

DETERMINING MARKETING COSTS AND RETURNS OF PLANTAIN IN NASARAWA NIGERIA

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Abstract: This paper examines plantain production to determine marketing cost and returns. Marketing is a process of satisfying human needs by bringing products to people in the proper form and at a proper time and place. The cost of performing the various marketing functions and of operating various agencies. Return variability in spot and futures prices have been analyzed using multivariate GARCH models in different types of studies. McCurdy and Morgan (1991) analyzed uncovered interest rate parity. Problem statement of This study aimed High cost of production and poor marketing strategies as has result in the increase in price of input, low farm income, low efficiency of resource utilization, low distribution and returns. Objective of this study is to analyze the evaluate costs and returns, what are the marketing activities and functions. The hypothesis Ho: There is no significant relationship between marketing costs and net returns. Primary data was collected and analyzed using both description statistics and inferential statistics. The R² value of 0.530 means that the estimated variables included in the model explained 53% of variation in net returns of respondents. The F -value of 21.268 is also significant at 1%. urban areas. This will help in getting the produce to market places in good time and in good shape (quality). It will also bring about a reduction in transportation cost and hence the cost of marketing. From the findings of this study, it could be concluded that net returns are affected by estimated marketing costs and due to some selected characteristics

Keywords: marketing cost and returns.

1. INTRODUCTION

Marketing is defined as a process of satisfying human needs by bringing products to people in the proper form and at a proper time and place. Marketing has economic value because it gives form, time, place, utility to products and services. The marketing of agricultural products begins at the farm when the farmer harvests his products. The product when it is harvested cannot usually go directly to the consumers. Firstly, it is likely to be located some distance from the place of consumption in regular and continuous manner throughout the year. Secondly, storage is required to adjust supply to meet demand. Thirdly, a product when it has been harvested is rarely in a form acceptable to consumers. Therefore, it must be sorted, cleared and processed in various ways and must be presented to the consumer in convenient quality and quantities for sale. Finally the farmer expects payment when his produce leaves his possession, and hence some financial arrangements must be made to cover all the various stages until the retailer sells the products to the final consumer. Barker (1989) stated that there is no universally accepted definition of marketing indicating the variety of opinions which exist concerning the subject.

The term costs mean sacrifice (interms of money or comforts) which are made to produce goods and services. Cost function depends on various factors such as output, technology and price of input, productivity of inputs. The cost involved in moving the product from the point of production to the point of consumption, i.e., the cost of performing the various marketing functions and of operating various agencies; and Profits of the various market functionaries involved in moving the produce from the initial point of production till it reaches the ultimate consumer. Agricultural prices vary because production and consumption are variable (Gilbert & Morgan 2010).

Return variability in spot and futures prices have been analyzed using multivariate GARCH models in different types of studies. McCurdy and Morgan (1991) analyzed uncovered interest rate parity. Chan, K. *et al.* (1991) made a similar study using stock and futures indices. Ng and Pirrong (1994) analyzed joint dynamics of spot and futures prices returns for metals. Jacobs and Onochie (1998) work was done for the relationship between return variability and trading volume in international futures prices. Research by Stephenson and Lev (2004) supports the use of direct marketing to earn higher prices; they determined that development of more localized food systems utilizing direct marketing in two contrasting Oregon communities could enhance the viability of small farmers.

Problem statement of This study aimed High cost and poor marketing strategies as has resulting increase in price, low efficiency of resource utilization, low distribution and returns ,these concerns are similar to those expressed by Thilmay and Watson (2004), who concluded that while farmers' markets are expected to grow in popularity, producers' needs to balance their marketing activities with the requirements of their production efforts made it difficult for some markets to attract producers.

Objective of this study is to analyze the

1. What are the marketing activities and
2. evaluate costs and return

Hypothesis of the study:

The hypothesis of the study stated in the null form is as follows:

Ho: There is no significant relationship between marketing costs and net returns.

2. METHODOLOGY

Primary data was collected; respondents are plantain marketer in Nasarawa Nigeria. Nasarawa State is located in north central Nigeria. It lies between North Latitude 7° and 9° and 7° and 10° East Longitude and shares boundary with Benue State to the South, Kogi State to the west, the Federal Capital territory, Abuja to the North – East, Plateau State to the South east. The State covers an area of about 27, 117 Km² with an estimated population of 1,863,275 people (National Population Commission 2006). The State has a mean temperature range of 25°C in October to about 36°C in March while annual rainfall varies from 13.73mm in some places to 145mm in others. Alluvial soils are found along the Benue trough and their flood plains. The forest soils, which are rich in humus and laterite, are found in most part of the state.

There are also sandy soils in some parts of the state. Solid minerals notable are salt and bauxite.

Analytical Techniques:

The methods of data analyses used to determine marketing cost and returns; analyzed using both description statistics and inferential statistics. Description statistics such as frequency distribution and percentage were used to analyze specific objective

Multiple regression analysis of the linearised cobb-douglas function was carried out to test the stated hypothesis.

The Cobb – Douglas Regression Model

$$\log \square\square = b_0 + b_1 + b_2 \log X_2 + \dots + b_{12} \log X_{12}$$

Where $\square\square$ = Net return (Measured in Naira)

X1 = Price (Naira)

X2 = Labour cost (Naira)

X3 = Rent (Naira)

X4 = Transport cost (Naira)

X5 = Age of respondent (Years)

X6 = House hold Size (Actual number of household members)

X7 = Purchase cost (Naira)

X8 = Years of Plantain marketing experience (Years)

X10 = Source of capital (Dummy)

X11 = Storage Cost (Naira)

X12 = Level of Education (Years of Schooling)

Table 1 showed that the marketers perform transportation function, and in doing this, 99.5% of them uses vehicles as means of transport while 2.7% and 1.8% respectively opted for motor bikes and head loads. Information collected further showed that the respondents perform storage function. Analysis showed that 29.1% store their ware under sheds, 57.3% store in rented shops while 13.6% claimed to store right in their houses. On the issue of plantain bulk purchase as part of their marketing function, 40.9% of the respondents buy directly from the producers' farms, 1.8% opted for suburbs while 57.3 claimed that they meet with their suppliers right in the marketplace. Data analysed showed that the marketers in carrying out their distributing function uses diverse channels. About 10.9% claimed to supply their wares in wholesales. The remaining 26.4%, 42.7% and 20% sell directly to the retailers, final consumers and processors/food vendors respectively. On the issue of labour type used, 54.5% claimed to use family labour, 27.3 claimed to use hired labour while 18.2% submitted that they combine both.

3. MARKETING FUNCTIONS AND PRACTICES

Variable	Frequency	Percentage
Transportation means		
Vehicle	105	99.5
Motor bike	3	2.7
Head load	2	1.8
Storage facilities		
Shed	32	29.1
Rented shops	63	57.3
Home	15	13.6
Purchase source		
Farm	45	40.9
Suburb	2	1.8
Market place	63	57.3
Distribution channel		
Wholesalers	12	10.9
Retailers	29	26.4
Consumers	47	42.7
Processors /food Vendors	22	20.0
Labour type		
Family	60	54.5
Hired	30	27.3
Both	20	18.2
Sales (bunches sold per month)		
≤50	10	9.2
51– 100	13	11.9
101 – 150	22	20.0
151 – 200	45	40.9
> 200	20	18.2
Total	110	100.0

In order to determine the market structure of plantain market in the study area, the herfindahl index was computed making use of total sales (bunches of plantain) per month. Herfindahl index is calculated as:

$$\text{Herfindahl index (HI)} = \sum Si^2$$

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Where S_i = market share for respondent i , calculated

$$\text{as: } S_i = \frac{q_i}{q}$$

Where q_i = bunches sold per month by respondent i

q = total no of bunches sold per month by all respondents.

$$\text{Thus, the herfindahl index (HI)} = \sum Si^2 = 0.3$$

The highest value obtainable here is 1. A very low herfindahl index (0.3) obtained here revealed that the concentration ratio for plantain marketers is very low, thus the market structure of plantain tends toward perfect competition, which is characterized by (1) The product sold is homogenous, (2) There is no barrier to entry in to the business (3) There are few buyers and sellers in the study area.

The Costs and Returns analysis of respondents revealed the following on per monthly average basis:

$$\text{Variable Cost (VC)} = \text{N}22,262.11$$

This include transport cost + storage cost + labour cost + cost of plantain purchase.

$$\text{Fixed Cost (FC)} = \text{N}1,874.10$$

This include transaction land rent + miscellaneous

$$\text{Total Cost (TC = VC + FC)} = \text{N}24,136.21$$

$$\text{Total Revenue} = \text{N}34,476.68$$

$$\text{Benefit cost ratio (BCR)} = \frac{\text{Total Revenue}}{\text{Total Cost}}$$

$$\text{Total Cost} = \frac{34,476.68}{24,136.21} = 1.47$$

The relationship between marketing costs of plantain and net returns to marketers was determined by regression analysis of the Cobb-Douglas functional form. The model is specified as follows:

$$\text{Log } Y = b_0 + b_1 \log X_1 + b_2 \log X_2 + b_3 \log X_3 + \dots + b_{12} \log X_{12}$$

Where Y = Net return

X_1 = Price, X_2 = Labour Cost, X_3 = Rent, X_4 = transport cost, X_5 = Age, X_6 = Household size X_7

= purchase cost, X_8 = quantity sold X_9 = Years of plantain marketing experience, X_{10} = Source of capital X_{11} = storage cost, X_{12} = level of education.

b_0 = constant, $b_1 \dots b_{12}$ coefficient of variables.

The result obtained is as follows:

Variable	Coefficient	t-value
Constant b_0	1.245	0.34
Price (X_1)	0.747	6.719
Labour cost (X_2)	0.027	0.264
Rent (X_3)	-0.181	-1.949
Transport cost (X_4)	-0.185	-1.221
Age (X_5)	0.105	0.796

Household size (X6)	-0.030	-0.275
Purchase cost (X7)	-0.214	-2.111
Quantity sold (X8)	0.237	2.099
Years of experience (X9)	0.223	2.082
Major Source of capital (X10)	0.017	0.715
Storage Cost (X11)	0.010	0.075
Level of Education (X12)	-0.66	-0.542

R2 = 0.530

F-value 21.268 (0.000)***

4. RESULT AND CONCLUSION

The R2 value of 0.530 means that the estimated variables included in the model explained 53% of variation in net returns of respondents. The F –value of 21.268 is also significant at 1% urban areas. This will help in getting the produce to market places in good time and in good shape (quality). It will also bring about a reduction in transportation cost and hence the cost of marketing.

By measuring the costs for labor, purchased goods and services, and capital assets associated with these marketing-related activities, we determined that there are significant variations in marketing costs across marketing channels, Significant labor costs for the selling activity and transportation expenses can offset the higher prices and minimal packaging costs associated with farmers’ markets. From the findings of this study, it could be concluded that net returns are affected by estimated marketing costs and selected characteristics

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