

## Economic analysis of group marketing of Pineapple in selected markets of Osun-State, Nigeria.

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### ABSTRACT

Marketing of pineapple is as essential as its production since an effective marketing system helps to harmonize demand and supply and stimulate production. The study therefore analyzed returns to group marketing of pineapple in selected market of Osun state. The data for the study were randomly collected from twenty marketing groups (with five members from each group) with structured questionnaires. The data were analyzed using descriptive statistics, marketing margin and regression technique. The results show that 85% of the marketers gained considerably from group marketing and revealed a 10% reduction in loss of fruits when compared to the individual marketing effort. Marketing margin ranges from ₦26.92 to ₦1, 003.8 per dozen of pineapple. Marketing efficiency ranges from 1.01 to 1.35 with an average pooled efficiency of 1.17. The regression analysis revealed purchase cost, transport cost, labour cost, and cost of losses as significant factors influencing selling price of pineapple. Major problems identified by this type of marketers were difficulties in evacuating the fruit from farm to assembling center, high cost of transportation and poor state of available storage facilities.

Keywords: Group marketing, marketing margins , marketing efficiency.

### INTRODUCTION:

Pineapple is a delicious fruit with fine flavour and high nutritive value. Its content makes it a good raw material in confectionery industries for making sweet, fruit drinks and household food additives (Hasegawa, et al, 1996). It has a medicinal value and a fragment consumption of pineapple juice immunizes one against fever parasites (Hasegawa, et al, 1996). Marketing of pineapple cannot to be overemphasized considering the number of industries springing up which make use of pineapple as raw material for their production.

The national objective of the Agricultural Policies (increased food sufficiency and export) can only be achieved through efficient marketing (David, 1999). Food marketing problems are connected with reduction in the production of most crops in Nigeria. Defective marketing system is also responsible for the poor functioning of the agro- processing

industries in Nigeria (Abdullahi, 1983) Defective marketing system could have significant adverse effect on the marketing margins and efficiency of the marketers because of inadequate storage facilities and transportation hazards. Most of these problems cannot be solved by an individual marketer but by collective effort. This collective effort is expected to reduce losses and transaction cost more in group than with individual effort.

Pineapple marketing is characterized mainly by the problem of perishability among others. Often, marketers are compelled if not forced to sell their fruits at a very low price to avoid huge wastage or total loss and this reduces their marketing margins and efficiency. Okunmadewa (1999) showed that there are few rural farmers involved in contractual and cooperative marketing given the importance of gain from this type of marketing structure. Individual marketing is constrained by level of resources and information. Thus, there is the need to address the

following: What gains do the marketers derive from collective marketing? To what extent has this system of marketing influence marketing margin and efficiency? To what extent has this marketing system reduced the inherent problems of marketing faced by an individual marketer? The study therefore seeks to investigate gains to marketers from group effort. More specifically, the objectives of the study are to:

- (i) examine socio-economic characteristics of the respondents that influence group marketing;
- (ii) identify the activities influencing group marketing;
- (iii) determine the marketing costs, marketing margins, and marketing efficiency a
- (iv) Determine the factors that influence selling price of pineapple fruits by group marketers.

**Theoretical And Conceptual Framework**

Marketing is the sum total of all business activities performed in the movement of commodities from the point of initial production until the commodities are in the hand of the ultimate consumers. It is a production process which adds time, place and possession utility to agricultural commodities (Adekanye, 1988). Marketing activity begins even before production by finding out what the consumers really want (Adekomi, 1999) Agricultural marketing, therefore, plays an important role in agribusiness because it acts as a link between production and consumption (Adekanye, 1988). Cooperative marketing involves group of people who pool their resources together for joint marketing of a product. According to Okunmadewa (1990), cooperative marketing assumes all various marketing functions which in their absence would be performed by each member separately. Though this type of organization is not widely practiced as regards pineapple trading, through group marketing, processing firms could be stimulated into contract marketing which according to Okunmadewa (1990) have numerous advantages such as risk reduction, reduced responsibility, and technical assistance, reduce operating expenses etc. Sequel to the above, the study therefore examines group marketing of pineapple in some selected markets of Osun-State with a view to identify the gains accruing to marketers from such a marketing system.

**MATERIALS AND METHOD**

The study covers 6 markets in 3 local government areas of Osun-State. These markets are known as the centers of pineapple marketing in the ADP zone of the state. Primary data for this study were obtained with the aid of a structured questionnaire. A two-stage random sampling was used to select the marketing groups and the second stage was random selection of individual marketers for interview.

The questionnaire was administered on 33 marketing groups of 50 registered group (each group has members ranging from 6 - 15). However, only 20 marketing groups with 5 members each completely filled their questionnaire and were used for the analysis. Table 1 shows the distribution of questionnaire to the respondents. The data for the study were analyzed using descriptive statistics, marketing margins and efficiency, and regression technique.

The marketing margin and efficiency procedure are as follows:

$$MM = TR - TMC \dots\dots\dots(i)$$

$$ME = \frac{TR}{TMC} \dots\dots\dots(ii)$$

Where; TR = Total Revenue; TMC = Total Marketing Cost; MM = Marketing Margin and ME = Marketing efficiency.

TMC comprises of purchase cost in Naira per dozen; cost of labour (cooperative) in Naira per dozen; cost of losses in Naira per dozen; cost of storage in Naira per month and cost of transportation in Naira per dozen of pineapple.

TR = Total Revenue (Price/dozen multiplied by quantity sold).

Regression Analysis: this is used to predict the effect of purchase price and other marketing cost on selling price. The model can be explicitly stated as:

$$Y = f(X_1, X_2, X_3, X_4, X_5, U) \dots\dots\dots (iii)$$

Where;

Y = selling price in Naira/dozen

X<sub>1</sub> = purchase cost in Naira per dozen

X<sub>2</sub> = transport cost in Naira per dozen

X<sub>3</sub> = storage cost in Naira per dozen

X<sub>4</sub> = labour cost (for packaging) in Naira per dozen

X<sub>5</sub> = cost of losses in Naira per dozen.

Estimating procedure: Four functional forms were fitted in the analysis, the models are: linear, exponential double- log and semi-log functional forms.

Linear:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + U \dots\dots\dots (iv)$$

**Semi-log:**

$$Y = \log_0 + b_1 \log X_1 + b_2 \log X_2 + b_3 \log X_3 + b_4 \log X_4 + b_5 \log X_5 + \log U \dots \dots \dots (v)$$

**Double-log:**

$$\log Y = \log_0 + b_1 \log X_1 + b_2 \log X_2 + b_3 \log X_3 + b_4 \log X_4 + b_5 \log X_5 + \log U \dots \dots \dots (vi)$$

**Exponential:**

$$\log Y = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + U \dots \dots \dots (vii)$$

female, 71% were married (71%) and sixty-eight percent (68%) had no formal education. This level of education may to some extent constrain their marketing activities in various marketing functions involved in pineapple marketing. The number of years a marketing group had been involved in marketing shows how well a particular marketer group is able to grasp the intricacies and complexities of that particular marketing system. Forty-eight percent (48%) from various groups of marketers have between 6 – 10 years experience in pineapple marketing. Eighty-six percent (86%) of the respondents in the groups interviewed were small and medium scale marketers and the majority (87%) sources their capital from cooperative societies, which they belong.

**RESULTS AND DISCUSSION**

**Socio-economic characteristics of the Respondents**

The results of the analysis in Table 2 show that majority of the respondents (65%) in all the marketing groups were middle-aged and active. Eighty percent (80%) of the respondents were

**Table 1**

Local Government Area	Town	Market	No of Marketing Group that received Questionnaire	No of Marketing Group that returned completely filled Questionnaire	No of Respondents per Group with completely filled Questionnaire
Ayedaade	Ode- Omu	Obada	6	4	20
	Gbongan	Olufi	5	4	20
Ede North	Sekona	Sekona	5	3	15
	Akoda	Akoda	6	3	15
Isokan	Apomu	Total	6	3	15
	Ikoyi	Ikoyi	5	3	15
Total			33	20	100

Source: Field survey, 2004

**Table 2: Socio-economic characteristics of the respondents**

Variable	Category	Frequency	Percentage	Cumulative percentage
Age Group in years	21 – 50	65	65	65
	> 50	35	35	100
	Total	100	100	
Gender	Male	20	20	20
	Female	80	80	100
	Total	100	100	
Marital Status	Single	71	71	71
	Married	22	22	93
	Widow	7	7	100
	Total	100	100	
Educational Status	No formal education	68	68	68
	Formal education	32	32	100
	Total	100	100	
Experience in Pineapple marketing	< 5	38	38	38
	5 – 10	48	48	86
	> 10	14	14	100
	Total	100	100	
Types of marketing	Small (< 30 dozen)	48	48	48
	Medium (30 – 100 dozen)	38	38	86
	Large (> 100 dozen)	14	14	100
	Total	100	100	
Source of capital	Personal	5	5	5
	Cooperative	87	87	92
	Bank	8	8	100
	Total	100	100	

Source: Field Survey, 2004.

**Marketing Activities of the Respondents:**

The result in Table 3 shows majority of the marketer (71%) in the groups interviewed as wholesaler and obtained their pineapple stock from farmers (61%). They transport their goods by means of trucks and do grade their products into sizes and degree of ripeness. They sell their products to processors more than any other channels.

Transportation was reported as the factor that contributed highest to loss of fruits. The problem of

transportation is expressed in terms of bad roads leading to villages where fruits were collected and high cost associated with bringing these fruits to assembling centers and or stores. Fifty two percent (52%) of the respondents identified transportation cost as the highest cost component of the total marketing cost which is on account of road conditions to villages where pineapples were collected.

**Table 3: Marketing Activities of the Respondents**

Variable	Category	Frequency	Percentage	Cumulative percentage
Class of marketers	Retailer	3	3	3
	Wholesaler	71	71	74
	Agent	16	16	90
	Farmer marketer	10	10	100
	Total	100	100	
Source of Pineapple sold	Farmers	61	61	61
	Personal	20	20	81
	Agents	12	12	95
	Wholesaler	7	7	100
	Total	100	100	
Mode of Haulage	Trucks	55	55	55
	Small bus/pick up	25	25	80
	Motor cycle	15	15	95
	Head portage	5	5	100
	Total	100	100	
Grading and sorting	Yes	92	92	92
	No	8	8	100
	Total	100	100	
Factors used in grading and sorting	Small Vs big (a)	15	15	15
	Degree of ripeness (b)	25	25	40
	(a) and (b)	60	60	100
	Total	100	100	
Marketing channel	Contract	20	20	20
	Processors	68	68	88
	Marketing skills	10	10	98
	Distant market	2	2	100
	Total	100	100	
Area of fruit losses	Transportation	42	42	42
	Storage	28	28	70
	Packaging	20	20	90
	Handling	10	10	100
	Total	100	100	
Problems of marketing	Perishability	10	10	10
	Transportation	52	52	62
	Storage facilities	18	18	80
	Exploitation from buyers	20	20	100
	Total	100	100	

Source: Field Survey, 2004.

**Analysis of Marketing Costs, Marketing margins and Efficiency in Pineapple marketing**

The results in Table 4 show the range of marketing margin for the markets in each Local Government Area chosen. Marketing margin and marketing efficiency are highest in Ayedaade Local Government markets and lowest in Ede North local government markets. Marketing efficiency in the three local governments is greater than one which

implies that the system of marketing adopted by the marketer *ceteris paribus* will accrue more margins than their individual effort. All the respondents interviewed further substantiated this result by agreeing that group marketing benefits them more than their individual marketing effort. They also reported a considerable reduction in the level of losses encountered with this marketing structure.

**Table 4: Cost, Structure, marketing margin and efficiency of pineapple marketers.**

	Variable	Ayedaade	Ede North	Isokan
a.	Total Marketing cost (TMC) in ₦/dozen	2868*	2692*	2802*
b.	Total revenue in ₦/dozen	3871.8*	2718.92*	3222.30*
c.	Marketing margin (b – a) in ₦/dozen	1003.8*	26.92*	420.30*
d.	Marketing efficiency = $\frac{b}{a}$	1.35	1.01	1.15

\* For both Small and Big sizes

Source: Field Survey, 2004.

### Results Of Regression Analysis

Four functional forms were fitted to the data namely; linear, semi-log, double- log and exponential. The semi-log form was chosen as the lead equation on the basis of coefficient of determination, F-ratio, number of significant variables, sign of the coefficients and economic expectation.

The result according to Table 5 shows ( $X_1$ ) purchase cost ( $p < 0.01$ ), ( $X_2$ ) transport cost ( $p < 0.1$ ), ( $X_4$ ) labour cost ( $p < 0.01$ ) and ( $X_5$ ) cost of losses ( $p < 0.01$ ) as

significant factors that influence the selling price of pineapple. Using the coefficient values, the relative importance of the four significant explanatory variables on the determination of the selling price of pineapple can be determined. Thus, a 1% increase in purchase price ( $X_1$ ), transport cost ( $X_2$ ), labour cost ( $X_4$ ) and cost of losses ( $X_5$ ) will lead to 0.35%, 0.231%, 0.176% and 0.185% increases in selling price of pineapple of this marketing system.

**Table 5: Result of regression analysis**

Functional form	Constant term	$X_1$	$X_2$	$X_3$	$X_4$	$X_5$	$R^2$	F-Value
	b0	b1	b2	b3	B4	b5		
Semi-log								
Coefficient	4.779	$5.085 \times 10^{-5}$	$3.248 \times 10^{-5}$	$1.384 \times 10^{-5}$	$6.957 \times 10^{-5}$	$3.659 \times 10^{-5}$	0.649	34.820
S.E	0.38							
t-value	126.449***	0.000	0.000	0.000	0.000	0.000		
		3.505***	1.890*	0.855	2.619***	2.688***		

\*\*\* Significant at 1%; \*\* Significant at 5%;

\* Significant at 10%

### Conclusion And Recommendation

The study has demonstrated the benefits derived from group effort or cooperation in agricultural marketing with respect to pineapple marketing in the selected markets. The study revealed considerable increase in both marketing margin and efficiency of marketers practicing group marketing. This system of marketing being practiced in the study area has created a better link with processors which expectedly increased marketing efficiency as well as production efficiency of pineapple.

1. The study also revealed decrease in the loss of pineapple fruits among group marketers which is rampart with individual marketing effort. Based on the results of the analysis, the following recommendations are made for policy intervention in marketing of pineapple: The local government authority in the area should consider rural road grading and construction as an important effort. This is expected to reduce the high cost of transportation experienced by the marketers and frequent loss of pineapple fruits due to bad road network linking production centers with the markets.

2. Extension services will be of importance to these groups of marketers given their level of education. This will minimize the exploitation from buyers, increase their handling, packaging, and storage skills.
3. The marketers can also involve themselves in production activities by organizing themselves into producer cooperatives. This will increase their scale of operation, and margins by reducing purchase cost.

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