

**STRUCTURAL CHARACTERISTICS AND CONDUCTS OF CASHEW NUT  
MARKETERS IN NORTH CENTRAL ZONE, NIGERIA**

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**ABSTRACT**

This study accessed the structural characteristics and conducts of cashew nut marketers in north central zone, Nigeria. Structured questionnaires were used to collect data from 396 cashew nuts marketers selected from Kogi, Nasarawa and Kwara States; using a multi-stage random sampling technique. Various statistical tools used in assessing market performance of cashew nuts marketers: percentages, frequency, Herfindahl-Hirschman Index, Gini coefficient was used to describe the structural characteristics and conducts of cashew nut marketers while factor analysis was employed to identify major constraints militating against the marketing of cashew nut in the study area. The Herfindahl-Hirschman Index (HHI) of 0.006 implies that cashew marketing is dominated by many sellers implying perfect competition among sellers. The Gini Coefficient ratio of 0.87 implies that there is lower level of market competition (imperfect competition) among marketers in the study area and the high market power is controlled by few marketers whose actions can influence market activities in the study area because they control larger share of income/revenue in the market. Many marketers were not members of marketing association. This study also revealed that there is unavailability of source of funding among marketers thus; many marketers rely on personal saving and family saving for their business.; Cashew nut produce was differentiated into wet (at the point of sale) and dried (before sale). Majority (59.6%) of cashew nuts marketed wet nuts while 40.4% of the marketers dried their cashew nuts before selling. The major constraints militating against marketing of cashew nuts in the study area were price instability (.865), unregulated market; (.788), lack of storage facilities (.830), inadequate/unstable supply (.770), high transportation cost (.734), poor institutional support (.670) among others. This study concludes that there is no transparency in market information among cashew nuts marketers in the study area and based on this empirical finding the following recommendations were suggested: Government in collaboration with Agencies and NGOs should ensure they continue to extend their production and marketing training programs to more marketers to ensure wider coverage among beneficiaries since many of the respondents are yet to benefit from trainings and researches; marketers should be encouraged through their cooperatives to provide storage facilities that will enable them store their produce and sell when the price appreciates; Government through the extension agents with the aid of social media and cooperatives should organize training to marketers to help improve their level of knowledge on marketing and pricing that would in turn increase their marketing efficiency level; farmers should be encouraged to form cooperative in order to help them minimize the exploitation by middlemen; financial institutions, exporters, processors and donor organizations should be linked to marketers in order to assist them with fund.

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**Keywords:** Structure, conducts, marketers, cashew nut, north central Nigeria.

## **1. INTRODUCTION**

Cashew crop is a drought resistant multipurpose tree well suited to poor sandy soils and thrives in soils unfit for good crops, can be planted in degraded areas, as done in some parts of the country. Products gotten from cashew tree are cashew nuts, juice, pulp, Cashew Nut Shell Liquid (CNSL) and fuel wood. Cashew nut is a richly sweet product of cashew tree which have gained popularity because of their nutritional value and pleasant flavor. The cashew nuts are either processed as roasted, salted, sugared or covered with chocolate and/or often used as flavored complement to appetizers, main dishes and deserts, packs a mix of nutrients and minerals not found in many common foods (Balomurugan *et al.* 2011). Nigeria in particularly, these processed cashew nuts can be found at motor parks, local markets and supermarkets, etc. where they are packaged in various forms - recycled bottles, plastic containers - and with various seasonings – honey roasted, salt and pepper, curry, etc (Chemonics/USAID, 2002<sub>a</sub>).

According to Olusegun (2016), Nigeria ranked 7<sup>th</sup> among the top 10 Raw Cashew nut (RCN) producing countries in the world and the 4<sup>th</sup> in Africa after Cote d'Ivoire, Guinea-Bissau and Tanzania, producing 130,000 M/T in 2014 and presently, cashew nut is Nigeria's third largest agricultural export with the value of export of \$110M in 2013 which represented 8% of all agricultural exports. Cashews nuts from Nigeria are sold either in raw form – Nut in Shell (NIS) or as kernels after processing. Both products are sold in the domestic and export markets. Chemonics/USAID (2002<sub>b</sub>), estimated 90% of the traded quantity is exported by local and foreign trading companies to India, Vietnam, and smaller quantities to Brazil and lately to China where the nuts are processed into kernels and sold at a higher value. About 5 to 10% of total production is processed locally for local and export market by few Nigerian entrepreneurs with various capacities ranging from 500 to 1,000 MT/year. Nigeria has the potential to capture the world cashew nut market since cashew can be grown in various parts of the country (Cashew Handbook, 2014).

The structure of the market simply refers to the number of sellers and buyers whether the market is perfectly competitive, monopolistic or oligopolistic (Arene, 2003). Basically, deviation from the perfectly competitive model is the major indicator that is used to determine the market structural theory. Market conduct refers to behavior of firms in relation to pricing and their practices in adapting and adjusting to the market in which they function. Specifically, market conduct includes: market sharing and price setting policies; policies aimed at coercing rivals; and policies towards setting the quality of products (Acharya and Agarwal, 2006).

Although Nigeria plays a dominant position in the global cashew nut production and export, there is little information on structure and conducts of marketers in the study area. Market information is an important marketing function which ensures the smooth and efficient operation of the marketing system. Timely, accurate and adequate availability of market information facilitates decision about when and where to market products. Also, market information creates a competitive market process and checks the growth of monopoly. According to Olagunju (2014) the lack of access to market information and prices for all stakeholders needs to be remedied to

ensure greater understanding, transparency and efficiency across the entire production chain in the region, for better income and wealth creation and distribution, for encouragement of efficient transactions in marketing of the most vulnerable rural poor.

## **2.OBJECTIVES OF THE STUDY**

The broad objective of this study is to describe the market structure and conduct of cashew nuts marketers in north central Nigeria. The specific objectives are to:

- (i) describe the structural characteristics of cashew nuts marketers in the study area;
- (ii) describe the conducts of cashew nuts marketers in the study area;
- (iii) identify the constraints militating against the marketing of cashew nuts in the study area.

## **3. METHODOLOGY**

This study was conducted in Kogi, Kwara and Nasarawa States: north central Nigeria. Kogi State lies between latitudes 7.48° and 8.35° N of the equator and between longitudes 6.44° and 14.64° E of the Greenwich Meridian. Kwara State is between latitudes 8.30° and 8.5° N of the equator and between longitudes 4.32° and 4.33° E of the Greenwich Meridian. while Nasarawa, lies between latitudes 7.45° and 9.25° N of the equator and between longitudes 7° and 9.37° E of the Greenwich Meridian ([findlatitudeandlongitude.com](http://findlatitudeandlongitude.com)). North Central Nigeria covers a land area of about 251,425KM<sup>2</sup> (Nigeria Annual Abstract of Statistics, 1996; Nasarawa State Agricultural Development Programme, 2010). The total population of North Central Nigeria is about 20,266,257 inhabitants (National Population Commission, 2009; Ayoola and Ayoola, 2015). The types of crops grown in north central Nigeria are tuber crops such as yam, cassava, cocoa-yam, potatoes; cereals such as millet and maize; economic trees such as Iroko, obeche and mahogany; fruits such as citrus fruit, guava, cashew, mango and some other related crops grown for commercial purposes. The nature of the land of the region varies relatively from states to States. The soil generally in north central Nigeria is relatively sandy-loam type of soil while parts are reddish in colour and sticky ([www.https://exporable.com](http://www.https://exporable.com)).

Primary data were generated through the use of structured questionnaires that were distributed and administered to 396 cashew nut traders in the study area. Multi-stage sampling technique was used to select 396 respondents for this study. The first stage involved purposive selection of three states in North Central Nigeria namely; Kogi, Kwara and Nasarawa States because of the volume of cashew nut production and marketing activities. The second stage involves purposive selection of a total of nine Local Government Areas that is three Local Government Areas in each of the selected States. Three communities that typify the Local Government Areas in terms of cashew nut production were drawn employing a randomized sampling design. One market/community each was selected from each community selected. Furthermore, from each market/community, three Local buying agents (LBAs), eleven merchants/sub-buyers, eleven village agents and nineteen farmers were drawn for the study through a randomized sampling design. This consisted of total of 99 village agents, 171 farmers, 99 merchants and 27 LBAs.

### **Herfindahl hirschman index (HHI) for market concentration**

HHI is expressed as adopted by Adetunji and Adesiyani (2008), Salau, *et al.* (2017) is as follows:

$$HHI = \sum_{i=1}^n S_i^2 \quad (1)$$

where  $S_i$  = Market share for respondent  $i$ , calculated as:  $S_i = Q_i/Q$ ,  
where  $Q_i$  = 80kg bag of cashew nut sold annually by respondent  $i$ , and  
 $Q$  = Total number of 80kg bag of cashew nut sold annually by all respondents.

### **Gini-coefficient for income inequality**

For this study the Gini Coefficient formula as adopted by Shafaatu (2017), is given as follows

$$G.C = 1 - \sum_{i=1}^{n-1} (Y_k - Y_{k-1})(X_k - X_{k-1}) \quad (2)$$

Where

G.C= Gini coefficient

Y= cumulative percentage of cashew sellers

X= cumulative percentage of their sales

The Gini coefficient is the ratio of the area between the Lorenz curve and the 45 degrees line. A Gini coefficient value closer to 1 shows high level of inequality (market concentration) thus rendering the market less competitive. The level of Gini coefficient is determined not only by number of firms present but also by the size of the market.

### **Factor analysis model**

Factor analysis model is expressed as follows:

$$X_j = a_{j1}F_1 + a_{j2}F_2 + \dots + a_{jm}F_m + e_j \quad (3)$$

Where,  $e_j = 1, 2, \dots, p$

In the classical factor analysis mathematical model,  $p$  denotes the number of variables ( $X_1, X_2, \dots, X_p$ ) and  $m$  denotes the number of underlying factor ( $F_1, F_2, \dots, F_m$ ).  $X_j$  is the variable represented in latent factors. Hence, this model assumes that there are  $m$  underlying factors whereby each observed variable is a linear function of these factors together with a residual variate.

The factor loadings are  $a_{j1}, a_{j2}, \dots, a_{jm}$  which denotes that  $a_{j1}$  is the factor loading of  $j^{\text{th}}$  variable on the first ( $1^{\text{st}}$ ) factor. The specific or unique factor is denoted by  $e_j$ . The factor loadings give us an idea about how much the variable has contributed to the factor; the larger the factor loading, the more the variable has contributed to that factor.

## **4.RESULTS AND DISCUSSION**

### **Structural characteristics of cashew nut marketers in the study area**

Market structure refers to those characteristics of the market organization (buyers and sellers) that may likely affect the behavior and performance of firms. In order to determine the market structure of cashew nuts market in the study area, this study evaluated the degree of market concentration, membership of market association, freedom and ease of entry and exit, price information and setting, degree of product differentiation

### **Degree of market concentration**

Market concentration refers to the number of sellers and buyers in the market. The concentration ratio is expressed as the percentage of the market sector controlled by the biggest  $X$  firms. In this

survey, the analysis of the degree of market concentration for cashew nut marketers was carried out in Kogi, Kwara and Nasarawa States, where LBAs, Merchants, village agents as well as producers (marketers) of the cashew nut marketing actors were significantly involved.

**Herfindahl-hirschman Index (HHI)**

Market concentration of cashew nut sellers in the study area was calculated using Herfindahl-Hirschman Indices (HHI) for the marketers in Kogi, Nasarawa and Kwara States. The result (Table 1) revealed a HHI of 0.006. This means that cashew nut marketing in the study area is dominated by many sellers implying high competition among sellers. Salau and Salman (2017) revealed HHI of 0.008 in the case of tomatoes seller in Ilorin metropolis of Kwara State, indicating that tomato market tended toward pure competition. The study by Nzima *et al.* (2014) on the marketing of groundnut in Malawi reported HHI high (above 0.5) in Chatoloma (0.879), Chinkhoma (0.502), Embangweni (0.710), Jenda (0.850), Kasungu (0.607), Nkhamenya (0.924); indicating that the markets were dominated by a few sellers while the markets for Lilongwe (0.154), Mzimba (0.280), Mzuzu (0.109), Santhe (0.271) had low HHI.

**Table 1: Herfindahl Hirschman (HH) for cashew nuts marketers in Kogi, Nasarawa and Kwara**

	<b>Kogi</b>	<b>Nasarawa</b>	<b>Kwara</b>	<b>Pooled</b>
HHI Index	0.018	0.023	0.015	<b>0.006</b>

Source: Field survey, 2019.

**Gini coefficient index**

Tables 2, 3, 4 and 5 shows the Gini coefficient values for cashew nuts marketers in Kogi, Nasarawa, Kwara States and for the pooled value for the three States. The results of the estimated value for the Gini coefficient computed were 0.86, 0.85 and 0.87 for Kogi, Nasarawa and Kwara States respectively. The pooled value for the Gini Coefficient was 0.87 a value closer to 1(value of perfect inequality). This result implies that there is about 87% level of inequality among cashew nuts sellers in the study area. This implies that there is lower level of market competition among cashew nut marketers in the study area (imperfect competition); and that high market power is controlled by few marketers, whose actions can influence the market activities in the study area. This implies that there is inefficiency in the marketing of cashew nut in the study area. The result of this study is similar when compared to that of Haliru and Ibitoye (2014), who reported an estimated Gini coefficient value of 0.812 among Gum Arabic marketers in North eastern Nigeria and Egbeadumah *et al.* (2016) also reported an estimated Gini coefficient value of 0.80 among tomato retailers in Abeokuta South, Ogun State, Nigeria. However, Ike and Chukwuji (2005) reported an estimated Gini coefficient of 0.676 among cashew nut sellers in Enugu State. One of the reasons responsible for the high value of Gini coefficient in the study area may be the inability of most marketers to invest more funds in their cashew nuts marketing.

**Table 2: Gini - Coefficient for Cashew Nut Marketers in Kogi State Source: Field survey, 2019.**

Sales	Freq. (Sellers)	Prop. (Sellers)	Cum. Sellers(x)	$x_k - x_{k-1}$	Revenue	Market Share	Cum. Market Share(y)	$y_k - y_{k-1}$	$(x_k - x_{k-1}) / (y_k - y_{k-1})$
< 1,000,000	74	0.56	0.56	0.56	30,941,500	0.14	0.14	0.14	0.08
1,000,001 – 2,000,000	19	0.14	0.70	0.14	28,995,000	0.13	0.27	0.13	0.02
2,000,001 – 3,000,000	15	0.11	0.82	0.11	39,080,000	0.17	0.44	0.17	0.02
3,000,001 – 4,000,000	10	0.08	0.89	0.08	36,842,000	0.16	0.60	0.16	0.01
4,000,001 – 5,000,000	3	0.02	0.92	0.02	14,000,000	0.06	0.67	0.06	0.00
5,000,001 – 6,000,000	4	0.03	0.95	0.03	22,950,000	0.10	0.77	0.10	0.00
6,000,001 – 7,000,000	3	0.02	0.97	0.02	19,950,000	0.09	0.85	0.09	0.00
7,000,001 – 8,000,000	1	0.01	0.98	0.01	7,680,000	0.03	0.89	0.03	0.00
8,000,001 – 9,000,000	3	0.02	1.00	0.02	26,030,000	0.11	1.00	0.11	0.00
Total	132	1			226,468,500	1			0.14
								GC	0.86

**Table 3: Gini - Coefficient for cashew nut marketers in Nasarawa State**

Sales	Freq. (Sellers)	Prop (Sellers)	Cum. Sellers(x)	$x_k - x_{k-1}$	Revenue	Market Share	Cum. Market Share(y)	$y_k - y_{k-1}$	$(x_k - x_{k-1}) / (y_k - y_{k-1})$
< 1000000	82	0.62	0.62	0.62	26,548,000	0.14	0.14	0.14	0.09
1000001 - 2000000	27	0.20	0.83	0.20	40,468,000	0.21	0.35	0.21	0.04
2000001 - 3000000	6	0.05	0.87	0.05	15,610,000	0.08	0.44	0.08	0.00
3000001 - 4000000	2	0.02	0.89	0.02	7,035,000	0.04	0.47	0.04	0.00
4000001 - 5000000	2	0.02	0.90	0.02	9,304,000	0.05	0.52	0.05	0.00
5000001 - 6000000	4	0.03	0.93	0.03	22,540,000	0.12	0.64	0.12	0.00
6000001 - 7000000	3	0.02	0.95	0.02	19,930,000	0.11	0.75	0.11	0.00
7000001 - 8000000	4	0.03	0.98	0.03	30,110,000	0.16	0.91	0.16	0.00
8000001 - 9000000	1	0.01	0.99	0.01	8,040,000	0.04	0.95	0.04	0.00
9000001 - 1000000	1	0.01	1.00	0.01	9,750,000	0.05	1.00	0.05	0.00
Total	132	1			189,335,000	1			0.15
								GC	0.85

Source: Field survey, 2019.

**Table 4: Gini coefficient for cashew nut marketers in Kwara State**

Sales	Freq. (Sellers)	Prop (Sellers)	Cum. Sellers(x)	$x_k - x_{k-1}$	Revenue	Market Share	Cum. Market Share(y)	$y_k - y_{k-1}$	$(x_k - x_{k-1}) / (y_k - y_{k-1})$
< 1000000	62	0.47	0.47	0.47	35,557,000	0.13	0.13	0.13	0.06
1000001 - 2000000	23	0.17	0.64	0.17	33,590,000	0.12	0.25	0.12	0.02
2000001 - 3000000	9	0.07	0.71	0.07	21,850,000	0.08	0.33	0.08	0.01
3000001 - 4000000	15	0.11	0.83	0.11	54,160,000	0.20	0.52	0.20	0.02
4000001 - 5000000	6	0.05	0.87	0.05	26,910,000	0.10	0.62	0.10	0.00
5000001 - 6000000	11	0.08	0.95	0.08	61,530,000	0.22	0.84	0.22	0.02
6000001 - 7000000	3	0.02	0.98	0.02	19,082,000	0.07	0.91	0.07	0.00
7000001 - 8000000	2	0.02	0.99	0.02	15,120,000	0.05	0.97	0.05	0.00
8000001 - 9000000	0	0.00	0.99	0.00	-	0.00	0.97	0.00	0.00
9000001 - 1000000	1	0.01	1.00	0.01	9,600,000	0.03	1.00	0.03	0.00
Total	132				277,399,000	1			0.13
								GC	0.87

Source: Field survey, 2019.



**Table 5 Gini – the coefficient for cashew nut marketers in Kogi, Nasarawa State and Kwara (Pooled)**

Sales	Freq. (Sellers)	Prop. (Sellers)	Cum. Sellers(x)	$x_k - x_{k-1}$	Revenue	Market Share	Cum. Market share(y)	$y_k - y_{k-1}$	$(x_k - x_{k-1})$ $(y_k - y_{k-1})$
< 1000000	218	0.55	0.55	0.55	93,046,500	0.13	0.13	0.13	0.07
1000001 - 2000000	69	0.17	0.72	0.17	103,053,000	0.15	0.28	0.15	0.03
2000001 - 3000000	30	0.08	0.80	0.08	76,540,000	0.11	0.39	0.11	0.01
3000001 - 4000000	27	0.07	0.87	0.07	98,037,000	0.14	0.53	0.14	0.01
4000001 - 5000000	11	0.03	0.90	0.03	50,214,000	0.07	0.61	0.07	0.00
5000001 - 6000000	19	0.05	0.94	0.05	107,020,000	0.15	0.76	0.15	0.01
6000001 - 7000000	9	0.02	0.97	0.02	58,962,000	0.09	0.85	0.09	0.00
7000001 - 8000000	7	0.02	0.98	0.02	52,910,000	0.08	0.92	0.08	0.00
8000001 - 9000000	4	0.01	0.99	0.01	34,070,000	0.05	0.97	0.05	0.00
9000001 - 10000000	2	0.01	1.00	0.01	19,350,000	0.03	1.00	0.03	0.00
Total	396	1			693,202,500	1			0.13
								GC	0.87

Source: Field survey, 2019.

The distribution of respondents' ability to entry and or exit nut cashew nut marketing business in the study area showed that majority (96.2%) of respondents agree that there was no freedom to buy and sell cashew nut in the market and selling centers (Table 6). The respondents reported that the major requirement for entry into cashew nut marketing was capital layout and high competition. Anybody that has capital and interest to enter the business at any given time is free to do so. Likewise, he could get out of the business at his/her own will. This is because the actual guiding factors to entry or exit are either profit or loss.

Although most of the products marketed by the marketers are generic products that are not patent, majority of the products are differentiated in terms of packaging: that is wet (at the point of sale) and dried (before sale). However, cashew nuts must be sun dried for at most three days to attain a moisture content of 12% before they are finally sold to exporter or processors to avoid spoilage on transit. The analysis of the result of product differentiation (also in Table 6) revealed that 55.3% of the respondents engaged in marketing of wet cashew nuts in the Kogi State, 44.7% market dried nuts, while 66.7% of the respondents are involved in marketing of wet cashew nuts and 33.3% were involved in the marketing of dried cashew nuts in Nasarawa State. In Kwara State, about 56.8% respondents sold wet cashew nuts while 43.2% were involved in the sale of dried cashew nut. This showed that majority (59.6%) of the marketers sold wet cashew nut in the study area while 40.4% of the marketers dried their cashew nuts before selling.

Market information consists of knowledge about costs, prices and market conditions among the participants in the market (Olukosi et al. (2012)). Results in Table 6 also revealed that the percentage distribution of respondents by flow of market information. Majority (97.7%) indicated that there is no free flow of marketing information among cashew nuts marketers. The result indicates that there is no free flow of marketing information in the study area. However, the sources of these market information differ among cashew nuts marketers in the study area. About 55.5%, 19.2%, 5.1%, 2.3% and 17.9% of the marketers respectively obtained their market information from merchants/LBAs, market union/association, company agents such as Olam and other exporters/processors who establishes buying centers, media and nearby market respectively.

The result in Table 6 also revealed that majority of marketers access their market information on price and unit of measurement from middlemen who keeps information relating to international price and unit of measure from the marketers. Since the source of market information as discovered by this study is from informal sources, it implies market information for cashew nut marketers is not transparent hence there is inefficiency in the marketing of cashew nut marketing in the study area. The study is in agreement with study carried out by Abah et al. (2015) who reported that the middlemen have high influence regarding pricing and other marketing decisions in the paddy rice market in Benue State hence paddy rice market is imperfect.

The percentage distributions of respondents by membership of market association showed that majority (75.8%) of respondents were not members of marketing association. It was observed that producer (sellers) in the study area were not members of any marketing association while the middle men had well organized associations. This is because the high demand for cashew nuts in the study area makes it easy for producers (sellers) to sell their produce without being a member of any marketing cooperative society. According to Ruttoh et al. (2018), absence of reliable marketing organizations could affect the bargaining power in price setting, access to credit and market. This result disagrees with a survey by Abah et al. (2015) as stated above that majority of their paddy rice marketers (69.04%) belong to marketing association.

**Table 6: Market Structure of cashew nuts marketers in north central Nigeria**

Variable	Kogi n=132		Nasarawa n=132		Kwara n=132		Pooled n=396	
	Freq	%	Freq	%	Freq	%	Freq	%
<b>Membership of marketing association</b>								
Member of marketing association	29	22	22	17	45	34	96	24.2
Not a member of marketing association	103	78	110	83	87	66	300	75.8
<b>Total</b>	132	100	132	100	132	100	396	100
<b>Freedom of entry and exit</b>								
There is no freedom of entry and exit	129	97.7	122	92.4	130	98.5	381	96.2
Freedom of entry and exit exist	3	2.3	10	7.6	2	1.5	15	3.8
<b>Total</b>	132	100	132	100	132	100	396	100
<b>Free flow of information</b>								
There is free flow of information	127	96.2	130	98.5	130	98.5	387	97.7
No free flow of information	5	3.8	2	1.5	2	1.5	9	2.3
<b>Total</b>	132	100	132	100	132	100	396	100
<b>Price fixing behaviours</b>								
Bargaining	25	18.9	20	15.2	32	24.2	77	19.4
market price	53	40.1	98	74.2	68.2	241	60.9	
Group decision	54	41	14	10.6	7.6	78	19.7	
<b>Total</b>	132	100	132	100	100	396	100	
<b>Sourcing of marketing information</b>								
co-trader	51	38.6	15	11.4	68.9	157	39.6	
Market union/association	44	33.3	17	12.9	11.4	76	19.2	
market official	15	11.4	42	31.8	4.5	63	15.9	
company	0	0	0	0	20	15.2	20	5.1
Media eg radio, internet, town criers	4	3	5	3.8	0	0	9	2.3
nearby market	18	13.6	53	40.1	0	0	71	17.9
<b>Total</b>	132	100	132	100	132	100	396	100
<b>Product Differentiation</b>								
wet nut	73	55.3	88	66.7	75	56.8	236	59.6
dried nuts	59	44.7	44	33.3	57	43.2	160	40.4
<b>Total</b>	132	100	132	100	132	43.2	396	100

Source: Field survey, 2019.

Source: Field survey, 2019.



The percentage distributions of respondents by membership of market association showed that majority (75.8%) of respondents were not members of marketing association. It was observed that producer (sellers) in the study area were not members of any marketing association while the middle men had well organized associations. This is because the high demand for cashew nuts in the study area makes it easy for producers (sellers) to sell their produce without being a member of any marketing cooperative society. According to Rutttoh et al. (2018), absence of reliable marketing organizations could affect the bargaining power in price setting, access to credit and market. This result disagrees with a survey by Abah et al. (2015) as stated above that majority of their paddy rice marketers (69.04%) belong to marketing association.

### **Conduct of cashew nut marketers in the study area**

For this research, the major factors used in assessing market conduct are methods of determining price and output, sales promotion policy, product policy, the presence or absence of exclusionary tactics directed against established rivals or potential entrants, research and development (Table 7).

Table 7 shows that majority (71.2%) of respondents in the study area indicated that price fixing for cashew nuts was based on the current price as provided by the middlemen who have information on the current pricing of cashew nuts in the international and local market and act on behalf of the buyers. This result indicates that there is high influence of buyers over sellers with regard to pricing and is indicative of oligopsony market structure. The finding of this study differ from the study carried out by Abah. (2020) who reported majority of soybean retailers (52.3%) responded that price was determined by purchase price.

It was observed as shown in Table 7 that the two major methods employed in the sales of cashew nuts in the study was cash sale and advance financing where the middle men loan the producers money in advance before harvest to meet their pressing need and they payback with quantity of product at the present market worth of the money lend. This the middlemen do to commit the farmer to sell only to them. About 80% of the respondents sold on cash and carry basis, while 10% sold their produce in advance for finance. The partial implication of this is that marketers in the study area have limited access to loan from financial institution.

Majority (59.60%) of respondents in the study area did not store their cashew nut after harvesting or buying before selling it. When marketers sell their produce during harvest season, they make less profit than when they store and sell at later date. One of the reasons for this result is that the sale of cashew nut in the study area falls within the dry season when people are less busy with farm work and are in need of money to meet their urgent needs. Another reason is that most sellers have small capital outlay invested in their cashew nut business they quickly sell their produce in order to reinvest in other businesses.

The distribution of respondents by source of business finance showed that most (76.65%) depend on personal or family funding for their business. This is because the farmers lack the capacity to meet the lending requirements of commercial banks. In addition, cooperatives or market associations are only able to provide minimal financing considering the number of applicants and the small amount of money available.

The percentage distribution of respondents by advertising showed that majority (83.60%) of the respondents in the study area did not advertise their cashew nut business to prospective buyers. This result shows that there was no strategy employed by cashew nut sellers in the study area geared towards promoting the sales of their product. This is because the demand for the produce is very high. And the market is structured in such a way that village agents move about in the villages with their measuring scale or even wait for farmers at strategic points on market days to collect (buy) the produce from them. Also, sellers can take their cashew nut to merchants in their stalls or LBAs at their warehouses.

**Table 7: Distribution of Respondents according to their market Conduct**

Variable	Kogi		Nasarawa		Kwara		Pooled	
	freq	perc	freq	percentage	freq	perc	freq	perc
<b>Mode of sales</b>								
cash	98	74.20	114	86.40	107	81.1	319	80.60
advance sale	34	25.80	18	13.60	25	18.9	77	19.40
<b>Total</b>	<b>132</b>	<b>100</b>	<b>132</b>	<b>100</b>	<b>132</b>	<b>100</b>	<b>396</b>	<b>100</b>
<b>Price fixing behaviours</b>								
Bargaining	25	18.9	20	15.2	32	24.2	77	19.4
market price	94	71.1	98	74.2	90	68.2	282	71.2
Group decision	13	10	14	10.6	10	7.6	37	9.3
<b>Total</b>	<b>132</b>	<b>100</b>	<b>132</b>	<b>100</b>	<b>132</b>	<b>100</b>	<b>396</b>	<b>100</b>
<b>Practice storage after harvesting</b>								
Practice storage	59	44.7	44	33.3	57	43.2	160	40.4
Do not practice storage	73	55.3	88	66.7	75	56.8	236	59.6
<b>Total</b>	<b>132</b>	<b>100</b>	<b>132</b>	<b>100</b>	<b>132</b>	<b>100</b>	<b>396</b>	<b>100</b>
<b>Rely on loans for business</b>								
Rely of loans	11	8.3	12	9.1	5	3.8	28	7.1
Do not rely on loans	121	91.7	120	90.9	127	96.2	368	92.9
<b>Total</b>	<b>132</b>	<b>100</b>	<b>132</b>	<b>100</b>	<b>132</b>	<b>100</b>	<b>396</b>	<b>100</b>
<b>Collusion among rice farmers</b>								
Collusion exists	27	20.5	110	83.3	7	5.3	144	36.4
Collusion does not exist	105	79.5	22	16.7	125	94.7	252	63.6
<b>Total</b>	<b>132</b>	<b>100</b>	<b>132</b>	<b>100</b>	<b>132</b>	<b>100</b>	<b>396</b>	<b>100</b>
<b>Advertising</b>								
Advertising exists	23	17.4	28	21.2	14	10.6	65	16.4
Advertising does not exist	109	82.6	104	78.8	118	89.4	331	83.6
<b>Total</b>	<b>132</b>	<b>100</b>	<b>104</b>	<b>78.8</b>	<b>132</b>	<b>100</b>	<b>396</b>	<b>100</b>
<b>Attended training</b>								

Attended training	24	18.2	24	18.2	5	3.8	53	13.4
Did not attend training	108	81.8	108	81.8	127	96.2	343	86.6
<b>Total</b>	<b>132</b>	<b>100</b>	<b>132</b>	<b>100</b>	<b>132</b>	<b>100</b>	<b>396</b>	<b>100</b>

Source: Field survey, 2019.

This result differs from that of Nsikan et al. (2013) who reported that rice marketer in Akwa Ibom State employed the following promotion strategies while selling their product; they were friendly to customers, sold on credit, sold good quality as well as used discount trade.

Majority of the respondents (63.60%) are of the view that there is no collusion among sellers on pricing and unit of measures for cashew nuts in the study area. This result shows that there is no collusion during the marketing of cashew nut in the study area. This result tally with that of Zorinah (2016) who reported that there was no collusion among cabbage market actors in the Central District of Botswana.

Majority of the respondents (86.60%) in the study area did not attend any training on cashew nut production or marketing. This indicates that there is no research and development practice in the cashew nut market in North central, Nigeria. This implies that the marketers themselves were yet to take personal initiative for self-development and research. This finding contradicts the findings of Abah et al. (2015) in their research on paddy marketing in Benue State and Tiku et al. (2012) on palm oil marketing in Cross River State who reported that majority of their respondents attended training on rice cultivation or paddy rice marketing and palm oil marketing respectively.

### **Constraints Militating Against the Marketing of Cashew Nuts in the Study Area**

Table 8 shows the factor analysis of the constraints faced by cashew nut marketers in the study area using varimax rotation method. The Kaiser-Meyer Olkin (KMO) measure of sampling adequacy index of 0.764 and the Bartlett's Sphericity of 0.0001 obtained shows the suitability of the data for factor analysis. Three factors were extracted based on the items loadings as constraints. These factors were; structural factor; marketing factor; and economic factor. The result revealed that the major constraints that loaded strongly on each of the factors extracted were price instability (.865), unregulated market by government (.788), lack of storage facilities (.830), inadequate/unstable supply (.770), high transportation cost (.734) and poor institutional support (.670).

The first factor (structural factor) where price instability (.865) had the highest factor loading, is the most severe factor constraining the marketing of cashew nuts in the study area. This implies that the seasonal fluctuation or instability in the price of cashew nuts is a major constraint affecting marketing of the product in the study area. This may be as a result of the activities of the off – takers and the producers, where the former pays in advance during the off season. The off – takers hoard the product leading to artificial scarcity and a resultant increase in price. Oladejo (2015) reported that the major constraint affecting the marketing of cashew nuts in Oyo State was fluctuation in price. Salau et al. (2017) also considered price fluctuation, transportation and spoilage as major constraints to cashew nut marketing in Kwara State. Maitre et al. (2011)

indicated that the potential factors influencing food price volatility are basically related to supply and demand fundamentals: rapid growth of demand (urbanization, demography growth, biofuels), and slow growth of supply (limited productivity growth).

The second factor (marketing factor) with lack of storage facilities (.830), having the highest factor loading as the most severe marketing related constraints. Although cashew nuts can be stored for 2-4 years but if it is not properly picked during harvest and properly dried it can lead to spoilage and reduction in its market value. According to Kumar (2018), lack of storage facilities will force marketers to sell their surplus produce immediately after harvests at a very low and un-remunerative price. Shah and Ansari (2020) in their survey identified lack of storage facilities, long chain of intermediaries and high transportation charges as major marketing constraints faced by vegetable growers in Uttarakhand, India. Also Arbabi et al. (2015), reported that lack of marketing facilities (storage, packaging, transport equipment and roads) were the major marketing challenges of agricultural products from the perspective of rural cooperatives in Qom province in Iran.

And the third factor was economic factor with poor institutional support (.734) having the highest factor loading. Offor et al. (2019) indicated lack of finance as the major factors affecting cashew nuts marketers in Abia State.

**Table 8: Factor analysis of constraints militating against marketing of cashew nuts in the study area**

<b>Constraints</b>	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>
Price instability	<b>.865</b>	-.063	.332
Unregulated market by government	<b>.788</b>	.086	.131
Inadequate capital	<b>.777</b>	.122	-.206
inadequate price information	<b>.765</b>	.134	.198
Dishonesty of middlemen	<b>.724</b>	.289	-.111
Poor government policy	<b>.684</b>	.322	.279
Poor marketing channel/ coordination	<b>.498</b>	.099	.348
lack of storage facilities	.098	<b>.830</b>	.147
Inadequate/ unstable supply	.121	<b>.770</b>	.321
Irregular grading	-.015	<b>.677</b>	.222
Bad road	.031	<b>.590</b>	.312
Seasonality of produce	.410	<b>.478</b>	.326
Poor quality of product	.410	<b>.408</b>	-.258
Poor institutional support	.445	.482	<b>.734</b>

High transportation cost	.323	.351	<b>.670</b>
Irregular contact with extension agent	.381	.134	<b>.661</b>
Illiteracy	-.038	.024	<b>.567</b>
Disturbance by law enforcement /revenue/produce check point	.387	.122	<b>504</b>
Insufficient buyers	.008	.494	<b>434</b>

Rotation method: Varimax Rotation

The KMO index of 0.764 and Bartlett's sphericity of 0.0001 shows the suitability of the data for factor analysis. Factor 1= Structural factor, Factor 2= marketing factor and Factor 3= Economic factor.

**5.CONCLUSION AND RECOMMENDATIONS**

This study concludes that there is low level of market competition among cashew nut marketers in the study area (imperfect competition) and the high market power is controlled by few marketers whose actions can influence the market activities in the study area because they control larger share of income/revenue in the market. Many marketers were not members of marketing association and marketers access their market information on price and unit of measurement from middlemen who keeps information relating to international price and unit of measure from the marketers hence there is no transparency in market information among cashew nuts marketers in the study area. Marketers do not store their produce because storage facilities were not available. This study revealed that there is unavailability of source of funding among marketers thus; many marketers rely on personal or family funding for their business. Even with presence of some donor organizations like Huxley global, Technoserve, Foodpro, USAID etc. many of the marketers are yet to benefit from training on cashew nut cultivation or marketing. This study concludes that the major constraints militating against marketing of cashew nuts in the study area were price instability unregulated market by government, lack of storage facilities, inadequate/unstable supply, high transportation cost, poor institutional support etc. This study recommended that Government in collaboration with donor organizations should ensure they continue to extend their production and marketing training programs to more marketers to ensure that they wider coverage among beneficiaries since many of the respondents are yet to benefit from such trainings and research. Government through the extension agents with the aid of social media and cooperatives should organize training to marketers to help improve their level of knowledge on marketing and pricing that would in turn increase their marketing efficiency level. Government should introduce policies and programs that would help stabilize the price of cashew nuts in Nigeria in order to improve market performance of marketers. Financial institutions, exporters, processors and donor organizations should be linked to marketers in order to assist them with funds in form of soft loans for their marketing activities so that income/revenue can be evenly distributed among them and not be in the hands of selected few. Farmers should be encouraged to form cooperatives through which they get farm inputs and access credit as well as market their produce in order to help them minimize the exploitation by middlemen so as to generate more income and improve their standard of living. And marketers

should be encouraged through their cooperatives to enlarge the scope of their activities to include provision of storage facilities that will enable them store their produce to enable them manage price risks –delaying sales beyond the immediate post-harvest period in order to improve their efficient.

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