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MARKET STRUCTURE AND CONDUCT OF NSUKKA YELLOW PEPPER IN ENUGU STATE, NIGERIA

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ABSTRACT

The study was carried out to examine the market structure and conduct of Nsukka yellow pepper in Enugu State, Nigeria. Specifically, the study sought to: describe the socio-economic characteristics of Nsukka yellow pepper marketers, examine the market structure of Nsukka yellow pepper, determine the marketing channel and conduct, and identify the constraints militating against the marketing of Nsukka yellow pepper. Purposive and multistage random sampling technique and a well-structured and validated questionnaire were used in the study. Based on the findings, the males (60%) dominated the wholesale market, while the females (90%) dominated the retail market of Nsukka yellow pepper in the study area. There was relatively a high-income inequality and degree of concentration with the Gini-coefficient of 0.584 in wholesaling against 0.524 in the retailing level of the crop. Five distributive channels (producers- marketing agents – wholesalers- retailers-consumers) were identified in the marketing of Nsukka yellow pepper. Major constraints among others include cost of transportation (93.3%), seasonality (63.3%) and perishability (86.7%) of the product and marketing charges (92.2%). It was recommended that Nsukka yellow pepper marketers should form cooperative societies to help them properly dispose their products, strengthen their capital base and easily assess credit facilities. Enlightenment campaigns about the crop should be embarked upon and the channels of distribution should be improved to help reduce the problem facing the marketers in the disposal of the product.

KEYWORDS Market, structure, conduct, channels, Nsukka yellow pepper

INTRODUCTION

Pepper (*capsicum annum*) belongs to the family solanaceae and is said to be originally a native of central and South America. (Berka, 2002). Pepper an important vegetable crop forms integral part of local delicacies across countries of the world. The crop is nutritionally, economically, medicinally and industrially beneficial to man. Nutritionally, the fruit is an integral part of household delicacies globally after tomatoes. As a spice crop, it can be consumed either fresh or processed as it spices, flavours and colours stew, soup and sauces. It is a rich source of vitamins A and C (Onwubuya, Okporie and Nenna, 2008). Medicinally, it is a high antioxidants which is associated with the prevention of cardiovascular disorders, cancers and cataracts and are recognized sources of vitamins A, C and E (Ugwu, 2010). Sence Agric (2014) asserts that pepper can act as heart stimulant which regulates blood flow and strengthen the arteries and possibly reducing heart attacks. It helps the digestive system, relieves systems of sore throat, cold, fevers and helps to remedy hangover ad regulate blood sugar. According to Bosland and Votava (2010), pepper is industrially used by pharmaceutical industries in manufacturing stimulants and counter irritant balms for external application. Economically pepper production and marketing creates employment and helps to increase

the income and financial base of the rural sector. Hence, the Central Bank of Nigeria is currently partnering with Local farmers to produce yellow pepper in commercial quantity out of which about 80% of produced crop will be exported to Europe and America (Ossai, 2017, Ikem, 2018, and Uzor 2018).

Bosland and Votava (2010) assert that the production of pepper has increased globally. This could be because of its high nutritive value. Sence Agric (2014) documenting on pepper asserts that the food and Agricultural Organisation (FAO) statistics on pepper production in 2001 was 21.3 million tonnes from a harvested area of 1.6million hectares. Tropically, the production of pepper in Africa was estimated at 1 million tonne, with Nigeria and Ghana as the largest producers with 715,000 tonnes from 90,000 hactares and 270,000 from 75,000 hactares respectively. Since then, the production of pepper in Nigeria has been on the increase. Hence, Business Day (2007) acclaimed Nigeria as one of the major producers of pepper in the world accounting for about 5% of the African production. The major area of production in Nigeria is the Northern part. However, the cultivation of pepper in the southern and eastern part of the country is on the increase especially in the farms and garden

production. The pace of growth was the most pronounced in 2018 when the production volume increased by 0.7% against the previous year. As a result, production reached the peak volume of 63K tons. From 2019 to 2022, production growth remained at a lower figure. Pepper output in Nigeria indicated a relatively flat trend pattern, which was largely conditioned by a relatively flat trend pattern of the harvested area and a relatively flat trend pattern in yield figures. In value terms, pepper production reduced sharply to \$97M in 2022 estimated in export price. In general, production showed a deep downturn. The most prominent rate of growth was recorded in 2021 when the production volume increased by 43% against the previous year (Wikipedia, 2024).

Amongst the varieties of pepper prevalently grown in Nigeria such as Bird pepper “Atawere” (*capsicum frutescense*), cayenne or red pepper “Sombo” (*capsicum frutescense*), “Atarodo” (*capsicum annum*) “Tatase” (*capsicum anum*) and Nsukka yellow pepper “Ose Nsukka” (*capsicum chinense nsukka-drillus*). Nsukka yellow pepper, which is the focus of this work, has a unique characteristic flavor that cannot be compared to another. Abu and Uguru (2005) asserts that this aromatic attribute of Nsukka yellow pepper makes it costlier in the market when compared to other varieties of pepper. In support of this, Uloh and Igwe (2018) asserts that the natural aroma and flavor of Nsukka yellow pepper coupled with the beautiful bright yellow colouration remains irresistible and hence, most households especially in the eastern part of the country prefer Ose Nsukka to any other type in the market. Nsukka yellow pepper a rainfed crop green at maturity with yellow or orange colour owes its name to Nsukka where the soil and weather supports its production much more than any other part in Nigeria. Hence, the pepper is popularly referred to as Nsukka yellow pepper “Ose Nsukka”.

It is through the marketing system that the produced Nsukka yellow pepper gets to the consumers. The marketing system is concerned with all levels and stages of operation that facilitate the movement of products from the farms to the consumers (Esheya, 2022). In the words of Ugwu (2010), agricultural marketing encompasses all processes and services involved in moving food and farm products from the farm where they are produced to the consumers located in urban and rural areas. Production is useless if what is produced is not efficiently and effectively marketed (Esheya, 2012). Without efficient marketing in place all production effort

goes into the drains of post harvest losses (Uloh and Igwe, 2018), Hence, Olukosi, Isitor and Ode (2015) hold it that marketing has economic value because it gives form, time and place utility to products and services.

In product marketing, the flow of information is usually determined by the farmer and marketers from the farm to the market place and this consequently influenced the marked performance (Amusa & Esheya, 2022). Market performance according to Olukosi, Isitor and Ode (2015) is the appraisal of the extent to which the interactions of buyers and sellers in a market facilitate and stimulate outcomes that are consistent with social purposes. In the words of Enete (1999), market performance represents the economic result of structure and conducts and generally consists of an analysis of progressiveness, equity, allocative and pricing efficiency. In order to effectively executive market performance, the marketing system has to carry out a number of services so as to achieve the place, form and time utilities desired by the consumers (Esheya, 2021). For these utilities to be realized, Anuebunwa (2008) asserts that transfer costs are incurred and that these costs are influenced by the nature of the product, mode of transportation, the nature of the road and distance.

In Nigeria, pepper generally and Nsukka yellow pepper specifically, have long been placed as a minor crop, hence has attracted little marketing research attention in comparison to other major crops such as yam, cassava, rice, beans, cocoa and rubber etc. This is highlighted by the lack of literature on its marketing even though many studies have been done on its agronomy and preservation. Studies by researchers such as Ugwu (2010), Bosland and Votava (2000), Abu and Ugwu (2005), Madu and Uguru (2005), Dipeola and Akinbode (2008), Sanusi and Ayinde (2013), and Onwubuya, Okporie and Nnenna (2008) all focused on the production and preservation of pepper. With respect to it's marketing, only Udegbe, Udegbe, Olumoko and Hassan (2012) and Alawole and Abegunde (2016) have looked into the marketing of pepper. But, up on till now there has not been any research work done on the marketing of Nsukka yellow pepper despite it's peculiarities of colour, aromatic flavor, soil and weather selection. Due to the fact that there is a little or no research patronage on the marketability of the crop, few or no medium and large scale farmer has invested in it. It is worthy to note that just like the marketing of any other vegetable crop, the marketing of Nsukka yellow pepper in Enugu North Agricultural Zone of Enugu State is worth considering. Consequently, the general objective

of this study is to examine the market performance of Nsukka yellow pepper in the study area. Specifically, the study sought to:

- i. describe the socio-economic characteristics of Nsukka yellow pepper marketers;
- ii. examine the market structure of Nsukka yellow pepper;
- iii. determine the marketing channel and conduct of Nsukka yellow pepper; and
- iv. identify constraints militating against the marketing of Nsukka yellow pepper in the study area.

The marketing of pepper can help strengthen agribusiness development, enhance employment opportunities and help increase the financial base of the rural sector. The finding can be of great benefit to both the farmers and prospective marketers of Nsukka yellow pepper. This is because the findings may lead to designing of policies that will help the pepper farmers to improve and increase production and in the same vein increase the marketers' chances of improving on the marketing efficiency.

MATERIALS AND METHODS

The study was conducted in Enugu State, Nigeria. The state which is made of 17 Local Government Areas, lies in the South-East geo-political zone of Nigeria and located at longitude 6°30' North and latitude 7°30' East of the equator is divided into 3 (three) Agricultural zones, which include, North, East and West Zones (ENADEP, 2008). The Enugu North Agricultural zone was purposively selected for this study, because Nsukka yellow pepper is highly produced in the zone. The zone is made up of six Local Government areas comprising Igbo-Etiti, Igbo-Eze South, Igbo-Eze North, Nsukka, Udenu and Uzo-Uwani Local Government Areas. Purposive and multistage random sampling technique was adopted in selecting the respondents used for the study.

In stage one, three (3) Local Government Areas which include Igbo-Etiti, Nsukka and Uzo-Uwani Local Government Areas were purposively selected out of the six Local Government areas that make up the zone. This is because of the high level of production and marketing of Nsukka yellow pepper in the area. In stage two, two markets highly involved in the marketing of Nsukka yellow pepper were purposively selected from each of the three (3) selected Local Government Areas, thus bringing the number of markets used for the study to six (6). In stage three, ten (10) wholesalers and twenty (20)

retailers of Nsukka yellow pepper were randomly selected from each of the six (6) purposively selected markets, thus giving a total of one hundred and eighty (180) marketers used for the study. A well-structured questionnaire was used to collect data for the study. Descriptive and inferential statistical tools such as frequencies and percentages were used to present the results of the socio-economic characteristics of the respondents and constraints encountered by them in the marketing of Nsukka yellow pepper. Gini-coefficient analysis was used to determine the degree of market concentration amongst the marketers. The Gini coefficient (a) was computed as follows,

$G = 1 -$

$$\sum_{i=1}^k X_i Y_i = 1$$

Where:

X_1 = Percentage of Nsukka yellow pepper marketers (traders)

Y_1 = Cumulative percentage of sellers total sales (income)

The Gini Coefficient varies from 0 to 1, where 0 implies perfect equality in distribution (signifying a perfect market). 1 implies perfect inequality (signifying an imperfect market). The closer the Gini Coefficient is to zero, the greater the degree of equality and the lower the level of concentration and the more competitive are the markets. In the same vein, as the Gini coefficient approaches 1 (unity), the greater is the degree of inequality and the higher the level of concentration and the more imperfect are the markets (Ubokudom, Eshey, & Udioko, 2021).

RESULT AND DISCUSSION

Socio-Economic Characteristics of Nsukka Yellow Pepper Marketers

The socio-economic characteristics of Nsukka yellow pepper marketers analysed in this study include gender, age, marital status, household size, educational status and marketing experience. This is as shown in Table 1. The result shows that most (77.5%) of the respondents were females, 60% of the wholesalers were males, while 93% of the retailers were females. This implies that the wholesale market was dominated by males, while the females dominated the retail market of Nsukka yellow pepper in the study area. This is in tandem with the findings of Sanusi and Ayinde (2013), who asserted that males dominated the wholesale market of water melon in Nnewi Anambra State, Nigeria, while the retail market was dominated by the females.

The table also showed that majority (35.8%) of the marketers (wholesaler and retailers) fall within the age range of 41-50 years. The mean age of the wholesalers and retailers was 45 and 47 respectively. This implies that Nsukka yellow pepper marketers in the study area are energetic and in their economically active age of life. With respect to marital status, 66.7% of the wholesalers and 74.5% of the retailers were married. This suggests that Nsukka yellow pepper marketers in the study area have a stable family, responsible and can make productive and good business decisions. The result of household size showed that the wholesalers and retailers had a mean household size of six persons. This indicates

a strong family stability and sufficient work force for efficient use of resources for maximum returns.

The result further shows that 60% of the marketers (wholesalers and retailers) attended primary school, followed by 22.3% that completed secondary school. This means that a good number of the marketers are formally educated and this could translate to higher business acumen in terms of level of business profit. With respect to marketing experience, the result shows that the wholesalers and retailers had the same mean of 8 years. Since experience indicates a lot about the success of a business, Nsukka yellow pepper can be said to be a very lucrative business and a pathway out of poverty.

Table 1: Socio-economic Characteristics of Nsukka Yellow Pepper Marketers

	Wholesalers (30)		Retailers (90)		Total (120)	
	Frequency	%	Frequency	%	Frequency	%
Gender						
Male	18	60	9	10	27	22.5
Female	12	40	81	90	93	77.5
Age						
≤ 20	-	-	5	5.6	5	4.2
21-30	2	6.6	15	16.7	17	14.2
31-40	8	26.8	22	24.4	32	26.7
41-50	12	40	33	36.7	43	35.8
51-60	5	16.6	11	12.2	16	13.3
61≥	3	10	4	4.4	7	5.8
Mean	45.1		36.3		47	
Marital status						
Married	20	66.7	67	74.5	87	72.5
Single	4	13.3	11	12.2	15	12.5
Widowed	6	20	12	13.3	18	15
Household Size						
1-5	18	60	48	53.3	66	55
6-10	7	23.3	26	28.9	33	27.5
11-15	5	16.7	16	17.8	21	17.5
Mean		5.8		6.2		6.1
Educational Status						
No formal education	7	23.3	13	14.4	20	16.7
Primary	15	50	57	63.3	72	60
Sec. Sch.	8	26.7	20	22.2	28	23.3
Tertiary Institution	-	-	-	-	-	-
Marketing experience						
1-5	5	16.7	28	31.1	33	27.5
6-10	16	53.3	41	45.6	57	47.5
11-15	7	23.3	11	12.2	18	15
16-20	2	6.7	6	6.7	8	6.7
21 & above	-	-	4	4.4	4	3.3
Mean		8.1		8.3		8.54

Source: Field survey, 2021.

Gini-Coefficient for Nsukka Yellow Pepper Marketers

Results in table 2 on Gini-Coefficient for Nsukka yellow pepper marketers showed that both the wholesalers and retailers had a Gini-Coefficient of 0.584 and 0.526 respectively. This indicates high level of inequality in sellers' income (sales margin). It shows a high concentration and distribution of income amongst Nsukka yellow pepper marketers in the study area. The inequality could be due to variation in the

investment level of the respondents. This result agrees with separate studies carried out by Anuebunwa (2008) and Taru and Lawal (2011) on concentration in the yam market in Abia and Taraba States, Nigeria that there is high degree of inequality in sellers' income and that the markets were highly concentrated. However, this contrasts with the study by Mafimisebe et al (2006) which shows a Gini Coefficient of 0.4680 on the analysis of the fundamentals in palm oil marketing in Osun state indicating a low-level income inequality.

Table 2: Computation for Gini-coefficient for Nsukka Yellow Pepper Wholesalers by Monthly Sales

Monthly Sales (₦)	Frequency	% of wholesalers (x)	Cumulative %	Total value of Monthly sales (₦)	% of Total value of monthly sales	Cumulative % (Y)	XY
100,100-150,000	4	13.3	13.3	138,600	11.	11	0.0146
150,100-200,000	9	30	43.3	199,500	15.9	26.9	0.0807
200,100-250,000	12	40	83.3	241,550	19.2	46.1	0.1844
250,100-300,000	3	10	93.3	287,115	22.8	68.9	0.0689
300,000 & Above	2	67	100	391,100	31.1	100	0.067
Total	30	100		1,257,775	100		0.416
Mean = 1 - 0.416 = 0.584							

Source: Field survey, 2021.

Computation for Gini-coefficient for Nsukka yellow pepper Retailers by monthly sales

Monthly Sales (₦)	Frequently	% of wholesalers (x)	Cumulative %	Total value of Monthly sales (₦)	% of Total value of monthly sales	Cumulative % (Y)	XY
10,100-20,000	10	11.1	11.1	19,550	10.2	10.2	0.0113
20,100-30,000	23	25.6	36.7	28,120	14.7	24.9	0.0637
30,100-40,000	29	32.2	68.9	39,810	20.8	45.7	0.1472
40,100-50,000	18	20	88.9	46,660	24.4	70.1	0.1402
50,100 & Above	10	11.1	100	57,270	29.9	100	0.111
Total	90	100		191,410	100		0.4734
Mean = 1 - 0.4734 = 0.526							

Source: Field survey, 2021.

Marketing Channel and Conduct of Nsukka Yellow Pepper

Marketing channel of Nsukka yellow pepper refers to the path the commodity passes and the various market players that facilitates the transfer of title of Nsukka yellow pepper as it moves from the producer to the final consumer. In figure 1 the finding showed five alternative marketing channels for the crop. The channels are as follow in figure 1 below. This collaborates with the findings of Alawode and Abegunde (2016), Uloh and Igwe (2019) and Amao, Adebise, Olajede, Adeoye and Olabode (2011) where five alternative marketing channels were identified for pepper marketing in Oyo State, broom production and marketing in Enugu State and pineapple marketing in Edo and Delta

States respectively. However, the finding contrasts with that of Onah (2014) where three alternative channels were identified for cabbage marketing in Abia State, Nigeria.

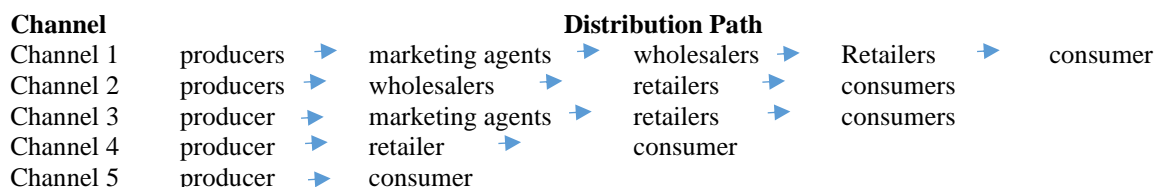


Figure 1 – Channels or distribution

Source: Field survey 2021.

Conduct of Nsukka Yellow Pepper Marketers

Table 3 below shows the results on the pricing technique used by respondents, their means of purchase, selling and strategy used to attract customers. On the pricing technique used, majority (91.1%) of the retailers and 80% of the wholesalers usually fix their market price by considering the market condition of demand and supply. This was followed by the consideration of the marketing costs which showed 84% for retailers and 73.3% for wholesalers. This agrees with Uloh (2015) and Ajie (2013), where the market condition of demand and supply and the marketing costs incurred were the two major pricing techniques used in the marketing of banana

fruits and cocoyam in south east and Rivers States of Nigeria respectively. 100% of the wholesalers and Retailers buy their Nsukka yellow pepper in bags, while 100% of the retailers sell by displaying on the table or ground. On the strategy adopted to attract customers, 100% of retailers practice attractive packaging and Neat attractive display, while 86.7% and 93.3% of the wholesalers attract customers by attractive packaging and Neat/attractive display of their products. This agrees with Uloh (2015), where attractive packaging and neat/attractive display were major strategies used by marketers in the marketing of banana fruits in south east Nigeria.

Table 3: Market Conduct of Nsukka Yellow Pepper Marketers

Variables	Wholesalers		Retailer	
	Frequency	%	Frequency	%
Pricing Technique				
Arbitrary fixing of prices	-	-	-	-
Consideration of Marketing Costs	22	73.3	76	84
Market Condition of dd/ss	24	80	82	91.1
Bargaining and haggling	15	50	21	23.3
Price fixed by trade association	10	33.3	10	11.1
Means of Purchase				
By kilogram	-	-	-	-
By Bags	30	100	90	100
By Baskets/Basins	24	80	24	26.7
By painter (tin) measurement	-	-	08	8.9
Means of selling				
Display on table/floor	-	-	90	100
Use of tin/container	8	26	14	15.6
Packaged in polythene	-	-	12	13.3
By Bags	30	100	-	-
By Baskets/Basins	12	40	-	-
Strategy used to attract customers				
Attractive Packaging	26	86.7	90	100
Neat/attractive display	28	93.3	90	100
Buy and get some free (Jara)	-	-	56	62.2
Granting of credit facility	14	46.6	21	23.3
Sorting and Grading	21	70	78	86.7

*Multiple responses

Constraints to the Marketing of Nsukka Yellow Pepper

Table 4 shows the constraints to the marketing of Nsukka yellow pepper. Out of the 12 constraints identified, cost of transportation (93.3%), perishable nature of the product (86.7%) and lack of storage facility (83.3%) ranked 1st, 2nd and 3rd respectively. This agrees with Uloh and Igwe (2018) and Isibor and Ugwumba (2014) where the marketing constraint of high cost of transportation (93.3%) was peculiar to the wholesalers. This could be connected to the fact that the wholesalers travel to long

distances and rural areas to purchase the commodity coupled with the bad road networks. This contrasts with that of the retailer which is attributed to the fact that many of them buy and resale in the same market and hence, incurs less transportation cost. Perishable nature of the product and lack of storage facility were common constraints to both the wholesalers and retailers. The least constraints facing the marketers was lack of market information, while bad road/ long distance to the market was peculiar to the wholesalers.

Table 4: Constraints to the Marketing of Nsukka Yellow Pepper

Constraints	Wholesalers			Retailers		
	Freq.	%	Rank	Freq.	%	Rank
Cost of Transportation	28	93.3	1 st	48	53.3	10 th
Perishable nature of pepper	26	86.7	2 nd	82	91	3 rd
Seasonality of the product	19	63.3	7 th	85	94.4	1 st
Lack of Government assistance	22	73.3	5 th	72	80	6 th
Bad Road/Long distance to the market	18	60	8 th	20	22	12 th
Marketing Charges	23	76.7	4 th	83	92.2	2 nd
Low Market Information	10	33.3	9 th	30	33.3	11 th
High Cost of Pepper	18	60	8 th	56	62.2	9 th
Bulkiness of the Product	20	66.6	6 th	68	75.5	7 th
Lack of storage facility	25	83.3	3 rd	78	86.6	4 th
Irregular supply	14	46.6	10 th	74	82.2	5 th
Lack of Sufficient capital	16	53.3	9 th	67	74.4	8 th

*Multiple response.

Source: Field Survey, 2021.

CONCLUSION AND RECOMMENDATIONS

This study examined the market structure and conduct of Nsukka yellow pepper in Enugu State, Nigeria. Findings revealed that male dealers dominated the wholesale market, while the female dealers dominated the retail market of Nsukka yellow pepper in the study area. It further identified producers, wholesalers, retailers, marketing agents and consumers as the five distributive channels in the marketing of Nsukka yellow pepper. The major constraints to the market structure and conduct include cost of transportation, seasonality and perishability of the product and marketing charges. It is recommended that Nsukka yellow pepper marketers should form cooperative societies as this will help them properly dispose their products, increase their capital base and easily assess credit facilities from banks and other financial institutions; while enjoying other economies of scale.

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