Asian Journal of Marketing

ISSN 1819-1924

Academic Journals Inc.

www.academicjournals.com

Asian Journal of Marketing 1 (1): 14-22, 2007
ISSN 1819-1924

Marketing Margin and Spatial Pricing Efficiency of Pineapple in Nigeria

[1]M.O. Oladapo, [2]S. Momoh, [3]S. Yusuf and [3]Y. Awoyinka
[1]National Horticultural Research Institute, Nigeria
[2]University of Agriculture, Abeokuta, Nigeria
[3]University of Ibadan, Ibadan, Nigeria

Abstract: The study examined retail marketing margin and pricing efficiency of pineapple among selected marketing pairs in Nigeria. A multi-stage random sampling technique was used to collect primary data on trader's characteristics and marketing factors in the study area. Secondary data for pricing efficiency were collected from states' Agricultural Development Programme and Project Coordinating Unit. The data were analyzed with the aid of descriptive statistics simple margin analysis and bivariate correlation coefficient. The results showed that women are more involved in pineapple marketing; most of the respondents had primary level of education and have been in the business for more than 10 years in the business. The marketing margin recorded by an average retailer in the rural market was N3986.23/ton while it was N10877.63/ton in the urban market depicting an average marketing margin percentage of 10.9 and 20.3%, respectively. Transportation cost accounted for the large component of total marketing cost and this is followed by storage cost. The bivariate correlation coefficient showed that 73.3% of the market pairs have correlation coefficient between 0.01 and 0.50, which implies an inefficient price communication between markets. There is a significant difference between the mean retail price of pineapple in rural and urban markets in Edo and Oyo State while there is no significant difference between mean retail prices of pineapple in Lagos State. Thus, efforts to improve market information and reduction in transport costs will improve marketing margin and pricing efficiency of the marketers.

Key words: Marketing margin, pricing efficiency and bivariate correlation coefficient

INTRODUCTION

Research Problem

The potential contribution of agricultural marketing towards improved rural incomes in developing countries has been a source of concern to both businessmen and researchers. Income inequality between the rural and urban areas draws people away from agricultural activities and places great stress upon infrastructure and social services in the cities (Dixie, 1989). The necessity of the distributive trade due to geographical separation of the producers and consumers gives rise to the intermediation of distributors referred to as wholesalers (Adekanye, 1988). A distributive system that guarantees favourable prices facilitates the exchange of commodities for additional earnings. This improves the margin as well as pricing efficiency. Agricultural marketing assumes greater importance in the Nigeria economy because the excess production from the farm must be disposed off in order to earn some income with which farmers can purchase their goods and services not produced by them (Adekanye, 1988). The study of marketing margin and pricing efficiency is important in determining the mark up earning to different levels of marketing. The knowledge of marketing margin and pricing efficiency determines to a large extent marketing efficiency and integration.

Corresponding Author: Dr. M.O. Oladapo, Division of Agricultural Economics and Statistics, National Horticultural Research Institute, Ibadan, Nigeria

Without spatial price analysis of the markets, price signals will not be transmitted from food deficit to food surplus areas, prices will be more volatile, agricultural producers will fail to specialize according to a long-term comparative advantage and the gain from trade will not be realized (Chirwa, 2000). In order to facilitate agricultural development process, analysis of marketing margin and pricing efficiency of foodstuff is considered very pertinent and, it is expected that favourable pricing efficiency will stimulate more of the products concerned to be produced. Over the years, food shortages coupled with high prices in Nigeria have indicated that domestic output has not been able to provide most Nigerians food at affordable prices (Idachaba, 1998). It is therefore logical to find out the factors (particularly transportation and marketing information) that are responsible for the price hike.

The link between the producers and the consumers is the market. Marketing therefore plays a central role in the development process. However, the marketing system of Nigeria's food and staple failed to address prices stability from time to time due to information asymmetry. Study on agricultural marketing margin and pricing efficiency have been conducted on staple foods and animal products (Orubu, 1994; Dittoh, 1994; Mafimesebi, 2002). Few marketing studies have been conducted on fruits particularly pineapple. Therefore, relating marketing margin to pricing efficiency in pineapple marketing will add to the growing literature in marketing efficiency analysis and again form a baseline for study in fruits and vegetables marketing.

The basic research questions are: What is the level of marketing margin in pineapple on the selected location? Is there any difference between retail-marketing margin in both rural and urban markets? How efficient are the selected pineapple markets in terms of price? What is the extent of variation of marketing margin in both rural and urban markets? Given these research questions, the study attempts to evaluate marketing margin, marketing cost structure and pricing efficiency of pineapple marketing in selected states of South-Western, Nigeria.

Theoretical and Conceptual Framework

The portion of the consumer's food expenditure that goes to food marketing is referred to as the marketing margin. It is in a sense the price of all utility adding activities and functions performed by the food marketing system.

Relatively, few studies have addressed the micro-economic behaviour of market participants, such as individual traders or forms (Brycesson, 1993; Barret, 1997; Madhin-Gabre, 1998; Fafchamps and Minten, 1999). These studies highlight the importance of transaction costs facing individual traders, the role of intermediaries and of relationships. This study will in addition link trader characteristics and market behaviour with standards of market performance.

In market literature, researchers have questioned the reason for low margin accrued to marketers and they identified market imperfection and not competitive practices as factors contributing to low returns from marketing (Okereke, 1988). Okunmadewa (1990) asserted that an efficient marketing system is a stimulant to the development of nation's economy. Fafchamps and Minten (2001), stressed the importance of transaction cost for the reduction of marketing cost. They noted that, food markets are operating in a weak institutional environment where institutions are deficient and the small scale nature of most of the transactions further constrain the effectiveness of existing formal institutions. Fafchamps and Madhin-Gabre (2001) showed that transportation costs forms a large share of total marketing costs. Onu (2000) discovered marketing imperfections with respect to cotton marketing in Nigeria. He found a high marketing margin and confirmed that the performance of the markets exhibits pricing inefficient and high degree of independence while Orubu (1991) used bivariate correlation of price series of spatially dispersed market to measure pricing efficiency. The cited literature forms the basis for the study.

Methodology

The study was carried out in Southwestern zone of Nigeria. For the purpose of this study, the selected states are Edo, Oyo and Lagos States. The zone falls within the rain-forest vegetation and it is characterized by two distinct climates i.e. a rainy season and a dry reason within one year. The type of vegetation coupled with soil type allows cultivation of pineapple on a large scale. There is enough rain and sunshine favourable to pineapple production in the Southwestern Nigeria (Ucheagwu, 1985). The geographical location lies between latitudes 3°N and 12°N and approximately between longitude 2°E and 7°E. It covers about 114,271 Km^2 approximately 12% of Nigeria's total land area (NARSP, 1997).

Primary data were collected with the aid of structured questionnaire distributed to the respondents at the various rural and urban markets to capture the socioeconomic and marketing factors of the marketers in the study area. A multistage sampling technique was used to select a total of 40 and 60 retailers from rural and urban market, respectively from each state. Based on the available lists, the overall sample size is three hundred respondents. The chosen markets are Fiditi (rural) and Oje (urban) for Oyo State; Igbanke (rural) and Benin (urban) Edo state and Ikorodu (rural) and Ketu (urban) for Lagos State.

Time series monthly pineapple price data covering 1991 to 2001 (11 years) were collected from the State's Agricultural Development Project (ADP) and Project Coordinating Unit (PCU). Since the retail price data were collected from three states covering one rural and one urban market in each state, a total of 264 data points per state and an overall data point of seven hundred and ninety two data points were collected for all the states.

Analytical Techniques

The data were analysed using descriptive statistics, which include measures of central tendency such as mean and mode as well as measures of dispersion notably the coefficient of variation. Other analytical techniques are expatiated upon below

T-Test of Difference of Means Between Markets

The t-test was adopted to compare the mean retail price between rural markets and urban markets in all the selected states, (Edo, Oyo and Lagos States).

The formula for calculating t-value is given as:

$$t = \frac{X_i - \bar{X}_t}{\sqrt{S_i^2/n + S_j^2/n}} \quad (1)$$

Where,

- t = Calculated value of t-distribution
- $\overline{X_i}$ = Mean of retail price for rural market in a given state
- $\overline{X_j}$ = Mean of retail price for urban market in a given state
- S_i = Standard deviation of sample mean of rural market in a given state
- S_j = Standard deviation of sample mean of urban market in a given state
- N = Number of data points for the markets (n = 132)

The t-test was carried out using the price data in both rural and urban markets. The null hypothesis was tested against the alternative hypothesis at 5% level of significance.

Correlation Analysis

The Pearson's correlation coefficient (r) was computed for the rural and urban markets in the state. The formula for the simple bivariate relation is:

$$r_{ij} = \frac{\sum_{i=1}^{n}(P_{ir} - \bar{P}_{it})(P_{jt} - P_{jt})}{\sum_{i=1}^{n}\sqrt{(P_{it} - \bar{P}_{it})^2 \sum_{i=1}^{n}(P_{jt} - P_{jt})^2}} \quad (2)$$

Where:

i = Rural market
j = Urban market
P_{it} and P_{jt} = Prices for pineapple in the two markets I and j measured at time, t.
$\bar{P}_{it}$ and = $\bar{P}_{jt}$ means of each price series
n = Number of observations
r_{ij} = Correlation between market i and market j

Testing for market integration reduces to assessing whether or not simple correlation coefficient is significantly different from one.

RESULTS AND DISCUSSION

Socioeconomic Characteristics of the Respondents

Table 1 shows the socio economic factors considered across states and markets. Majority (70.13%) of the respondents from the selected markets are female and they dominate the marketing sphere of pineapple. Majority of the respondents (57.6%) were between 31 and 60 years of age. This implies that active working age group are into pineapple marketing in the study area. Most of the respondents sampled (79.5%) were married, while highest proportion had primary level of education (46%). This level of education will have implication on gathering information on marketing activities and marketing margin of the respondents. Again, majority of the respondents had 5-10 years of marketing experience and this shows the influx of marketers into the business in the last decade.

Table 2 shows the sources of purchase of pineapple fruits, reasons why people do the business and the average working capital per month. Although, there is variation across the markets and states, majority of the respondents (49.5%) buy their product directly from wholesalers and this is followed by those who buy directly from farmers. The traders joined the business because of high profit while most of them (53.1%) had low working capital.

Marketing Margin Analysis

Primary data generated from the survey of retailers at the various markets were used to determine the marketing margin. The gross margin varies among the six selected markets. The accrued marketing margin to marketing services as reflected in Table 3 varies from one state to another and also varies with the type of market (i.e., rural or urban) The average gross return in Edo state was N44858.4 per ton whereas it was N41603.8 per ton and N46816.4 per ton in Oyo and Lagos states, respectively.

The gross return at Igbanke (rural market) was N38213/ton while it was N51,503.8 per ton at Benin (urban market) representing 34.8% increase in gross return between Igbanke rural market and Benin urban market. Also, in Oyo State the gross return at Oje (urban market) was N48528 indicating

Table 1: Socio-economic characteristics of respondents**

Characteristics		Igbanke Market (Rural)	Benin Market (Urban)	Avg.%	Fiditi Market (Rural)	Oje Market (Urban)	Avg.%	Ikorodu Market (Rural)	Ketu Market (Urban)	Avg.%	Total Avg.%
Sex	Male	37.5	21.7	29.6	47.5	13.3	30.4	42.5	16.7	29.6	29.9
	Female	62.5	78.3	78.3	52.5	86.7	69.6	57.5	83.3	70.4	70.1
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Age	<30 years	35.0	35.0	35.0	15.0	15.0	15.0	22.5	6.7	14.6	21.6
	31-50 years	55.0	55.0	55.0	45.0	45.0	45.0	72.5	73.3	72.9	57.6
	>50 years	10.0	10.0	10.0	40.0	40.0	40.0	5.0	20.0	12.5	20.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Marital	Single	10.0	25.0	17.5	5.0	10.0	7.5	2.5	20.0	11.2	12.1
Status	Married	77.5	70.0	73.8	82.0	82.0	82.2	90.0	75.0	82.5	79.5
	Divorced	7.5	3.0	5.2	2.5	3.0	2.8	5.0	2.0	3.5	3.8
	Widowed	5.0	2.0	3.5	10.0	5.0	7.5	2.5	3.0	2.8	4.6
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Level of	No Formal										
education	Education	22.5	23.0	22.8	20.0	60.0	40.0	7.5	23.0	15.2	26.0
	Primary	60.0	420	51.0	52.5	30.0	41.2	50.0	42.0	46.0	46.0
	Secondary	12.5	25.0	18.7	20.0	7.0	13.5	22.5	33.0	27.8	20.0
	Tertiary	5.0	10.0	7.5	7.5	3.0	5.3	20.0	20.0	11.0	8.0
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Years of	<5 years	10.0	20.0	15.0	-	15.0	7.5	22.5	25.0	23.4	15.4
experiences	5-10 years	47.5	43.3	45.4	52.5	20.0	36.2	42.5	38.0	40.2	40.6
	11-15 years	27.5	20.0	23.8	30.0	45.0	37.5	25.0	25.0	26.0	29.1
	>15 years	15.0	16.7	15.8	17.5	20.0	18.8	10.0	10.0	10.0	14.9
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

**Figures indicated are in percentage terms, Source: Field Survey (March, 2003)

Table 2: Socio-economic variable on sources of purchase of pineapple fruits, reasons why people do the business and average working capital for the retail market**

Variables		Igbanke Market (Rural)	Benin Market (Urban)	Avg.%	Fiditi Market (Rural)	Oje Market (Urban)	Avg.%	Ikorodu Market (Rural)	Ketu Market (Urban)	Avg.%	Total Avg.%
Source of	Farmers	72.5	3.0	51.8	70.0	2.0	36.0	62.5	-	31.2	35.0
Pineapple	Agents	27.5	-	13.7	30.0	-	15.0	32.5	3.0	17.8	15.5
fruits	Wholesales	-	97.0	48.5	-	98.0	49.0	5.0	97.0	51.0	49.5
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Reason for	Profit	85.0	72.0	78.5	77.5	80.0	78.8	95.0	93.0	94.0	83.8
the trade	Business	15.0	28.0	21.5	22.5	20.0	21.2	5.0	7.0	6.0	16.2
	Inherited										
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Working	N40,000	87.0	15.0	51.0	93.0	35.0	64.0	83.3	5.0	44.2	53.1
capital	N40-80,000	13.0	62.5	37.8	7.0	55.0	31.0	13.4	17.5	15.4	28.1
	>N80,000	-	22.5	11.2		10.0	5.0	3.3	77.5	40.4	18.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Figures indicated are in percentage terms, Source: Field Survey, March, 2003

Table 3: Marketing margin of pineapple in Edo, Oyo and Lagos States (N/ton)

	Edo		Oyo		Lagos	
Variables	Igbanke (Rural)	Benin (Urban)	Fiditi (Rural)	Oje (Urban)	Ikorodu (Rural)	Ketu (Urban)
AvgGR	38213.0	51503.8	34679.5	48528.0	37153.5	56475.2
AvgPC (N/ton)	29948.3	34629.0	26705.3	32900.0	27930.5	35661.0
AvgTC (N/ton)	2585.0	3733.3	2265.0	4377.4	1870.0	4035.7
AvgSC (N/ton)	825.0	1483.8	595.0	1775.7	1540.0	2005.0
AvgMC	1263.0	803.8	1165.0	1452.5	1395.0	1017.0
Avg Margin (N/ton)	3591.7	10853.9	3949.0	8022.0	4418.0	13757.0
Marketing Margin (%)	9.4%	21.0%	11.4%	16.5%	11.9%	24.4%

All costs and returns relates to 1 ton of pineapple in Naira. Source: Field Survey March 2003. Avg GR = Average Gross Revenue; Avg PC = Average Purchase Cost; Avg SC = Average Storage Cost; Avg TC = Average Transport Cost; Avg MC = Average Miscellaneous Cost

an increase of 39.9% relative to Fiditi (rural market). In Lagos State, the average gross return at Ikorodu (rural market) was N37153.5 per ton while it was N56475.2 per ton at Ketu (urban market). In the same vein, an increase of about 52% gross return was noticed at Ketu market relative to Ikorodu market.

The average marketing margin at Igbanke (rural market) was N3591.7 per ton representing a 9.4% marketing margin whereas it was N10, 839.9 at Benin (urban market) representing 21% marketing margin. Also, in Oyo State, the average marketing margin per ton at Fiditi market was N3949 depicting 11.4% marketing margin while it was N022 per ton in Oje market a share of marketing margin at 16.5%. In Lagos State, the average marketing margin at Ikorodu market was N4418 per ton which was lower than the margin of N13, 757 per ton at Ketu (urban market) percentage marketing margins at both Lagos State rural and urban markets were 11.9 and 24.4%, respectively.

From the analysis above, two facts emerged. First, average gross returns at the urban markets are higher across the states compared to the rural markets despite the fact that marketing costs are generally higher in urban markets (Table 3). Second, marketing margin at the rural markets is generally lower compared to urban market in the respective states. From the table, the purchase cost at the rural market is very close in all the three rural markets. Also, the transport and the storage cost are close. Variation in marketing margin is therefore largely related to the selling pace of pineapple at these markets.

Transport represents the largest component of marketing cost; 55.3% of the total marketing cost in Edo State rural market (Igbanke) accounts for transport, whereas it was 56.3% at Fiditi market. The cost of transportation in Ikorodu market accounts for 38.9% of the total marketing cost in that market. Also, transportation at the retail urban level ranges between 57.2 and 61.9%. The highest percentage was 61.9% recorded in Edo State while it is 57.6% in Oyo State. The least is recorded in Lagos with 57.2% as transportation share of the marketing cost. This confirms other empirical findings that transport represents the largest share of marketing cost in sub-Saharan Africa (Madhin-Gabre, 1991). The second most important marketing cost at the rural markets as shown in Table 3 may be regarded as other costs. Its percentage share is higher than storage cost in Edo and Oyo States, except at Ikorodu market where storage cost was higher than other costs. This implies that storage cost is more important in Lagos State than other cost. This may be due to the fact that cost of rent in Lagos is high relative to other states. Storage cost is very important at the urban markets. It is the second most important marketing cost at this level. It ranges between 23.3 to 28.4% in Oyo and Lagos States urban markets, respectively. The percentage share of storage cost in Edo State urban market is 24.6%. The fact that storage cost is important at the retail end indicates that the cost of storage in urban market is relatively higher than rural markets since retailers pay on either daily basis or weekly basis as against rural markets monthly or annual payments. At times, no payment was made for restage in rural markets.

Price Trend Analysis

The maximum price ever attained in pineapple prices in the study area was N184.62/kg recorded in Ketu market in December 1999, whereas the minimum price of N7.50 was recorded in Igbanke market in September 1997. The price of pineapple in other markets in September 1997 varied between # 20/kg and # 40.15/kg depicting a localized glut in pineapple production and marketing. The maximum price of pineapple ever attained in Benin Market # 75/kg in September 2001 whereas the minimum price was # 9.50kg recorded in December 1997. However, the maximum price for a kilogram of pineapple ever attained at Igbanke market was # 76.09/kg, which was recorded in December 2001 as shown in Table 4. The highest peak price ever attained in Oje market was # 84.33/kg. This price was recorded in May 2001 while the minimum was # 11.00/kg recorded in January 1991. Coincidentally, the peak and the minimum price at Oyo State rural market (Fiditi) was recorded in the same month as the urban market, although, with the prices at # 77.00/kg and # 9.00/kg, respectively (Table 4). This

Table 4: Summary of descriptive statistics of prices in the selected states

Parameters	Urbanedo Benin	Ruraledo Igbanke	Urbanoyo Oje	Ruraloyo Fiditi	Urbanlag Ketu	Ruralag Ikorodu
Mean (N)	29.52038	26.55447	32.31864	29.75091	44.16606	36.46909
Median (N)	27.50000	25.00000	30.35000	28.36500	39.14500	73.6400
Maximum (N)	80.75000	76.09000	84.33000	77.96000	184.6200	73.64000
Minimum (N)	9.500000	7.500000	11.00000	9.000000	20.94000	20.00000

Source: Computed from Pineapple price series (1991-2001). Figures are in Nigerian Naira/kg

is just an indication of price movement in these markets. Finally, the minimum price ever attained in Ikorodu market was # 20/kg recorded in March 1991 while the peak was # 73.64/kg recorded in December 1999 whereas the minimum at Ketu market was # 20.94/kg recorded in March 1991. This also gives first hand information about price movement across the rural and urban markets in Lagos State for the particular period (January-March 1991).

Generally, prices of pineapple fruits are not stable in all the selected markets. The peak of the prices was almost always in the second and fourth quarters of the year, while least price fell in the first quarter of the year except for Benin and Igbanke markets in Edo State. Prices in the first and third quarters were relatively stable over the years.

The price in urban markets rose higher and faster than that of the rural market in Edo and Oyo States. The reason for the non-corresponding peaks of rural and urban markets could have been that fewer pineapple fruits were being supplied form the rural markets to the urban markets. Thus, urban markets had low supply of pineapple fruits as against the high demand of pineapple fruits in the urban markets. The reason for the variation in price is simply based on the economic principle of demand and supply of pineapple fruits. Due to the fact that the first quarter of the year is regarded as off-season, the resultant effect is the high price of pineapple fruits in the second quarter as shown in Table 5. Also, the harvesting season is during the fourth quarter of the year, which in turn justifies low price for pineapple fruits in the first quarter of the year.

Spatial Price Consonance-Static Approach

The spatial price association shows the relationship of price in a particular market vis-à-vis another market. It is a static approach since lagged values of prices at various markets were not considered. The use of Pearson correlation coefficient of pineapple market pairs in Edo, Oyo and Lagos States showed that some market pairs are highly correlated while some exhibit weak correlation. It could be seen from Table 6 that there is very high correlation between the rural market and urban market in each state.

The correlation ranges between 0.81 and 0.94 whereas the correlation between rural market pairs shows relationship ranging between 0.39 and 0.46. Although, a negative relationship of 0.10 was recorded between Igbankie/Ikorodu, it was only Lagos and Oyo markets that gave a maximum relationship of 0.46 level of correlation between its rural markets. Considering urban market pairs, the correlation ranges between 0.44 to 0.47 but with a negative correlation of 0.08 in Benin/Ketu market pairs. This depicts the same scenario as shown in the case of rural markets between the two states (Edo/Lagos). The implication of this is that there is no perfect information flow between the market pairs.

From the analysis in Table 7, it can be deduced that the flow of information within state is high whereas across the states, it is weak. This implies that market integration across the states is weak, which suggests market inefficiency and low competitiveness. However, market integration within states is strong. It should be noted that there is market segregation between Benin and Ketu, Benin and Ikorodu, Igbanke and Ketu and Igbanke and Ikorodu. Thus, information on prices of pineapple does not flow across these market pairs. About 73% of the market pairs have correlation coefficient of less than 0.51 while 26.7% have correlation coefficient between 0.51 and 1.00. It suffices to note that majority of the market pairs exhibits low information flow as regards prices of pineapple.

Table 5: Average retail price of pineapple (1991-2001)

Market		Quarterly Average (N/kg) 1st Quarter (Jan-March)	2nd Quarter (April-June)	3rd Quarter (July-Aug)	4th Quarter (Sept-Dec)
Edo	Igbanke (Rural)	26.22	29.19	33.64	24.09
	Benin (Urban)	28.55	34.19	29.71	25.62
Oyo	Fiditi (Rural	27.46	31.74	28.79	30.39
	Oje (Urban)	28.40	35.08	31.04	34.71
Lagos	Ikorodu (Rural)	25.83	37.00	35.64	37.35
	Ketu (Urban)	42.11	42.85	41.13	50.55

Source: Computed from Appendix 3 on Pineapple Price Series (1991-2001); Figures are in Nigerian Naira/kg

Table 6: Correlation matrix of pineapple market pairs in Edo, Oyo and Lagos States

Market	Oje[a] (Urban)	Ketu[b] (Urban)	Benin[c] (Urban)	Fiditi[a] (Rural)	Ikorodu[b] (Rural)	Igbanke[c] (Rural)
Oje[a] (Urban)	1.00	0.44	0.47	0.94	0.46	0.42
Ketu[b] (Urban)	0.44	1.00	-0.88	0.44	0.81	-0.08
Benin[c] (Urban	0.47	-0.08	1.00	0.43	-0.06	0.94
Fiditi[a] (Rural)	0.94	0.44	0.43	1.00	0.46	0.39
Ikorodu[b] (Rural)	0.46	0.81	-0.06	0.46	1.00	-0.10
Igbanke[c] (Rural)	0.42	-0.70	0.94	0.39	-0.10	1.00

Source: Computed from Pineapple Price series (1991-2001); [a] Oyo State; [b] Lagos; [c] Edo State

Table 7: Summary of price correlation result for price of pineapple in Edo, Oyo and Lagos State

Bivariate Correlation Coefficient (r)	No. of market pairs	%	Remark
$0.01 \leq r \leq 0.50$	11	73.3	Weak correlation
$0.52 \leq r < 1.00$	4	26.7	High correlation
Total	15	100.0	

Source: Computed from Table 6

Table 8: t-values of intra state pineapple market pairs

Market pair	$t_{0.01}$	$t_{0.05}$	$t_{0.10}$	t_{cal}
U-R Edo State	2.58***	1.96***	3.29*	1.96
U-R Oyo State	2.58***	1.96**	3.29*	1.60
U-R Lagos State	2.58^{ns}	1.96^{ns}	3.29^{ns}	3.40

Source: Computed from Pineapple Price series (1991-2001); *** t-value significant at 10%; ** t-value significant at 5%; * t-value significant at 1%; ns not significant

Comparative Mean Retail Price Between Rural and Urban Markets

The result in Table 8 revealed that there is significance difference between mean retail price of pineapple in rural and urban markets of Edo and Oyo States while there is no significance difference between mean retail price of pineapple in rural and urban markets of Lagos State.

CONCLUSIONS

The study showed that more females are involved in retail marketing of pineapple. It further stressed that retail marketing is more lucrative in urban markets relative to rural markets. Transportation cost forms the largest component of total marketing costs in both rural and urban markets in the study area. Efforts to reduce transportation costs might translate to large marketing margin. Furthermore, the study identified and confirmed slow movement of market information among the market pairs. Thus, educative and qualitative market information system becomes very relevant in those areas where there are deficiencies and unorganized inefficient information system. Efforts to reduce transportation and storage costs in terms of good roads, vehicle assisted programme and the use of effective storage facilities will be an important factors that will facilitate market integration between rural and urban markets for pineapple. All these factors identified require a wholistic approach, which will translate to an increase in marketing margin of pineapple trade in Nigeria.

REFERENCES

Adekanye, T.O., 1988. The Markets for Foodstuffs in Western Nigeria. Reading in Agricultural Marketing. Adekanye, T.O. (Ed), pp: 12-22.

Barret, C.B., 1997. An Heteroscedastic Price Forecasting for Food Security Management in Developing Countries.

Brycesson, D.F., 1993. Liberalization of Tanzania Food Trade: Public and Private of Faces of Urban Marketing Policy (1938-88) Geneva, Suntzertland; United Nations Research Institute for Social Development.

Chirwa, E.W., 2000. Liberalization of Food Marketing and Market Integration in Malarise. Final Report of an AERC Sponsored Research Work Presented at the Bi-annual Economic Research Workshop Nambi.

Dittoh, J.S., 1994. Market Integration: The Case of Dry Season Vegetable in Nigeria: Issues in African Rural Development, pp: 89-101.

Dixie, G., 1989. Horticultural marketing: A Resource and Training Manual for Extension Officers. FAO Service Bulletin, pp: 1-5.

Fafchamps, M. and B. Minten, 1999. Relationship and Traders in Madagascar. J. Develop. Studies, 35: 1-35.

Fafchamps, M. and B. Minten, 2001. Social Capital and Agricultural Trade. Am. J. Agric. Econ., 2:12-20

Fafchamps, M. and Madhin-Gabre, 2001. Agricultural Markets in Benin and Malawi: Operation and performance of Traders. IFFU Report on the Impact of agricultural Market Reform on Small-Holder Farmers in Benin and Malawi.

Idachaba, F.S., 1998. Instability of national Agricultural Research System in Sub-Saharan Africa: Lessons from Nigeria. ISAAN Research Report No. 13.

Madhin-Gabre, E., 1991. Transfer Costs of Cereal Marketing in Mali. Implications for Regional Trade in West Africa. M.S. Thesis East Lasing, MI: Michinmgan State University.

Mafimisebi, T.E., 2002. Spatial Price Equilibrium and Fish market Integration in Nigeria. Unpublished Ph.D Thesis. University of Ibadan, Nigeria.

NARSP Report, 1997. National Agricultural Research Strategy Plan: 1996-2010. Report on Nigeria Agricultural Situation. Submitted to World Bank. Buker Shaib, Adamu Aluju and J.S. Bakshi (Eds.), pp: 355.

Okereke, O.O., 1988. An Analysis of the Structure, Conduct and Performance of Wholesale Markets for Grain Distribution in Former East Central State of Nigeria. Ph.D Thesis, University of Ibadan, Nigeria.

Orubu, C.O., 1991. Integration of the nigerian goods market. A Rural-Urban Analysis. J. Arts Social Sci., 4: 108-116.

Okunmadewa, F.Y., 1990. An Econometric Analysis of Alternative Food Marketing Arrangements in Oyo State. Unpublished Ph.D Thesis, University of Ibadan.

Onu, J.I., 2000. An Analysis of the Structure and Performance of Cotton Marketing in Northern Nigeria. An Unpublished Ph.D Thesis, University of Ibadan.

Ucheagwu, A.C., 1985. Pineapple Production in Nigeria. Processings of National Food Production Workshops FACU, pp: 71-76.