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NON-TIMBER FOREST PRODUCTS TRADING AND RURAL LIVELIHOOD SUSTENANCE IN IBADAN STATE OF NIGERIA

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ABSTRACT

The study on non-timber forest products (NTFPs) trading in the Ibadan North Local Government Area, Oyo State, was carried out to encourage sustainable forest management. All registered NTFP marketers in selected markets were the target respondents. A total of 125 questionnaires were distributed, 65 in Bodija and 60 in Oje. Data were analyzed using descriptive statistics and budgeting techniques. The results showed that the majority of the respondents were male (58.4%), aged 31- 40 years (36.0%), and married (93.6%), and 32.8% had a family of 3-4 members. In terms of education, 59.2% of respondents had secondary education, while 77.6% were native speakers. The main occupation was trading in NTFPs, with 43.2%, and 52.8% had between 11-20 years of experience. The variety of NTFPs being marketed include; honey, bitter kola, locust beans, dika nuts, and walnuts. The highest average ranking for locust beans was 0.96 in Oje, while kola nuts had the highest average ranking of 0.96 in Bodija. The benefit-cost ratio was 1.54 and 1.67 in Bodija and Oje markets, respectively, showing that for every ₦1 spent, 54kobo was earned by traders in Bodija and 67kobo in Oje. The main challenges facing NTFPs are government policies, inadequate social infrastructure, bad road network, scarcity of NTFPs, and overexploitation of NTFPs, with 100% each. Sustainable forest management practices should be

adopted as a developmental strategy to ensure the continuous supply of NTFPs in the study area.

Keywords: *NTFPs*, *Marketing*, *Sustainable Forest Management*, *Ranking*, *Respondents.*

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1. INTRODUCTION

Non-Timber Forest Products (NTFPs) play a vital role in supporting the subsistence, daily life, and well-being of people worldwide, particularly in the rural societies of developing countries. Maua *et al.* (2018) emphasized that millions of individuals engage in the daily collection of these products, often relying on the sales of NTFPs as a means of livelihood (Ibrahim *et al.*, 2016). Eighty percent of the developing world relies on Non-Timber Forest Products for nutritional and health needs (Reshad *et al.*, 2017). In developing countries, including Nigeria, millions of households benefit from NTFPs, which they use for various purposes such as food sources like fruits, nuts, honey, insects, and animals. NTFPs are also employed as fodder, fibers, fertilizers, medicinal extracts, construction materials, cosmetics, cultural products, natural dyes, tannins, gums, and other exudates. Additional advantages encompass essential oils, spices, and edible oils. Decorative articles, horns, tusks, bones, pelts, plumes, hides, skins, non-wood ligno-cellulose products, photo-chemicals, and aroma chemicals constitute a wide range of products derived from different sources. These resources include plants such as palms, grass, herbs, shrubs, and trees, as well as animals like insects, birds, reptiles, and large animals (Garcia, 2019).

These products are used within households or traded, often with socio-cultural and religious significance (Babatunde *et al*., 2020). A significant portion of the rural populations living near forested areas earn their livelihoods by engaging in the extraction, collection, and sale of NTFPs, thereby improving their quality of life and standard of living (Asafiwa and Etefe, 2017). Non-timber forest Products contribute significantly to household income and well-being. NWFPs come in a wide variety and are used by people from across diverse socio-economic, geographical, and cultural backgrounds for various purposes, such as animal feed and cultural preservation within households. Better dissemination of information on the trading of NTFPs would significantly contribute to existing knowledge and raise awareness of the need to ensure their sustainability (Ibrahim *et al*., 2018).

There is a growing awareness that NTFPs play a significant role in the livelihoods of a large number of people, both within and outside tropical forest areas. This realization has led to the belief that sustainable forest management for NTFPs can have positive welfare outcomes while also promoting environmental goals. The increasing commercial demand for various non-timber products like rattan, oils, resins, and pharmaceutical extracts has also driven attention towards NTFPs. Despite this, there is still limited information on the NTFPs marketed in the study area. Enhanced dissemination of information regarding the trading of NTFPs would significantly contribute to existing knowledge and raise awareness about their importance in the region. Therefore, this study aimed at investigating the socio-economic impact of NTFPs trading on rural livelihood

sustenance in Ibadan North Local Government Area, Oyo State, Nigeria.

2. REVIEW OF LITERATURE

According to Olawuyi and Agbeja (2018), non-timber forest products (NTFP) are naturally grown forest resources that can be processed for household consumption or traded locally and internationally by forest users. NTFPs include a diverse array of items such as fruits, seeds, leaves, animal products, latex, fibers, and more, emphasizing that forests contain a wide spectrum of products beyond just trees. The forestry sector faces several challenges that contribute to its poor performance and resource loss. Delgado et al. (2023) noted that Nigerian tropical forests are losing their properties due to anthropogenic actions that adversely impact the environment. The unsustainable exploitation of forests, particularly the removal of woody species for non-forest purposes, along with current forest management plans, has resulted in significant resource depletion (Derebe et al., 2023). Recent case studies conducted in Africa highlight the significant role of Non-Timber Forest Products (NTFPs) as a crucial income source in overall household economies. In Malawi, for instance, wild and planted fruit trees on common land contribute up to 15% of the total income, which includes both subsistence and cash income (Ojea et al., 2016).

Similarly, in the Republic of Congo, wild plants make up 10% of households' total food consumption, and it is estimated that consumptive forest environmental products, including fuelwood, farm implements, construction materials, wild food items, herbs, and medicines, constitute 27% of income in

northern Ethiopia. A comprehensive study in Zimbabwe by Asfaw and Etefa (2017) revealed that various forest environmental products, such as wild foods (plants and animals), medicinal plants, wood and grass uses, forage plants, as well as soil and termite use, collectively account for 35% of the average rural income. While comparing these studies can be challenging due to variations in the investigated forest products, they collectively emphasize the economic importance of NTFPs. The subsequent list, derived from the newly established International Economic Botany Data Collection Standard, serves as an illustration of various compilations of utilization categories for Non-Timber Forest Products (NTFPs) (Musinguzi, 2018).

- **Food:** wild fruits, vegetables, nuts, edible roots, bush meat, edible insects, and honey.
- **Food additives**: spices, flavourings, food colorants, fermentation agents.
- **Animal food:** fodder for livestock, straw, bait to catch animals, bee plants.
- **Animal products:** skins (leather and fur), living animals as pets, feathers, bones.
- **Construction**: palm leaves or grass for roof thatch, bamboo, wood (sticks and poles).
- **Materials:** fibers, baskets, furniture, bow and arrow, dye, paint, varnish, glue.

- **Fuel:** firewood, charcoal, petroleum substitutes, lighting resins.
- **Medicine:** medicinal plants, bark, resin, seeds.
- **Poisons:** for fishing, to control insects.
- **Social uses:** religious and magic plants, drugs, narcotics, intoxicants.
- **Environmental uses:** ornamental plants, shelter trees, plants for soil improvement.

3. RESEARCH METHODOLOGY

3.1 Description of the study area

Oyo State, located in the southwestern part of Nigeria, is a landlocked State. The capital, Ibadan, has a population of 4,004,316, with a growth rate of 3.34% by 2024. Agriculture is the main occupation of the people of Oyo State, given the abundance of non-timber forest products (NTFPs). The Oje market in Ibadan is particularly notable for its wealth. Established in 1884 during the reign of Oluyole, it is one of the oldest and most popular markets in Ibadan, located less than a kilometer from Oba's palace. Similarly, Bodija Market is situated in Oyo State, Nigeria. Established in October 1987, it is the largest informal food market in Ibadan, Oyo State. Located between latitude 7°26'9.2"N and longitude 3°54'56.7"E, Bodija Market is a vital hub for trade and commerce in the region. Oje market, located in Ibadan, is one of the oldest and most authentic markets in the region. It is known for its vibrant and lively atmosphere. Despite its somewhat disorganized appearance, the market offers a wide range of products, making

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it a unique destination for various food and agricultural products. Market vendors are proud of their wares, sometimes extending their stalls onto the road, which can disturb users. In addition, the Oje market is particularly known for its selection of Aso-Oke and other traditional clothing, making it an important cultural reference point in the local community.

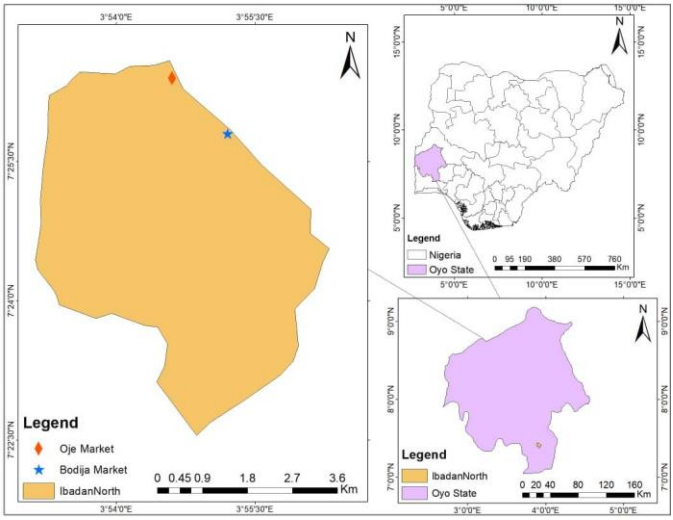

Figure 1. Map of the study area

3.2 Sampling procedure

From the exploratory survey conducted, a total of 65 non-timber forest product (NTFP) traders were identified in the Bodija market, while 60 were identified in the Oje market. In addition, a complete count of all respondents was conducted in the study. Therefore, 65 questionnaires were administered in

Bodija while 60 questionnaires were administered in Oje market, making a total of 125 respondents for the study.

3.3 Data collection method

Primary data was used for this study. The primary data was collected using a structured questionnaire. The questionnaire was designed to capture the specific objectives of identifying commercial non-timber forest products in the area, investigating the socio-economic importance of the non-timber forest products in the study area, determining the profitability of non -timber forest products in the study area, to investigate the challenges related to the commercialization of non-timber forest products in the study area. Data were analyzed using the procedure adopted by Adeola *et al*., (1994). The details are highlighted in the data analysis below amd budgetary analysis.

3.4 Data analysis

Objective one: identification of the non-timber forest products NTFP commercialized in the study area. This analysis was carried out using descriptive statistics.

Objective two: study of the highest valued non-timber forest products commercialized in the study area. This analysis was carried out according to the procedure adopted by Adeola *et al*., (1994). This indicates that to determine the final position of the NTFPs in the ranking exercise, the following parameters were calculated:

(1) Number of times that the NTFP was mentioned.....(a)

(2) Mentioned value.....(b)

(3) Average ranking (for a given product) by respondents...(c)

(4) Ranking value .....(d)

(5) Final value..... ....(e)

Note:

(1) The number of times a particular NTFP is mentioned (a) must be calculated to obtain the mentioned value (b)

(2) The average ranking (c) of each of the NTFPs must be calculated based on the sum of its ranking assigned by the respondents divided by the total number of the respondents.

(3) The ranking value (d) was obtained by tabulation and ranking of the position of each NTFPs.

(4) The assigned value is determined by adding the mentioned value and dividing by 2, i.e.

$e = b + d/2$.....(2)

The final result of this calculation will be presented in a table. Based on this, the highest priority NTFPs were selected for further study.

Objective three: To determine the profitability of NTFPs traded in the study area. This analysis was done using budgeting techniques. Budgeting techniques involve estimating the cost and return associated with the collection and marketing of the selected NTFPs. The profit for the selected NTFP is calculated with:

n = R – (VC FC)..... (3)

VC= rixi..... (4)

GM = R – VC..... (5)

Where n = Net income/ profit

R = Gross revenue/income

VC = Variable cost/expenses

ri = Price of variable input used

xi = Quantity of variable input

FC = Fixed cost/expenses

GM = Gross margin

TC = Total cost

The average revenue (income) cost and profit were calculated.

4. **Objective four:** Determine the challenges related to the marketing of non-timber forest products in the study area. This analysis was carried out using descriptive statistics.

4. RESULTS AND DISCUSSION

4.1 Socio-demographic information of respondents

The result on Table 1 revealed that most respondents in the study area are male, comprising 58.4% of the total sample, while females make up 41.6%. This indicated a slight gender disparity, with more males participating in the survey. The largest age group among respondents was 31-40 years, representing 36.0% of the total. This was followed by the 51-60 years' age

group with 26.4%. The data showed a relatively even distribution among other age groups, with the youngest (21-30 years) and oldest (60 years and above) comprising smaller proportions, at 9.6% and 12.8%, respectively (Figure 2). This implies that the majority of respondents involved in the marketing of NTFPs are still young, agile, and strong enough to carry out tasking jobs (Harris, 2019). Figure 3 revealed that a significant majority of respondents are married, accounting for 93.6% of the total. The proportions of single, widowed, and divorced respondents are very low, each comprising less than 3.0% of the sample. This indicated a predominantly married population in the study area (Johnson 2018). The result on Table 2 revealed that the most common household size among respondents is 3-4 members, making up 32.8% of the total. This was followed by 1-2 member households at 24.8% and 5-6 member households at 18.4%. Larger households (7-8 members) and very large households (9 and above) are less common, representing 15.2% and 8.8%, respectively. The result in Table 3 revealed that the majority of respondents have no formal education, comprising 59.2% of the total. Those with primary school certification make up 27.2%, while 12.0% have a secondary education. A very small percentage, 1.6%, had a tertiary education. This suggested a relatively low level of educational attainment among the respondents. Majority of respondents are indigenous to the area, making up 77.6% of the total sample. Non-indigenous respondents accounted for 22.4%. This indicated a predominantly local respondent base (Table 4). The result in Table 5 revealed that traders of non-timber forest products constituted the largest occupational group among respondents, accounting for 43.2% of the total. Timber contractors and saw-millers followed at 27.2% and

18.4%, respectively. Farmers and loggers are less represented, making up 1.6% and 9.6%, respectively. The result in Table 6 revealed that the majority of respondents have 11-20 years of work experience, comprising 52.8% of the total. Those with 21-30 years of experience make up 19.2%, while 18.4% have 5-10 years of experience. Only 9.6% of respondents have over 31 years of experience. This indicated that most respondents have substantial experience in their respective fields.

Table 1. Distribution of the Respondents Base on Gender

Gender	Frequency	Percentage
Male	73	58.4
Female	52	41.6
Total	125	100.0

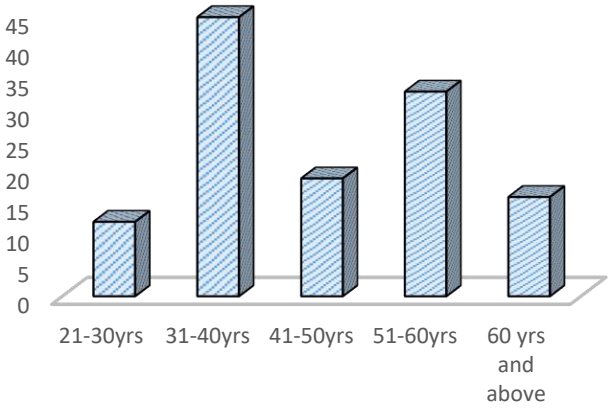

Figure 2. Age distribution of respondents

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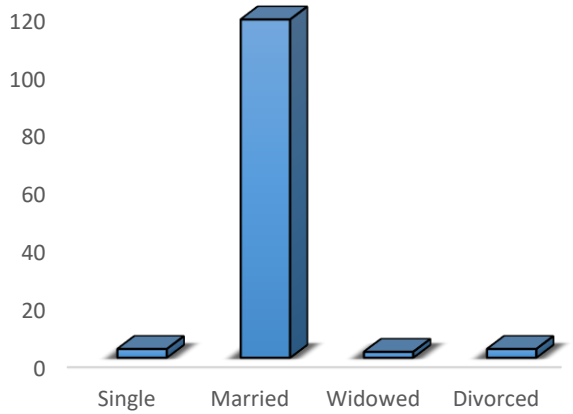

Figure 3. Marital status of respondents

Table 2. Distribution of the respondents based on household size

Household size	Frequency	Percentage
1-2	31	24.8
3-4	41	32.8
5-6	23	18.4
7-8	19	15.2
60 years and above	11	8.8
Total	125	100.0

Table 3. Distribution of the respondents based on educational status

Educational status	Frequency	Percentage
No formal education	74	59.2
Primary school cert	34	27.2
Secondary school cert	15	12.0
Tertiary school cert	2	1.6
Total	125	100.0

Table 4. Distribution of the respondents based on nativity

Nativity status	Frequency	Percentage
Indigene	97	77.6
Non-indigene	28	22.4
Total	125	100.0

Table 5. Distribution of the respondents based on category of occupation

Occupation	Frequency	Percentage
Farmer	2	1.6
Trader	54	43.2
Saw-miller	23	18.4
Logger	12	9.6
Forest product collector	0	0.0
Timber contractor	34	27.2
Others	0	0.0
Total	125	100.0

Table 6. Distribution of the respondents based on years of experience

Year of experience	Frequency	Percentage
5-10yrs	23	18.4
11-20yrs	66	52.8
21-30yrs	24	19.2
31 years and above	12	9.6
Total	125	100.0

4.2 Non-Timber Forest Products (NTFPs) marketed in the study areas

Table 7 shows the non-timber forest products marketed in the study areas, specifically in the Bodija and Oje markets. It was revealed that a wide variety of NTFPs are universally available

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Table 7. Non-Timber Forest Products (NTFPs) marketed in the study areas

Local Name (Yoruba)	Common Name	Scientific Name	Bodija		Oje	
			Yes	No	Yes	No
Oparun	Bamboo	*Bambusa vulgaris*	65 (100.0%)	0(0.0%)	60 (100.0%)	0(0.0%)
Oyin	Honey	*Apis mellifera*	65 (100.0%)	0(0.0%)	60 (100.0%)	0(0.0%)
Orogbo	Bitter kola	*Garcinia cola*	65 (100.0%)	0(0.0%)	60 (100.0%)	0(0.0%)
Obi	Kola nut	*Cola nitida*	65 (100.0%)	0(0.0%)	60 (100.0%)	0(0.0%)
Asala	Walnut	*Juglans nigra*	65 (100.0%)	0(0.0%)	60 (100.0%)	0(0.0%)
Atare	Alligator pepper	*Aframomum melegueta*	65 (100.0%)	0(0.0%)	60 (100.0%)	0(0.0%)
Ori	Shea butter	*Vitellaria paradoxa*	65 (100.0%)	0(0.0%)	60 (100.0%)	0(0.0%)
Ogbono	Wild mango	*Irvingia wombolu*	65 (100.0%)	0(0.0%)	60 (100.0%)	0(0.0%)
Oro	Bush mango	*Irvingia gabonensis*	65 (100.0%)	0(0.0%)	60 (100.0%)	0(0.0%)
Dongoyaro	Neem leaves/ bark	*Azadirachta indica*	65 (100.0%)	0(0.0%)	60 (100.0%)	0(0.0%)
Iyere	African black pepper	*Piper guineense*	65 (100.0%)	0(0.0%)	60 (100.0%)	0(0.0%)
Igi ose	Baobab leaves	*Adansonia digitata*	65 (100.0%)	0(0.0%)	60 (100.0%)	0(0.0%)
Iru	Locust beans	*Parkia biglobosa*	65 (100.0%)	0(0.0%)	60 (100/0%)	0(0.0%)

in both markets. The Table shows that for each of the 12 listed species, 100% of the vendors in both markets sell these products. This indicated a high demand and cultural or economic importance of these NTFPs in the area. Key species such as bamboo (*Bambusa vulgaris*), honey (*Apis mellifera*), bitter kola (*Garcinia cola)*, kola nut (*Cola nitida*), and shea butter (*Vitellaria paradoxa*) are sold by all surveyed vendors in both markets, underscoring their significance. Other notable species include wild mango (*Irvingia wombolu*), bush mango (*Irvingia gabonensis*), and neem leaves (*Azadirachta indica*). Overall, the universal availability of most NTFPs across both markets highlights their integral role in the local economy and daily life. This finding is supported by Adams (2018), who pointed out that NTFPs such as bamboo, honey, and shea butter are crucial to local markets and widely available. Similarly, Chukwu and Okoro (2020) reported that NTFPs play a significant role in the economic and cultural practices of local communities, with high availability in surveyed markets.

4.3 Prioritization of NTFPs in the Oje Market

The results in Table 8 describe the most prioritized NTFP in the Oje market. Locust beans had the highest average rank of 0.96, followed by bamboo with the average rank of 0.88, while African black pepper recorded the lowest average rank of 0.24. Locust beans having the highest average ranking value may be due to the fact that locust beans are the main food components in the diet of most people in the region. However, this supports Smith's (2018) statement that a fundamental theme of marketing is the expression of customer needs, also known as customer requirements. Customers have complex needs that influence purchasing decisions.

Table 8. Prioritization of NTFPs in the Oje Market

NTFPs	Frequency	Mentioned Value	Average Ranking	Rank Value	Assigned Value
Locust beans	12	1	0.96	4	2.50
Bamboo	11	2	0.88	2	2.00
Honey	10	3	0.80	1	2.00
Bitter kola	7	5	0.56	9	7.00
Kola nut	7	6	0.56	14	10.00
Walnut	6	7	0.48	15	11.00
Alligator pepper	6	8	0.48	13	10.50
Shea butter	5	9	0.40	10	9.50
Wild mango	5	10	0.40	18	14.00
Bush mango	5	12	0.40	17	14.50
Neem leaves/ bark	5	13	0.32	3	8.00
African black pepper	4	15	0.32	21	18.00

The result in Table 9 shows the most prioritized NTFPs in the Bodija market. Kolanut had the highest average rank of 0.96, followed by bitter kola and honey with the average rank of 0.88 and 0.80 correspondingly, while neem leaves/ bark recorded the lowest average ranking of 0.40. Kola nuts have the highest average rank value, which might be a result of the fact that the kola nut is highly valued in the society. These results, however, attested to the statement made by Smith's (2018) claim that a fundamental theme of marketing is the expression of customer needs, also known as customer demands. Customers have complex needs that influence purchasing decisions.

Table 9. Prioritization of NTFPs in the Bodija market

NTFP	Frequency	Mentioned value	Average ranking	Rank value	Assigned value
Kola nut	12	1	0.96	4	2.5
Bitter kola	11	2	0.88	17	9.5
Honey	10	3	0.80	18	10.5
Shea butter	9	4	0.72	21	12.5
Locust bean	8	5	0.64	13	9.0
Dika nut	7	6	0.56	2	4.0
Walnut	7	7	0.56	9	8.0
Alligator pepper	7	9	0.56	15	12.0
Bamboo	6	10	048	1	5.5
Bush mango	6	11	0.48	12	17.5
Neem leaves/bark	5	12	0.40	8	10.0

4.4 Profitability analysis of non-timber forest products traded in the study area

The result in Table 10 shows the profitability of NTFPs in both the Bodija and Oje markets. It showed that the cost-benefit ratio was 1.54 and 1.67 in Bodija and Oje markets, respectively. This implies that although NTFPs trading was profitable in both markets, it was more profitable in the Oje market than in the Bodija market. In fact, for every naira spent, traders in Bodija earned 54 kobo while in Oje, they earned 67 kobo for every naira spent. The reason for this may be that variable costs and fixed costs in Bodija were higher than those in the Oje market. This confirms the findings of Adebayo (2017), who showed that the trade of non-timber forest products is highly profitable due to their demand and market prices and is heavily influenced by their processing and transportation costs, with a significant profit margin in well-managed supply chains.

Table 10. Profitability analysis of the most prioritized non-timber forest products marketed in the study area

	Items	Bodija	Oje
A	Variable Costs (₦)		
	Price Collection	17,666.70	16,166.60
	Labor	3,166.70	2,400.00
	Transportation	2,066.70	1,533.00
	Shop Rent	2,500.00	2,333.00
	Association	583.30	300.00
	Processing Cost	1,450.00	750.00
	TVC	27,433.20	23,482.60
B	Fixed Costs (₦)		
	Depreciation on Chair	500.00	366.60
	Depreciation on Table	716.60	517.00
	Depreciation on Stool	467.00	333.00
	Depreciation on cutlass	700.00	500.00

	Total Fixed Cost	2,383.00	1,716.60
C	Total Cost	29,816.80	25,199.20
D	Total Revenue	45,933.42	42,033.16
E	Gross Margin	18,500.22	18,550.56
F	Net Profit	16,116.62	16,833.96
G	Average Gross Margin	29.42	44.13
H	Benefit Cost Ratio	1.54	1.67

4.5 Constraints/challenges associated with NTFPs business

The result in Table 11 shows the constraints/challenges associated with the timber business in the study areas. The result revealed that most 122 (97.6%) of the respondents indicated that lack of education was not a challenge associated with NTFPs but the major challenges are government policies, inadequate social amenities, bad road network, scarcity of timber products, over exploitation of timber products, lack of buyers, lack of funds/capital, weather condition, inadequate supply and insecurity with 100% respectively. This result showed that the marketing of NTFPs business is faced with a lot of challenges that hinder the smooth running of the business. These challenges resonate with the findings of Okorie and Njoku (2019), who highlighted similar constraints in the timber industry, particularly relating to government policies and infrastructure deficiencies. Additionally, Ojo and Adewale (2021) pointed out the impact of inadequate funding and market uncertainties on forestry businesses, further emphasizing the complexities faced by stakeholders in this sector.

Table 11. Constraints/challenges associated with NTFPs business

Challenges	Yes (%)	No (%)
Lack of formal education	3(2.4)	122(97.6)
Government policies	125(100.0)	0(0.0)
Inadequate social amenities	125(100.0)	0(0.0)
Bad road network	125(100.0)	0(0.0)
Scarcity of NTFPs	125(100.0)	0(0.0)
Overexploitation of NTFPs	35(28.0)	80(72.0)
Lack of buyers	125(100.0)	0(0.0)
Lack of funds/capital	125(100.0)	0(0.0)
Weather condition	125(100.0)	0(0.0)
Lack of technical know how	27(21.6)	98(78.4)
Inadequate supply	125(100.0)	0(0.0)
Insecurity	125(100.0)	0(0.0)

5. CONCLUSION

The findings of this investigation revealed that varieties of non-timber forest products (NTFPs) were traded in the surveyed region. These NTFPs encompass a broad range of attributes that reflect their distinct nature and significance, and it was also identified that some respondents do source their products directly from the forest. The report underscores the substantial contributions and considerable influence of NTFPs on both the economic and social aspects of the people. NTFPs play a crucial economic role, contributing significantly to community livelihoods, particularly in rural areas. Sustainable harvesting practices are imperative for ensuring the ongoing viability of

NTFPs while balancing utilization with conservation efforts. The study revealed that though the marketing of NTFPs was profitable in both markets, it was more profitable in the Oje market than in the Bodija market. Furthermore, the major challenges facing the marketing of NTFPs in the area are government policies, inadequate social amenities, bad road network, scarcity of NTFPs, over exploitation of NTFPs, lack of buyers, lack of funds/capital, weather condition, inadequate supply and insecurity of non-timber forest products (NTFPs). It is, therefore, recommended that sustainable forest management practices be adopted as a developmental strategy to ensure the ongoing supply of non-timber forest products in the study area. Additionally, awareness programs should be organized for residents living in and around the study area to educate them about the availability and importance of non-timber forest products.

REFERENCES

Adams, J. (2018). Market Analysis of Non-Timber Forest Products in West Africa. *Journal of Sustainable Forestry*, 45(2), 178-193.

Adebayo, S. (2017). Strategies for Sustainable Forest Management in Nigeria. *Journal of Environmental Management*, 58(2), 150-165.

Asfaw A. and Etefa L. (2017). The contribution of non-timber forest products to the rural livelihood: The case of Yayo district, illu ababora zone, Oromia regional state, western Ethiopia. *International Journal of Applied Agricultural Research*, *12*(2), 157-169.

Babatunde T.O, Babatunde O.O. Okeleke S.O, Aduloju T. and Agboola F.O. (2020) Assessment of commercial importance and determinant factor influencing collection of non-timber forest products in adjoining communities of Lanlate forest reserve of Oyo State. *Nigeria Journal of Research in Forestry, Wildlife and Environment*, 12 (1), 62-69.

Chukwu, P. and Okoro, E. (2020). The Role of Non-Timber Forest Products in Local Economies. *Journal of Ethnobotany and Economic Botany*, 52(1), 145-160.

Delgado T. S, McCall M. K, and López-Binnqüist C. (2023). Non-timber forest products: small matters, big significance, and the complexity of reaching a workable definition for sustainability. Small-Scale Forestry. 22(1), 37–68. doi: 10.1007/s11842-022-09517-9.

Derebe B, Alemu A, and Asfaw Z. (2023). Contribution of non-timber forest products earn to livelihood in rural households and the type of use: a systematic review. *Int J. for Res*. 2023:1–14. doi: 10.1155/2023/9643290.

Garcia, L. (2019). Community Composition and Indigenous Representation. *Journal of Regional Studies*, 47(3), 130-145.

Harris, P. (2019). Workplace Demographics: An Age-Based Analysis. *Journal of Workforce Studies*, 50(3), 210-225.

Hassan B.A. (2020). Trees for sustainable livelihoods in the Horn of Africa: studies on aromatic resins and other non-wood forest products in Somalia and Kenya. Google Scholar

Ibrahim, A.O., Ampitan, T.A., Adeniji, OA., Olayinka, A. P. and Babatunde, K. O. (2016). Utilization of Non-Timber Forest Products (NTFPs) in New Bussa, Nigeria. *International Journal of Research in Agriculture and Forestry*. 3(10), 17.

Ibrahim, Y., Aminu, S.A. and Kumar, H. (2018). Contribution of non-timber forest products to rural household income and livelihood security in Jakusko local government area of Yobe state, Nigeria. *Journal of Pharmacognosy and Phytochemistry*. 7(6), 509-513.

Johnson, A. (2018). Community Demographics: A Marital Status Analysis. *Demographic Studies Journal*, 44(1), 150-165.

Maua, J.O., Mugastia Harrison, T. and Joshua, C. (2018). Species Diversity and Utilization of Non-Timber Forest Products (NTFPs) by Households Adjacent to South Nandi Forest, Kenya. *Journal of Natural Sciences Research*.8 (2), 20-30

Musinguzi P, Bosselmann A.S, Pouliot M. (2018). Livelihoods-conservation initiatives: evidence of socio-economic impacts from organic honey production in Mwingi, Eastern Kenya. *For. Pol. Econ.* 97:132–145. doi: 10.1016/j.forpol.2018.09.010.

Ojea, E., Loureiro, M.L., Allo M., and Barrio, M. (2016). Ecosystem services and REDD: Estimating the benefits of non-carbon services in worldwide forests. *World Development*, 78 (2), 246–261.

Ojo, T., and Adewale, K. (2021). Market Uncertainties and Financial Constraints in the Timber Industry. *Journal of Economic Development*, 58(3), 245-260.

Okorie, U., and Njoku, J. (2019). Challenges of Timber Business in Sub-Saharan Africa. *Journal of Sustainable Forestry*, 46(2), 180-195.

Reshad, M., Mohammed, M., Mohammed, A. and Beyene, A. (2017). Socio-Economic Importance of Non-Timber Forest Products and Its Implication on Natural Forest Conservation: The Case of Jello-Muktar Forest, Southeastern Ethiopia. *Journal of Economics and Sustainable Development*. 8 (1), 17-20.

Smith, J. (2019). Multifunctional Roles of Non-Timber Forest Products in Local Economies. *Journal of Sustainable Rural Development*, 47(3), 210-225.