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CONSTRAINTS AND PROSPECTS OF PLANTAIN MARKETING IN OWO LOCAL GOVERNMENT AREA, ONDO STATE, NIGERIA

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ABSTRACT

The study examined the constraints and prospects of plantain marketing in Owo Local Government Area of Ondo State, Nigeria. The factors considered include socio-economic characteristics of plantain marketers, marketing channels, costs and returns, constraints and prospects of plantain marketing. Multi-stage sampling technique was used to select 75 plantain marketers. Primary data were collected using a well-structured questionnaire. The data were analysed using descriptive statistics and budgetary analysis. The results showed that 70.7% of the respondents were female and married. They were between 31 and 40 years (37.3%) and had at least secondary education (52.0%). Thirty seven percent (37.3%) of the respondents sold their plantain to retailers, 30.7% of them sold to final consumers, 28.0% sold to wholesalers and the remaining 4.0% sold theirs to processors. The results further revealed that plantain market in the study area is a perfect competitive market. The results showed that plantain marketing is a profitable business with a Gross Margin of ₦231,637, Net Margin of ₦132,971, and marketing margin of 25%. Hence, plantain marketing has a good prospect. The study recommends that government should provide good road networks and processing facilities for the marketers.

Keywords: Profit, market channels, gross margin, plantain marketers, costs and return

INTRODUCTION

In Nigeria and other developing countries alike, plantain is considered as staple food crop for many. Available trade records and associated indices showed that Nigeria is one of the largest producers of plantain in the world (FAO, 2013; Chiemela *et al.*, ., 2021). Nigeria is ranked first in Africa and fifth in the world producing 2,722,000 metric tons in 2011 (FAO, 2012; Chiemela *et al.*, ., 2021). Nigeria produced 3,088,938 tons of plantains in 2016, ranking fourth in Africa after Uganda, Rwanda, and Ghana. In 2022, Nigeria was among the top five producers of plantain in the world occupying the fifth position with production capacity of 3.1 metric tonnes (Worldmapper, 2024).

Plantain is a seasonal, annual crop with relative short shelf life, and its production in Nigeria is concentrated in humid lowland to upland tropical

areas (FAO, 2016). Due to the rich availability of fertile forests and laterite soils favourable for plantain growth, plantain production is concentrated in the southern region of Nigeria: Anambra, Benue, Cross River, Akwa-Ibom, Imo, Kwara, Enugu, Plateau, Kogi, Rivers, Edo, Delta, Lagos, Ondo, Ogun, Osun, and Oyo (Ekunwe & Helen, 2010).

Nutritionally, ripe plantain is a good source of energy while unripe plantain serves as a source of iron (Achike *et al.*, ., 2011). More so, it is a rich source of vitamins A, B complexes and C, and also includes minerals and dietary fibre essential for healthy growth (Honfo *et al.*, ., 2007). It equally serves as a source of employment and cash income to rural dwellers in countries like Nigeria. The crop has become a crucial revenue earner because of its export potentials (Olumba & Onunka, 2020). Plantains serve as raw material for several

indigenous delicacies and snacks (Newilah *et al.*, ., 2005). Depending on the mode of consumption, plantain can be roasted, boiled, or fried. Studies have shown that fibres acquired from the pseudo stem may be used in the paper and pulp industry as biodegradable and in other sectors such as the textile industry (Rana & Fanguero, 2016).

Idachaba, (2000) disputed that it is inadequate for policy makers to concentrate on solving problems in production alone without reference to the difficulties faced during the stage of marketing. This implies that product marketing requires sufficient attention owing to the role it plays in the empowerment of marketers and facilitating supply to meet market demand. Plantains are perishable, and where advanced technology is lacking, they must be consumed in about three weeks after harvest. If their perishability must be reduced, then they must be spontaneously distributed and marketed (Fonsah & Chidebelu, 2011). More so, Eronmwon *et al.*, . (2014) asserted that increase in the output of plantain needs adequate marketing because the product has a significantly low shelf life. In Nigeria, output of plantain is believed to have doubled, even though production system is largely driven by small scale farmers (Akinyemi *et al.*, ., 2010). So, in a situation where the production and consumption of plantain is on the rise and the link between the producers and the consumers make up the market as reported by (Oladapo *et al.*, ., 2007; Olumba and Onunka, 2020), it thus becomes imperative to examine marketing of this commodity as the link between the producer and consumer will always be the marketers.

Despite large production of plantain in the study area (Owo, Ondo State) its marketing and distribution system to other parts of the country and is not well and effectively developed compared to other food and cash crops. This study will add to the already existing literature on marketing of plantain which may aid further researchers in other tropical rain forest regions where the production of plantain is massive.

Due to the nutritional importance of plantain, venturing into its enterprise holds promising potentials. However, the relatively little attention given to plantain is focused on its production technology while only a few is done on its

marketing. It is obvious that increased production without corresponding increase in marketing may amount to wastage of resources leaving people on the same platform of malnutrition. According to Ariyo *et al.*, . (2013) profit in plantain marketing involves the role of middlemen in passing plantain from the farms to the markets or from a particular market to another and selling them at a greater price at the detriment of the farmers who produced the crop. One of the factors that have militated against efficient marketing of plantain according to Aina *et al.*, . (2021) has been thought towards ignorance on the part of marketers. This has led to low profitability. There is also high post-harvest losses which are the major problems limiting the availability of plantain in the country and in the study area (Bayeri and Nwachukwu, 2005; Yebirzaf and Esubalew, 2021). Also, unavailability or ignorance of when to provide storage facility or subsidy for storage facilities according to Josiah (2014) has discouraged many marketers and farmers who would want to keep part of their produce till off season so that profit could be enhanced.

However, majority of the agricultural studies in Nigeria highlighted other factors that have limited maximum profit in marketing of plantain. Akinyemi *et al.*, . (2010) pointed out that majority of plantain marketers still operate on a small scale which makes unit cost of plantain costly, high cost of transportation, seasonal price fluctuation, poor access road which has caused perishable goods such as plantain to spend so much time on transit. Amidst all these challenges, there is need to examine the marketing of plantain in Owo Local Government Area to help the farmers to avail themselves of the opportunity to acquire knowledge to improve their plantain markets to receive good price for the product and thus enjoy more profit in the business. This research seeks to provide answers to the following questions: (i) What are the socio-economic characteristics of plantain marketers in the study area? (ii) What are the marketing channels and structures of plantain in the study area? (iii) What are the costs and returns of plantain marketing in the study area? (iv) What are the prospects of plantain in the study area? (v) What are the constraints of plantain marketers in the study area?

The broad objective of the study was to examine the constraints and prospects of plantain marketing in

Owo Local Government Area of Ondo State, Nigeria. The specific objectives were to: (i) identify the socio-economic characteristics of plantain marketers in the study area; (ii) describe the marketing channels of plantain in the study area; (iii) evaluate costs and returns of plantain marketing and its profitability in the study area; (iv) examine the prospects of plantain marketing in the study area; and (v) determine the constraints of plantain marketers in the study area.

Plantain is an important crop in Nigeria and plays a significant role in the country's economy. Understanding the dynamics of plantain marketing can provide insights into the factors that affect the supply and demand of plantains and how it affects the economy. The study of plantain marketing in Nigeria can provide insights into the market structure, market trends, and market access for plantains. This information can help farmers and traders to make informed decisions about pricing, production, and marketing strategies.

Plantain marketing creates employment opportunities for many people, including farmers, traders, and transporters. Studying the marketing of plantains can help to identify the challenges faced by people in the plantain value chain and how these challenges can be addressed to improve the livelihoods of those involved. Studying plantain marketing can help to identify ways to improve the competitiveness of Nigerian plantains in both local and international markets and can also help to ensure that there is a stable supply of plantains in the market, which is essential for food security in the country. It will also be helpful to potential investors interested in plantain business in Owo, Ondo State.

METHODOLOGY

Study Area: The study area is Owo Local Government Area (LGA) Ondo State, Nigeria. It has its administrative headquarters in the town of Owo. Owo Local Government Area is domiciled in Ondo state, South-west geopolitical zone of Nigeria. The LGA is made up of seven towns/ villages which include *Iyere, Idasen, Uso, Upenmen, Isuada, Ipele,* and *Owo* town. Its geographical coordinates are 7° 11' 0" North, 5° 35' 0" East. It is bounded by the states of Kwara and Kogi on the north, Edo on the

east, Delta on the southeast, and Osun and Ogun on the west and by the Bight of Benin of the Atlantic Ocean on the south. The current estimated population of Owo LGA is put at 222,262 inhabitants with the area primarily populated by members of the Yoruba ethnic group (Oyeniya, 2022). The Yoruba language is commonly spoken in the LGA while the religions of Christianity and Islam are practiced in the area.

Owo, Ondo State has a tropical climate, with temperatures ranging from 25°C to 32°C, and an annual rainfall of about 1200 mm (Ogunbameru, 2012). It has fertile soils suitable for plantain cultivation. The land is well-drained, and the soil is rich in nutrients, which favours the growth of healthy plantains (Akinwale *et al.*, 2013). Owo has a lot of arable land suitable for plantain farming. This makes it easier for farmers to acquire land and start their plantain farms. Owo LGA, Ondo state is a major collecting point for cocoa. It also serves as a market centre for yams, cassava (manioc), corn (maize), rice, palm oil and kernels, pumpkins. The LGA is also known for food processing, lumbering, and farming with crops such as cocoa, pepper, cotton, maize and cassava grown in the area.

Data Collection: The data for this study was collected from primary sources using well-structured questionnaires.

Sampling Techniques: Multi-stage sampling procedure was used to select the plantain marketers in Owo Local Government Area of Ondo State. The first stage involved purposive selection of five communities/towns in the LGA where plantain is produced and marketed in large quantities. The second stage involved purposive selection of five markets from the five communities. The third stage involved random selection of fifteen plantain marketers from each market. A sample size of seventy-five was used for this study.

Data Analysis: Objectives (i), (ii), (iv) and (v) was realized using descriptive statistics while objective (iii) was analysed using budgetary analysis.

Budgetary Analysis: The gross margin analysis used for the study is given as:

$$GM = TR - TVC$$

Where:

GM = Gross Margin (₦)

TR = Total Revenue (₦)

TVC = Total Variable Cost (₦)

The higher the GM, the more likely a farm was profitable and the smaller the GM, the less the profit possibility.

Net Margin: It is given as: $TR - TC$

Where:

TR = Total Revenue

TC = Total Cost

Marketing Margin: This is given as $SP - CP \times 100\%$

Where:

SP = Selling Price

CP = Cost Price

RESULTS AND DISCUSSION

Socio-economic Characteristics of the Plantain Marketers: Table 1 describes the socio-economic characteristics of the respondents in terms of age, sex, marital status, marketing experience, education, household size. Majority (72.0%) of the respondents were plantain sellers only while the remaining respondents (28.0%) were plantain farmers and sellers. This result is very motivating as there is no need to venture into farming before becoming a plantain marketer. Production and marketing constitute a continuum, so those that are not able to farm can engage in marketing of agricultural produce thereby promoting agricultural production. Also, majority (70.7%) of the plantain marketers were female while the remaining (29.3%) were male. This signifies that female dominates plantain marketing. This corresponded with the result reported by Chiemela *et al.*, . (2021) and Jatto *et al.*, . (2020).

Majority (37.3%) of the respondents were between the ages of 31-40 years, 30.6% have their ages ranged between 41-50 years and 16.0% have their ages ranged between 21-30 years. This result indicates that most of the plantain marketers in the

study area were agile, middle-aged individuals. As such, they should be provided with adequate and relevant market information to increase their efficiencies. This result is in line with the findings of Akunwe and Ajayi (2010); Jatto *et al.*, . (2020) and Ukwuaba *et al.*, . (2022) that plantain marketers were middle aged individuals. The result of marital status of the respondents in Table 1 showed that majority (70.7%) were married, 13.3% were divorced and 8.0% were single. This result as supported by Ekunwe and Ajayi, 2010; Ukwuaba *et al.*, . (2022) implies that majority of the plantain sellers were married people, thus it may ensure availability of labour for the business. The mean is 2.44. Most (52.0%) of the respondents had secondary education, 18.7% had tertiary education, 16.0% had primary education, while 13.3% had no formal education. This indicates that the respondents have different level of education most especially formal education, so they could read and write.

Table 1 also showed that 49.3% of the respondents had household size of between 6-10 individuals while 44.0% of the respondents had household size of between 1-5 individuals. This fall in line with finding of Nelson *et al.*, ., (2016) that 54% of plantain marketers had household size between 6-10 persons. The plantain marketers in the study area had an average household size of 10 individuals comprising of an average 1 husband, 1 wife, 6 children and at least 2 dependent relatives. This implication of this is that majority of the households in the study area had a large family size and the marketers may need to work and earn more income to maintain and feed the large family. The more the individuals in the household, the less the work for the marketer/farmer as the individuals will be a source of manpower for marketing operations like loading and offloading of plantains. Majority of the people in the study area (60%) have no other occupation than plantain marketing, some were engaged in farming (20%) while few were engaged in trading (9.4%).

On marketing experience, the result showed that 70.7% of the respondents had marketing experience of between 1-10 years, 20.0% had marketing experience of 11-20 years, 5.3% of the respondents had 21-30 years of marketing experience while 4.0% of the marketers had 31-40 years of marketing

experience. This implies that majority of the marketers were well-experienced, and they are expected to make higher profits with their wealth of experience in the plantain business.

Marketing Channels for Plantain: Table 2 also showed that 64.0% of the marketers were wholesalers while the remaining 36% were retailers. The Table further showed that 62.7% of the marketers got the plantain they sell from producers, 22.7% got it from their own farms while the remaining 14.7% got it from wholesalers. This shows that large percentage of those who sell plantains are plantain marketers are not farmers. About thirty seven percent (37.3%) of the respondents in Table 3 sold their plantain to final consumers, 30.7% of them sold to retailers, 28.0% sold their plantains to wholesalers and the remaining 4.0% sold theirs to processors. This result shows that most of the plantain marketers sold their plantains to the final consumers to maximize profits.

In Table 4, the most used unit of measurement was bunches according to 57.3% of the plantain marketers, 26.7% measured using heaps, 8.0% measured in dozens, 6.7% used size of fingers while 1.3% used kilogrammes. The use of different units of measurement gives room for buyers to purchase the quantity they desire at better pricing and helps in profit maximization. Hence, those that desire large quantities of plantain buy in heaps while those that desire small quantities buy based on any other unit of measurement used in the market.

Budgetary Analysis: Analysis of costs and return data supplied by the respondents shown in Table 5 revealed the following:

Average Selling Price (SP) was ₦2000 per bunch of plantain while the Average Cost of plantain (CP) was ₦1500 per bunch of plantain.

Total Revenue per annum = Selling Price × Quantity Sold = ₦2,000 × 369116 = ₦738,232,000

Total revenue for a marketer per year = ₦1,847,790,000 ÷ 75 = ₦9,843,093.33.

The results of analysis of plantain marketing showed that the total value of sales for an average plantain marketer was ₦9,843,093 at the unit cost of ₦2,000 per bunch while the total cost was ₦9,710,122. The results in Table 5 showed that plantain marketing is

a profitable business in the study area. Jatto *et al.*, . (2020) and Ukwuaba *et al.*, . (2022) also opined that plantain marketing is a profitable business. The Gross margin was ₦231,637, the Net margin was ₦132,971 while the marketing margin was 25%.

Prospects of Plantain Marketing: The results obtained from analysis as shown in Table 6 revealed that majority (72.0%) of the respondents didn't process plantain, 12.0% processed to plantain chips, 10.7% processed plantain to flour while 5.3% processed plantain into flakes.

Furthermore, greater percentage (93.3%) of the respondents have no processing facilities in their area which makes processing of plantain difficult even though 94.7% of the respondents believed processing of plantain extends its shelf life, while only few (5.3%) were not in aware of that. This indicates that processing of plantain to other forms is not common among the marketers. This can be because of the extra cost incurred in changing the form of a produce to add value and the time needed. Hence, there are indications that plantain production and marketing will flourish and become more profitable in the future because if there is improvement in its marketing through processing, its production will also expand.

Plantain has nutritional benefits such as provision of carbohydrates and iron; 61.3% of the plantain marketers had no idea of other benefits of plantain, 18.7% of the respondents indicated that plantain can also be effective in treatment of plantains are useful in the treatment of diabetes, 13.3% indicated plantain can be eaten by ulcer patients, 4.0% consumed plantain for general wellbeing (good health) while 1.3% accepted that it helps to prevent kwashiorkor. The implication of this result is that many individuals are yet to understand other importance of plantain apart from its nutritional values.

In Table 7, majority of the respondents (98.7%) affirmed that they will expand their plantain business if provided with adequate resources. They suggested that plantain marketing can be improved in various ways such as access to credit facilities (26.7%), improvement in transportation (24.0%), provision of more farmland for its cultivation. Thus, by providing adequate credit facilities, efficient

transportation system and more farmland for cultivation of plantain, the future of plantain marketing in the study area will be brightened.

Challenges Associated with Plantain Marketing in the Study Area: The challenges majorly identified by the respondents in Table 8 include: insufficient fund (14.1%), low price of plantain during on-season (6.9%), bad road (19.5%), lack of processing facilities (7.2%), inadequate storage facilities (11.1%), perishability of plantain (14.7%), high cost of shop/space (3.0%), high cost of labour (4.2%), theft (4.2%). The pressing problems facing plantain marketers in the study area is perishability of plantain, followed by insufficient fund and bad road. This result is in line with Jatto *et al.*, . (2020) and Ukwuaba *et al.*, . (2022) in their studies on plantain marketing.

CONCLUSION AND RECOMMENDATIONS

Conclusion:

The socio-economic characteristics of the respondents showed that majority of the plantain marketers were females and married and have household size of 6-10. Majority were young adults with at least secondary education and were experienced in plantain marketing. The marketing channel showed that the plantain marketers (wholesalers and retailers) obtain the plantain from the farmers and sell to the final consumers with a little portion to the processors. Values obtained from the gross margin analysis, rate of return, marketing margin, net margin and marketing efficiency showed that plantain marketing is profitable and has good prospects. The responses about prospects of plantain in the study area showed that large number of the respondents do not process plantain and information gathered from the marketers' showed plantain is useful in treatment of diabetes and ulcer. Challenges hindering plantain marketing in the study area include insufficient fund, perishability of plantain, bad road, lack of processing facilities, inadequate storage facilities, low price of plantain during surplus season.

Recommendations:

Based on the findings of study, the following recommendations were made:

1. Programmes that will improve plantain marketing should be organized for the

marketers (wholesalers and retailers) by relevant government or non-government agencies. The programme should include value addition, marketing strategies, proper recording and fund generation.

2. Processing of plantain should be encouraged to reduce spoilage during on-seasons because of perishability of plantain thereby increasing the profitability of the enterprise.
3. Government should provide good road network in the study area to facilitate easy transporting of plantain to point of sale or usage.
4. Loans should be made available to plantain marketers by credit institutions to facilitate effective plantain marketing.
5. Plantain marketers should be encouraged to form cooperative societies so that they can pull resources together to overcome problems of insufficient fund and other marketing issues.

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Table 4: Distribution of plantain marketers according to their socio-economic characteristics

Variables	Frequency	Percentages (%)
Gender		
Male	22	29.3
Female	53	70.7
Total	75	100
Age in years		
20 years and below	2	2.7
21-30	12	16.0
31-40	28	37.3
41-50	23	30.6
51-60	8	10.7
60 and above	2	2.7
Total	75	100.0
Marital status		
Single	6	8.0
Married	53	70.7
Divorced	10	13.3
Widowed	3	4.0
Separated	3	4.0
Total	75	100
Level of education attained		
No formal education	10	13.3
Primary	12	16.0
Secondary	39	52.0
Tertiary	14	18.7
Total	75	100.0
Household size		
1-5	33	44.0
6-10	37	49.3
11-15	3	4.0
16 and above	2	2.7
Total	75	100
Years of marketing experience		
1-10	53	70.7
11-20	15	20.0
21-30	4	5.3
31-40	3	4.0
Total	75	100.0

Source: Field Survey, 2023.

Table 2: Distribution of plantain marketers according to their type and source of plantain

Variables	Frequency	Percentage
Type of marketer		
Wholesaler	48	64.0
Retailer	27	36.0
Total	75	100.0
Sources of plantain		
Producer/farmers	47	62.7
Wholesalers	11	14.7
Self	17	22.7
Total	75	100.0

Source: Field Survey, 2023.

Table 3: Distribution of plantain marketers according to their customers

Variables	Frequency	Percentage
Who they sell to		
Wholesalers	21	28.0
Retailers	23	30.7
Final consumers	28	37.3
Processors	3	4.0
Total	75	100.0
Total	75	100.0

Source: Field survey, 2023.

Table 4: Distribution of plantain marketers according to units of measurement

Variables	Frequency	Percentage
Units of measurements		
Bunches	43	57.3
Heaps	20	26.7
Kilograms	1	1.3
Fingers	5	6.7
Dozens	6	8.0
Total	75	100.0

Source: Field survey, 2023

Table 5: Budgetary Analysis

Item	Detail (₦)	Total (₦)
Total Revenue (TR)		9,843,093.33
Variable Costs		
Transportation	1,963,920	
Loading/offloading	213,696	
Toll fee	39,200	
Purchase price	7,382,320	
Processing	12,320	
Total Variable Cost (TVC)		9,611,456
Gross Margin (TR-TVC)		231,637
Fixed Costs		
Storage	28,560	
Market stand	28,336	
Loan interest	28,778	
Market levy	12,992	
Total Fixed Cost (TFC)		98,666
Total Cost, TC= (TVC+TFC)		9,710,122
Net Margin (TR-TC)		132,971
Marketing Margin (SP-CP/SP×100%)		25%

Table 6: Distribution of plantain marketers according to forms they processed plantain, processing facilities and health benefits of plantain

Variables	Frequency	Percentage
Form of processing plantain		
Flakes	4	5.3
Plantain flour	8	10.7
Plantain chips	9	12.0
None	54	72.0
Total	75	100.0
Availability of processing facilities		
Yes	5	6.7
No	70	93.3
Total	75	100.0
If yes, specify		
None	73	97.3
Facilities for Plantain chips	2	2.7
Total	75	100.0
Specify other benefits of plantain		
Treatment of Ulcer	10	13.3
Treatment of Diabetes	14	18.7
No idea	46	61.3
Treatment of Diabetes and Ulcer	1	1.3
Good health	3	4.0
Treatment of kwashiorkor	1	1.3
Total	75	100.0

Source: Field Survey, 2023.

Table 7: Distribution of plantain marketers according to their interest in expanding their business and ways plantain marketing can be improved

Variables	Frequency	Percentage
Will you like to expand your plantain business?		
Yes	74	98.7
No	1	1.3
Total	75	100.0
In what ways can plantain marketing be improved?		
Access to credit facilities	20	26.7
Easy access to transportation	18	24.0
Access to farmland	8	10.7
Adequate storage facilities	2	2.7
Provision of labour	2	2.7
E-marketing	2	2.7
Provision of shed	1	1.3
No idea	22	29.3
Total	75	100.0

Source: Field survey, 2023.

Table 8: Challenges associated with plantain marketing in the study area

Challenges	Frequency	Percentage
Insufficient fund	47	64.4%
Low price of plantain	23	31.5%
Bad road	65	89.0%
Lack of processing facilities	24	32.9%
Inadequate storage facilities	37	50.7%
Perishability of plantain	49	67.1%
Marketers health challenges	6	8.2%
High cost of shop/spaces	10	13.7%
High cost of labour	14	19.2%
Theft	14	19.2%
Herdsmen invasion	7	9.6%
Illiteracy	6	8.2%
Packaging cost	6	8.2%
Maximum responding unit	75	100.0%

Multiple responses recorded

Source: Field survey, 2023.