



ANALYSIS OF THE PERFORMANCE OF SOYBEAN MARKETING IN NIGER STATE, NIGERIA

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ABSTRACT

The study analyzed the performance of soybean marketing in Niger State, Nigeria. A multi-stage sampling techniques was used to select 388 soybean marketers categorized into producer marketers (131), marketer retailers (130) and marketer wholesalers (127). Data were collected with the aid of a structured questionnaire and analyzed using gross margin analysis, net marketing margin, profitability ratio and marketing efficiency. The market performance indicated that soyabean marketing in the study area was profitable and efficient both in pricing and operational terms with the estimated mean gross margin and market efficiency found to be ₦2,248,072 and 100.6% for the producer marketers, ₦885,532 and 46.77% for the marketer retailers and ₦3,013,076 and 44.38% for the marketer wholesalers. The study concluded that, soybean marketing is profitable and efficient in the study area. In view of the huge gap in soybean marketing training for the actors in the study area, the study therefore recommended that, the government in collaborations with Non-Governmental Organizations (NGOs) in the state should prioritize and organize periodic trainings and workshops for soybean marketers and sensitize them through marketing cooperative societies, social media platforms, radio, televisions jingles/programmes, informal family members and friends channels on how to conduct and ensure efficient performance of marketing activities.

Keywords: Analysis, Marketing, Performance, Retailers and Wholesalers

INTRODUCTION

Soybean (*Glycine max* (L) Merrill), originated from China, and belong to the family leguminosae, in the sub-family of *papilionaceae*. It is a versatile leguminous crop denoted as a “miracle crop” and mostly cultivated around the guinea savannah zones of Nigeria (Ogbanje *et al.*, 2023). Nigeria’s annual soybean production stands at 680,000mt presently, the second largest producer in Africa and, Niger State contributes over 100mt annually to that figure hence, a major producing state (Sahel Capital Partners, 2017 and Akah *et al.*, 2021). For a number of reasons, soybean is widely cultivated amongst smallholder farmers in Nigeria. Sani (2018) affirmed that, the less cultural practices and high profitability predispose smallholder farmers to its cultivation. Udeh *et al.* (2018) attributed it to increased use by human for nourishment as a high protein-rich substitute food for vegetarian diet, edible oil rich in essential amino acids, healthy omega-3 unsaturated fats and cholesterol-free and, for animals as fodder and major constituent of livestock feed. Omoigui *et al.* (2020) credited it to the incredibly versatile industrial use in providing bio-fuels: an environmentally friendly and renewable bio-diesel energy, lubricants, bioplastic and building materials.

Agricultural marketing remained a critical driver of economic development and growth when properly harnessed (Bwala and Alani, 2020). It encompasses the comprehensive process of planning, producing, processing and distribution of farm products from the farm to the final



consumer with the view to maximize profit or objective utility. Maharazu (2022) averred that, agricultural marketing covers all the supply chain operation such as harvesting, grading, processing, storage, transport and sales of agricultural commodity aimed at satisfying the farmers' needs, intermediaries and the end-users. According to Alabi *et al.* (2020), profit maximization objective underlies the motivating factor that predisposes producers and marketers of agricultural commodities all over the world to venture into the enterprise.

Agricultural marketing in Nigeria tends to be constrained by low yield which often is 1mt/ha or less which is grossly low compared to the optimum yield of 3mt/ha and the lack of markets and poor soybean prices attributed to market inefficiencies and activities of middle men (Biye *et al.*, 2018). These factors inhibit the performance of soybean marketing and discourage smallholder farmers from engaging in the enterprise. The performance of a market is a function of the profitability, net marketing margin, profitability ratio and efficiency as it relates to the structure and conduct of the market conditions by the actors (Chima *et al.*, 2022). Lelissa and Kuhil (2018) upheld that, profitability reflects the gross margin earned from the marketing process as a function of the total cost less the total variable cost; the net marketing margin depicts the profit left over after all marketing expenses have been subtracted from the selling price per unit of a product, expressed as a percentage of the final selling price; profitability ratio is a gauge that assesses the marketing venture's capability to earn a profit relative to its assets, equity and sales and; marketing efficiency refers to the measure of how much of the marketing output the venture obtains relative to the marketing input such as costs and resources.

Broadly, the study analyzed the performance of soybean marketing in Niger State, Nigeria. Specifically, the study seeks to estimate the profitability, net marketing margin, profitability ratio and marketing efficiency of soybean marketing in the study area.

MATERIALS AND METHODS

The Study Area

The study was conducted in Niger State, Nigeria. The State is located in North-Central Zone of Nigeria, between Latitude 8°20' and 11°30' North and Longitude 3°30' and 7°40' East of the equator. The state covers an estimated land area of approximately 76, 469 square kilometers and approximately 85% is arable, consists of twenty-five Local Government Area (LGA) and population of 6,782,800 people as recorded by the National Population Commission (NPC, 2023). The state experiences two distinct seasons namely; wet and dry seasons, with annual rainfall varying from 1,100mm² in the Northern and 1600mm² in the Southern part, an average daily temperature which oscillates between 23°C - 37°C. Niger State is bordered with Kebbi State to the North-West, Zamfara State to the North, Kaduna State to the North-East, Kogi State to the South-East, Kwara State to the South-West, Federal Capital Territory, Abuja to the South-East and an international border with Republic of Benin to the West as documented by the Niger State Agricultural and Mechanization Authority (NAMDA, 2018).

Sampling Techniques and Sampling Size

The population for the study comprises 12,850 registered smallholder farmers selected from eleven (11) LGAs notable for the preponderance of soybean production and marketing. The LGAs are distributed to touch the three senatorial zones A, B and C based on the guide of Niger State Agricultural and Development Program (NSADP), to draw out the sample size for the study.

A multistage sampling technique was used for the study. The first stage involved purposive selection of senatorial zones A, B and C in the study area. The second stage involved purposive

selection of four (4) LGAs each, from zones A and B respectively and, three (3) LGAs from zone C which were identified for their preponderance of soybean production and marketing in the study area. The third and final stage involved simple random selection of the 388 soybean marketers (131 producer marketers, 130 marketer retailers and 127 marketer wholesalers) using the Taro Yamane method (Yamane, 1967) and the Bowley Proportional Allocation Formula (Bowley, 1926).

Mathematically, the Taro Yamane method is expressed as;

$$n = \frac{N}{1 + N(e^2)} \quad \dots(1)$$

where;

n = Corrected sample size

N = Population size

e = Margin of error (MoE = 0.05)

Mathematically, Bowley's proportional allocation formula is expressed as;

$$n_i = n \frac{N_i}{N} \quad \dots(2)$$

where;

n_i = Sample size for the i^{th} stratum

n = Total sample size

N_i = Population for the i^{th} stratum

N = Total population

Table 1: Sample size selection plan

Senatorial Zones	LGAs	Sampling Frame	Sample Size
A	Agaie	1050	32
	Gbako	977	30
	Lapai	1020	31
	Mokwa	1503	45
	Bosso	1388	42
B	Gurara	980	30
	Munya	1200	36
	Paikoro	1100	33
	Borgu	1407	42
C	Kontagora	1205	36
	Mashegu	1020	31
Total	11	12,850	388

Source: Field Survey (2024)

Method of Data Collection

The data for the study were collected with the aid of a structured questionnaire from major soybean marketers in the study area in line with the study's objective. They soybean marketers are categorized into 3 groups; producer marketers (Who are either smallholder or large-scale producers and marketers of soybean seed), marketer retailers (Soybean marketers who deals with village agents, smallholder or large-scale farmers directly or indirectly either in the rural or urban area) and marketer wholesalers (Licensed or unlicensed marketers who buy soybean seed in large volumes, and are independent individual agents and or commissioned agents to exporters or processors). Data such as inputs, outputs of soybean in metric tonnes and prices were collected from the marketers.



Analytical Techniques

Gross margin (GM)

Gross margin analysis is one method of calculating profitability of soybean marketing. Gross margin refers to the difference between the Total Revenue (TR) and the Total Variable Cost (TVC). And the model is expressed as;

$$GM = TR - TVC \quad \dots(3)$$

Where;

GM = Gross Margin (₦)

TR = Total Revenue (₦)

TVC = Total Variable Cost (₦)

Net Marketing Margin (NMM)

The Net Marketing Margin refers to the gross margin less the total fixed cost of marketing. This technique gives a closer approximation of performance than the gross margin and the model is expressed as;

$$NMM = GM - TFC \quad \dots(4)$$

Where;

NMM = Net Marketing Margin (₦)

GM = Gross Margin (₦)

TFC = Total Fixed Cost (₦)

Profitability Ratio (Return on Sale) (PI)

Profitability ratio refers to the ratio of the Net Marketing Margin (NMM) and the Total Revenue (TR) and the model is expressed as;

$$PI = \frac{NMM}{TR} \quad \dots(5)$$

Where;

PI = Profitability Ratio

NMM = Net Marketing Margin (₦)

TR = Total Revenue (₦)

Marketing Efficiency (ME)

Marketing efficiency refers to the difference between Total Revenue (TR) and Total Cost (TC) divided by Total Cost (TC) incurred and the model is expressed as;

$$ME = \frac{TR - TC}{TC} \times 100 \quad \dots(6)$$

Where;

ME = Marketing Efficiency

TR = Total revenue from sales (₦)

TC = Total cost total cost incurred (₦)

RESULTS AND DISCUSSION

Profitability Analysis

The estimated profitability analysis of the categories of soybean marketers in the study area is presented in Table 3. The mean total revenue (TR) from sales of soybean for the producer marketers who marketed a total of 9,550 bags of soybean (approximately 73 bags per producer marketers weighted 75kg/bag), the marketer retailers who marketed total of 6,141 bags of soybean (approximately 47 bags per marketer retailers weighted 75kg/bag) and the marketer wholesalers who marketed a total of 18,686 bags of soybean (approximately 147 bags per marketer wholesalers weighted 75kg/bag) were estimated to be ₦4,482,592, ₦2,778,973 and ₦9,802,526 respectively and the mean total variable cost (TVC) incurred during the marketing process for producer marketers, marketer retailers and marketer wholesalers were calculated to be ₦2,234,520, ₦1,893,441 and ₦6,789,450 respectively. Consequently, the gross margin (GM) as calculated for the producer marketers, marketer retailers and marketer wholesalers were found to be ₦2,248,072 (₦17,161 per producer marketers), ₦885,532 (₦6,812 per marketer retailers) and ₦3,013,076 (₦23,275 per marketer wholesalers) respectively. Based on the analysis of the gross margin, it can be inferred that soybean marketing is profitable in the study area. The finding is in line with the study conducted by (Udeh *et al.*, 2018) reported profitable soybean marketing amongst marketers in Benue State Nigeria.

Net Marketing Margin

Furthermore, the net marketing margin (NMM) for the producer marketers, marketer retailers and marketer wholesalers were estimated to be ₦1,785,072, ₦620,732 and ₦1,215,325 respectively. The estimated figures reflect the actual profit left over after all marketing expenses had been deducted from the selling price per unit of a product. The estimated figures showed that soybean marketing is profitable in the study area. The result conformed with the survey by Alabi *et al.* (2020) who documented profitable soybean venture amongst marketers in Abuja, Nigeria.

Profitability Ratio

Additionally, the profitability ratio for the producer marketers, marketer retailers and marketer wholesalers were calculated to be 0.40, 0.22 and 0.12 respectively, implying that a profit of ₦40, ₦22 and ₦12 was realized for every ₦100 invested in soybean marketing by the categories of marketers showing soybean marketing is lucrative in the study area.

Marketing Efficiency

Finally, the marketing efficiency of the producer marketers was found to be 100.6%, the marketer retailers and marketer wholesalers had a marketing efficiency of 46.77% and 44.38%. The result showed soybean marketing is efficient in the study area although, the producer marketers were the most efficient both in pricing and operational terms in the marketing of their soybean amongst the categories listed in the study. The result aligned with Maharazu (2022) who found soybean marketing to be profitable and efficient with over 100% in Birnin Gwari market (188%), Pambegua

markets (179%), Unguwan Rimi market (219%) and Gidan Waya market (224%) markets all in Kaduna State.

Table 3: Performance of Soyabeans marketers in the study area

Variable (388)	Producer Marketer (n = 131)	Marketer Retailer (n = 130)	Marketer Wholesaler (n = 127)
Total Revenue (TR)			
Minimum	120,000	1,280	312,000
Maximum	37,500,000	56,000,000	49,000,000
Mean	4,482,592	2,778,973	9,802,526
Standard Deviation	7651.9	1474.6	6231
Total Cost (TC)			
Minimum	115,600	133,620	31,200
Maximum	5,265,000	7,230,000	4,320,000
Mean	2,234,520	1,893,441	6,789,450
Standard Deviation	3410.5	7508.8	7423.1
Gross Margin (GM)	2,248,072	885,532	3,013,076
GM/Marketer	17,161	6,812	23,725
Total Fixed Cost (TFC)			
Rentage	463,000	264,800	1,791,251
Interest	0	0	6,500
Total	463,000	264,800	1,797,751
Net Marketing Margin	1,785,072	620,732	1,215,325
Profitability Ratio	0.40	0.22	0.12
Marketing Efficiency (ME)	100.61	46.77	44.38

Source: Field Survey (2024)

CONCLUSION AND RECOMMENDATIONS

The findings of the study showed that soyabean marketing in the study area is relatively profitable and efficient in both pricing and operational terms, indicating a high future prospect for soybean marketing in the state. The study therefore recommended that, the government in collaborations with Non-Governmental Organizations (NGOs) in the state should prioritize and organize periodic trainings and workshops for soybean marketers and sensitize them through marketing cooperative societies, social media platforms, radio, televisions jingles/programmes, informal family members and friends' channels on how to conduct and ensure efficient performance of soybean marketing activities.

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