

ANALYSIS OF MARKET STRUCTURE AND CHANNEL FOR LEAFY VEGETABLES IN KOGI STATE, NIGERIA.

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ABSTRACT

The study was carried out to describe the socio-economic characteristics of leafy vegetable marketers, marketing channel and to determine the market structure of leafy vegetable. Multi stage sampling technique was used to select a total of 160 respondents which comprises of wholesalers and retailers. Descriptive statistics and Gini coefficient model were used to analyse the data. The results showed that leafy vegetable marketing was dominated by females (81.25%) and married (67.5%). The major marketing channel was from producer to wholesaler to retailer and to consumers. The result for Gini coefficient was 0.56 and 0.68 for wholesalers and retailers respectively which showed a high degree of inequality of sales. The study therefore, recommended that Government should carry out their indispensable role in building and repairing worn out roads, as well as constructing new ones; which will in turn bring about reduction in the cost of transportation and minimization of vegetable losses.

Keywords: fluted pumpkin, spinach, marketing, marketers.

INTRODUCTION

Vegetables are succulent herbaceous plants that can be eaten whole, raw or cooked as a part of main dish or salad. According to FAO (1998), vegetables refer to all categories of plants whose leaves, fruits or roots are acceptable and used as vegetables by urban and rural communities through custom, habit and tradition. The importance of the nutritional status of vegetables by Nigerians has resulted in the increased demand for the knowledge of food nutrients. There are a host of terms describing traditional African vegetables (TAV), including indigenous African vegetables (IAV); African indigenous vegetables (AIV) traditional leafy vegetables (TLV); African leafy vegetables (ALV); traditional African leafy vegetables (TALV or TLV)—and all are subject to contested meanings (Ambrose-Oji, 2009). In Nigeria, some common leafy vegetables include Ugu (*Telfairia occidentalis*), water leaf (*Talinium triangulare*), bitter leaf (*Vernonia amygdalina*), spinach/Green (*Amaranthus caudatus*) and ukazi (*Gnetum africanum*) and examples of fruit vegetables are cucumber, garden egg, carrot, Cabbage, and onion.

Leafy vegetables are important feature of Nigerian's diet that a traditional meal without it is assumed to be incomplete (Badmus and Yekini, 2011). They are referred to as plants which are consumed in addition to starchy basic foods in order to make it more palatable. According to Fasuyi (2006), green leafy tropical vegetables are important components of the dietary regime of human beings because they provide the necessary vitamins and minerals which the body requires. The consumption of large quantities of vegetables in a diet protect against various health problems such as arthritis, heart disease, stroke, dementia, cancer, and can also help slow down the body aging process (CNN Health, 2014). They are foods with low glycemic index associated with low risk of type II diabetes and coronary heart disease, prolonged satiety responses which leads to weight control (World Health Organization, 2005). Its cultivation support rural, peri-urban and urban populations in terms of subsistence and income generation without requiring huge investments (Department for International Development and Research for Development (DFDRD), 2010). According to Mohammed (2002) vegetables can give high yield per unit area of land and hence generate high income for the farmers.

Vegetables are perishable products and may last effectively for only 24 hours, after which they dry up and become unusable. The amount of vegetable produce that are available to the consumer by the marketer is more important, than the level of vegetable production, given the costs incurred in their marketing, items of transportation from producing areas and the quantities that perish during transportation (Erinle, 1989; Egbuna, 2009; Muhanjiet *al.*, 2011). Therefore, for distribution system to be efficient, the product needs to get to the final users within 24 hours after the harvest by the farmers. The cost of operations are heighten as wholesalers travel almost every day from their locations to the river basin where the farmers are and also travel to the market where the retailers are waiting for the product. Consequently, vegetable marketing is complex and challenging because of their special characteristics which include: perishability, seasonality, high economic value and standardization requirement (Adebisi-Adelanietet *al.*, 2011).

It is the responsibility of retailers to transport the product to the market where the product is sold to the

ultimate users; the challenges facing the middlemen are how to hold an optimal level of stock on a daily basis. This is particularly so because there is the problem of surplus (gap from unsold) and Problem of shortage (gap from demand). Also, the farmers have successfully passed the losses of the unsold items unto the middlemen. This is particularly true, because the farmers only harvest the product needed by the wholesalers and retailers. Anything that happens with the product after the sales becomes the responsibility of the middlemen.

This study therefore (i) analysed the socio economic characteristics of leafy vegetable marketers (marketers of fluted pumpkin and spinach); (ii) described the marketing channel of leafy vegetables in the study area; (iii) examine the market structure of leafy vegetables.

MATERIALS AND METHODS

The study was carried out in Kogi State which lays on latitude 7°30N and longitude 6°42E, it has a population of 3314,043 at the 2006 census and covers a total area of 29,833km². Kogi State consists of 21 Local Government Areas grouped into four agricultural zones. For good data collection and presentation, one community was chosen from each of the four zones, Sampling was preceded by a reconnaissance survey to determine the sampling frame. Multi-stage sampling technique was employed in selection of respondents for this study. In the first stage, one local government area was purposively selected from each of the zones. In the second stage, from each of the four local government areas two markets were selected based on the relative predominant availability of leafy vegetables in the area identified, this gave a total of eight (8) market. In the third stage, there was a proportional selection of 40 marketers from each market that is fourteen (14) wholesalers and twenty six (26) retailers which made up a total of fifty-six (56) wholesalers and one hundred and four (104 retailers) and a total sample size of 160 marketers.

Data Analysis

Descriptive statistics such as frequency mean and percentage was used to analysis socio-economic characteristic as well as marketing channel of respondent. Gini coefficient was used to examine the structure.

Gini coefficient can be expressed as follows:

$$GC = 1 - \sum XY$$

Where:

GC = Gini Coefficient

X = The proportion of Marketing Agent

Y = The cumulative proportion of total sales

\sum = Summation sign

RESULT AND DISCUSSION

Socio-Economic Characteristics of Leafy Vegetable Marketers

The result from Table 1 shows that leafy vegetable marketing was dominated mostly by females in the state, wholesalers 64.3% and retailers 90.4%. The high participation of woman in leafy vegetable marketing in Kogi state corroborated with the findings of Agbugba and Thompson (2013) in their work marketing of tropical vegetable in Aba area of Abia State Nigeria where it was found that, majority of the marketers of vegetable in the area were women.

Analysis of marital status of respondents indicated that majority 85.7% wholesalers and 57.7% retailers were married. It confirms with Taphone (2009) who reported that married people have more responsibilities in taking care of their family members and this may be the reason why the business is dominated by them so as to meet these responsibilities.

Analysis of age among the respondent showed that the greater population of marketers is between the age ranges of 21-40 years. Similar age range of 25-45 years was found by Schippers' (2000) study on tropical vegetable in a sub Saharan African country who established that the ages of key market players in vegetable marketing fell between 25 and 45 years of age. The marketers of vegetable were in their active productive age group, which is a good indication for sustainable and active vegetable marketing in the study area.

The marketing experience is closely related to ones' chronological age. The result showed that 53.5% had marketing experience between 1 to 10 years. This agrees with Adejobi *et al.* (2011) who claimed that the more the number of years a marketer engage in a business, the better he will be equipped in exploring the business opportunities due to business tactics and networking he would have developed over the years.

The result showed that the majority of respondent had a house hold size of between 6-10 persons. This relatively low number of persons per household could be attributed to the recent improvements and adoption of different modern family planning methods by households.

The result showed that majority of the respondent had at least primary education wholesalers 30% and retailers 50%. This is in consonance with the findings of Usman *et al.* (2006), who found out that educational level of a trader does not only raise his productivity but also increase his ability to understand and evaluate new techniques and processes for better marketing of his goods.

Table 1 Socio Economic Characteristic of Leafy Vegetable Marketers

SN	CHARACTERISTIC	WHOLESALEERS	RETAILER	TOTAL
		56	104	160
.1	GENDER			
	Male	20(35.7)	10(9.25)	30(18.75)
	Female	36(64.3)	94(90.4)	130(81.25)
2	Marital status			
	Single	2(3.6)	35(33.7)	37(23.13)
	Married	48(85.7)	60(57.7)	108(67.5)
	Divorce	4(7.14)	2(1.92)	6(3.75)
	Widowed	2(3.5)	7(12.5)	9(5.63)
3	Age distribution			
	< 20	-	31(29.8)	31(29.8)
	21-40	34(60.7)	56(53.8)	90(56.25)
	41-60	19(33.9)	10(9.6)	29(18.1)
	>60	3(5.36)	7(6.7)	10(6.25)
4	Marketing experience			
	1-10			
	11-20	30(53.6)	56(53.8)	86(53.8)
	21-40	15(26.8)	35(33.6)	50(31.25)
	>40	8(14.3)	13(12.5)	21(13.13)
		3(5.35)	-	3(5.35)
5	Household size			
	1-5	19(33.9)	32(30.8)	51(31.9)
	6-10	30(53.6)	66(63.5)	96(60)
	11-15	7(4.4)	6(5.8)	13(8.1)
6	Education level			
	0	10(17.9)	24(23.1)	34(21.25)
	1-6	30(53.6)	50(48.1)	80(50)
	7-12	16(28.6)	30(28.9)	46(28.8)
	13-18	-	-	-

Source: computed from field data 2016.

Marketing Channel of Leafy Vegetable

Marketing channel are sets of individuals, participants, players or organizations which facilitate the transfer of title of vegetables (fluted pumpkin and spinach) as they pass from the producer or farmer to the final consumer. They are often employed for analyzing the performance of a market. The analysis of leafy vegetable marketing channels was intended to provide a systematic knowledge of how the vegetable in question flow from its place of production to the final consumers. Channel comparison was made based on the volume of the fluted pumpkin and spinach that passed through each channel. Each of the percentages show the amount of leafy vegetables marketed as they flow through each of the channels from the producers to consumers as shown in figure 1. The figure shows that:

Channel 1: Producers→ Retailers→ Consumers = 45%

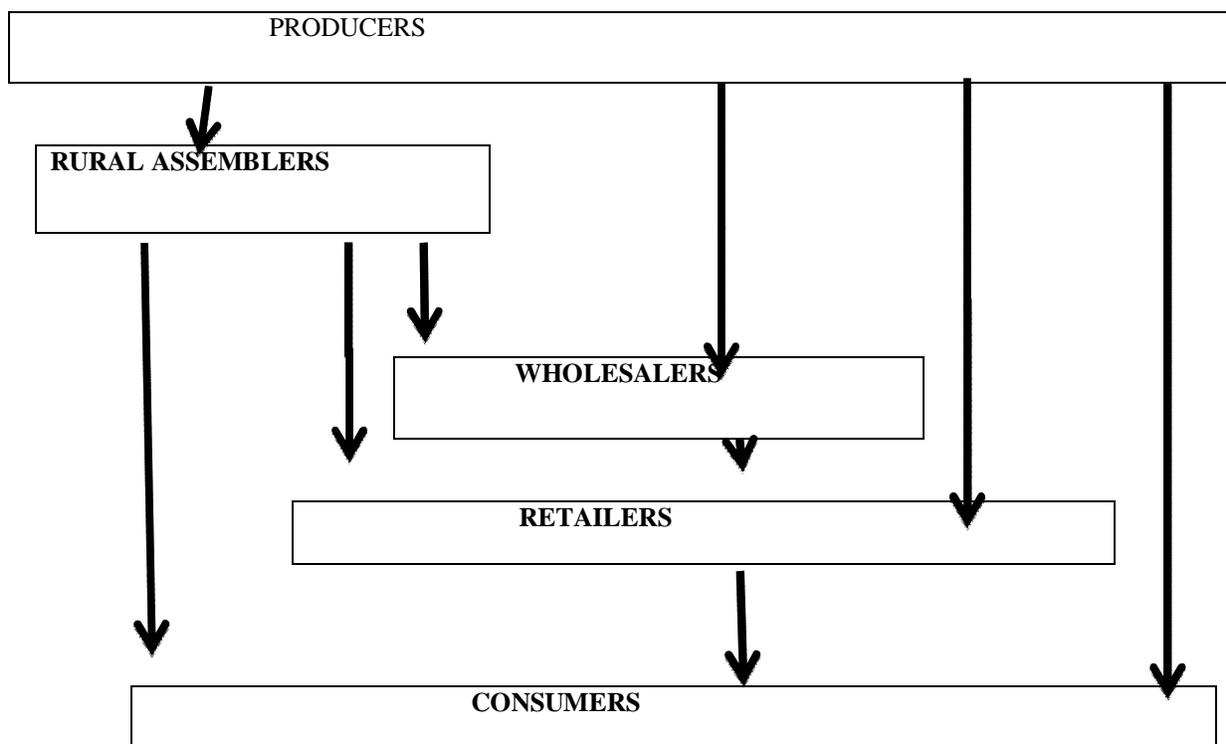
Channel 2: Producers→ Wholesaler→ Retailer→ Consumers = 75%

Channel 3: Producers→ Rural Assemblers → Wholesalers→ Retailers→ Consumers = 35%

Channel 4: Producers→ Rural Assemblers→ Retailers→ Consumer = 30%

Channel 5: Producers→ Wholesalers→ Consumers = 25%

Fig 1: showing the marketing channel for leafy vegetables in the area



Source : Field data 2016

Structure of Leafy Vegetable Market

This section sought to describe and analysed the structure of leafy vegetable market.

Table 2 shows the sales distribution and Gini coefficient for wholesalers. Gini coefficient of wholesalers was calculated as 0.56. This value being higher than 0.35 implied high inequality in sales and

income distribution among the wholesalers in the study area. This high value of Gini coefficient implied that few wholesalers controlled large shares of leafy vegetable supply in the study area. In other words, few wholesalers share significant part of volume of trade in the market such, that it affect market price which invariably lead to market imperfection.

Table 2. Sales distribution and gini coefficient for wholesalers

Sales class qty sold/month	Freq	Proportion (X)	Cumul	Total sales	Proportion of total sales	Cumulate. proportion (Y)	ΣXY
10000-19999	4	0.07	0.07	64700	0.02	0.02	0.0014
20000-29999	13	0.23	0.3	340500	0.12	0.14	0.0322
30000-39999	11	0.2	0.5	380000	0.14	0.28	0.056
40000-49999	12	0.21	0.71	522700	0.19	0.47	0.0987
50000-59999	5	0.09	0.8	282800	0.10	0.57	0.0513
>60000	11	0.2	1.0	1182000	0.43	1.0	0.2
TOTAL	56			2772700	1.0		0.44

Source: Field data 2016

$GC = 1 - 0.44 = 0.56$

Table 3.shows the sales distribution and Gini coefficient for retailers. The Ginicoefficient (0.68) for leafy vegetable retailers represented a situation where powerful leafy vegetable retailers dominated the market, a sign of inefficiency in the market structure.

From this result, it can be deduced that there was high inequality in the income from sales among retailers. This meant that each of these traders could exert pressure on the market by influencing quantity and price.

Table 3: Sales distribution and Gini coefficient for retailers

Sales class qty sold/month	Freq	Proportion (X)	Cumul	Total sales	Proportion of total sales	Cumulate. proportion (Y)	ΣXY
<10000	11	0.11	0.11	75000	0.02	0.02	0.0022
10000-19999	39	0.38	0.49	583200	0.19	0.21	0.0789
20000-29999	12	0.12	0.61	282000	0.09	0.3	0.036
30000-39999	16	0.15	0.76	534400	0.17	0.47	0.0705
40000-49999	4	0.04	0.8	174800	0.06	0.53	0.00212
50000-59999	10	0.1	0.9	541600	0.17	0.7	0.01
>60000	12	0.12	1.0	951800	0.3	1.0	0.12
Total	104	1.0		3142800	1.0		0.32

Source: Field data 2016

GC = 1-0.32=0.68

CONCLUSION

The leafy vegetable majorly consumes in Kogi State are fluted pumpkin and spinach, these vegetables have high nutritional values. The market is dominated by married females. The market players involved in its marketing are producers, wholesalers, retailers and consumers. High ginicoefficient for both wholesalers and retailers simply shows that only a few of the marketers had control over the market, an indication that there is monopoly of prices by some of these participants in the market

RECOMMENDATION

Vegetables are known to be highly perishable and so it's to be kept for long, good storage facilities are needed. Therefore government should build sufficient and modern storage to curb perishability. Forming market association is essential in enhancing marketer's welfare and services. Government's indispensable role in building and repairing worn out roads, as well as constructing new ones; which will in turn bring about reduction in the cost of transportation and minimization of vegetable losses in the marketing process should be encouraged.

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