

## The Sweet Orange Market in Nigeria, How Viable?

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**Abstract:** This study examined the viability of the sweet orange market in Nigeria using Kwara State, Nigeria as a case study. The study specifically estimated the distribution of net margins among the various marketing agents: wholesaler and retailer in the sweet orange market and identifies the constraints limiting the sweet orange commodity market. Data were collected from 160 sweet orange marketers; sixty-four wholesalers and ninety-six retailers surveyed across Kwara State. The marketing margin and marketing efficiency estimates were ₦25.1 per kg and 273.7 per cent respectively at the wholesaler end of the market while at the retailer end these estimates were ₦85.6 per kg and 232.3 per cent respectively. Problems limiting sweet orange marketing were found to include poor storage, poor access to credit facilities and poor road infrastructures. The study therefore calls for the enhancement of storage techniques research for sweet orange and mobilization of marketers to join viable cooperatives so as to organize and fund their marketing activities.

**Key words:** Marketing Margin, Marketing Efficiency, Wholesaler, Retailer, Viability, Kwara State.

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### INTRODUCTION

Sweet orange is one of the most important fruits in the tropical and sub-tropical regions of the world. The fruits are eaten fresh and used for making canned orange juice. Large quantities of sweet orange are used to produce single strength juice, frozen concentrate, rind oil, pectins used in the production of jams and jelly pulp residue which is fed to livestock. The orange juice is also extracted and used for flavours for food items. Sweet orange are known to contain sweetening agents which are being researched into as probable substitute for sugar in the world market<sup>[6]</sup>. In West Africa and Africa in general however, the great potentials derivable from sweet orange has not been harnessed. Virtually, all the sweet orange produced locally are eaten within Africa as fresh fruits. Only a small percentage of the sweet orange produced find their way to the canning industry.

The neglect of the orange fruit industry is more so, since in instances where investors are willing to invest in agriculture, they prefer to invest on food crops such as maize and cassava that can fetch them short-run quick returns, rather than invest in the fruits canning industries like sweet orange (citrus). This is because the sweet orange industry is constrained by many marketing problems. Heavy crop losses usually occur while the citrus fruit is being transported along its marketing chain. Loss in transit is great for citrus fruit

because the fruits are fragile and juicy as well<sup>[1]</sup>. At the market place, the seller is also faced with the problem of spoilage as the fruits have to be sold within the shortest time possible before they get spoilt. The sweet orange fruit perishability problem is also compounded by the poor storage/shelf life of the fruit<sup>[4]</sup>. Another problem is that of pests and diseases attacks on the crop. Fruits such as the sweet orange are attacked by pests and diseases which reduce their market quality and quantity<sup>[3]</sup>.

Aside the perishable nature of sweet orange, the fruit marketers inherent socio-economic factors in the marketing chain for these fruits is very crucial<sup>[2]</sup>. All these factors as well as the frequent price fluctuations of sweet orange due to its perishability and seasonal nature discourage prospective investors from venturing into the sweet orange industry<sup>[4,1,11,9]</sup>.

In the light of the foregoing, it is necessary that remedial solutions to the marketing constraints that has back out investments from the sweet orange industry be sought. This quest therefore, raises research questions as to whether the returns from sweet orange marketing are worthwhile?. To what extent is the sweet orange market efficient? What are the constraints confronting sweet orange marketing?. This study therefore examined the viability of the sweet orange market and profiles the characteristic of sweet orange marketing in Nigeria using Kwara State as a case study.

This study stands to benefit stake holders in the sweet orange industry as it seeks educate prospective investors in industry about the profitability or otherwise of the sweet orange commodity. The study outcomes could also indicate ways by which some aspects of the market for sweet orange can be improved upon thereby encouraging a wide and efficient market for the commodity. This in turn would increase sweet orange production in the country.

The current study is timely considering Nigeria's low output of sweet orange. Reports on global Sweet orange production estimates indicate that Nigeria is yet to be classed amongst the major sweet orange producing nations. This situation prevails despite the numerous sweet orange plantations all over the country<sup>[4,5,1]</sup>. There is therefore an urgent need to encourage sweet orange production, processing, storage and its trade amongst the country's citizenry. Therefore an assessment of the market where sweet orange is being traded is expedient. The result is that recommendations necessary to improve the commodity market could be drawn from such studies

**Methodology:**

**Study Area and Data:** This study was conducted in Kwara State of Nigeria. Kwara state lies on latitude 7<sup>0</sup> 15<sup>0</sup> N and Longitudes 6<sup>0</sup> 18<sup>0</sup> E and covers a land area of about 32,500km<sup>2</sup>. The State serves as a 'bridge' state between the Northern and South-western Nigeria and shares boundaries with Ondo, Oyo, Osun, Niger and Kogi States in Nigeria, and an international border with the republic of Benin. The State has a population of about 2.37million people<sup>[10]</sup> and it is made up of 16 Local Government Areas (LGAs) or sub-states areas,

Sweet orange is not produced in commercial quantities in Kwara State. The commodity is usually transported into Kwara state from the South-western states of Nigeria. These states include Ondo, Ekiti, Oyo, Osun and Ogun States. However, fruits and vegetable marketing is popular in the state<sup>[8]</sup>. The target population for the study is the sweet orange marketers (wholesalers and retailers) in Kwara State, Nigeria. Therefore, the sampling procedure for the study comprised a 2 stage sampling procedure. The first stage comprised the random selection of eight, large and popular markets across the study area. These markets are those that are popular for the sweet range trade. The sampling frame for markets where sweet orange was being traded in Kwara was sourced from the Kwara State Ministry of Information at Ilorin, Kwara State. The second stage involved the random selection of twenty sweet orange marketers (eight retailers and eight wholesalers) each from the markets selected. The total sweet orange marketer respondent was therefore

one hundred and sixty consisting of sixty-four wholesalers and ninety-six retailers.

**Data Analysis:** The descriptive statistics, marketing margin and the marketing efficiency analyses were used in analysing the data for the study.

**Descriptive Statistics:** Descriptive statistic such as the frequency count, percentages, means and standard deviations were used to analyse the data gathered on the socio-economic characteristics of sweet orange marketers in the study area.

**Marketing Margin Analysis:** Marketing margin analysis was used to estimate the margin in terms of revenue and profit that accrue to the sweet orange marketers. According to Kohls<sup>[7]</sup>, marketing margin can be estimated as

$$\text{Marketing Margin} = \text{Selling Price} - \text{Cost Price} \quad (1)$$

$$\text{Net Marketing Margin} = \text{Marketing Margin} - \text{Marketing Cost} \quad (2)$$

$$\text{Net Marketing Margin for Wholesaler} = \text{Wholesale Marketing Margin} - \text{Wholesale Marketing Cost} \quad (3)$$

$$\text{Net Marketing Margin for Retailer} = \text{Retailer Marketing Margin} - \text{Retailer Marketing cost} \quad (4)$$

$$\text{Gross Marketing Margin} = \text{Wholesaler Selling Price} - \text{Retailers Cost Price} \quad (5)$$

**Marketing Efficiency:** For the Marketing efficiency analysis, marketing efficiency is measured as

$$\text{Marketing Efficiency} = \frac{\text{Value added by Marketing Activities}}{\text{Marketing Cost}} \times 100 \quad (6)$$

$$\text{But, Value added by marketing activities} = \text{Selling Price} - \text{Cost Price} \quad (7)$$

This equation (7) also equals Gross Marketing Margin, therefore

$$\text{Marketing Efficiency} = \frac{\text{Gross Marketing Margin}}{\text{Marketing Cost}} \times 100$$

The Marketing Cost is the Marketing Margin minus Net Margin<sup>[7]</sup>.

**Table 1:** Study Area Distribution of Marketers included in Sample

Local Government Area	Market Visited	Number of Respondent per market		Total Number of Respondent
		Wholesaler	Retailer	
Baruten	2	8	12	40
Ilorin West	2	8	12	40
Irepodun	2	8	12	40
Oke-ero	2	8	12	40

Source: Field Survey, 2006

## RESULTS AND DISCUSSIONS

**Socio-economic Profile of Respondents:** The socio-economic characteristics of sweet orange marketing including their age, gender, educational status, cooperative activities and years of their marketing experience to a large extent influences the nature of the sweet orange market. Table 2 presents the socio-economic profile of sweet orange marketer respondents (wholesalers and retailers) in the study area.

The age of marketers to a large extent affects their agility and ability to perform their marketing activities which in turn affects their sales. Most of the respondents (31.3% wholesalers and 63.3% retailers) are aged below 40 years while the rest are adults (Table 2). The mean age is 24 years with a standard deviation of 10.3 years for the wholesaler respondents while the mean age for the retailers is 16 years. The fact that most of the respondents are in their youthful life stage implies that sweet orange marketing can be a dynamic and efficient activity. The gender analysis indicates that sweet orange marketing is mainly a feminine vocation in the study area. The Table indicates that over two-thirds of the respondents are females while the rest are males. The result implying that females dominate the sweet orange market may be because of the simple nature of the business. The older female marketers (woman) respondents reported that they were satisfied with the sweet orange trading activities as the activity could be combined with their child bearing and rearing responsibilities. The educational status of a marketer is *sin qua non* to facilitating marketers ability to understand and use improved marketing strategies and facilities. Less than one third of the respondent (27.0 % wholesalers and 29.7% retailers) have acquired one form of formal education or the other. These respondents have had at least six years of primary school education. The peak educational attainment of the respondent is secondary school education. The remaining marketers have not had education or any form of formal education at all. The result implies that few respondents have acquired formal education. Only these few respondents could therefore innovate and be willing to adopt improved marketing opportunities for their business.

The table result also shows that most of the respondents (64.0% wholesalers and 68.7% retailers) have been involved in the sweet orange business for periods that is less than one to seven years while the remaining respondents have been trading the commodity for periods that were over seven years. The average period of marketing experience for the wholesaler respondents is 2.1 years with a standard deviation of 0.8 years. For the retailer respondents, the mean is 2.4 years with a standard deviation of 0.7 years. An average marketing experience of at least 2 years could imply that the respondents in the study area are not well knowledgeable about the operations and constraints of sweet orange business. The cooperative membership of respondents was another characteristics investigated during the study. Cooperatives usually avail their members special opportunities such as loan, economies of scale in the sales of their products and input purchases. Table 2 shows that few of respondents (25% retailers and 2% of the wholesalers) are members of cooperative society. This will definitely impact negatively on the business activities of respondents in the area since most of the sweet orange marketers may therefore not enjoy cooperative incentives like loans, and economics of scale in the performance of their activities.

**Marketing Margin:** The marketing margin for any commodity marketing is indicative of the level of profit for that commodity. The sweet orange wholesale respondents got the lower net margin from their sweet orange business. They got on average, ₦25.10 per kilogram of sweet orange with a standard deviation of 10.1 per kg of sweet orange. Though the net margin is lower at the wholesale level, over time the wholesaler benefits more as they usually purchase their sweet orange commodity in bulk thereby enjoying substantive price reduction from the producers (farmers) of the commodities. These wholesalers therefore enjoy economics of scale in the purchase of their wholesale stocks. The net marketing margin at the retail level is ₦85.6 per kilogram of sweet orange with a standard deviation of ₦18.1 per kilogram of sweet orange (Tables 3 and 4).

**Table 2:** Socio-economic Characteristic of Respondents

Characteristics	Wholesaler		Retailer	
	Frequency	Percentage %	Frequency	Percentage %
Age (Years)				
> 20	8	12.5	49	51.0
21 – 30	6	9.4	22	22.9
31 – 40	6	9.4	9	9.4
41 – 50	31	48.4	9	9.4
> 50	13	20.3	7	7.3
<b>Total</b>	<b>64</b>	<b>100.0</b>	<b>96</b>	<b>100.0</b>
Mean	24		16	
Standard Deviation	10.30		9.60	
Gender				
Male	16	16.67	20	31.2
Female	80	83.33	44	68.7
<b>Total</b>	<b>96</b>	<b>100.0</b>	<b>64</b>	<b>100.0</b>
Education Status				
None above	10	15.6	19	19.8
Arabic	28	43.8	35	36.5
Adult	7	10.9	16	16.7
Primary	10	15.6	17	17.7
Secondary	9	14.1	9	9.30
Tertiary	0	0.0	0	0.0
<b>Total</b>	<b>64</b>	<b>100.0</b>	<b>96</b>	<b>100.0</b>
Marketing Experience				
<1	14	21.8	36	37.5
1 – 7	30	46.9	35	36.5
8 – 15	20	31.3	25	26.5
<b>Total</b>	<b>64</b>	<b>100.0</b>	<b>96</b>	<b>100.0</b>

Source: Field Survey, 2006

**Table 3:** Net Marketing Margin at Sweet Orange Wholesaler Respondents Level (₦/kg)

Variable	Wholesalers
Wholesale Price	100.6
less	45.3
Farmer Gate Price equals	
<b>Marketing Margin (Naira ₦ per /kg)</b>	<b>55.3</b>
less	
<b>Total Marketing Cost</b>	<b>20.2</b>
Transport & Packaging Cost	10.1
Imputed rent of Storage Structure	10.1
<b>Net Marketing Margin</b>	<b>25.1</b>
% of Net Margin in overall market Margin	22.7
<b>Standard Deviation</b>	<b>10.1</b>

US \$ Equals 118 naira (₦)

Source: Field Survey, 2006

**Table 4:** Net Marketing Margin at Sweet Orange Retailer Respondents Level (₦/kg)

Variable	Wholesalers
Retail price	250
Less	
Wholesale Price equals	100.6
<b>Marketing Margin (Naira ₦ per /kg)</b>	<b>150.3</b>
less	
<b>Total Marketing Cost</b>	<b>64.7</b>
Transport & Packaging Cost	20.5
Imputed rent of Storage Structure	44.2
<b>Net Marketing Margin</b>	<b>85.6</b>
% of Net Margin in overall market Margin	77.3
<b>Standard Deviation</b>	<b>18.1</b>

US \$ Equals 118 naira (₦)

Source: Field Survey, 2006

**Marketing Efficiency:** A market that is efficient does not only bring sellers and buyers together, it enables entrepreneurs to take advantage of opportunities, to innovate and improve in response to demand and price changes. At the wholesale level, the marketing efficiency was found to be highest at about 273.7% while the efficiency at the retail level was 232.30% (Table 5). The result generally implies that the sweet orange market in the study area is efficient.

**Marketing Chain for Sweet Orange:** Figure 1 depicts the marketing channel/chain identified for the sweet orange market in the study area, Kwara State. The bulk of sweet orange sold in the state is produced in villages and communities of states like Osun, Ondo, Oyo and Ekiti States in Nigeria. These states are neighbouring states to Kwara state. At the farm level in these states as well as the sweet orange farms in the Kwara state, farmers usually harvest their sweet orange when is ripe and transport them to road side and/or periodic markets. At these markets, the wholesaler purchases and assembles farmers' sweet oranges which they transports in large sacs to cities within the study area. The wholesale rmay store his sweet orange in warehouse before he finally transports his commodity to markets. Atimes the wholesaler may transport his commodity straight to ready buyers in the city markets. This is usually the case because of the perishable nature of the sweet orange commodity. Popular markets identified for sweet orange in the study area were the Ago, Ganmo, Ipata and Oja-Oba markets. Most of the markets surveyed are those that are patronised daily, except for the Ganmo market which is patronised only

at designated days (periods). At the market, wholesalers sells out their commodities to retailers, thereby distributing his commodities to them in batches.

Another direct route for sweet orange ensues occasionally. This involves the direct sales of sweet orange by farmers themselves to the retailers at the retail markets. In most cases, the retailers are usually the link between the markets and the consumers of sweet orange. These retailers hawk and sell sweet orange to consumers.

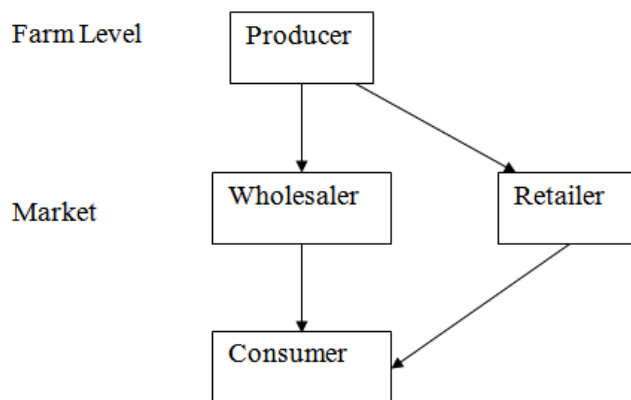
**Constraints to Sweet Orange Marketing:** The various constraints limiting the performance of market activities for Sweet orange were reported by respondents. These constraints were ranked as in Table 6.

Table 6 shows that the major sweet orange marketing constraints as ranked by respondents include poor and inadequate storage facilities. This was followed by poor road network and the inability of respondents to access credit facilities for their sweet orange business. Most of the respondents complained that they usually lost a sizeable portion of their sweet orange stock due to the poor storage conditions under which they store the commodity. re This is a very serious constraint considering the perishable nature of sweet orange. Poor transport facilities for conveying the sweet orange commodity along its market chain was also a big constraint reported. This is because the poor nature of roads for conveying the sweet orange commodity along its market chain is also a big constraint. This is because the poor nature of feeder roads caused undue damage and wastage of sweet orange in transit.

**Table 5:** Marketing Efficiency of Respondents Sweet Orange Margin Levels ₦/kg

Variable	Wholesale Level	Retail Level
Gross Marketing Margin	55.3	150.3
Marketing Cost	20.2	64.7
Marketing Efficiency %	273.7	232.30

Source: Field Survey, 2006



**Fig. 1:** Marketing Chain for Sweet Orange in Kwara State

**Table 6:** Likert-Scale Ranking of Constraints to Sweet Orange Marketing.

Constraints	Rankings	
Poor storage	1	1
Inadequate credit	2	2
Poor transportation facilities	3	3

Source: Field Survey, 2006.

### REFERENCES

1. Adeyemi, S.A. and P.S. Ogazi, 1998. Export Potentials for fruits Grown in Nigeria National Horticultural Research Institute (NIHORT) Bulletin. Ibadan, 1-56.
2. Ajayi, A.O., 1998. "Grocery Marketing in Lagos An Unpublished M.Sc Thesis Submitted to the Department of Agricultural Economics, University of Ibadan, Ibadan.
3. Apata, O.M., 2002. "Marketing of Citrus Fruits (Sweet Orange) in Some Selected Markets in Ibadan. An Unpublished Ph.D Thesis Submitted to the Department of Agricultural Economics. University of Ibadan.
4. Babatola, J.O., 2004. Export Promotion of Horticultural Crops. A Paper Presenter at the 22<sup>nd</sup> Annual Conference of Horticultural Society of Nigeria (NIHORT).
5. Food and Agricultural Organisation (FAO), 1998. Production Year Book. Rome.
6. Grieve, M., 2008. Herbal :Sweet Orange accessed at <http://www.botanical.com>
7. Kohls, R.L., 1980. Marketing of Agricultural Products. Macmillian Publishers. New York.
8. Kwara State Ministry of Information, 2004. Kwara State Diary.
9. National Horticultural Research Institute (NIHORT), 2000. NIHORT Bulletin.
10. Nigerian National Population Commission, 2008. Nigerian 2007 Population Census Report.
11. Olukosi, J.O. and S.U. Isitor, 1991. Introduction to Agricultural Marketing and Prices: Principles and Applications. GU Publication. Abuja. Nigeria.