



ANALYSIS OF GROUNDNUT MARKETING IN LAFIA LOCAL GOVERNMENT AREA OF NASARAWA STATE, NIGERIA

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ABSTRACT

The study examined groundnut marketing in Lafia Local Government Area (LGA) of Nasarawa State. A multi stage sampling procedure was used for the study. Data were collected using structured questionnaire and analysed using descriptive statistics, costs-and-returns analysis, marketing margin analysis, and OLS regression were employed. Female traders dominated (66.3%), with a mean age of 34 years and six years of marketing experience. The average marketing margin was ₦404.38 per unit (12.31%), net profit per marketer was ₦70,892.25, and return on investment stood at 14.55%. OLS results showed that quantity purchased ($\beta = 0.612$, $p < 0.01$), marketing experience ($\beta = 0.183$, $p < 0.05$), and cooperative membership ($\beta = 0.147$, $p < 0.05$) were significant positive determinants of net profit, while transportation cost exerted a significant negative effect ($\beta = -0.214$, $p < 0.01$). It is concluded that groundnut marketing in Lafia LGA is a profitable and predominantly female livelihood enterprise, with volume of purchases, marketing experience, and cooperative membership as the key drivers of profitability, while transportation cost and storage inadequacy remain critical constraints to market efficiency. The study recommends targeted investment in storage infrastructure, road rehabilitation, and cooperative strengthening to enhance market efficiency and marketer welfare.

Keywords: Determinants, Profit, Groundnut, Marketing, Margin, OLS

INTRODUCTION

Groundnut (*Arachis hypogaea* L.) ranks third among the world's oilseed crops and contributes substantially to the food security and income of smallholder households across sub-Saharan Africa (FAO, 2022). With approximately 48–50% oil and 26–28% protein content, the crop is nutritionally valued by both rural and urban consumers (Mukhtar, 2019). Nigeria accounts for roughly 10% of global production, 39% of the African total, and about 51% of West African output, making it the dominant groundnut-producing nation in the sub-region (Audu *et al.*, 2020). Annual unshelled groundnut production in the country is estimated at approximately 2.6 million metric tons from some 2.5 million hectares, with cultivation concentrated in northern states including Nasarawa, Kano, Katsina, and Niger (Ajegena *et al.*, 2022). The marketing system through which groundnuts move from producers to final consumers plays a critical role in determining the welfare returns available to value chain participants. Where marketing channels function efficiently, traders earn reasonable margins, price signals flow reliably between production and consumption zones, and post-harvest losses are minimised. In practice, however, the groundnut marketing environment across much of northern Nigeria is undermined by inadequate storage infrastructure, volatile prices, poor rural road networks, limited access to formal credit, and the dominance of intermediaries who compress margins available to smallholder traders (Oluranti *et al.*, 2020; Afolabi and Ogunniyi, 2022; Bako *et al.*, 2021).

These structural weaknesses are particularly pronounced in Lafia LGA of Nasarawa State, where groundnut marketing constitutes an important livelihood activity yet has received limited empirical attention at the local market level. Ajegena *et al.* (2022) analysed marketing efficiency across Nasarawa State but did not disaggregate findings to the LGA level or model the determinants of individual marketer profitability. Audu *et al.* (2020) focused on production economics in Lafia rather than the downstream marketing dimension. The absence of current, locality-specific evidence on profitability and its drivers makes it difficult for extension services, credit institutions, and development agencies to design targeted support for groundnut traders in the area. This study was therefore conducted to fill that gap. The specific objectives were to: (i) describe the socio-economic profile of groundnut



marketers; (ii) assess enterprise profitability; (iii) estimate marketing margins; and (iv) identify the socio-economic and operational determinants of net profit. The null hypothesis tested was that socio-economic and operational characteristics jointly exert no significant effect on the net profit of groundnut marketers in Lafia LGA.

METHODOLOGY

The Study Area

The study was conducted in Lafia LGA of Nasarawa State, north-central Nigeria, situated between longitudes 8°31'E–9°33'E and latitude 9°33'N. The LGA covers approximately 298,000 km² and had a projected population of 330,712 in 2006 (NPC, 2006), projected to approximately 538,579 by 2025 at an annual growth rate of 2.6% for Nasarawa State (NPC, 2006; NPopC, 2023). A bimodal wet season (April–October) delivers mean annual rainfall of 127–154 mm. Mean temperature is approximately 26.7°C and relative humidity ranges between 75% and 87% (NIMET, 2021). Four high-volume markets, Modern Market, Neighbourhood Market, Koro Market, and Thursday Market, serve as the principal groundnut trading nodes in the metropolitan area. Lafia, the state capital of Nasarawa State, serves as the commercial and administrative hub of the LGA and functions as a major convergence point for agricultural produce from surrounding rural communities. The LGA is predominantly agrarian, with smallholder farming and petty agricultural commodity trading constituting the principal livelihood activities of a large segment of the population. Groundnut cultivation is widely practiced across the LGA's fadama lowlands and upland areas, generating a consistent marketable surplus that flows into the identified market nodes. The proximity of Lafia to major inter-state transport routes connecting Abuja, Keffi, and the Benue River Basin facilitates both inflow of buyers and outflow of commodity to distant markets, making the LGA an important node in the regional groundnut value chain. Access to these markets, however, is constrained by the condition of feeder roads linking rural production zones to urban trading centres, a structural challenge that has been documented as a recurring impediment to marketing efficiency in north-central Nigeria (Bako *et al.*, 2021).

Sampling Technique and Sample Size

A multi-stage sampling procedure was adopted. In the first stage, the four major markets were purposively selected based on active groundnut trading. Market officials assisted in listing all active groundnut sellers at each site. In the final stage, respondents were selected from each market using proportionate random sampling based on the enumerated sampling frame provided by market officials. The number of sellers drawn from each market was proportional to the total number of active groundnut traders registered at that site: Modern Market (n = 25), Neighbourhood Market (n = 22), Koro Market (n = 18), and Thursday Market (n = 15), yielding a total sample of 80 respondents. Proportionate allocation was adopted in preference to equal allocation in order to ensure that markets with larger trading populations contributed more observations, thereby preserving the representativeness of the overall sample relative to the true market-level distribution of traders. This stratified proportionate approach is consistent with the procedures recommended for agricultural marketing surveys characterised by unequal stratum sizes (Bako *et al.*, 2021; Ajegena *et al.*, 2022).

Method of Data Collection

Primary data were collected using a structured, pre-tested questionnaire administered by trained enumerators during the 2025 main marketing season. The instrument captured socio-economic characteristics, purchase and selling prices, marketing expenditures, revenues, and perceived constraints.

Method of Data Analysis

Data collected from the field survey were analysed using both descriptive and inferential statistical methods. Descriptive statistics including frequencies, percentages, and means were used to summarise the socio-economic characteristics of respondents. Quantitative enterprise performance indicators were derived through costs-and-returns analysis and marketing margin analysis. Ordinary Least Squares (OLS) regression was employed to model the determinants of marketer profitability. The analytical procedures adopted are detailed below.



Model Specification and Data Analysis

Costs and returns analysis

Profitability was evaluated using standard enterprise budgeting (Olukosi and Isitor, 2017):

$$GM = TR - TVC \dots (1); \pi = TR - (TVC + TFC) \dots (2); ROI = (\pi/TC) \times 100 \dots (3)$$

where GM = gross margin, TR = total revenue, TVC = total variable cost, TFC = total fixed cost, TC = total cost, π = net profit, and ROI = return on investment.

Marketing margin analysis

Following Bako *et al.* (2021):

$$MM = Ps - Pp \dots (4); PMM = (MM/Ps) \times 100 \dots (5)$$

where MM = absolute marketing margin, Ps = selling price, Pp = purchase price, and PMM = percentage marketing margin.

OLS regression model for determinants of net profit

To identify drivers of marketer profitability, the following OLS model was estimated:

$$\pi = \beta_0 + \beta_1 QTY + \beta_2 EXP + \beta_3 EDU + \beta_4 COOP + \beta_5 TC + \beta_6 MKT + \varepsilon \dots (6)$$

where π = monthly net profit (₦); QTY = monthly quantity purchased (kg); EXP = years of marketing experience (Years); EDU = years of formal schooling; COOP = cooperative membership (1 = member, 0 = non-member); TC = monthly transportation cost (₦); MKT = market dummy (Modern Market as reference); β_0 = intercept; β_1 – β_6 = partial slope coefficients; ε = error term $\sim N(0, \sigma^2)$. QTY, EXP, EDU, and COOP were expected to carry positive signs, reflecting economies of scale and human capital effects (Adeoye *et al.*, 2021; Aliyu *et al.*, 2021). TC was expected to be negative, since haulage expenditure directly compresses the margin retained by the marketer (Ogunniyi *et al.*, 2022). Variance inflation factors (VIF) were computed to screen for multicollinearity, and the Breusch-Pagan test was applied to check for heteroscedasticity. Data were analysed with SPSS version 26 and Microsoft Excel.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Respondents

The age distribution showed that 78.8% of respondents were between 31 and 40 years (mean = 34 years), confirming the enterprise attracts individuals within their productive capacity. A comparable mean age of 35 years was recorded by Bako *et al.* (2021) in Niger State, while Ajegena *et al.* (2022) found 42 years in Nasarawa State; differences likely reflect variations in market maturity and entry barriers across locations. Female marketers constituted 66.3% of the sample, consistent with the female-dominated character of agricultural commodity trading in northern Nigeria documented by Oluranti *et al.* (2020) and Audu *et al.* (2020). Most respondents were married (77.5%) and had household sizes of four to six persons, reflecting the role of groundnut marketing in supporting multi-member family budgets.

Formal education was generally low: only 3.8% had tertiary qualifications, while 42.5% had primary education only, mirroring findings by Augustin *et al.* (2024) for Adamawa State. Low schooling constrains access to market information, digital platforms, and formal credit. Mean marketing experience was six years, and only 35% belonged to cooperatives. The absence of associational support limits collective bargaining and group-based credit, as emphasised by Akinyele (2021). Eight in ten respondents reported that middlemen significantly influence their price-setting capacity, corroborating the intermediary dominance documented by Ogunniyi *et al.* (2022) across Nigerian groundnut markets.



Table 1. Distribution of Respondents based on the Socio-economic Characteristics (n = 80)

Variable	Category	Frequency	(%)	Mean
Age (years)	20–30	15	18.8	34
	31–40	63	78.8	
	Above 40	2	2.4	
Gender	Female	53	66.3	
	Male	27	33.7	
Marital status	Single	4	5.0	
	Married	62	77.5	
	Divorced/Widowed	14	17.5	
Household size	Below 4	9	11.3	5
	4–6	56	70.0	
	Above 6	15	18.7	
Education	No formal education	14	17.4	
	Primary	34	42.5	
	Secondary	29	36.3	
	Tertiary	3	3.8	
Experience (years)	< 5	30	37.2	6
	5–7	25	31.3	
	8–10	23	28.9	
	> 10	2	2.6	
Occupation	Groundnut marketing only	28	35.0	
	Other trading	50	62.5	
Cooperative member	Yes	28	35.0	
	No	52	65.0	
Record keeping	Yes	22	27.5	
	No	58	72.5	
Middlemen influence	Reported	64	80.0	
	Not reported	16	20.0	

Source: Field survey data, 2025.

Marketing Margin and Profitability

The purchase price of ₦2,879.38 against a selling price of ₦3,283.75 yielded an absolute margin of ₦404.38 and a percentage margin of 12.31%, confirming that groundnut marketing generates positive returns in the study area. Monthly revenue averaged ₦558,201.30, with the cost of stock (₦487,106.30) accounting for 99.95% of total variable expenditure. Transportation (₦133.25) and storage (₦69.50) were comparatively marginal outflows. Net profit was ₦70,892.25, with an ROI of 14.55%, meaning every ₦100 invested returned ₦114.55. The margin of 12.31% is broadly consistent with findings by Umar *et al.* (2020) in Borno State and Ajegena *et al.* (2022) in Nasarawa State. The somewhat modest magnitude relative to earlier studies reflects the cost-pressure environment following fuel subsidy removal, which has raised haulage and general operating costs, an effect also documented by Afolabi and Ogunniyi (2022).



Table 2. Distribution of Respondents According to Marketing Margin Analysis (₦ per unit)

Parameter	Value (₦)	Percentage (%)
Average purchase price	2,879.38	,
Average selling price	3,283.75	,
Absolute marketing margin	404.38	12.31

Note. Source: Field survey data, 2025.

Table 3. Enterprise Budget for Groundnut Marketing per Marketer per Month (₦)

Budget Item	Amount (₦)
Average total revenue (TR)	558,201.30
Average groundnut purchase cost	487,106.30
Transportation cost	133.25
Storage and handling	69.50
Total variable cost (TVC)	487,309.05
Total fixed cost (TFC)	0.00
Total cost (TC)	487,309.05
Gross margin (GM = TR – TVC)	70,892.25
Net profit ($\pi = TR - TC$)	70,892.25
Return on investment (ROI)	14.55%

Source: Field survey data, 2025.

Constraints to Groundnut Marketing

Storage inadequacy topped the constraint hierarchy (17.9%), restricting the ability of traders to hold stock during harvest gluts and sell when prices recover. This is consistent with Bako *et al.* (2021) and Ilesanmi *et al.* (2024), who identified storage deficits as binding constraints for agricultural commodity marketers in Nigeria. Price instability (15.1%), poor roads (14.3%), and high transportation costs (14.1%) collectively accounted for a further 43.5% of constraint mentions, highlighting physical infrastructure as the dominant systemic bottleneck. Inadequate market information (13.7%) and capital scarcity (7.1%) reflect the institutional gaps that prevent marketers from making informed trading decisions and scaling their operations, as noted by Aliyu *et al.* (2021).

Table 4. Distribution of Respondents based on the Constraints to Groundnut Marketing

Constraint	Frequency*	(%)	Rank
Lack of storage facilities	65	17.9	1st
Price fluctuation	55	15.1	2nd
Poor road network	52	14.3	3rd
High transportation cost	51	14.1	4th
Inadequate market information	50	13.7	5th
Unfavourable government policies	47	12.9	6th
Lack of capital	26	7.1	7th
Pest and disease infestation	18	4.9	8th

Source: Field survey data, 2025. Multiple-response data; percentages are based on cumulative mentions.



Determinants of Net Profit

The OLS model was globally significant ($F(8,71) = 21.86, p < 0.001$) and accounted for 71.2% of the variation in monthly net profit ($R^2 = 0.712$; Adjusted $R^2 = 0.679$). Diagnostic statistics confirmed the reliability of estimates: the Durbin-Watson statistic of 2.04 ruled out serial correlation, the Breusch-Pagan test did not detect heteroscedasticity ($p = 0.503$), and all VIF values remained below 2.0, indicating an absence of problematic multicollinearity. These diagnostic outcomes validate the inferential use of the OLS results.

The quantity of groundnut purchased monthly (QTY) was the strongest predictor of net profit ($\beta = 0.612, p < 0.001$). This result reflects economies of scale: traders who move larger volumes spread fixed transaction costs over more units, negotiate preferential purchase prices through bulk buying, and access higher-volume consumer segments. Scale effects of a similar character have been documented by Adeoye *et al.* (2021) among rice marketers in Southwest Nigeria and by Ogunniyi *et al.* (2022) for groundnut intermediaries.

Marketing experience (EXP) was a significant positive predictor ($\beta = 0.183, p < 0.05$). Experienced traders accumulate tacit market knowledge regarding seasonal price rhythms, reliable supply sources, and profitable customer channels, which translates into better purchase timing and higher selling prices. The human capital premium to trading experience has been confirmed in the Nigerian agricultural marketing literature by Akinyele (2021) and Aliyu *et al.* (2021). Cooperative membership (COOP) likewise significantly enhanced net profit ($\beta = 0.147, p < 0.05$), consistent with the argument that group membership confers collective purchasing power, shared price information, and access to rotating credit arrangements that reduce input costs and liquidity constraints (Afolabi and Ogunniyi, 2022; Ilesanmi *et al.*, 2024).

Transportation cost (TC) exerted a significant negative effect on profitability ($\beta = -0.214, p < 0.001$). Each additional naira spent on haulage reduces the margin retained by the trader without generating a commensurate increase in selling price, directly eroding enterprise income. This finding reinforces the constraint analysis above and echoes the consistent finding in the literature that poor rural roads and high freight rates suppress marketing efficiency in Nigerian commodity chains (Bako *et al.*, 2021; Oluranti *et al.*, 2020). Educational level (EDU) was not statistically significant ($p = 0.153$), possibly because the skills that matter most in informal groundnut trading, price numeracy, network management, route knowledge, are acquired through experience rather than formal schooling at the primary and secondary levels that characterise this sample. Market-specific dummies were similarly non-significant ($p > 0.20$), indicating that, after controlling for trader-level attributes, market location alone does not determine profitability, a finding suggesting broadly comparable trading conditions across the four markets.

Table 5. Determinants of Net Profit among Groundnut Marketers in Lafia LGA

Variable	Description	B	Std. Error	t-value	Sig.	VIF
Constant (β_0)	Intercept	8,412.24	2,103.61	4.000	0.000***	,
QTY	Monthly quantity purchased (kg)	0.612	0.089	6.876	0.000***	1.42
EXP	Years of marketing experience	0.183	0.072	2.542	0.013**	1.38
EDU	Years of formal schooling	0.091	0.063	1.444	0.153ns	1.21
COOP	Cooperative membership (1=yes)	0.147	0.066	2.227	0.029**	1.18
TC	Monthly transportation cost (₦)	-0.214	0.058	-3.690	0.000***	1.35
NHB	Neighbourhood Market dummy	0.084	0.081	1.037	0.303ns	1.29
KRM	Koro Market dummy	0.098	0.078	1.256	0.213ns	1.31
THM	Thursday Market dummy	0.071	0.083	0.855	0.395ns	1.27

n = 80. R² = 0.712; Adjusted R² = 0.679; F(8,71) = 21.86, p < 0.001. Durbin-Watson = 2.04. Breusch-Pagan test: $\chi^2 = 7.32$, p = 0.503. All VIF < 2.0.

Dependent variable: Monthly net profit (₦). Reference: Modern Market. **p < 0.05; ***p < 0.001; ns = not significant.

CONCLUSION AND RECOMMENDATIONS

This study examined groundnut marketing in Lafia LGA of Nasarawa State through socio-economic profiling, enterprise budgeting, marketing margin estimation, and OLS regression analysis. Groundnut marketing was found to be a predominantly female enterprise yielding a monthly net profit of ₦70,892.25, a marketing margin of 12.31%, and an ROI of 14.55%, confirming its viability as a livelihood activity. OLS regression demonstrated that volume of purchases, marketing experience, and cooperative membership are significant positive determinants of profitability, while transportation cost is the principal negative driver. Inadequate storage facilities, price volatility, poor road infrastructure, and limited market information were the dominant operational constraints.

These findings carry clear policy implications. Government and development partners should invest in affordable community storage facilities at major market nodes to enable traders to smooth income across price cycles. Road rehabilitation linking production zones to Lafia's markets would directly reduce the transportation cost that the regression identified as the primary profit suppressor. Strengthening cooperative formation through the extension service would amplify the collective bargaining and credit access effects confirmed in the regression. Financial institutions should develop flexible, short-tenor credit products calibrated to the cash-flow cycles of groundnut marketers. A mobile-based market information service would reduce information asymmetry and curb intermediary exploitation. Future research should examine seasonal price dynamics, aflatoxin-related grading premiums, and gender-differentiated constraints within the groundnut marketing chain.

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