with the stress that comes with the timber trade and engage in activities to increase income generation. However, it is essential to address the marginalization of females in natural resource management and related value chains, especially in economic activities like marketing. Cultural structures and religious norms, for instance, have been reported to limit women participation and role in forest-based activities, including marketing of forest products (Suleiman *et al.*, 2017; Magry *et al.*, 2022; Okunlola *et al.*, 2023).

Regarding ethnicity, the sawn wood market is predominantly dominated by the Yorubas, which can be attributed to the geographical location (southwest Nigeria) of the market. Conducting business with people of the same ethnicity can facilitate communication between buyers and sellers, thus allowing for improved profit maximization and cost-effectiveness for both parties. The presence of an Igbo respondent indicates some degree of diversity and the possibility for individuals from other ethnic backgrounds to transact their businesses in the market. Our findings also revealed the presence of the two predominant religions in Nigeria in the market.

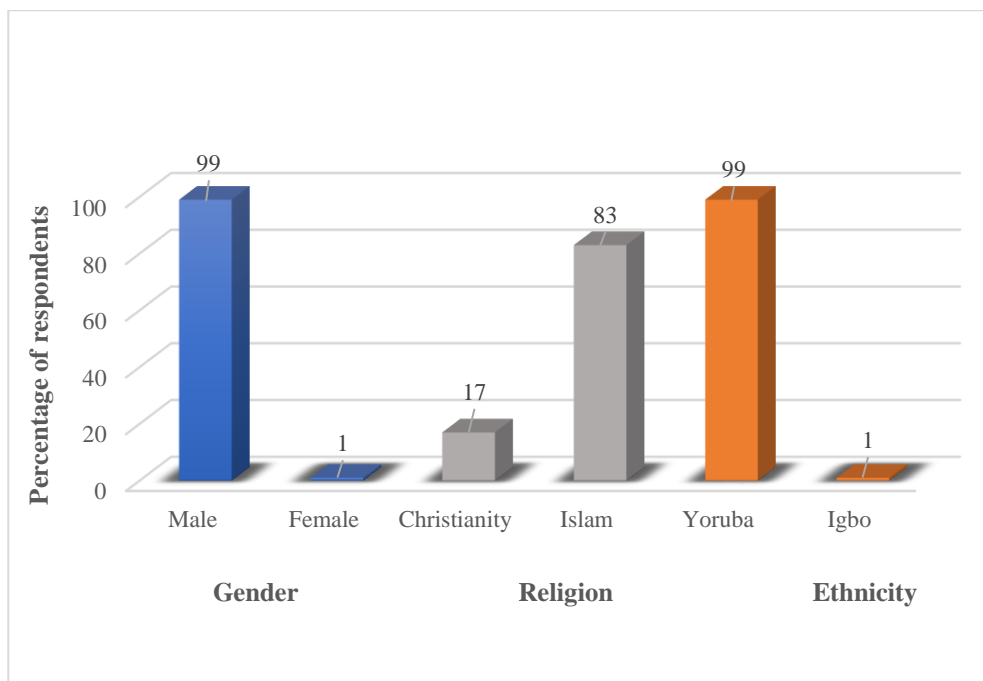


Figure 4: Gender, religion, and ethnicity of the respondents in Bodija sawn wood market

Net Monthly Income from Sales of Sawn Wood

The net monthly income realised from the sales of sawn wood among the respondents in Bodija sawn wood markets was quantified and presented in Figure 5. The figure shows that 58% of the respondents earned between ₦10,000 and ₦60,000 monthly, while 31% earned between ₦60,001 and ₦110,000. Lesser proportions of the marketers had the highest income classes: 7% earned between ₦110,001 and ₦160,000, and 4% of the total respondents earned a monthly income above ₦160,000. The lowest monthly income realized from sawn wood sales was ₦10,000, while it was also possible for some respondents to earn as much as ₦300,000, with the mean income standing at ₦69,830 (Fig. 5).

Analyzing the monthly income against the amount typically required to start up a timber business, timber marketing is considered lucrative. Aremu *et al.* (2015) had earlier reported the average start-up capital to be about ₦350,000, which may have increased due to the current high inflation rate. According to a recent timber income analysis conducted by Sambe *et al.* (2022), taking cases from three timber markets in Kogi state, timber trading can generate a mean return (gross margin) as high as ₦517,000 per month, depending on the species. Our findings further revealed that only 1% of the respondents earned below the national minimum wage, which, at the time of publication, stands at ₦30,000. Hence, the sawn wood business is relatively a profitable venture considering the economic context of the country, and it contributes about 99% of the total income of the respondents. This agrees with Adedokun *et al.* (2017), who asserted that timber marketing is profitable enough to be relied upon to cater for both larger and smaller households. Timber marketing serves as an

appreciable source of income generation for diverse groups of people across the globe, help to ameliorate poverty and improve livelihoods (Belcher 2005). For instance, timber trading was reported to contribute to over 60% of the households' income in some communities in Tanzania (Nkwera 2010).

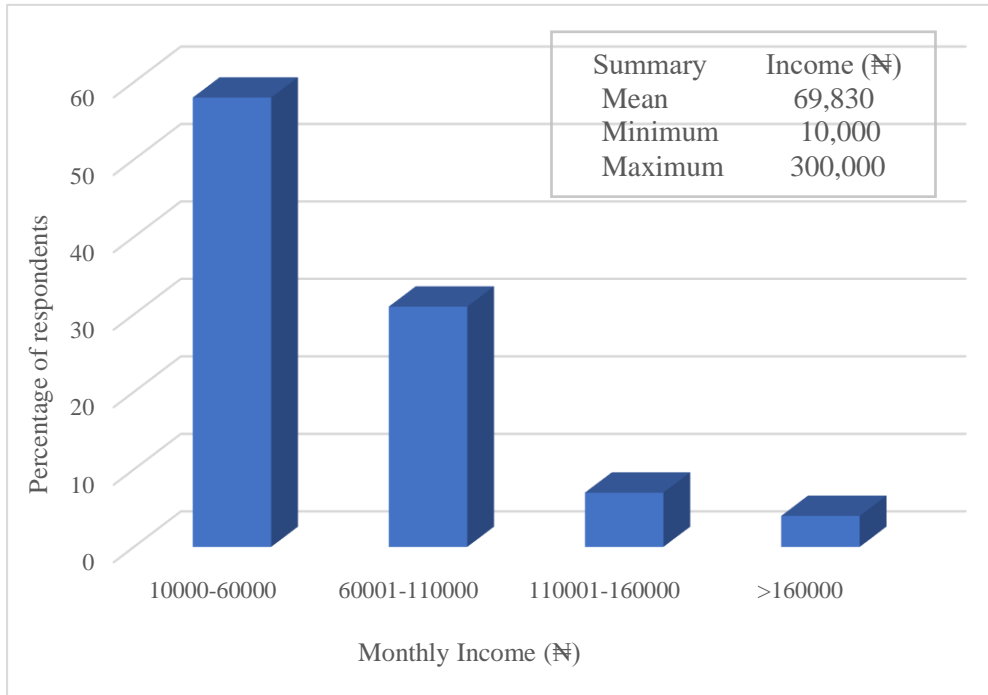


Figure 5: Net monthly income from sales of sawn wood

Association between Socio-cultural Characteristics and Income of the Respondents

The potential and degree of revenue generation from timber marketing depend on various critical factors. In the present study, some socio-cultural characteristics of the marketers in Bodija sawn wood market. However, not all the commonly assessed socio-cultural variables showed a significant influence on the income realized by the marketers from their timber business, as evident from Table 1. The Spearman's correlation value of 0.122 at $\alpha = 0.05$ revealed that there was no significant relationship between the age of respondents and the income generated from the sales of timber products. On the other hand, for the relationship between years of experience and income, there was a positive correlation. The Spearman's correlation value of 0.009 at $\alpha = 0.05$ indicates a significant relationship between the years of experience of respondents and the income generated from the sales of timber products. Additionally, the Pearson's Chi-square (χ^2) analysis value of 0.101 ($\alpha = 0.05$) showed that the respondents' level of education had no significant effect on the income generated. However, the Pearson's Chi-square (χ^2) value of 0.001 ($\alpha = 0.05$) revealed a significant relationship between ethnicity and income.

Table 1: Relationship between socio-cultural characteristics and income of respondents

Variable	p-value	Decision
Age	0.122	NS
Years of experience	0.009	*
Religion	0.745	NS
Level of education	0.101	NS
Ethnicity	0.001	*

* Significant at the .05 probability level; NS, nonsignificant

Our findings suggest that the income derived by individual marketers is independent of the age of the respondents, but experience has been found to significantly impact income generation. Having more experience in the timber market leads to higher income generated from this business. Thus, for the marketers to be able to maximize the benefits of the business, the individuals may need to get accustomed to the various operations within the market and those operations external to the market but have an impact on the market. Also, acquiring necessary expertise on demand and supply of various timber products within the market, as well as their price behaviours. This finding is consistent with Busari *et al.* (2012) and Aremu *et al.* (2015), who observed that experience is a very important skill required to overcome factors that affect the returns on investment by timber marketers. Experienced timber marketers demonstrate better understanding of customer preferences and pricing trends, negotiate more effectively, identify lucrative opportunities, and adapt their strategies to changing market conditions. They also tend to have built stronger customer networks and relationships, leading to more regular patronage and higher income.

While education can provide advantages such as access to information and trends in demand and supply of the product, it does not necessarily translate to higher revenue generation in the timber market. As asserted by Haruna *et al.* (2012), literate traders may adopt new marketing ideas and tactics and be more proficient in communication with their customers, but these benefits of educational exposure may not significantly improve financial performance in the timber market, as observed in Bodija sawn wood market. Relevant experience in timber marketing surpasses generic formal education, although the two can form a beneficial synergy, facilitating improved timber industry and increasing willingness to contribute to forestry development (Daramola *et al.*, 2022). However, the evidence of non-significance of educational impact on income among the timber traders could have been conspicated by the fact that all the traders had some level of formal education, from primary to tertiary. Another significant factor affecting income generation in the sawn wood market is ethnicity. The market is dominated by the Yoruba people due to its location within the southwestern region of the country. Bargaining between individuals of the same ethnicity facilitates better communication and allows both buyers and sellers to maximize their profits. On the other hand, communication between individuals of different ethnicities might be truncated due to language barriers, which can thus influence sales and revenue generation. However, the limited proportion of Igbo traders in the market may have affected the thorough capture of the significance of the impact of ethnicity on the marketers' income.

CONCLUSION

Timber trading considerably contributes to the income and livelihoods of the marketers involved in the business. However, their financial performance and income

generation are intricately linked to specific socio-cultural characteristics. Furthermore, ethnicity is a relevant factor influencing the contribution of timber marketing to the income of the marketers in the study area, likely due to the market's geographical location. To enhance expertise and experience, individuals planning to engage in the timber business should seek knowledge from experienced people in the venture. Organizing training sessions in various areas such as product knowledge, market analysis, supply chain and financial management, digital and online marketing, and customer relations among the marketers would help them stay up to date with market strategies and practices that will enhance their understanding of marketing timber and timber products.

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