



**ANALYSIS OF MARKET MARGINS AND MARKETING EFFICIENCY IN THE
SOYBEAN SUPPLY CHAIN: EVIDENCE FROM BARUTEEN LGA, KWARA STATE**

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Abstract

Soyabean is produced mainly in small holder farms in Baruteen LGA of Kwara State, but the soybean marketers in Baruteen are faced with a lot of challenges ranging from high transaction costs, fluctuations in soybeans prices, limited storage capacity, access to credit, down to inadequate distribution networks. This making profit maximization difficult. This study examines the market margin and efficiency of wholesaler soybean supply chain in Baruteen, Nigeria. Data for study were obtained from primary sources with the aid of a well-structured questionnaire. The study used cost-benefit analysis to estimate market margin and marketing efficiency of soybeans. Our results show that an average of 17.5bags were sold by marketers at every market day with average profit margin per marketer of ₦5,188, and a market margin of 33.14%. However, the marketing efficiency of soybean in the area is relatively low, at 15.37%. These findings suggest that while the sales of soybeans are profitable in Baruteen, there are inefficiencies in the marketing channel that need to be addressed in order to improve the performance of the soybean marketers. The study recommends strategies to improve marketing efficiency, such as reducing transaction costs, improving market access, and enhancing the productivity of soybean marketers.

Keywords: *Soybean marketing, Market Margin, Efficiency, Supply chain, Wholesale*

JEL Code: Q13, D40, L14

INTRODUCTION

Nigeria's agricultural landscape is characterized by the cultivation of diverse crops, each playing a pivotal role in ensuring food security and economic development (Ojeleye, 2018). Among these, soybeans (*Glycine max*) stand out as a vital crop, serving as an essential source of protein, oil, and income for countless smallholder farmers (Tewari et al., 2016). With Nigeria ranking among the top 20 global producers of soybeans, major production hubs have emerged in states like Benue, Kaduna, Kwara, and Adamawa (Khojely et al., 2018; Agada, 2014). Kwara State, nestled in the North-Central region, has emerged as a significant contributor to the national soybean output, with Baruteen Local Government Area (LGA) being among the leading production hubs (Olorunsanya et al., 2009).

While soybean cultivation holds immense importance for food security and rural livelihoods in Nigeria, the efficiency of the marketing system plays a crucial role in ensuring fair returns for farmers and affordable prices for consumers (Brown et al., 2020; Kalita, 2017). Marketing efficiency refers to the ratio of output to input in the marketing process, with output measured in terms of sales, market share, or other marketing objectives, and input measured in terms of marketing expenses. (Kotler et al., 2009). An efficient marketing system ensures that consumer prices are not disproportionately higher than producer prices after accounting for necessary marketing services (Chen, 2014).

Marketing of soybean in Baruteen LGA is plagued with many challenges such as high transaction costs, fluctuations in soybeans prices, limited storage capacity, access to credit and inadequate distribution networks. These problems lead to situations that either tends to increase costs, challenges in predicting and adjusting to prices, high post-harvest loss, cashflow constraints, and delays and increased cost which reduces the market margin. In spite of the extensive body of research examining the marketing margin and efficiency of soybeans in Nigeria, the marketing efficiency of soybean in Baruteen remains understudied, with little or no research on profitability and marketing efficiency, highlighting a need for investigation into this critical aspect of the soybean value chain. Thus, this study seeks to fill the literature gap by conducting a comprehensive analysis of the market margins and marketing efficiency within the soybean supply chain of Baruteen LGA, Kwara State. The specific objectives are:

- i. To estimate the marketing margins associated with soyabean marketing in Baruteen LGA, Kwara State
- ii. To analyze marketing efficiency of soyabeans supply chain in the study area

LITERATURE REVIEW

In soybeans marketing the concepts of Market Margin cannot be overemphasized. This represents the differences between the selling price and the purchase price of soybeans. This is defined as the difference between the selling price and the purchase price of a security, commodity, or asset" (Investopedia, 2024). In the same vein it is the amount added to the cost of a product or service by a seller to determine its selling price (Business Dictionary, 2024). While Market Efficiency is seen as a scenario in a market where prices reflect all available information, and no trader can consistently achieve returns in excess of the market's average (Investopedia, 2024) and also a market that is fair and unbiased, where prices reflect all publicly available information (Corporate Finance Institute, 2024).

Empirically, several studies have investigated the profitability and efficiency of soybean production and marketing in Nigeria. Ogbanje (2023) found that soybean production is profitable, with a higher gross margin and return on investment per hectare in the treatment group compared to the control group. Udeh et al. (2018) reported marketing margins for soybeans and identified challenges faced by soybean marketers, including inadequate capital and limited access to credit. Ukaoha et al. (2022) found that soybean production is profitable, but farmers achieved only 52% profit efficiency, indicating room for improvement. Biye et al. (2018) reported a marketing efficiency of 74.19% and identified obstacles faced by soybean marketers, including limited access to capital and seasonal scarcity of soybeans. Ugbabe et al. (2017) assessed the profitability and technical efficiency of soybean production in Northern Nigeria and found that the highest profit was earned by soybean-producing households in Dawakin-Tofa LGA.

METHODOLOGY

Survey research design was used in collecting data for the study. Structured questionnaire was administered to a sample size of 110 respondents. A cross sectional data on soybean marketing collected includes production and yield data, market prices, demographic data on the market participants etc. This study used a random sampling technique to select soybean marketers from the list provided by the Soybean Marketing Association in Baruteen LGA. To ensure representation from different markets, five wards notable for soybean marketing were purposely selected: Gure/Gwassoro, Okuta, Ilesha, Gwanara, and Yashkira. From each of these wards, two markets were selected, and a proportionate sampling of 50% was used to select respondents (marketers) from these markets. This resulted in a total sample size of 110 soybean marketers. The sample frame for this study consisted of the registered soybean marketers on the list provided by the Soybean Marketing Association in Baruteen LGA. A structured questionnaire was administered to the selected marketers to gather data on their demographics, marketing practices, and activities of the soybean market. By using a random sampling technique and proportionate sampling, this study aimed to ensure a representative sample of soybean marketers in Baruteen LGA, and to gather reliable data on their experiences and marketing activities.

Data Analysis

The marketing margin analysis was employed to estimate the margins associated with soybean marketing at wholesaler level of the supply chain. The marketing efficiency ratio was calculated to assess the marketing efficiency of the wholesale soybean supply chain.

Marketing Margin Analysis

The marketing margin is the difference between the selling price and the purchase price of a commodity at different levels of the supply chain. It represents the cost incurred by market participants in facilitating the movement of the commodity from producers to consumers (Wohlgenant, 2001). The marketing margin was computed using the following formula:

$$MM = \frac{sp - pp}{sp} \times 100 \dots \dots \dots 1$$

Where:

MM = Marketing Margin; SP = Selling Price; PP = Purchase Price

Marketing Efficiency Ratio

Shepherd's Marketing Efficiency (SME) is a metric used to evaluate the effectiveness of marketing efforts in generating revenue. It is calculated by dividing gross profit by marketing expenditure, expressed as a percentage (Shepherd, 1964). This metric helps businesses assess the return on investment (ROI) of their marketing strategies and optimize resource allocation (Kotler, 2003).

$$MER = \frac{\Delta R}{\Delta M} \times 100 \dots \dots \dots 2$$

Where:

MER = Marketing Efficiency Ratio (expressed as a percentage), ΔR = Revenue generated from marketing activities, ΔM = Total Marketing Costs

A higher SME indicates better marketing efficiency, while a lower SME suggests room for improvement (Kotler, 2003). An SME < 100%: Inefficient marketing efforts, SME = 100%: Break-even point, SME > 100%: Efficient marketing efforts.

RESULTS AND DISCUSSIONS

Market Margin of Soyabeans

The market margin analysis revealed that soybean marketers in the study area enjoy a moderate level of profitability, with a market margin of 15.37%. This suggests that for every ₦1 of soybean sold, the marketer retains a profit of ₦0.154. The moderate market margin (15.37%) suggests that soybean marketing is a viable business, which can attract more entrepreneurs and create employment opportunities in the agricultural sector. This finding is consistent with previous studies, such as Udeh et al. (2018), who reported low marketing margins for soybean marketing in Benue State, Nigeria. The average profit margin per bag of soybean was ₦5,188, with a total cost of ₦36,812.27 per bag and a selling price of ₦42,000 per bag. This indicates that marketers can cover their costs and earn a reasonable profit, suggesting that soybean marketing is a viable business in the study area. The profitability of soybean marketing may also lead to improved livelihoods for farmers and marketers, contributing to poverty reduction and economic growth.

The study's findings also support the notion that marketing margins can vary significantly among traders, as reported by Achike and Anzaku (2010) in their study on benniseed traders in Nasarawa state, Nigeria. This highlights the importance of understanding the market dynamics and identifying opportunities for improvement in the soybean marketing chain. Practically, Marketers may need to explore strategies to reduce costs, improve product quality, and enhance market access to increase their market margin. The result from market margin analysis is presented in Table 1.

Table 1 Market Margin of Soybeans in the Baruteen LGA

| Item | Total amount (₦/bag) |
|---------------------------------|----------------------|
| A. Cost Component/bag | |
| Cost of Storage | 99.55 |
| Cost of loading& off loading | 96.50 |
| Cost of bagging | 70.77 |
| Transportation | 10002.72 |
| Farm gate price (fp) | 35,545.45 |
| Total cost/bag | 36,812.27 |
| B. Revenue/bag | |
| Selling price (sp) | 42,000 |
| C. Profitability/bag | |
| Profit margin (B-A) | 5,188 |
| Marketing Margin (%) | 15.37 |
| $\frac{sp-fp}{sp} \times 100$ | |
| Average sales/market day | 17.5 |

Source: Field survey 2023

Market Efficiency of Soybeans

This refers to the effectiveness of marketing efforts in achieving the desired objectives of the soybean's marketer, i.e. higher sales, and revenue. The marketing efficiency ratio of 33.14% was obtained. This indicates that for every naira spent on marketing, the return on investment (ROI) is 33 kobo. This suggests that the marketing efforts of soybean marketers are generating a decent return, but there is room for improvement. Which in turn suggests potential for increased revenue and profitability for soybean marketers. The marketing efficiency ratio also indicates that for every naira spent on marketing generates a return of 33 kobo impliedly that marketers are efficiently utilizing their resources but may need to explore new strategies to maximize their ROI. This could involve diversifying their marketing channels, enhancing product quality, or improving market access. The efficient resource utilization may lead to increased employment opportunities and improved livelihoods for farmers and marketers. This work is in contrast with Biye et al.'s (2018) finding of a 74.19% marketing efficiency ratio in Gombe State which might suggests that there may be regional differences in marketing strategies and resource allocation. This highlights the need for soybean marketers to assess and adapt their marketing approaches to optimize their ROI. Table 2 showed the results from marketing efficiency of soybeans obtained in the study area.

Table 2 Market Efficiency of Soybean in Baruteen LGA

| | |
|---|-----------------|
| Profit Margin/bag = B-A (from Table 1) | 5,188 |
| Revenue/price/bag | 42,000 |
| Marketing costs/bag | 1,267.27 |
| Marketing Efficiency = $\frac{\text{revenue}}{\text{cost of marketing}} \times 100$ | 33.14 |

Source: Field survey, 2023

CONCLUSION AND RECOMMENDATIONS

This study examines the market margin and efficiency of soybean marketing in Baruteen, Nigeria. The findings indicate a substantial market margin of 33.14%, highlighting the potential for profitability in soybean marketing. However, the marketing efficiency of soybean in the region was found to be relatively low, at 15.37%, suggesting the presence of inefficiencies in the marketing channel. The study identified three primary factors contributing to the low marketing efficiency: high transaction costs, poor market access, and inefficient marketing channels. These findings suggest that soybean marketers in Baruteen, Nigeria, face significant challenges in optimizing their marketing strategies, leading to reduced profitability and efficiency.

The results of this study have important implications for stakeholders in the agricultural sector, including soybean marketers, policymakers, and other industry players. By addressing the identified inefficiencies and implementing strategies to enhance marketing efficiency, soybean marketers can improve their profit margins, contribute to the growth of the agricultural sector, and enhance the overall performance of the marketing channel. Thus, the study recommends that:

- i. The government and private sector should invest in essential infrastructure, such as roads, storage facilities, and market buildings, to enhance market access and reduce transaction costs.

- ii. Soybean marketers should adopt efficient marketing strategies, such as direct sales to processors, to minimize costs and maximize profits.
- iii. Farmer-marketer organizations should be empowered through capacity-building programs and training to enhance their bargaining power and marketing efficiency.

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