DETERMINANTS OF PROFITABILITY IN SOYBEAN MARKETING IN BARUTEEN LGA, KWARA STATE

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Abstract

Soybean is an important crop mostly produced in the middle belt zone in Nigeria. Baruteen LGA is one of the largest producers of soybeans in Kwara State. Moreso, soybeans marketing in Baruteen LGA faces numerous challenges that could significantly impact on its profitability; hence it became imperative to carry out the study. The study analyses the determinants of profitability in soybean marketing, it specifically describes the socioeconomic characteristics of soybean marketers and identifies the key factors influencing profitability. Data were collected from 110 soybean marketers through structured questionnaires and analysed using descriptive statistics and multiple regression analysis. The findings revealed that majority of the marketers (82.7%) were male with mean age of 44years and an average household size of 9 persons. Equally 56.4% had secondary education, with 6-10 years of marketing experience (51.8%). While the result of the multiple regression analysis showed that age and market experience of the respondents (marketers) are positively significant, while labour and transport are negative but significant. Also, R^2 was 0.764, meaning 76.4% of the variables is well represented. Thus, the study concluded that Soyabeans marketing is done predominantly by men of moderate age with high level of marketing experience. Age, marketing experience, transportation and labour had significant effect on the level of profit.

Keywords: Baruteen LG, Marketing, Profitability, Soybean

Introduction

Soybean (*Glycine max*) has emerged as a crop of immense significance in Nigeria, particularly in the Northern region, including the Baruteen Local Government Area (LGA) of Kwara State (Khojely, et al., 2018; Sanginga, 2003). Renowned for its high protein content and versatility in food, feed, and industrial applications, soybean plays a vital role in the livelihoods of smallholder farmers and traders in the region (Modgil, et al., 2020). The marketing of soybeans is a crucial component of the crop's value chain, serving as the essential link between producers and consumers, and determining the profitability and long-term viability of the entire soybean industry (Cruz, et al., 2014).

However, soybean marketers in Baruteen LGA face numerous challenges that can significantly impact their profitability. These challenges include price instability, inadequate storage infrastructure, transportation bottlenecks, and limited access to market intelligence (Iwuchukwu, 2018). These constraints have also been identified in other regions of Nigeria

and countries like Ethiopia (Achamyelh, 2020; Biam, 2013). Price instability can lead to unpredictable incomes, while insufficient storage facilities often result in post-harvest losses. Transportation challenges, worsened by poor road networks, increase operational costs, and reduce market efficiency. Also, limited access to market information hinders marketers' ability to make informed decisions, affecting their competitive edge and profitability.

To address these challenges and enhance the profitability of soybean marketing in Baruteen LGA, it is crucial to gain a comprehensive understanding of the socioeconomic profiles of the marketers and the factors influencing their ability to generate sustainable returns (Czinkota, et al., 2021). While previous studies (Lawrence et al., 2023; Aifa, 2023; Delele, et al. ,2022, Alabi et al., 2020; Udeh et al., 2018) have provided valuable insights into soybean production, marketing, and profitability in other regions of Nigeria and countries, there is a need for region-specific research that considers the unique socioeconomic and environmental factors influencing soybean marketing in Baruteen LGA.
This study aims to bridge the research gap by specifically:

i. providing a detailed characterization of the socioeconomic attributes of soybean marketers in Baruteen LGA of Kwara State, and
ii. determining the factors influencing the profitability of soybean marketing in the study area.

Literature Review

Lawrence et al. (2023) examined soybean production performance in Kwara State, reporting a net farm income of thirty-seven thousand seven hundred- and fifty-three-naira ninety-two kobo (₦37753.92k), an average rate of return on investment of 1.49, and a mean technical efficiency score of approximately 56%. However, their research primarily focused on production aspects rather than investigating into marketing dynamics. Similarly, Aifa (2023) study on the economic profitability of soybean production in Benin State, Nigeria, identified factors such as economic conditions, climatic and meteorological factors, and rural road infrastructure as significant influences on profitability. In Benue State, Udeh et al. (2018) examined the marketing margins of soybean marketers. Their results indicated marketing margins for producer-marketers, wholesalers, and retailers to be ₦88.91, ₦85.78, and ₦85.99, respectively. The study highlighted the challenges faced by marketers, including capital constraints, transportation issues, limited access to credit, taxation concerns, and inadequate storage facilities. While their research focused on marketing margins, it did not investigate the determinants of profitability, nor was it conducted in the Baruteen LGA of Kwara State.

Alabi et al., (2020) analyzed the profitability and marketing efficiency of the soybean (Glycine max) value chain among actors in Abuja, Nigeria. Their findings revealed that 86.33% of soybean marketers were aged between 31-60 years, and 83.33% had less than five years of marketing experience. Transportation costs accounted for 47.56% of total variable costs. The gross margin and annual income were estimated at ₦15,513,400 and ₦16,249,000, respectively. Marketing efficiency was influenced by factors such as gender, marital status, household size, education level, and extension agent contact. Although this study focused on profitability and marketing, it was not conducted in the Baruteen LGA of Kwara State. Delele et al. (2022) investigated the factors influencing the market supply of soybeans in Northwestern Ethiopia. Their study revealed that productivity, lagged prices, market information, prior experience with soybean farming, cultivated land area, weekly extension contacts, education level (completion of preparatory school), and access to credit all had a

positive and significant impact on the quantity of soybean market supply. While their focus was on market supply, their findings were not specific to the Baruteen LGA of Kwara State.

Materials and Methods

Study Area

The study was conducted in Baruteen Local Government Area (LGA) of Kwara State, Nigeria, an area characterized by a predominantly agrarian economy and favourable climatic conditions for soybean cultivation. Baruten shares a long border with the republic of Benin, with the headquarter at Kosubosu. It has a land mass about 974.9km square population of 209,459 (NPC, 2006) and has the rainfall of about 2000mm – 2150mm annually with loose sandy semi-guinea savannah. It is located between Latitude 935^{o}N and longitude 315^{o}E, with an average maximum temperature of the study area varies between 30^{o}C and 35^{o}C.

Sampling Technique and Sample Size

A structured questionnaire was administered to 100 soybean marketers selected through random sampling from the list provided by the Soybean Marketing Association in Baruteen LGA. The registered soyabean marketers on the list make up the sample frame for this study. Five wards notable for soyabeans marketing were purposely selected, these wards are Gure/ Gwassoro, Okuta, Ilesha, Gwanara and Yashkira. Two markets each notable for soyabean marketing was selected from the five wards. In selecting the respondents (marketers), a proportionate sampling (50%) was used. This gives a total of 110 marketers as the sample size. The questionnaire was designed to capture comprehensive information on the respondents' socioeconomic characteristics, marketing practices, costs incurred, and revenues generated from soybean marketing activities. The socioeconomic variables included age, gender, educational level, household size, marketing experience, and access to credit facilities, among others. The marketing practices section covered aspects such as transportation modes, storage facilities, and market information sources. Also, data on various cost components, including transportation, labour, and storage costs, as well as revenue from soybean marketing, were collected. The collected data were analyzed using descriptive statistics and inferential statistical techniques. Descriptive statistics, including measures of central tendency and dispersion, were employed to summarize and characterize the socioeconomic profiles of the soybean marketers. Multiple regression analysis was utilized to identify and quantify the factors influencing the profitability of soybean marketing activities in Baruteen LGA.

Model specification

Multiple regression model used for the study was explicitly specified as:

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 \ldots\ldots\ldots\ldots\ldots + \beta_7 X_7 + e_i} \quad \ldots\ldots\ldots\ldots 1$$

Where:

Y = Profitability

X_1= Age of Respondent (years)

X_2 = Education level (no of years spent in school)

X_3 = Household size (Number)

X_4 = Cost of transport (₦)

X_5 = Marketing experience (years)

X_6 = cost of labour N/man – day)

X_7 = Gender measured as dummy (female =1, otherwise =0)

eí = error term

b_o = intercept (or constant), B_1, $B_2 – B_7$ = ith coefficient corresponding to X_1, X_2, ------X_7

Results and Discussions

Socio-economic Characteristics of Soybean Marketers

The socio-economic characteristics of the respondent sampled includes age, gender, level of education, household size, marketing experience. This is presented in table 1.

The age of most of the respondents (51%) were within the age of (41-50) years, while those within the age of (31-40) constitute (36.4%) of the population. 17.3% were within 51 and above years. The mean age was found to be 44years. This implies that the marketers are within their active years and as such could carry out marketing activities actively, develop marketing strategies and product development. This finding agreed with the work of Ukaoha et.al., 2022 on profit efficiency of soybean production in Federal Capital Territory. The mean household size was found to be 9, with majority (41.8%) of the respondents having family size of between (6-10) members while the least percentage of the respondent had household size between (1-5) persons. This implies that depending on the household composition family labour could be properly utilized for soyabean marketing. In terms of gender, 91.7% of the respondent were male while 17.3% were female. This probably indicate that the cultural norms in the study area that does not allow women to mix freely and thus encouraged or shouldered the responsibilities of soyabeans business or marketing ownership to males. Equally, 56.4% of the marketers had secondary school education, 26.4% had tertiary education. This implied that they have fair knowledge of the market and strategies. This agreed with the finding of a similar study by Salihu et.al., 2018, who found that the marketers were predominantly male and had secondary education in Gombe State. Marketing Experience is key in the business. The mean marketing experience was found to be 12.7 years. 51.8% had marketing experience of 5-10 while 12.7% had experience of 11 and above. This might suggest that the more the years of involvement in the marketing of soyabean the more the profitability. This finding collaborates the work of Salihu et.al., 2018.

Table 1: Socio-Economic Characteristics of Soyabean Marketers

Variables	Frequency (110)	Percentage (100%)	Mean
Age (year)			
31 – 40	40	36.4	
41 – 50	51	46.3	44.26
51 and above	19	13.3	
Household size (persons)			
1 -5	28	25.5	
6 – 10	46	41.8	9
11 and above	36	32.7	
Gender			
Female	19	17.3	
Male	91	82.7	
Educational status			
Arabic	11	10.0	
Primary education	8	7.3	
Secondary education	62	56.4	
Higher education	29	26.4	
Marketing experience			
5-10	57	51.8	
6 – 10	32	21.3	12.74
11 and above	19	12.7	

Source: Field survey, 2023

Determinants of Soyabean Profitability

The result for the determinants of profitability is presented in Table 2. It was noted that age, transport, market experience and labour are the key determinant of profit in soyabean marketing in the study. Age was positive and significant at 1%, this implied that the older the marketers, the more experience they are in marketing, the more profit they are able to make. This is in tandem with the work of Alabi et.al., 2020. Marketing experience had equally a positive and significant influence on profitability. Experience tends to enhance proficiency and increase productivity (Abah, 2011).

Household size was found positive but not significant, impliedly an increase in the household size might have no effect on profitability. This contrast the findings of Alabi et.al., 2020 where the coefficient of household size of the soyabean marketers in Abuja measured was positive and statistically significant at 1% level of probability. Though, labour and transport were negative they were found to be significantly (10% and 1% respectively) influencing profitability, impliedly less of labour was used and transportation as the cost of both are high. Education and gender were found to be negatively related to soyabean profitability though not significant. This contradicts the findings of Alabi et.al, 2020. The coefficient of determination R^2 was found to be 0.764, meaning 76.4% of the variable in the model is well represented.

Table 2 Determinants of Profitability

Variable	*Coefficient*	*Std. Error*	*t-ratio*	*p-value*	*Sig*
Constant	9.69580	0.961741	10.08	<0.0001	***
Age	53043.4	4354.86	12.18	<0.0001	***
Education	−3395.82	2916.74	−1.164	0.2470	
Household	343.656	792.731	0.4335	0.6656	
Transport	-1.97745	0.234638	-8.428	<0.0001	***
Market experience	26.4959	3.27845	8.082	<0.0001	***
Labour	−732368	409790	−1.787	0.0769	*
Gender	−1520.93	6250.16	−0.2433	0.8082	
R-squared	0.764				

Source: field survey, 2023

Conclusion and Recommendations

The study investigated the determinants of profitability in soybean marketing in Baruteen LGA, Kwara State, Nigeria. The findings revealed that age, marketing experience, transportation costs, and labour costs were significant factors influencing the profitability of soybean marketing in the study area. The results demonstrated that older and more experienced marketers were more likely to achieve higher profitability, suggesting that experience plays a crucial role in enhancing marketing strategies and decision-making processes. However, transportation costs and labour costs negatively impacted profitability, highlighting the need for efficient transportation systems and cost-effective labour management. While household size and education level did not significantly influence profitability in this study, addressing these factors could potentially enhance the total performance of soybean marketing in the region. Also, gender did not significantly impact profitability, indicating that both male and female marketers have equal opportunities to succeed in the soybean marketing business.

The study recommends that stakeholders, including marketers, producers, and associations, Stakeholders in Baruteen LGA should collaborate to establish comprehensive training, advocate for infrastructure development, create knowledge-sharing platforms, and collectively bargain for improved soybean marketing profitability. Policymakers must

prioritize robust market information systems, facilitate affordable credit access, and implement a supportive regulatory framework to strengthen the soybean value chain.

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