



Socioeconomic Analysis of Plantain Marketing in Anambra State, Nigeria

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ABSTRACT

Rapid urbanization, combined with a growing preference for quick and convenient foods among urban residents, has sharply increased demand for plantains. However, marketers have struggled to meet this demand due to challenges such as rising input costs, calling into question the sustainability of profit margins. This study therefore conducts a socioeconomic analysis of plantain marketing in Anambra State using primary data. A multistage sampling procedure was adopted: in the first stage, four Local Government Areas (Awka South, Ogbaru, Idemili North, and Anambra West) were purposively selected based on the concentration of plantain marketers. From each LGA, three communities were randomly chosen, and from each community, ten farmers were randomly selected—yielding a total sample of 120 farmers. A structured questionnaire captured data on socioeconomic characteristics, costs and returns, and marketing constraints. Data were analyzed using descriptive statistics, gross margin analysis, marketing efficiency metrics, and a Likert scale. Results show that women constituted the majority of marketers (63.3%), with a mean age of 50 years. Married respondents formed the largest marital group (46.7%), and over half (55%) had no formal education. On average, respondents had 21.42 years of farming experience and a household size of six. There was no functional cooperative among marketers, and 95% operated on a small scale. The gross margin was ₦63,000. Key constraints included poor road infrastructure, high labor costs, seasonal fluctuations in supply, and high stall/space rental fees. The study recommends improving road networks, facilitating the formation and strengthening of cooperative societies, and implementing targeted support to reduce marketing costs and volatility.

Keywords: Plantain marketing, Nigeria, marketing efficiency, small-scale traders, female participation, input costs, urban demand.

INTRODUCTION

Agriculture provides individuals with a dignified and sustainable source of livelihood. It has long been recognized as a means of income generation and a driver of economic growth for impoverished rural households in Africa. A crucial aspect of agricultural development is the ability to move surplus produce from areas of comparative advantage to deficit regions (Muchopa, 2017). As noted by Arua (2016), efforts must be made to enhance the livelihoods of grassroots communities, encouraging them to cooperate effectively to maximize the limited resources at their disposal.

Plantains belong to the genus *Musa* and the family *Musaceae* (Brown et al., 2017). Although they can grow to tree heights, plantains are classified as herbaceous plants (Kaushal et al., 2022). They are a common food source in tropical regions worldwide (Amah et al., 2021). Smallholder farmers, who typically manage an average farm size of 0.7 hectares, are the main producers of plantains (Norgrove & Hausser, 2014; Elum & Tigiri, 2018). The rapid urbanization in Nigeria, coupled with a growing demand for quick, easy, and convenient foods among urban populations that do not engage in agriculture, has led to a significant increase in the demand for plantains (Ayanwale et al., 2016). In addition to being a staple food in more humid regions, plantains are also enjoyed as a delicacy and a popular snack in various other areas (Ukwuaba et al., 2022). They are a fundamental part of many traditional African diets, especially in Nigeria (Akintade et al., 2016; Ukwuaba et al., 2022). Despite their economic and nutritional importance, plantains are highly perishable and are best harvested while still green (Eleazu & Okafor, 2015; Olutomilola, 2021). Due to the fruit's perishable nature, post-harvest losses of plantains can vary by country, influenced by market chains, consumption patterns, and preservation methods. In Nigeria,

post-harvest losses of plantains can reach as high as 60% (FAO, 2016). Given the strong demand, there is significant potential for starting a plantain marketing business. The broad objective of this study was to analyze the socioeconomic characteristics of plantain marketing in Anambra State. The specific objectives of this study were to: describe the socioeconomic characteristics of marketers involved in plantain marketing; estimate the cost and return of plantain marketing in the study area and identify the challenges of marketers in marketing of plantains in the study area.

Marketing process incurs cost which is the monetary value of resources sacrificed to achieve specific objectives. Cost minimization is key to enhancing profitability in the marketing process. Therefore, efficient resource utilization requires cost and return measurement to determine return on investment (ROI), a metric that assesses the profits generated from a particular investment. Businesses utilize this calculation to compare various investment scenarios to identify which yield the highest returns.

Population of the Study

The population of the study consisted of all the plantain marketers in Anambra State.

Sampling procedure and Sample size

A multistage sampling procedure was employed for this study. The first stage witnessed the purposive selection of 4 Local Government Areas (LGAs): Awka South, Ogbaru, Idemili North and Anambra West were selected for their high number of plantain marketers. From each LGA, 3 communities were randomly picked. Ten farmers were then randomly selected from each village. 30 farmers were sampled per LGA, to reach a total sample of 120 respondents. Structured questionnaire was used to gather data on socioeconomic attributes, cost and return on plantain marketing and constraints to plantain marketing.

Methods of data analysis

Objective 1 was achieved using descriptive statistics: frequency, % mean and objective 3 was achieved using descriptive statistics: likert scale while objective 2 was achieved using gross margin and return on investment (ROI). The formula is expressed as follows:

$$\text{ROI (\%)} = \frac{\text{Gain from Investment} - \text{Cost of Investment}}{\text{Cost of Investment}} \times 100$$

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RESULTS AND DISCUSSION

Socioeconomic Characteristics of Plantain Marketers

Sex

Male marketers made up 36.7% of the sample, while female marketers constituted the majority at 63.3%. This shows that women dominate plantain marketing in the study area. The result agrees with the findings of Jatto et al. (2020), who also reported that female marketers overwhelmingly dominated plantain marketing in Afijio Local Government Area of Oyo State, Nigeria. Women's dominance reflects their traditional role in agricultural produce marketing, especially for crops like plantain, which are central to household food security and income generation (Elum & Tigiri, 2018).

Age

The majority of marketers fell within the age range of 45–64 years (35.0%). Marketers below 25 years represented 11.7%, those within 25–44 years made up 25%, and respondents above 60 years constituted 28.3%. The average age was 50.15, suggesting that most respondents are still in their economically active age. This aligns with the findings of Oghenero (2015), who recorded a mean age of 53.3 among plantain farmers in Edo State, showing that plantain marketing and production are dominated by mature adults with the strength and experience to engage in agricultural business.

Marital Status

Married individuals constituted the largest group (46.7%), followed by widows/widowers (31.7%), single individuals (15%), and divorced individuals (6.7%). This indicates that married individuals dominate the enterprise, reflecting the importance of family responsibilities as a motivating factor for engaging in agribusiness. Jatto et al. (2020) similarly observed that most plantain marketers in Oyo State were married.

Level of Education

The results show that most respondents had no formal education (55.5%), followed by primary education (26.7%), secondary education (16.7%), and tertiary education (1.7%). This suggests that plantain marketers in the area are generally low-educated, which may affect their ability to access information and adopt modern marketing strategies. This finding is consistent with Oghenero (2015), who also found that the majority of plantain farmers in Edo State lacked formal education.

Farming Experience

The largest group of marketers had been involved in farming for 1–10 years (41.7%), followed by 21 years and above (40.0%) and 11–20 years (18.3%). The mean farming experience was 21.42 years, indicating that marketers possess long-standing practical knowledge of the enterprise. Experience has been shown to significantly influence efficiency and profitability in agricultural marketing (Adepoju & Salau, 2021).

Household Size

Most respondents had household sizes of 5-8 (45.0%), followed by less than 5 (28.3%) and 9 or more (26.7%). The average household size was 6.22, suggesting that plantain marketers rely heavily on family labour. This finding aligns with the general pattern in smallholder agriculture, where large households provide the labour needed for production and marketing (Norgrove & Hauser, 2014).

Cooperative Association

None of the plantain marketers in the study area reported membership in a cooperative society. This could limit their access to credit, collective bargaining, and improved market opportunities. Previous studies emphasize the importance of cooperative societies in enhancing agricultural marketing efficiency and income (Okeke et al., 2021). Small farmers' reluctance behaviour toward cooperatives membership is influenced by illiteracy, lack of awareness and low-income gains. These barriers along with social norms and structural challenges further discourage farmers' participation in cooperatives (Pliakoura et al., 2021). Efforts are required from state and development organizations in building trust, transparency among farmers about cooperative operations to increase farmers' willingness to participate in such institutions (Zhong et al., 2013).

Socioeconomic characteristics of Plantain marketers

Socioeconomic characteristics	Frequency	Percentages (%)	Mean
Sex:			
Male	44	36.7	
Female	76	63.3	
Age:			
less than 25	14	11.7	
25- 44	30	25.0	43.46
45- 64	42	35.0	
Above 64	34	28.3	
Marital Status:			
Single	18	15.0	
Divorced	8	6.7	
Widow/widower	38	31.7	
Married	56	46.7	
Level of education:			
No formal school	66	55.0	
Primary school	32	26.7	
Secondary school	20	16.7	
Tertiary education	2	1.7	
Experience (years):			
1-10 years	50	41.7	
11-20 years	22	18.3	
21 years and above	48	40.0	10.45
Household size:			
Less than 5	34	28.3	
5-8 people	54	45.0	
9 and above	32	26.7	8.68
Cooperation association			
Yes	0	0	
No	120	100	

Source: Field Survey, 2024.

Estimation of the Costs and Returns of Plantain Marketing

The analysis of costs and returns showed that plantain marketing is profitable in Anambra. From the sales of 35 units at ₦3,700 each, marketers generate ₦129,500. After accounting for variable expenses such as transport, rent, loading/unloading, and packaging (₦66,500), a gross margin of ₦63,000 is realized. This confirms that plantain marketing remains a viable agribusiness venture, consistent with findings from Adepoju and Salau (2021), who emphasized that plantain marketing contributes significantly to rural household income and livelihood security. Similarly, Ibitoye et al. (2020) observed that plantain marketing is profitable across several Nigerian states, making it a sustainable source of income for traders despite the challenges they face.

Constraints Faced by Plantain Marketers

• The Likert scale analysis indicates that plantain marketers face multiple challenges. Seasonality of the production of plantain (with highest mean value of 4.77) was the most critical constraint, showing the heavy reliance on rainfall and seasonal cycles. Adepoju and Salau (2021) equally stressed that seasonality reduces market stability and exposes traders to income fluctuations.

Cost of rent emerged as another most significant constraint, mean value of 3.5. It affects the cost of production and profitability. This is consistent with Akinola et al. (2021), who reported that rising rental costs in urban and peri-urban markets affect trader profitability. Respondents marked labour costs as the second most significant constraint, with a mean value of 3.47. Skilled labor is required to perform specialized tasks in the field in all seasons, ranging from plantation to harvesting. If labor is short or expensive, the cost of production will increase. This agrees with the findings of Ajibefun (2019), who noted that high labor costs reduce profit margins in agricultural marketing. The third most prominent constraint, with a mean value of 3.1, was Poor infrastructure of roads. It was seen as a significant challenge, as it hampers the transportation/movement of the produce and market access. This aligns with Oyekale (2022), who found that poor road conditions reduce market access and increase post-harvest losses in Nigeria. This is followed by high transportation cost, although was not perceived as a major challenge (mean value 2.15) however, other studies, such as Eze et al. (2019), have shown that transport remains a key barrier in agricultural produce marketing.

Further, the issue of storage was not considered a major issue, which may be due to plantain's relatively short shelf life and quick market turnover. However, in regions with higher production volumes, storage challenges have been widely reported (Ugwu & Nwaeze, 2020).

• High Transportation Cost (Mean: 2.15): This

Table 2: Estimation of the costs and returns of plantain marketing

Items Description	Quantity	Unit Price (N)	Amount (N)
Sales Revenue:			
No. bunch	35	3,700	129,500.00
Marketing cost			
Loading and off loading		2,100	2,100.00
Shop rent		12,200	12,200.00
Transport		5,300	5,300.00
Labour	37	1,200	44,400.00
Logistics		2,500	2,500.00
Total marketing cost			66,500.00
Gross margin			63,500.00
Net return			
Profitability index			51.2%
Return on Investment			0.91

Source: Field Survey, 2024.

SN.	Constraints	Mean	Std. Dev.	Remarks
1	High transportation cost	2.15	0.633	Disagree
2	Poor road	3.10	0.602	Agree
3	Storage problem	1.90	0.354	Disagree
4	High cost of labour	3.47	1.081	Agree
5	Seasonality of production	4.77	0.427	Agree
6	High cost of rent	3.5	1.066	Agree
	Grand Mean	3.15	0.69	Agree

FIELD SURVEY: 2024

Conclusions

The study concludes that women constituted the majority of marketers (63.3%). The mean age of respondents was 50 years, indicating highly experienced respondents. There was no functional cooperative among marketers, and 95% operated on a small scale. The study reveals that plantain marketing in Anambra is profitable, but constrained by infrastructural and production-related challenges. The most significant constrain was the seasonality of produce and the high cost of labor. The other key issues were poor roads, and rent, which significantly affect marketing efficiency. Based on the findings, it is recommended to promote cooperatives, enhance access to credit, reduce transaction costs, and strengthen collective bargaining power. This strategy has been shown to improve marketing efficiency in rural Nigeria. Further, the government should prioritize road construction and maintenance to reduce transport costs and facilitate smooth distribution.

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Conflict of Interest: The authors declare no conflict of interest.

Data Availability: All data is given in the manuscript

Ethics Statement

Not applicable

Author's Contribution

Ngozi Obiekwe conceptualized and designed the study, developed the research instruments, and supervised data collection. The author performed data analysis, interpreted the results, and drafted the manuscript. The author critically reviewed and revised the paper for intellectual content and approved the final version for publication.

Generative AI Statements

The authors confirm that no generative-AI tools (including DeepSeek) were used in the writing or preparation of this manuscript.

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