



ECONOMIC ANALYSIS OF MARKETING MARGIN OF BANANA AND PLANTAIN IN ENUGU STATE, NIGERIA

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ABSTRACT: *Agricultural marketing has a stimulating and guiding impact on production activities and distributing agricultural commodities, thus is one of the major forces driving economic development. Due to the income generated from banana and plantain marketing, it is necessary to examine its marketing margin. The profit of middlemen, the economic power of farmers and efficiency of the marketing system is better determined by marketing margin analysis. The present study, therefore, analysed the marketing margin of banana and plantain in Enugu State, Nigeria. Primary data gotten from 160 marketers through the use of questionnaires were used in the study. The marketing performance of banana and plantain were determined by marketing margin model, T-test statistics and Likert scale rating technique. The results revealed that the mean marketing margin for banana and plantain retailers were 12.04% and 17.78%, respectively. Also, the mean marketing margin for banana and plantain wholesalers were 9.68% and 10.44%, respectively. Wholesalers and retailers lack capacity building. Poor finance, low capital investment, heavy imposition of tax/levies and high cost of transportation were the severe constraints to banana and plantain marketing in the study area. Available and adequate credit facilities at an appropriate interest rate is required to reduce the problem of finance. Feeder roads should be improved in an effort to reduce the high cost of transportation and damaged to the fruits, hence increasing marketing margin.*

KEYWORDS: Agricultural Marketing, Banana and Plantain, Economic Analysis, Marketing Margin, Nigeria

INTRODUCTION

Agriculture contributes greatly to the economy of Nigeria and other developing nations. It employs about 70 percent of the workforce in Nigeria and significantly contributes to the GDP. Nigeria and other sub-Sahara Africa countries depend on agriculture for food, raw materials for industries, means of livelihood and general wellbeing of their populace. Over the years agricultural production has increased due to increase in Nigeria populations which needs to be fed and to meet up with the food security requirement of the nation. However, the increase in yield of farm produce has not resulted in a coherent increase in earnings of most farmers (Ayinde at al., 2009). One of the factors said to have caused the imbalances is a poor and inefficient agricultural marketing system for major staple foods leading to high importation, inflation in farm produce and high rate of spoilage.



Banana and plantain are among the major staple food in Nigeria and other nations which provide several nutrients to the body. It constitutes a rich energy source, also rich in minerals, dietary fibre, vitamins A, B and C which are needed for healthy growth (Honfo et al., 2011). They are also used to manage diseases such as tonsillitis, ulcer and diabetes (FAO, 2007). Low fruit consumption posed a burden globally, adequate consumption of fruits including vegetables reduces the risks from stomach cancer, colorectal and cardiovascular diseases (WHO, 2014; Fadipe et al., 2015). Apart from their nutritional importance, marketing of banana and plantain serve as a source of employment thereby providing income to the rural and urban people in the Nigeria and other countries. The fruits were also being exported to other countries thereby generating revenue to the Nigeria government. In view of the importance of banana and plantain, their marketing become relevant to meet the demands of consumers locally and internationally, enhance income of both marketers and producers.

Agricultural marketing has a stimulating and guiding impact on production activities and distributing agricultural commodities, thus it is one of the major forces driving economic development (Mussema, 2006). Marketing of agricultural product, such as plantain and banana, begins after harvesting of the crop on the farm and involves all activities that happened from the farm gate till the product reach the final consumers. These activities include sorting, cleaning, storage, processing, packaging and distribution of the product. These activities are not usually carried out by the farmers but by the middlemen (marketers) who performed all the marketing functions and make a living from it. Effective marketing performance is very importance in agriculture which is characterised with perishable nature. If the market system is poor or the marketers did not perform their functions effectively there will be unstable agricultural price, high level of spoilage. This shows how importance the functions performed by the agricultural marketers are in Nigeria.

Due to the income generated from banana and plantain including its nutritional values and the role it plays in the livelihood of many Nigerians, it is, thus, necessary to examine its marketing margin and the problems faced in marketing it. This will help in policy formulation on how to improve the marketing system and better the welfare of its marketers which will also transposed to the producer. The profit of middlemen, the economic power of farmers and efficiency of the marketing system is better determined by marketing margin analysis (Gabre-Madhin, 2001). This study, therefore, analysed the marketing margin of plantain and banana, and identified the constraints faced in marketing the fruits in Enugu State, Nigeria.

METHODOLOGY

The Study Area

The study was conducted in Enugu State, Nigeria. The state occupies an area of 71,161 square kilometres with a population of 3,257,298 people with 85% of them living in the rural areas (National Population Commission (NPC), 2006). According to Ezike (1998), 75% of the population residing in rural areas are farmers. Enugu State is located between Latitudes 5° 55' N and 7° 08' N of the equator and longitudes 6° 55' E and 7° 08' E of the Greenwich meridian. The state shares boundaries with Anambra State to the West, Kogi State to the Northwest, Benue State to the Northeast, Ebonyi State to the East and Abia State and Imo State to the South. The state is made up of seventeen local government areas with Enugu as the capital. Enugu State is



divided into three agricultural zones: Enugu North, Enugu West and Enugu East. The major food crops grown in the state include cassava, maize, plantain, banana, cocoyam, yam, rice, groundnut, Bambara groundnut and vegetables like fluted pumpkin, Amaranths, garden eggs, okra.

Sampling Procedure

The study adopted a survey design. Multi-stage sampling technique was adopted in this study. Stage 1 involved a purposive selection of all the three agricultural zones in the state. This was done to cover the entire state and because of the availability of banana and plantain marketers in all the zones. Stage 2 involved a random selection of two local government areas (LGAs) from each zone making six LGAs. The LGAs selected were Udenu and Uzo-Uwani LGA (Enugu North Zone), Enugu North and Nkanu-West LGA (Enugu East Zone) and Awgu and Oji-River LGA (Enugu West Zone). The last stage (stage 3) involved a purposive selection of one market in each of the six LGAs because wholesale and retail markets were located there. These were Afor Obollo Market and Eke Nimbo Market (Enugu North Agricultural Zone), Enugu New Market and Eke-Agbani Market (Enugu East Agricultural Zone) and Afor Ugwuoba Market and Oye Awgu Market (Enugu West Agricultural Zone). The respondents selected from all the selected markets in the zones were 160 comprising 80 banana wholesalers/retailers and 80 plantain wholesalers/retailers.

Data Collection Method

Primary data were collected using structured and validated questionnaire which contains information on the marketers' socio-economic characteristics, the marketing margin (producer price, consumer price, cost of loading and off-loading, storage and cost of transportation) and the constraints faced by the marketers in the State.

Data Analysis

Descriptive statistics such as frequency and percentages were used to explore the socioeconomic characteristics of the marketers. The marketing margins of banana and plantain was realized with marketing margin analysis. Finally, the constraints marketing plantain and banana in Enugu State was achieved using a Likert scale rating technique. Tables and figures were used to present the results of this study.

Model Specification

Marketing Margin Analysis

This was employed to analyse the marketing margin of banana and plantain. It is the difference between a producer and consumer price of the same quality and quantity of a product.

Marketing margin of banana and plantain was computed using the following formula:

$$MM = \frac{SP - PP}{SP} \times 100$$

Where: MM = Marketing Margin

SP = Sales Price

PP = Purchasing Price



Likert Scale Rating Technique

A 5- point Likert scale rating was used in the study to measure the level of constraints in the marketing of plantain and banana. The grading was in this order: Very Great Extent=5; Moderate Extent=4; Little Extent=3; Very Little Extent=2; Not Affected=1. The mean score of the respondents based on the five-point scale was: $\Sigma x/x$

$$5+4+3+2+1=15$$

$$\Sigma x/x = 15/5=3.0$$

Using the interval scale of 0.5, the cut-off point was 3.0 ± 0.5 . Therefore, any mean score between 2.5 and 3.4 was considered little extent, while any mean score between 3.5 and 4.4 was considered as moderate extent. Also, any mean score of 4.5 or above was considered as very great extent.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Banana and Plantain Marketers in Enugu State

As shown in Table 1, females dominated plantain and banana marketing (87.5%) with only 12.5% which were male participants. This suggests that post-harvest handling of banana and plantain is still in the domain of women. The majority (76.2%) were married, 18.7% were single while 3.7% were widowed. The remaining respondents claimed to be either divorced or separated. The implication of this finding is that a larger proportion of the marketers could access extra financial, physical and moral support from their spouses which could boost their capital. Furthermore, the majority (76.8%) were within the age group of 31 to 50 years. This suggests that most of them were in their active age when they can do marketing function with youthful vigour. That is when they are likely to be more dynamic and willing to take risks that are associated with marketing with the hope of improving their socio-economic conditions.

On household size, the majority (65.6%) of the marketers had a household size of 5 to 10 members, 26.8% had a family size less than 5 people while the remaining 7.5% had a family size of 11 to 15 people (Table 1). The larger the household size the higher the tendency of getting additional helping hands from household members (especially the children), hence, the possibility of business proliferation. Table 1 further shows that 33.7% of the marketers had no formal education, 41.25% had only primary education while the remaining 25% of the respondents had post-primary education. These findings imply that the respondents were not highly educated and were unable to keep accurate and reliable trading records. The results further showed that 68.7% of the marketers had between 6 and 15 years of marketing experience while 19.5% had 5 years and below. Only 10% had between 16 and 20 years. This suggests that most banana and plantain marketers were well experienced and there are significant newly joined marketers in the business. This implies that in as much as plantain and banana marketing continue to serve as a reliable and quick source of income, more new young people will be getting involved in their marketing activities. For efficient and effective marketing of banana and plantain, information dissemination is very important. Out of 160 traders interviewed, only 15% did not have access to telephone. This shows that marketers appreciate the importance of information in the marketing of plantain and banana. Their major



source of capital was from personal savings (47.5%) followed by 33.7% who took loans from thrift societies which they belong. 15.6% submitted that they borrowed from relations and friends while 3.1% took bank loans.

Table 1: Socio-Economic Characteristics of Respondents

Variables	Wholesaler		Retailers		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Gender						
Female	48	80	92	92	140	87.5
Male	12	20	8	8	20	12.5
Marital status						
Single	12	20	18	18	30	18.75
Married	42	70	80	80	122	76.25
Separated	1	1.7	-	-	1	0.62
Divorced	1	1.7	-	-	1	0.62
Widowed	4	6.6	2	2	2	3.75
Age						
11-20	-	-	11	11	11	6.87
21-30	7	11.7	19	19	26	16.25
31-40	29	48.3	37	37	66	41.25
41-50	24	40	33	33	57	35.62
Household Size						
<5	18	38	25	25	43	26.87
5-10	36	60	69	69	105	65.62
11-15	6	10	6	6	12	7.5
Educational level						
Primary	25	41.7	41	41	66	41.25
Post primary	21	35	19	19	40	25
Non-formal	14	23.3	40	40	54	33.7
Marketing experience						
<1	2	3.3	-	-	2	1.25
1-5	10	16.7	19	19	29	18.25
6-10	27	45	26	26	53	33.1
11-15	15	25	42	42	57	35.6
>16	6	10	10	10	16	10
Source of capital						
Bank	4	6.6	1	1	5	3.1
Cooperatives	22	36.6	32	32	54	33.7
Relations/friends	7	11.6	18	18	25	15.6
Personal savings	7	45	49	49	76	47.5
Access to phone						
Access	52	86.6	83	83	135	84.36
No access	8	13.4	17	17	25	15.63
Source of Market information						
Radio/Tv	-	-	-	-	-	-



Market place	47	78.3	60	60	107	66.87
Transporters	3	5	20	20	23	14.37
GSM	10	16.7	20	20	30	18.75

Regarding the source of market information, the majority (66.8%) of the marketers sourced their market information from other marketers in different market place (Table 1). This was followed by the use of GSM (18.7%) and from transporters (drivers) (14.3%). This shows that in addition to information in the market place, the advent of GSM has improved dissemination of information in the markets resulting to the neglect of some other sources of information such as television, radio and newspaper that may not be readily available.

Marketing Margin Analysis of the Banana and Plantain

The summary of the marketing margin analysis of banana and plantain is presented in Table 2. The table shows that the marketing of plantain and banana is lucrative as the marketing margin (both wholesales and retails) of plantain and banana were 28.22% and 21.72%, respectively.

Table 2: Summary of Marketing Analysis of Banana and Plantain

	Plantain			Banana		
	Selling price	Buying price	Marketing margin	Selling price	Buying price	Marketing margin
Retailers	₦225	₦185	17.78%	₦108	₦95	12.04%
Wholesalers	₦182	₦163	10.44%	₦93	₦84	9.68%
Total			28.22%			21.72%

Marketing Margins for Retailers of Banana and Plantain fruits

From the information gathered from retailers in the study area, the average selling price for a kilogram of plantain was ₦225 and the average buying price was ₦185. On the other hand, the average selling price for a kilogram of banana was ₦108 and the average buying price was ₦95. The mean marketing margin for plantain retailers was therefore 17.78%, while the mean marketing margin for banana retailers was 12.04% (Table 2). This suggests that retail marketing of banana and plantain is viable and the retailers are making profits from it.

Table 3: T-Test for Marketing Margins for Retailers

Retailers	No of Obs.	Mean M.M. (%)	Std. Err	Std. Dev
MM for Plantain	50	17.78	1.0326	7.30159
MM for Banana	50	12.04	0.3603	2.54773

t-value = -29.4204

p-values = 0.0000

Source: Field Survey, 2017



The results also showed that plantain has a high standard deviation than banana, suggesting higher variations among plantain retailers than banana retailers. The absolute t-value of 29.4204 which is greater than 2 at 5% significant level, suggested that there existed a statistical difference between the marketing margins of banana and plantain retailers. The study, therefore, rejects the null hypothesis and concludes that there existed a significant difference between plantain and banana marketing margins.

Marketing Margins for Wholesalers of Banana and Plantain Fruits

The results gathered from wholesalers in the study area showed that the average selling price for a kilogram of plantain was ₦182 and the average buying price was ₦163. On the other hand, the average selling price for a kilogram of banana was ₦93 and the average buying price was ₦84. The mean marketing margin for plantain wholesalers was therefore 10.44%, while the mean marketing margin for banana wholesalers was 9.68% (Table 2). This suggests that wholesales marketing of banana and plantain is a profitable venture.

Table 4: T-Test for Marketing Margins for Wholesalers

Whole Sellers	No. of Obs	Mean	St. Err	Std. Dev
MM for Plantain	30	10.44	0.9021098	4.109877
MM for Banana	30	9.68	0.9961851	3.367878

t-values = 0.0620

p-values = 0.9511

Source: Field Survey, 2017

The results also showed that the difference in the standard deviation is not as high as that for retailers; however, plantain still has higher values than banana. The absolute t-value of 0.0620 is less than 2 at 5% significant level, and the probability value of 0.9511 which is greater than 0.05, suggested that there is no significant difference between the margins of plantain and banana wholesalers. The study, therefore, does not reject the null hypothesis and concludes that there is no significant difference between plantain and banana marketing margins for wholesalers.

Constraints Faced in the Marketing of Banana and Plantain

The results gathered from the study area on constraints faced by retailers and wholesalers of plantain and banana were presented in Table 5.

Table 5: Constraints Faced by Wholesalers and Retailers of Banana and Plantain

S/N	Contents	Banana Wholesaler	Banana Retailer	Plantain Wholesaler	Plantain Retailer
1	Inadequate Information	1.3	1.5	1.36	1.12
2	Breakage	1.3	1.68	1.5	1.08
3	Pest and disease attack	1	2.86	1.3	2.38
4	Heavy Imposition of tax/Levies	3.72	2.8	4.73	1.7



5	High Cost of Transportation	3.88	3.4	4.83	3.48
6	Rapid deterioration in quality	2	3.7	1.7	2.82
7	Low Capital/Initial Investment	4.54	4.5	4.78	4.1
8	Finance	4.2	4	4.68	4.4

Source: Field Survey, 2017

Constraints on the Marketing of Plantain

The results for plantain retailers and wholesalers are graphically represented below (figure 1) for better comprehension:

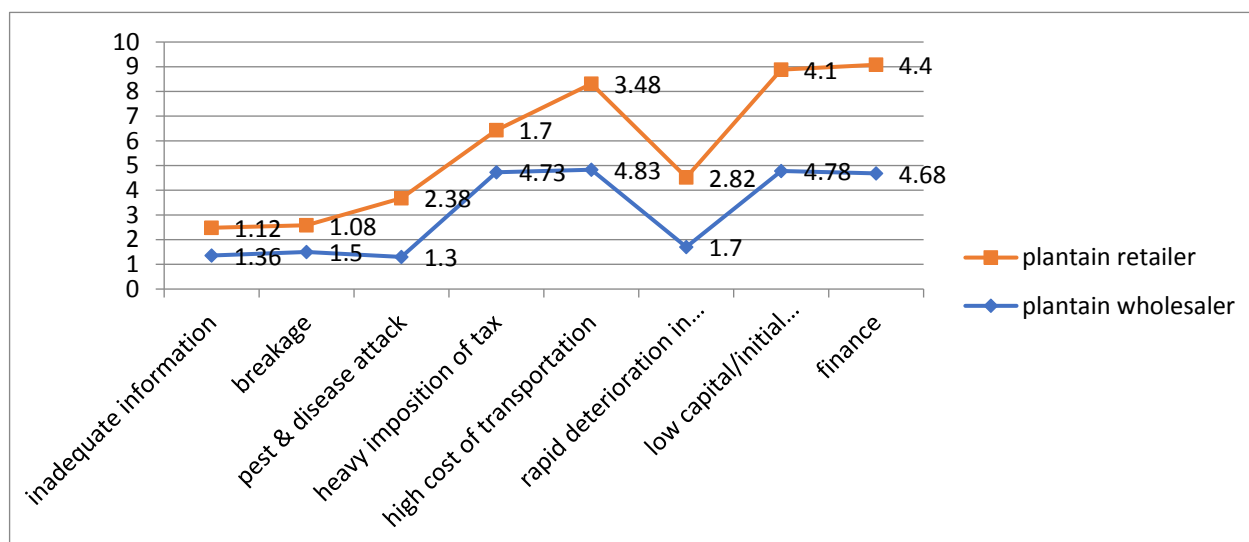


Figure 1: Graph Showing Mean Scores of Plantain Wholesalers and Retailers Marketing Constraints

Source: Computed from Field Survey, 2017

The plantain wholesalers and retailers had some constraints in marketing the fruits. The result from figure 1 showed that low capital/initial investment and finance affected plantain wholesalers and retailers to a very great extent during the period of this study. Plantain wholesalers were affected by the high cost of transportation to a very great extent, while plantain retailers were affected moderately. Both wholesalers and retailers were constrained to a very little extent by rapid deterioration in quality. Pest and disease attack constrained wholesalers to a very little extent and as compared to its effect to retailers in a little way. Breakage affected both to a little extent, while inadequate information had a very little effect on both wholesalers and retailers of plantain. The heavy imposition of tax/levies was a very great constraint to plantain wholesalers, with a relatively very low effect on plantain retailers.

Constraints on the Marketing of Banana

The results for banana retailers and wholesalers are graphically represented below (figure 2) for better comprehension:

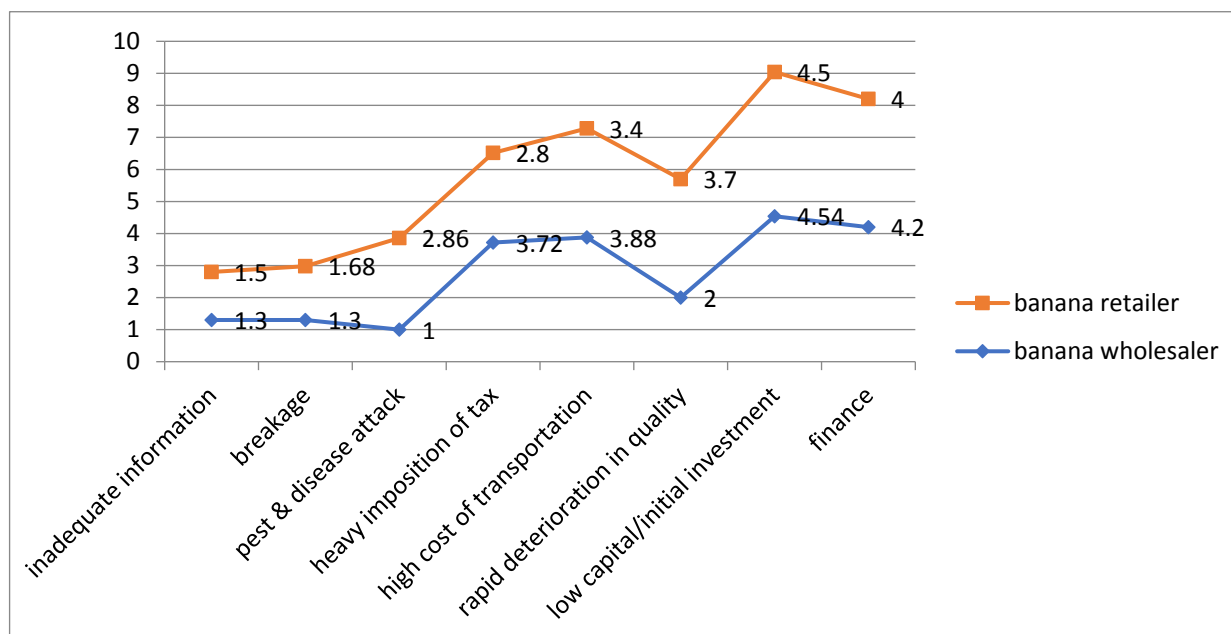


Figure 2: Graph Showing Mean Scores of Banana Wholesalers and Retailers Marketing Constraints

Source: Plotted from Field Survey, 2017.

The result from figure 2 showed that low capital/initial investment and finance affected banana wholesalers and retailers to a very great extent during the period of this study. This is same as the case of plantain retailers and wholesalers suggesting that both constraints were significant for banana and plantain. Banana wholesalers were affected by the high cost of transportation to a very great extent, while banana retailers were affected moderately. The rapid deterioration in quality, constrained banana retailers moderately and banana wholesalers to a little extent. Pest and disease attack constrained both wholesalers and retailers to a little extent. The results also show that breakage affected both wholesalers and retailers moderately, while inadequate information had a very little effect on both wholesalers and retailers of banana. Finally, Heavy imposition of tax/levies had a little effect as a constraint to banana retailers but affected wholesalers moderately.



CONCLUSIONS

The study of banana and plantain marketing using marketing margin analysis provides information on how competitive and profitable marketing of banana and plantain have been. The study found that the mean marketing margin for banana and plantain retailers were 12.04% and 17.78%, respectively. Also, the mean marketing margin for banana and plantain wholesalers were 9.68% and 10.44%, respectively. The study further revealed that there exists a significant difference between plantain and banana marketing margins for retailers, but no significant difference between plantain and banana marketing margins for wholesalers. The major severe constraints identified in the study were the high transportation cost, poor finance and low capital/initial investment, closely followed by the relatively lower severe constraint of the heavy imposition of tax levies. On average, the respondents noted that rapid deterioration, pest and disease attack, breakage, inadequate information were not very significant constraints to plantain and banana marketing.

RECOMMENDATIONS

Marketers of banana and plantain should be encouraged through the provision of accessible credit facilities at a low-interest rate by micro-finance banks, commercial banks, governments and other lending institutions. As this would help in reducing the marketing constraints and provide the unemployed youth with start-up capital needed to be self-employed, thereby creating more job opportunities. There is need for the government to improve the feeder roads and also provide farm taxis that aids in transporting products from farm to the markets, in an effort to reduce the high transportation cost which was a severe constraint to banana and plantain marketing. The efforts for value addition in banana and plantain needed to be done for enhancing returns.

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