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Evaluation of Small Scale Plantain Marketing in Delta State: A Case Study of Isoko North Local Government Area, Delta State

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Abstract:

The Study was carried out to evaluate plantain marketing in Delta state (A case study of Isoko North Local Government Area). A multi- stage proportional sampling was adopted for the study. A total of sixty (60) respondents were selected for the study. Data for the study were collected using structured questionnaire. The data obtained were analyzed with aid of descriptive statistics, while the hypothesis was tested with the help of regression. Majority 66.7% of the respondents were male, 84.3% married and 66% had household size of 1-4persons. About 75% of the respondents indicated that they are into plantain retailing, while 70% of the respondents asserted that plantain supply in the area is irregular. The result of the analysis revealed that price (x_1), quantity sold (x_5), marketing experience (x_7) are positively related to net income of the respondents, while transport cost (x_2), purchase cost (x_6) were found to be negatively related to net income of the respondents. The study recommends among others that plantain price should be encouraged, credit facilities should be granted to plantain marketers to increase quantity of plantain sold, plantain marketing awareness programme should be organized for the marketers by relevant government or non- government agencies to enhanced the performance and the activities.

Keywords: Evaluation, Plantain Marketing, Isoko North, Delta State.

1. Background of the Study

Plantain (*Musa Spp*) is one of the most important staple crops for millions of people both in developed and developing countries contributing to the subsistence economy in terms of most important food crops after rice, wheat and corn grown in more than 100 countries over harvested area of appropriately 10 million hectares with an annual production of 88 million metric tons and the World's most exported fruit (FAO, 2006).

Plantain is found in the diet of many Nigerian families. It is a very good source of carbohydrates, proteins, mineral and Vitamins no matter what forms it is consumed in addition to the numerous medical properties (Ajayi and Aneke, 2002 and Honto et al.2007). It can be boiled and consumed directly or taken in convenient forms like Dodo (fried ripe pulp), chips (fried unripe pulp) or processed to produce such as plantain flour, Local bear, plantain body food etc.

In terms of distribution, four main types of plantain are available in Nigeria which are strictly based on their bunch characteristics. These are horn type, French type, false type and French-horn type. In Nigeria the false horn type is the most widely distributed because of its ability tolerate poor soil condition than others (John and Marchal, 1995). The production of plantain is relatively static despite its high demand partly as a consequence of the increased incidence of black side Sigatoka disease, which has a strong influence on youth and the green leaves, and other diseases and pests (Kamsey et al, 1990). Declining soil fertility has also been implicated (IITA 1997) as a cause for low production of plantains. It was noted that plantain is produce mainly in bush fallow, home gardens, and backyard and as intercrop with cocoa and coffee where it serves as shade for young seedling rather than on commercial basis, in this situation production was basically for family consumption.

Marketing is a series of human activities by which a product is exchange between the producer and the consumer during which the place, time, form and possession desires of the consumer are satisfied. In broader sense, marketing is a total system of introducing business activities designed to plan, price, promote and distributes satisfying product and services to present potential customers (Nwaruet al, 2011). Traditionally, marketing and distribution system involve the collection, processing and transportation of plantain bunches from the producers residing in rural and urban areas to major consuming centers. Adetunji and Adesiyani (2008) reported that plantain market is a perfect competitive market and the business is easy to start with moderate initial capital. He also stated the business is profitable with high market margin and gross margin that are subject to increase as marketer's source produce from remote places. The marketing chain help to describe the succession of market which products pass through until its reach the consumers. Marketing helps to locate areas of surplus production and relocates the produce to area of shortages. Plantain is a seasonal crop with

relative short shelf life hence, it is available for a limited period and post-harvest losses are very high. Good marketing help to ensure the availability of seasonal produce at off-season (Oladejo and Sanusi, 2011). No doubt the study of the marketing of plantain products will help to create employment especially to the women folk and youth in both urban and rural area.

The general objective of this study is to evaluate plantain marketing in Delta State (A case study of Isoko North local Government Area)

The specific objectives that help to focus the research includes; identify the socio-economic characteristics of the respondents, marketing functions/practices, costs and returns and problems affecting plantain marketers

1.1. Statement of Problem

Plantain is a seasonal crop with relative short shelf life. This situation call for a scientific survey of its marketing system. Plantain is found in the diet of many Nigerian families and very useful due to its medical properties particularly for diabetic patients.

1.2. Hypothesis

Null hypothesis (Ho): There is no significant relationship between plantain marketing costs and net returns of plantain marketers.

2. Methodology

The study was carried out in Isoko North local Government area, Delta state, Nigeria. Isoko North local Government Area, has land mass of approximately 65,000m². The local government falls under the rain forest vegetation zone with a mean annual rainfall of 1800mm per annum and average temperature of 31⁰C. It is situated on latitude 5⁰N and longitude 5⁰N and 6⁰S. The inhabitants of the area are notable for farming.

The study was conducted in Isoko North local Government Area, Delta State because plantain production is predominantly grown in the area. Other crops grown include, maize, cassava, yam, oil palm etc.

Sixty (60) respondents were selected from the following areas; Ozoro (15) Emevor (10), Iyede (10), Otor- owhe (7), Ofagbe (8) and Owhegbo (10) through proportionate sampling technique. Data were collected through a well-structured interview schedule. Data collected were analyzed with the aid of descriptive statistics. Gross margin analysis was used to realize the profitability of plantain business. Regression analysis was used to test the hypothesis. The model is as shown below;

Gross margin (GM) = Total Revenue (TR) - Total Variable Cost (TVC).

Regression model $Y = f(x_1, x_2, x_3, x_4, x_5, x_6, u_1)$

3. Results and Discussion

3.1. Socio-Economic Characteristics of the Respondents

The summary statistics of some socio-economic characteristics are presented in Table 1. Table 1 revealed that 66.7% of the respondents were female, while 33.3% of them are male. This finding is not in agreement with Akalumba (1998) that posited that post-harvest handling of plantain is still within the domain of women, while men are more involved with its production. The table 1 further showed that most of respondents were within the age range of 31-40 years and 81.6% had one level of education or the other. The implication of this could be that plantain marketing is taking care of unemployment as more educated people are getting involved in the business. It was also discovered that about 66.7% had a household size of 1-4 persons. This finding is in contrast with Aregbesola (2001) that carried out a work estimation of marketing functions and practices. On the issue of source of capital, the result indicates that majority (63.3%) of the respondents submitted that they make use of their personal savings, while the others get fund from friends/relatives, cooperative societies and commercial banks.

The result in table 2 revealed that 50% of the respondents combine plantain farming and selling of plantain. Plantain marketing channels shows that 75% of the respondents are into plantain retailing, while 70% of the respondents asserted that plantain supply in the area is irregular. The implication of this is that most marketers will drift towards marketing of other agricultural products or plantain farming during the period of scarcity.

The result of plantain marketer's transportation function shows that 58.3% of the respondent make use of bike (okada) to transport their plantain, while 16.7% and 25% of the respondent opted for motor bikes (okada) and bicycle respectively. Table 2 also showed that most (66.7%) of the respondents stated that the plantains are sold in fresh bunches, while the remaining plantain marketers asserted that they sell their products in form of Dodo, chips and plantain flours.

3.2. Analysis of Costs and Returns

Table 4 and 5 revealed the costs and returns analysis of the plantain marketers dozens of plantain bunches;

Variable cost (VC) = N 670 + N 9600 = N10,270

This include transport cost, local government tax + Eweya council / Eletu charges

Fixed cost (FC) = N200, this include transaction space rent + miscellaneous

Total cost (TC) = VC + FC = N870.

Total revenue = N12,000

Benefit cost ratio (BCR) = Total revenue

Total cost = $\frac{N12,000}{N10,470} = 1.15$

Since the benefit-cost ratio is greater than one it shows that plantain marketing in the study area is profitable. The BCR revealed that for every N1 invested into plantain marketing business by the respondent, N1.15k is obtained.

$$\begin{aligned} \text{Gross Margin} &= \text{Total revenue} - \text{Variable cost} \\ &= \text{N}12,000 - \text{N}10,270 \\ &= \text{N}1720 \text{ per dozen of plantain sold} \\ \text{Net return} &= \text{Gross Margin} - \text{Fixed Cost} \\ &= \text{N}1720 - \text{N}200 \\ &= \text{N}1530 \text{ per dozen of plantain sold.} \end{aligned}$$

The cost and returns analysis revealed that on the average each plantain marketer in the study area makes a profit of N1530.00 per dozen of bunches of plantain sold.

3.3. Problems Affecting Plantain Marketing

Table 3 showed the major plantain marketing problems identified by the respondents. About 83.3% of the respondents asserted that finance is a serious problem confronting them, while 75% opted for high cost of transportation. Moreover, about 66.7% and 66.7% of the respondents submitted that price fluctuation (seasonality) and rapid deterioration in quality of plantain due to ripening were some of the challenges of plantain marketing in the study area. Furthermore, 50% of the respondents opined that pilfering is also a source of challenge plantain marketing in the area

3.4. Regression Analysis

The co-efficient of multiple determinations (R^2) is 5.20, which indicates that 52% variation net income is caused by the independent variables, i.e. transport cost, storage cost, and other marketing activities, while the remaining 48% is due to error term. The functional equation of the linear function is given as;

$$\begin{aligned} Y &= b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + e_i \\ Y &= 1.245 + 0.747x_1 - 0.185x_2 + 0.027x_3 + 0.010x_4 + 0.237x_5 - 0.214x_6 + 0.223x_7 \end{aligned}$$

The result of the analysis revealed that price (x_1), quantity sold (x_5), marketing experience (x_7) are positively related to net income of the respondents. Thus, 0.747, 0.237, 0.223-unit increase each in x_1 , x_5 and x_7 will bring about one-unit increase respectively in respondent's net income.

On the other hand, variables transport cost (x_2), purchase cost (x_6) were found to be negatively related to net income of respondents. The value of F-calculated (21.478) obtained shows that overall equation is statistically significant. With this result the null hypothesis (H_0) is rejected, while alternative hypothesis (H_a) is accepted.

3.5. Conclusion

Plantain market is a perfect competitive market and the business is easily to start with moderate initial capital. The study identified finance, cost of transportation, seasonality, (price fluctuation), pilfering and rapid deterioration based on responds of plantain marketers as some of problems affecting plantain marketing in the area. The result of the study also shows that plantain marketing is profitable and takes care of un-employment as more people are going into the business.

3.6. Recommendations

Based on the findings of the study, the following are hereby recommended,

1. High price of plantain and its products should be encouraged.
2. Credit facilities should be granted to plantain marketers to increase quantity of plantain sold by marketers.
3. Plantain marketing awareness programmes should be encouraged/organized by relevant government or non- government agencies so as to promote the performance and the activities of plantain marketers.

Variables	Frequency	Percentage (%)
Sex		
Male	20	33.3
Female	40	66.7
Total	60	100
Age		
30 years	15	25.0
31- 40 year	25	41.7
41 and above	20	33.3
Total	60	100
Marital Status		
Single	5	8.33
Marriage	50	84.3
Divorced	5	8.33
Total	60	100
Educational Level		
No formal education	5	8.33
Primary education	30	50.00
Secondary education	20	33.33
Tertiary education	20	8.33
Total	60	100
Household Size		
1-4	40	66.7
5-8	20	33.3
Total	60	100

Table 1: Demographic characteristics of the respondent
Source: Field survey, 2014

Variables	Frequency	Percentage
Major occupation		
Selling plantain only	20	33.3
Selling plantain with other- Agricultural product	10	16.7
Plantain farming and selling	30	50.0
Total	60	100
Plantain Products		
Fresh bunches	40	66.7
Dodo	10	16.7
Chips	5	8.3
Plantain hours	5	8.3
Total	60	100
Distribution Channels		
Wholesale	5	8.3
Retail	45	75
Farm gate collector	10	16.7
Total	60	100
Purchase source		
Farm	25	41.7
Suburb	15	25
Market place	20	33.3
Total	60	100
Mode of Transportation		
Vehicle	10	16.7
Motor bike (Okada)	35	58.3
Bicycle	15	25
Total	60	100
Supply rate of plantain		
Regular	18	30
Irregular	42	70
Total	60	100
Source of Finance		
Personal saving	38	63.3
Friends and relatives	10	16.7
Money lender	2	3.3
Cooperative society	5	8.3
Commercial Bank	5	8.3
Total	60	100

Table 2: Marketing functions and practices
Source: Field survey, 2014

Problems	Degree of Seriousness		Ranking
	Serious (s)	Not Serious (NS)	
Finance	83.3 % (50)	16.7% (10)	1 st
High transportation cost	75% (45)	25% (15)	2 nd
Rapid deterioration	66.7% (40)	33.3% (20)	3 rd
Price Fluctuation (Seasonality)	66.7% (40)	33.3% (20)	3 rd
Pilfering	50% (30)	50% (30)	5 th

Table 3: Distribution of Respondents Based on Problems Affecting Plantain Marketing
Source: Field survey, 2014

Cost of Item	Rate	Amount in Naira (N)
Cost of purchase	800	9,600
Transport cost	-	520
Other cost	-	150
Total Cost	-	10,270

Table 4: Estimate of average variable cost per bunch/Dozen of plantain bunches
Source: Field survey, 2014

Quantity	Selling Price Per Bunch	Total Revenue
Q1	(N)	(N)
12	1000	12,000

Table 5: Estimate average total revenue per dozen of plantain bunches
Source: Field survey, 2014

4. Result of Regression Analysis

Variables	coefficient	t- value
Constant	1.245	0.39
Transport cost(x_1)	-0.185	-1.728
Labour cost (x_2)	0.027	0.264
Storage cost (x_3)	0.010	0.075
Quantity sold (x_4)	0.257	2.099
Purchase cost (x_5)	-0.214	-2.111
Marketing experience (x_6)	0.223	2.082
R ² = 5.20		
F-value =21.478 (0.0000)***		

Table 6

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