

# Evaluation of Irvingia Kernels Marketing in Selected Markets in Akure, Ondo State, Nigeria

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**Abstract** This study examined the marketing of *Irvingia* kernels in selected markets in Akure. Data were collected through primary and secondary sources. One hundred and twenty (120) questionnaires were administered to Irvingia kernel sellers in six selected markets in the area. Thirty-one(31) of the questionnaires were administered to traders in Oja-Oba while 24, 20, 20, 14 and 11 were administered in NEPA, Isikan, Maronu, Isolo and Oluwatuyi markets respectively. The results showed that 70% of the traders were female while male accounted for 30%. The results also revealed that cost price of *Irvingia* kernels and the transport cost were the main determinants of the selling of the product. The level of involvement of the sellers, though had a positive relationship with the selling price, was not significant in determining the selling price because its coefficient, unlike those of cost price and transport cost, was not significant at 5% level. Also the average gross margin per marketer was put at N7, 802.34K, implying that the marketing of the product in the study area was profitable.

**Keywords** Irvingia, Marketing Efficiency, Profitability, Akure

## 1. Introduction

Non-timber forest products have a long history in Nigeria. They are wild plant and animal products harvested from forests, such as wild fruits, vegetables, nuts, edible roots, honey, palm and medicinal plants, poisons, snails and bushmeat (An-del, 2006). It was further stressed by An-del(2006) that millions of people especially those living in rural areas in developing countries, including Nigeria, collect these products daily and many, according to Sale(2006); Shomkegh et.al(2008) regard selling as a means of earning a living.

*Irvingia gabonensis* and *Irvingia wombulu* are two of these non-timber forest products (NTFPs) which in recent times have become very essential products, especially to rural communities. The *Irvingia gabonensis* is the eating type which produces sweet flesh (mesocarp). It is eaten fresh and the stone is usually split to reveal its kernel which is the product that is used for soup thickening in most parts of Nigeria. *I. wombulu*, on the other hand, is the type that has non-edible flesh. The flesh is sour and the fruit stone is also extracted to produce the kernel which is often known as 'Ogbono'.

*Irvingia* kernels are produced in the Southern forest area of Nigeria and trade in this commodity is great in the country. Ladipo and Boland (1994) reported an extensive trade in the kernels within the southern forest area and between this area

and the northern savannah areas. Kernels are transported to the Northern part of Nigeria by wholesalers and these are also traded internationally to various other countries. In marketing, *Irvingia* kernels pass through various market participants and exchange points before they reach the final consumers. These market intermediaries are the wholesalers and retailers. Both play an important role in the marketing system. There is high demand for bush mango kernels and this, according to NRC (1991), has resulted in excessive exploitation in the bush at such a rate that the sustainability of these natural resources has been the concern of various workers.

According to Harris(1993) and corroborated by Ejio-for(1994), the main supply of wild mango seeds is from *I. gabonensis*(which fruits from June to August) and *I. wombulu*(that fruits from January to March). Though their pulps have different properties, the kernels have similar characteristics and are not differentiated in the market. This explains why it is often common to mix the two types of kernels by sellers in the market. Consequent upon this, the study treated the kernels from the two species as the same and the objectives of the study were:

- To determine the socioeconomic characteristics of *Irvingia* kernel marketers in the study area
- To identify the determinants of the selling price of *Irvingia* kernels
- To determine the profitability of *Irvingia* kernel marketing in the study area
- To estimate the marketing efficiency of *Irvingia* kernels in the selected markets.

Since, according to Shomkegh et. al(2008), *Irvingia* kernel marketing provides a means of income as well as earning

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a living to the sellers, it is therefore essential for the traders to be efficient in carrying out their marketing activities so as to improve their living standard. Hence the need for this study to assess the performance of the sellers in relation to the cost incurred as well as the returns so as to have a knowledge of the profitability or otherwise of the ventures.

## 2. Materials and Method

The study was carried out in Akure. Akure is the capital city of Ondo State which is situated in the Southwestern part of Nigeria. It lies in the southern part of the forested Yoruba Hills and at the intersection of roads from Ondo, Ilesha, Ado-Ekiti and Owo. Akure has two Local Government Areas with a total population of 484,798 people (NPC, 2006). The people of Akure are known for farming, trading and manufacturing. Many are also civil servants. This study covered six markets which are Oja-Oba, NEPA, Isikan, Oluwatuyi, Maronu and Isolo markets. The selection of the markets was purposive because these were the markets that were involved in *Irvingia* kernel marketing in the area.

Data for this study was collected from both primary and secondary sources. Primary data were collected using structured questionnaire from one hundred and twenty randomly selected *Irvingia* kernel marketers. Journals, Conference Proceedings and internet were the sources of secondary data.

Collected data were analyzed with the use of descriptive statistics, Gross Margin, Multiple Linear Regression.

$$GM = TR - TVC$$

Where GM = Gross Margin

TR = Total Revenue

TVC = Total Variable Cost

Multiple Linear Regression was used to identify the factors that determine the selling price of *Irvingia* kernels in the study area.

The implicit form of the equation is  $Y = f(X_1, X_2, X_3, X_4, e)$ , while the linearized form is

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$$

Where Y = selling price in Naira

$X_1$  = cost price in Naira

$X_2$  = Transportation cost in Naira

$X_3$  = Level of involvement of marketers

$X_4$  = Storage cost

$X_5$  = Tax

$b_1 \dots b_5$  = coefficients

$X_1 \dots X_5$  = Independent variables

e = error term

Marketing efficiency = Total sales / Total marketing costs

The *a priori* expectation was that the coefficients of the independent variables were expected to be positive and have significant relationship with the independent variable, indicating the effect of marketing cost on the selling price.

## 3. Results and Discussion

Table 1 shows the socioeconomic characteristics of the

respondents. Majority (70%) of the traders are female. This implies that women mainly engage in *Irvingia* kernel marketing in the study area. This may not be unconnected to the fact that men deal in other income generating activities which may fetch them better income than *Irvingia* marketing. Ninety percent (90%) of the sellers were below 50 years of age. This means majority of those involved in the business were the active people who can still move around to scout for the commodity. The table also shows that 35% of the respondents failed to specify their household size. The reason may not be far fetched from the common belief in Yoruba land that it is a taboo to reveal the actual number of children they have, which is needed to make up the household size. It could also be observed from table 1 that no fewer than 21% of the sellers have household size of at least six people, an indication that the traders had responsibilities to cater for and this will make them to be very serious with their business, especially where they are the breadwinners, in order to maximize profits. The results also show that larger proportion (73%) of the marketers was married while only 15% of the respondents were single. This will also enhance their level of seriousness with the business, considering their financial needs to feed and train their children (Mafimisebi, 2000). Forty percent (40%) of the respondents had tertiary education. This is at variance with previous studies where majority of sellers lacked formal education. This implies that there is more awareness among the educated about *Irvingia* marketing. Consequent upon this, market information, especially that of price variation and changes given to them as well as new techniques with respect to marketing could easily be adopted by the sellers.

It was also discovered in the study that 69% of the traders were of Igbo extraction. This may not be unconnected to the fact that the origin of the use of *Irvingia* kernel as soup condiment in Nigeria could be traced to the Igbo people. Other tribes which included Delta and Edo accounted for only 5% while Yoruba represented 26%.

The values of coefficients of multiple determination ( $R^2$ ) from Table 2 show that at least 54% of the total variation in the selling price of *Irvingia* kernels in the selected markets was explained by the independent or explanatory variables. For all the selected markets, the coefficients of  $X_1$  and  $X_2$ , which are cost price and transport cost respectively, are positive and were significant at 0.05 level of probability. This implies that the cost price of *Irvingia* kernels and the cost of transporting it play prominent role in determining the selling price of the commodity. That is, the higher the cost price of the commodity and the cost of transporting it, the higher will be the price at which it will be sold. It was also observed from table 2 that the coefficient of the level of involvement of marketers ( $X_3$ ) in the trade, though positive, it was not significant at 5% level. This means whether the sellers are into full-time or part-time marketing of *Irvingia* kernels, it has no significance in determining the price at which the commodity will be sold. The major determinants were the cost price of the commodity and the cost of transportation.

**Table 1.** Socioeconomic Characteristics of Respondents

Variable	Frequency	Percentage
<u>Gender</u>		
Male	36	30
Female	84	70
Total	120	100
<u>Age(in years)</u>		
<20	4	3
20-29	26	22
30-39	36	30
40-49	42	35
≥50	12	10
Total	120	100
<u>Household size</u>		
1-5	53	44
6-10	19	16
>10	6	5
No Response	42	35
Total	120	100
<u>Marital Status</u>		
Single	18	15
Married	88	73
Divorced	6	5
Widow(er)	8	7
Total	120	100
<u>Educational Level</u>		
No formal education	7	6
Primary	23	19
Secondary	42	35
Tertiary	48	40
Total	120	100
<u>Tribe</u>		
Yoruba	31	26
Igbo	83	69
Others	6	5
Total	120	100

**Table 2.** Summary of estimated Regression parameters

Market	Parameters	t-value	R <sup>2</sup>
Oja-Oba	b <sub>0</sub> (968.51)		0.643
	b <sub>1</sub> (678.10)	**3.214	
	b <sub>2</sub> (572.70)	**2.310	
	b <sub>3</sub> (210.80)	0.976	
Maronu	b <sub>0</sub> (668.67)		0.574
	b <sub>1</sub> (547.40)	**4.031	
	b <sub>2</sub> (715.30)	**2.714	
	b <sub>3</sub> (321.80)	1.013	
Isolo	b <sub>0</sub> (748.70)		0.554
	b <sub>1</sub> (678.50)	**3.121	
	b <sub>2</sub> (447.80)	**2.871	
	b <sub>3</sub> (287.10)	0.854	
NEPA	b <sub>0</sub> (521.30)		0.617
	b <sub>1</sub> (867.91)	**2.344	
	b <sub>2</sub> (667.42)	**2.101	
	b <sub>3</sub> (338.48)	1.003	
Oluwatuyi	b <sub>0</sub> (450.30)		0.540
	b <sub>1</sub> (793.60)	**3.211	
	b <sub>2</sub> (694.88)	**2.032	
	b <sub>3</sub> (322.31)	0.741	
Isikan	b <sub>0</sub> (627.19)		0.611
	b <sub>1</sub> (503.44)	**3.044	
	b <sub>2</sub> (487.39)	**2.707	
	b <sub>3</sub> (384.79)	1.341	

\*\* Significant at 0.05 level

Figures in parentheses represent coefficients of the parameters

**Table 3.** Gross Margin Analysis for Irvingia Kernel Marketing in the Study Area

Item	Cost	Income
Storage	N501, 890	
Labour	N397, 735	
Transportation	<u>N544, 844.50K</u>	
Total Variable Cost	N1, 444,469.50K	
Total Income		N2, 380,750
Gross Margin		N93, 628.50K
Average GM/marketer		N7, 802.34K

From Table 3, the average gross margin realized by individual seller in the selected markets was estimated as N7, 802.34. The implication of this is that *Irvingia* kernel marketing is profitable in the study area, since the average margin for each marketer was more than the current minimum wage of N7, 500 in the country. The overall marketing efficiency for the selected markets was 1.65. This means that *Irvingia* kernels marketing in the study area was efficient since the value was greater than 1. That is, for every one naira spent by the sellers, there was a return of 65kobo. This study therefore compares favourably with a study by Okunmadewa *et al.* (2000) on sun-dried meat trading which had marketing efficiency of 1.14.

## 4. Conclusions and Recommendation

From the study, it was discovered that *Irvingia* kernel trading was mainly performed by women, considering the fact that 70% of the respondents were female. This therefore offers them an employment opportunity and ability to cater for their daily needs. It was also shown that 69% of the traders were of Igbo extraction. The study also revealed that the principal determinants of the selling price of *Irvingia* kernels in the study area were the cost price of the commodity and the cost of transporting the commodity.

Since it was also discovered in the course of the study that sellers encountered some difficulties in extracting the kernels from the fruits, it is hereby suggested that research technologists and scientists should device a means of fabricating modern machines that will make the extraction of the kernels from their fruits easier for the traders, as against the tedious traditional methods of extraction.

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