Market Performance of Cashew Nuts among Marketers in North–Central Geo-Political Zone, Nigeria

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Abstract:- The major aim of this study was to assess the performance of cashew nuts markets in North Central Nigeria. Category of actors in the cashew nuts supply chain selected for this study include farmers (producers), village agents, merchants and local buying agents (LBAs). Structured questionnaire was used to collect data from 396 cashew nuts marketers selected from Kogi, Nasarawa and Kwara States using multi-stage random sampling technique. Majors statistical tools used in assessing market performance of cashew nuts marketers include descriptive and market margin analysis. Seven major cashew nuts marketing channels and five major actors involved in the channeling of cashew nut from the farmers to the consumers were identified by this study. All participants in the cashew nuts market supply chain studied made profit as revealed by the net margin of N510,034.41, N174,591.25, N627,512.78 and N135,266.70 for merchants, village agents, LBAs and farmers respectively. The profit ratio of 0.18, 0.15, 0.29 and 0.45 for merchants, village agents, LBAs and farmers respectively imply that for every N100 invested in cashew nuts marketing, N18, N15, N29 and N45 were realized as profit, respectively. ANOVA results revealed that the average revenue at the three States was significant at 0.05 level while the Turkey B test showed that revenue was higher in Kogi and Kwara than Nasarawa State. Also the ANOVA results revealed that marketing margin in the three States was significant at 10% level while the Turkey B test, revealed that there was no significant difference in the market margin across the three States at 0.05 % level of significance.

Keywords:- Cashew nut, Performance, Market channel, Market margin.

I. INTRODUCTION

Cashew nut is among the prominent agricultural commodities exported from Nigeria. Olusegun (2016) reported that cashew nut is an important economic security tool for rural farmer which is in line with Sustainable Development Goals (SDGs). Cashew nut is also an important export oriented cash crop: the second largest agricultural export crop in Nigeria after sesame seed. As an important source of non-oil export earnings the export value of cashew nuts in 2018 was N37.9 billion, representing 47.5% of the combined export value of cashew nuts for 2017 and 2018 (Pricewaterhouse Coopers (PwC, 2019). According to Nugawela and Oroh (2005) cashew nut is a principal source of supplementary on –farm income to thousands of farmers and others employed by the sector. Cashew nuts from Nigeria are sold either as raw form – Nut in Shell (NIS) or as kernels

after processing. About 90% of raw form – Nut in Shell (NIS) 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. While about 5 to 10% of total production is processed locally for local and export market by a handful of Nigerian entrepreneurs with various capacities ranging from 500 to 1,000 MT/year (Chemonics/USAID, 2002$_a$).

Cashew nut marketing in the study area is characterized by seasonality, unstable supply and price fluctuation. For instance cashew nut marketing in Nigeria is not all year round. Trading starts in January, peaks in March/April and trading ends in May/June with very little trading in the remaining part of the year (Chemonics/USAID, 2002$_b$). According to Collaborative Africa Budget Reform Initiative (CABRI, 2019), the international cashew market changes rapidly and unpredictably, with increasing demand but constraints and variations in supply. Prices are rising over time but are also subject to sharp fluctuations. Adesanya*et al.* (2021) reported that a ton of Nigerian cashew nuts in the international market was sold for N24,753.00 in 1993, N180,011.00 in 2003, N420,000.00 in 2002 and a current price of cashew is N552,757.24 per ton in 2019. Also the volume of cashew nut produced in Nigeria in 2008 was 675,266 ton, it fell to 97,149 ton in 2015 and currently increased a little to 120,000 ton in 2019 according to National Cashew Association of Nigeria (NCAN).

Cashew nut market supply chain in north central is characterized by various actors including farmers, village agents, merchants, Local buying agents (LBAs), commission agents, exporters, processors among others. Many of these actors are not specialized and there is little structured organization among them: as there are few licensed and many unlicensed individual who venture into the Cashew nuts business because they have the capital. Currently, there exist ineffective marketing information system in cashew industry in Nigeria particularly at states level and entire north central cashew nut production zone. In their research Agbongiarhuoyi*et al.* (2020) reported that cashew marketing activities in Nigeria are largely controlled by the middle men with farmers receiving lower market margin. Middlemen in the study area take advantage of the unregulated cashew nut market and lack of current market price information by farmers to exploit them. Market information is a major marketing function which ensures the smooth and efficient operation of the marketing system. Adequate, timely and accurate availability of market information facilitates decision about when and where to market products. 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 of the cashew market needs to be remedied to ensure greater understanding, transparency and efficiency across the entire production chain, for better income and wealth creation and distribution for encouragement of efficient transactions in marketing of the most vulnerable rural poor.

Several research work had been carried out on marketing of cashew nuts in Nigeria. For instance, in an earlier study Ike and Chukwuji (2005), Agbongiarhuoyi*et al.* (2008) Adejo*et al.* (2011), Akanni and Adams (2011), Farayola*et al.* (2013),. Oladejo (2015), Salau*et al*. (2017). However, little attention is given to the performance of the different participants in the production and marketing channels of cashew nuts particularly in north central Nigeria geo-political zone. Obviously, the prevailing circumstances in this important industry in north central Nigeria give room for several questions.

- **0bjectives of the Study**

The broad objective of this study is to analyze the market performance of cashew nuts marketers in north central Nigeria. The specifics objectives were to:

- ➢ identify the various marketing channels for cashew nut in the study area;
- ➢ investigate cost and return on investment of cashew nut marketers in the study; and
- ➢ estimate the market margin of cashew nuts firm in the study area;

- **Statement of the Hypothesis**

The following hypotheses were tested:

- ➢ Ho_1; there is no significant difference in the average revenue receipt of the marketers in the study area;
- ➢ Ho_2; there is no significant difference in the marketing margins of marketers in the study area.

II. MATERTIALS AND METHODS

A. The Study Area

The study area for this study is Kogi, Kwara and Nasarawa states: north central Nigeria. Nigeria is divided into six geo-political regions, namely, north west, north east, north central, south south, south west and south east. North central Nigeria is geographically located in the center of the country, spanning from the west, around the confluence of the River Niger and the River Benue. The total population of North Central Nigeria is about 20,266,257 inhabitants (National Population Commission, 2009; Ayoola and Ayoola, 2015). The region itself is rich in natural land features, and thus boosts some of Nigeria's most exciting scenery. The states that constitute north central Nigeria include Benue, Kogi, kwara, Plateau, Niger, Nasarawa and the Federal Capital Tertiary. North central region of Nigeria is 115 meters above sea level. The geographic coordinates range between longitude 5° 00' E and 9° 45'E with Kwara State having the lowest longitude and Plateau State with the highest longitude. And the latitude ranges between 6° 25'N and 10° 00'N with Benue State having the lowest latitude and Niger State with the www.findlatitudesandlongitudes.com).

North Central Nigeria covers a land area of about 251,425 square kilometers ((Nigeria Annual Abstract of Statistics, 1996; Nasarawa State Agricultural Development highest latitude Programme.
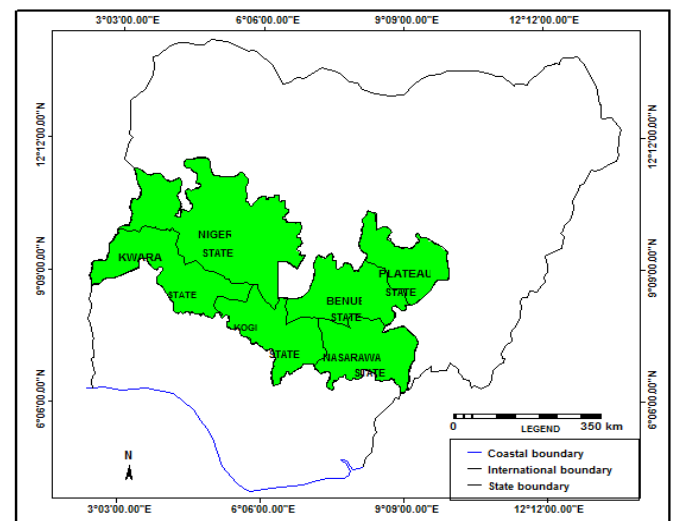

Fig. 1: Study Area Source: Oladimeji*et al.,* (2015)

B. Population of the Study

The population for this study includes a cross sectional survey of some major players involved in the selling and buying of cashew nuts in Kogi, Kwara and Nasarawa States. These traders were distinguished within four categories;

- Farmers: generally small holder/large holder crop farmers.
- Village agents: rural assemblers (agents) who generally work for a large LBA or merchants.
- Merchants/ Sub buyers: marketers who network with village agents and at time large holder farmers themselves to get cashew nuts from rural as well as urban centers.
- Local buying agents (LBAs): Licensed/unlicensed marketers who are generally large buyers, independent individual agents and or commission agent to exporters or processors.

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. In the second stage, a total of nine Local Government Areas were purposively selected 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. Thereafter from each market/community, three LBAs, eleven merchants/sub-buyers, eleven village agents and nineteen farmers were drawn for the study through a randomized sampling design.This comprised of total of 171 farmers, 99 village agents, 99 merchants and 27 LBA.

C. Model specification

   a) Marketing margin analysis

A budgetary analytical technique was used for the data analysis and it emphasized the cost and returns of the production enterprises. The cost of maintaining one hectare

of cashew plantation which included all costs associated with herbicide/weeding, pruning, harvesting, construction of fire belt and transportation of produce to market or selling centers was calculated for farmers. And for the other categories of marketers cost considered included cost of bagging/picking/cleaning, storage rent cost, handling cost, market levy and transportation cost. Basket, mudu, bag, measurement scale, tampolin, storage rent, interest from loan were part of the fixed items considered. Depreciation on the equipment was calculated using the straight line method. All the calculations were done in constant prices with the 2019 cropping season as the base year. The profit level and profitability ratios were calculated using gross margin and return to investment as adopted by Anegbeh*et al.(*2017) in analyzing the profitability of mixed farming in rubber-based agroforestry systems in Nigeria. The formula used in this study is as follows:

(a) GM = TR-TVC
 b) NP = GM-TFC
(c) Profitability ratio or Return on sale = NP/TR
(d) The ratio of return on investment

(%RRI) = NP/TR x 100
Where GM = Gross Margin; TR = Total Revenue; TVC = Total Variable Cost; TFC = Total Fixed Cost; NP = Net Profit; PI = Profitability ratio

b) Analysis of variance (ANOVA)

Analysis of variance is used to infer existence of difference across group means when the number of groups are greater than two. The analysis of variance procedure is based on F test such that as adopted by Ani (2015)

$$F= \frac{\text{variance of group means}}{\text{Means of the within the group variance}}$$

$$F^* = \frac{MST}{MSE}$$

Where:
F* = Anova Coefficient
MST = Mean Sum of Squares due to Treatment
MSE = Mean Sum of Squares due to Error.

Where:
$$MST = \frac{SST}{I-1}$$

SST= Sum of Squares due to Treatment
I= number of treatments

$$MSE = \frac{SSE}{nt-1}$$

Where:

SSE = Sum of Squares due to Error
nt= total number of cases

ANOVA was used to assess the difference in marketing margin, marketing cost and net margin among different middlemen in the three States.

III. RESULTS AND DISCUSSION

A. Marketing channel for Cashew Nuts in North Central Nigeria

The marketing channel for Cashew Nuts was identified. The findings are presented in Figure 2. The cashew nuts marketing channel identified in the study area revealed the participation of 5 major actors and 7 major marketing channels. These participants were involved in the channeling of cashew nut from the farmers to the consumers. At every most stage of the channel the participants perform marketing functions such as loading/offloading, transportation and storage.

a) Farmer ---Village agent/Sub buyers---Merchants---LBA---Commission agents----Exporter/Processors----Consumers
b) Farmer ---Merchants---LBA---Commission agents----Exporter/Processors----Consumer
c) Farmer ---LBA ----Exporter/Processors----Consumers
d) Farmer---Village agent/Sub buyers---LBA---Commission agents----Exporter/Processors----Consumers
e) Farmer---Village agent/Sub buyers---Merchants-----Exporter/Processors----Consumers
f) Village agents/Merchants--- commission agents----LBA--- Exporter/processors--- Consumers
g) Village agents/Merchants ----LBA----Exporter/processors--- Consumers

The first market channel Figure 2 (a) shows that, farmers sell their cashew nut to Village agent/Sub buyers who are local assemblers who sell the commodity to merchants who in turn sell the commodity to LBA who are either independent or agents of exporters/processors. The LBA with the help of commission agent negotiate deals with Exporter/Processors who either export and process or process and sell to consumers. Farmers sell at lower prices but usually incur less cost since village agents buy cashew nut from framers in the homestead. Baskets, mudus and measurement scale are the unit of measure used by the village agents. The major reason why many farmers use this channel in the study area is because it is convenient and reliable (Mutayoba andNgaruko (2015). Exporter/processors usually employ the services of commission agents in order to avoid being defrauded by numerous and independent village agent, merchant and LBA. The second market channel involves farmers selling to merchants who in turn sell to LBA. The commission agent negotiates deals between the LBA and Exporter/processors and then gets the product to the consumer after processing. Majorly of farmers in this channel are usually large scale farmers who produce in large quantity and also act as village agent/sub buyers for the merchant in their community. The major reason why farmers use this channel is because they would get better price for their product since they have to store their produce and sell when the price is fair. The third channel involves farmer transporting their products to cashew nut selling centers (ware houses) belonging to LBAs. These LBA are agents to exporter/processor so they do not need any commission agents to link them up with exporter/processor. The fourth channel involves farmer selling to village agent who in turn

sell to LBAs who is linked to exporters/processors by the commission agent before the product gets to the consumer. The fifth market channel involves farmers who sell to village agents who are agents to merchants. The merchants in turn sell to exporter/ processor before the product gets to the consumers. This channel is characterized by not having a commission agent because the merchants act as the commission agent due to their long –term business relationship between them and the exporter/processor. The sixth channel involves LBAs who buy the commodity from merchants and /or village agents. These LBAs are been linked by commission agents to the merchants and /or village agents and the LBAs then sell to exporter/processor before the product gets to the consumers. While the seventh channel involves local and independent LBAs buying from merchants and /or village agents then supplying to exporter/Processor before the commodity gets to the consumers. These LBAs are usually agents to the exporters/processors hence they do not need the commission agents to negotiate for them.

B. Distribution of marketers who sold cashew nuts to different agents

Table 1, shows is the distribution of marketers who sold cashew nuts to different agents. Majority (89.71%) of cashew nuts farmers (producers) sold their produce to village agents. even though the price and weight of LBAs was preferable: choosing to sell to village agents was convenient and the quicker way of selling off their produce to get money to meet their urgent need. Approximately 66% of the village agents sold their produce through the merchants at the open market. Very few (3.74%) merchants sold through the commission agents. while all LBAs sold their produce to exporter/processors.

Channels	Percentage of marketers that sold cashew nuts to the channels			
	Farmer	Village agent	Merchants	LBAs
Farmers	-	-		-
Village agents	89.71	4.05	-	-
merchant	56.20	65.81	-	-
LBAs	5.67	40.56	46.55	-
Commission agents	-		3.74	7.27
Exporter/Processors	-		12.03	27

Table 1: Distribution of marketers and the channels they sold cashew nuts to (Multiple responses)

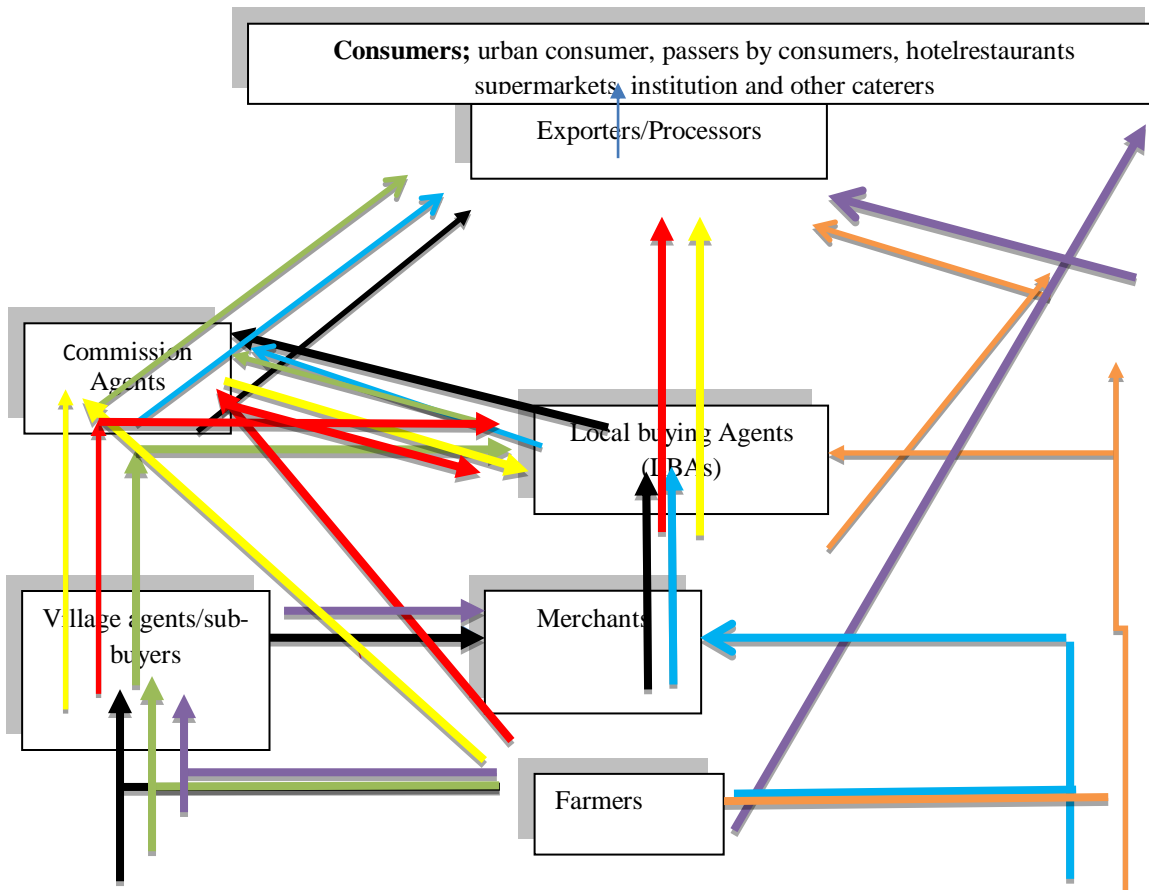Source: Field survey, 2019.

Fig. 2: Marketing channels of cashew nuts in north central Nigeria

Source: Field survey, 2019.

Black line ---- channel 1, Blue line ----channel 2, brown line ----channel, 3 Green line---- channel 4, Purple line---- channel 5, Yellow line---- channel 6 and Red line---- channel 7.

C. Performance of Cashew nuts marketing in the Study Area

a) Costs and returns analysis for cashew nuts marketers in Kogi State

In Kogi Statethe result revealed that the cost of purchasing cashew nuts for LBAs was the highest (₦5,219,066.67) accounting for 96.85% (Table 2) of their total market cost while their market levy (₦8,111.11) was the lowest, accounting for 0.15% of their total cost. For the village agents, the cost of purchasing cashew nuts was also the highest (₦975, 045.45) accounting for 96.34% of their total market cost; and their lowest cost was their market levy (0%) as they don't need to pay any market revenue as their activities involves sourcing for the nuts from established plantation and wild sources and supplying to the Village agents, merchants and/or LBAs. The cost of cashew nuts for merchants was also the highest (₦2, 312,977.00) accounting for 95.52% of their total market cost; while the cost of market levy was the lowest accounting for about 0.27% of the total market cost. The cost of cashew nuts for farmers was highest (₦191, 840.00) accounting for about 94.0%; while lowest market cost was the cost of market levy. The costs of market operation for LBAs aside cost of cashew nuts was lowest, when compared to that of the Merchants, Village agents and farmers. This is so because they enjoy economies of scale. Also the average revenue was highest for LBAs (₦7, 160,049.38), followed by merchants (₦2,314,280.99) then village agents (₦1,120,184.57) and the farmer (N186,498.46). The net (profit) margin was ₦670, 826.48, ₦101, 099.75, ₦1, 833,470.95 and N116, 268.85 for merchants, village agents, LBAs and farmers respectively. This result reveals that cashew nut marketing in the study area is profitable. The profitability ratio of 0.27, 0.10, 0.34 and 0.53for merchants, village agents, LBAs and farmers respectively imply that for every N100 invested cashew nuts marketing, ₦27, ₦10, ₦34 and ₦53 were realized as profit, respectively. Although all marketers made profit, the category of marketers that made the highest profit is the farmer while the village agents made the least profit. This result confirms that cashew nut marketing is a profitable business in north central Nigeria.

b) Costs and returns analysis for cashew nuts marketers in Nasarawa State

Table 3 shows the cost and return per 80kg bag for cashew nuts marketers in Nasarawa State. The total revenue of a marketer/80kg bag of cashew nuts were ₦2,314,280.99, ₦1,120,184.57, ₦7,160,049.38 and ₦186,498.46 formerchants, village agents, LBAs and farmers respectively. The cost of handling, transportation, storage cost, bagging/picking/cleaning and market levy was lowest at ₦2, 792.42; ₦5, 637.58; N88.14 and ₦3, 962.12/80kg bag, for village agents. In the same order, the costs were ₦7, 403.64; ₦4, 684.85; ₦3, 933.33; and ₦1, 465.15 for merchants; and for farmers, the costs were ₦625; ₦2,250.00; ₦694.14; and ₦1,435.09. Also for LBAs, the costs were ₦41,844.44; ₦51,066.67; ₦27,458.14; ₦66,138.89; and ₦10,426.67 in the same order. The profitability ratio of 0.32, 0.16, 0.60 and 0.60 for merchants, village agents, LBAs and farmers respectively confirms that for every ₦100 invested, ₦32, ₦16, ₦60 and ₦60 profit was made.

c) Costs and returns analysis for cashew nuts marketers in Kwara State

The result in Table 4 shows the cost and return per 80kg bag for cashew nuts marketers in Kwara State. The cost of purchasing cashew nuts for village agents was the highest (₦3,227,816.67) accounting for 94.38% (Table 4) of their total market cost, while their handling cost (₦10,006.06) was the lowest accounting for 0.78% of their total cost with no market fee. For the merchants, the cost of purchasing cashew nuts was also the highest (₦2, 514,545.45) accounting for 93.6% of their total market cost, and their lowest cost was their market levy (₦4, 704.55) accounting for about 0.2% of the total market cost. The cost of cashew nut was also the highest cost for the LBAs and the farmers accounting for about 67.23% and 88.86% of their total cost respectively. The total revenue of a marketer/80kg was ₦6, 515,578.50 ₦3, 879,130.85, ₦1, 597,937.56, and ₦674, 709.14 for LBAs, merchants, village agents and farmers respectively. The profitability ratio of 0.27, 0.25, 0.23, 0.20 for LBAs, merchants, village agents and farmers respectively shows that for every ₦100 invested in the cashew nut business, ₦27, ₦25, ₦23 and ₦20 were gained respectively.

Cost/Return Items	Merchants(n = 33)	Village Agent(n = 33)	Local Buying Agents(n = 9)	Farmers(n = 57)
Variable Costs(₦/80kgBag)				
Cost of Cashew nuts	2,312,977.00	975,045.45	5,219,066.67	191,840.00
Transportation	29,878.79	14,242.42	53,555.56	4,993.33
Handling Cost	14,751.52	5,696.97	38,333.33	1,248.33
Storage Cost	16,430.43	2,238.33	31,299.85	1,063.33
Bagging/picking/cleaning	29,503.03	14,242.42	37,222.22	4,653.51
Market Levy	11,530.30	-	9,543.33	0
Miscellaneous	6,500.00	650.00	8,111.11	340.00
Total Variable Cost	**2,421,571.07**	**1,012,115.61**	**5,389,020.96**	**204,138.51**
Fixed Cost				
Sales tools(Scales,Baskets, mudu,etc)Depreciation	14,878.06	599.15	30,199.44	10,415.81
Rent	24,000.00	4,000.00	28,888.89	5,535.71
Interest	15,714.29	-	12,000.00	-
Total Fixed Cost	**54,592.35**	**4,599.15**	**71,088.33**	**15,951.52**
Total Cost	**2,476,163.42**	**1,016,714.76**	**5,460,109.29**	**220,090.03**
Quantity (80kgbg)	147.5	57.0	301.1	18.6
Average Price(₦/80kgBag)	21,333.33	19,621.21	24,222.22	18,070.18
Returns	**3,146,989.90**	**1,117,814.51**	**7,293,580.25**	**336,358.88**
Gross Margin	725,418.83	105,698.90	1,904,559.29	132,220.37
Net Profit	670,826.48	101,099.75	1,833,470.95	116,268.85
Profitability Ratio	0.27	0.10	0.34	0.53

Table 2: Costs and returns analysis for cashew nuts marketers in Kogi State Source: Field survey, 2019.

Cost/Return Items	Merchants(n = 33)	Village Agent(n = 33)	Local Buying Agents(n = 9)	Farmers(n = 57)
Variable Cost (₦/80kg bag)				
Cost of Cashew nuts	1,716,462.81	943,215.79	4,091,456.79	102,973.84
Transportation	4,684.85	5,637.58	51,066.67	2,250.00
Handling Cost	7,403.64	2,792.42	41,844.44	625.00
Storage Cost	2,214.85	88.14	27,458.14	694.14
Bagging/picking/cleaning	3,933.33	3,962.12	66,138.89	1,435.09
Market Levy	1,465.15	-	55,862.33	0.00
Miscellaneous	-	-	10,426.67	-
Total Variable Cost	**1,736,164.63**	**955,696.05**	**4,344,253.93**	**107,978.07**
Fixed Cost				
Sales tools(Scales,Baskets, mudu,etc)Depreciation	5,574.06	6,639.61	64,184.44	5,173.35
Rent	3,454.55	3,000.00	60,000.00	3,052.38
Interest	9,000.00	-	15,222.22	-
Total Fixed Cost	**18,028.61**	**9,639.61**	**139,406.67**	**8,225.73**
Total Cost	**1,754,193.23**	**965,335.66**	**4,483,660.60**	**116,203.80**
Quantity (80kgbg)	74.7	61.2	209.2	7.2
Average Price(₦/80kgBag)	30,969.70	18,318.18	34,222.22	25,991.23
Returns	**2,314,280.99**	**1,120,184.57**	**7,160,049.38**	**186,498.46**
Gross Margin	578,116.36	164,488.52	2,815,795.45	78,520.40
Net Profit	560,087.76	154,848.92	2,676,388.78	70,294.66
Profitability Ratio	0.32	0.16	0.60	0.60

Table 3: Costs and returns analysis for cashew nuts marketers in Nasarawa State

Source: Field survey, 2019.

Cost/Return Items	Merchants(n = 33)	Village Agent(n = 33)	Local Buying Agents(n = 9)	Farmers(n = 57)
Variable Costs ((₦/80kgBag)				
Cost of Cashew nuts	2,514,545.45	1,209,823.69	3,227,816.67	270,450.35
Transportation	62,863.64	25,015.15	264,111.11	15,370.59
Handling Cost	31,431.82	10,006.06	56,333.33	6,789.47
Storage Cost	21,234.12	12,037.93	593,455.10	4,321.43
Bagging/picking/cleaning	52,386.36	25,015.15	492,916.67	7,431.58
Market Levy	4,704.55	-	75,118.52	0.00
Miscellaneous	-	-	91,252.28	-
Total Variable Cost	**2,687,165.94**	**1,281,897.99**	**4,801,003.68**	**304,363.42**
Fixed Cost				
Sales tools(Scales,Baskets, mudu,etc)Depreciation	10,056.94	4,659.94	60,444.44	9,020.39
Rent	40,181.82	12,000.00	72,222.22	12,000.00
Interest	372,341.67	-	209,083.33	237,542.86
Total Fixed Cost	**422,580.42**	**16,659.94**	**341,750.00**	**258,563.24**
Total Cost	**3,109,746.36**	**1,298,557.93**	**5,142,753.68**	**562,926.66**
Quantity (80kgbg)	209.5	100.1	276.7	37.2
Average Price(₦/80kgBag)	18,512.12	15,969.70	23,550.00	18,157.89
Returns	**3,879,130.85**	**1,597,937.56**	**6,515,578.50**	**674,709.14**
Gross Margin	1,191,964.91	316,039.57	1,714,574.82	370,345.72
Net Profit	769,384.49	299,379.63	1,372,824.82	111,782.48
Profitability Ratio	0.25	0.23	0.27	0.20

Table 4: Costs and returns analysis for cashew nuts marketers in Kwara State

Source: Field survey, 2019.

d) Costs and returns analysis for cashew nuts marketers in the study area (Pooled)

Presented in Table5 is the pooled cost and returns analysis for Kogi, Nasarawa and Kwara States. The cost of cashew nuts which was the highest for all the categories of marketers was ₦ 2,430,480.18, ₦1,081,320.71, ₦4,372,222.22, ₦ 188,421.40 for merchants, village agents, LBAs and farmers respectively while the other cost of marketing operations that is transportation cost, handling cost, storage cost, cost of bagging/picking/cleaning, market levy and miscellaneous accounted for about 4%, 3.5%, 14% and 8.7% for merchants, village agents, LBAs and farmers respectively. The total variable cost per seller/80kg bag was ₦2533459.23, N1122056.84, ₦5003642.05 and ₦206574.83 in the same order as above. The total fixed per seller/80 kg bag was ₦ 353, 964.59, ₦ 10, 238.96, ₦ 538, 803.81 and ₦ 93,329.70 accounting for about 12.3%, 0.9%, 9.2% and 31.1% of the total cost for merchants, village agents, LBAs

and farmers respectively. The revenue of LBAs was the highest (₦7, 169,958.64) and that of the farmers was the lowest (N135, 266.70). The gross margin was positive (₦863, 999.00, ₦184, 830.21, ₦2, 166,316.59 and ₦ 228, 596.40 for merchants, village agents, LBAs and farmers respectively. The result corresponds with the research work carried by Farayola*et.al.* (2013), on economic analysis of cashew nut marketing among produce buyers in Ogbomosho metropolis of Oyo State who reported a positive gross margin of ₦302, 378. 20. The profitability ratio shows that the three States were operating almost at the same level.

It can be seen from the overall profitability analysis result that cashew nut marketing in north central Nigeria is profitable. Since the operating cost and fixed cost is lower when the cost of cashew nut is excluded, income can easily be generated when a small output capital outlay is invested in cashew marketing as a business.

Cost/Return Items	Merchants(n = 99)	Village Agent(n = 99)	Local Buying Agents(n = 27)	Farmers(n = 171)
Variable Costs (₦/80kg bag)				
Cost of Cashew nuts	2,430,480.18	1,081,320.71	4,372,222.22	188,421.40
Transportation	32,475.76	14,965.05	122,911.11	6,859.00
Handling Cost	17,862.32	6,165.15	45,503.70	4,830.40
Storage Cost	11,633.49	4,549.37	217,404.36	1,617.31
Bagging/picking/cleaning	28,607.58	14,406.57	198,759.26	4,506.73
Market Levy	5,899.90	-	46,841.39	0
Miscellaneous	6,500.00	650.00	66,596.69	340.00
Total Variable Cost	**2,533,459.23**	**1,122,056.84**	**5,003,642.05**	**206,574.83**
Fixed Cost				
Sales tools(Scales,Baskets, mudu,etc)Depreciation	10,169.69	3,966.23	51,609.44	8,203.18
Rent	22,400.00	6,272.73	270,370.37	5,945.57
Interest	321,394.90	-	216,824.00	79,180.95
Total Fixed Cost	**353,964.59**	**10,238.96**	**538,803.81**	**93,329.70**
Total Cost	**2,887,423.82**	**1,132,295.80**	**5,542,445.87**	**299,904.53**
Quantity (80kgbg)	143.9	72.7	262.3	21.0
Average Price(₦/80kgBag)	23,605.05	17,969.70	27,331.48	20,739.77
Returns	**3,397,458.23**	**1,306,887.05**	**7,169,958.64**	**435,171.23**
Gross Margin	863,999.00	184,830.21	2,166,316.59	228,596.40
Net Profit	510,034.41	174,591.25	1,627,512.78	135,266.70
Profitability Ratio	0.18	0.15	0.29	0.45

Table 5: Costs and returns analysis for cashew nut marketers (Pooled for Kogi, Nasarawa and Kwara States)

Source: Field survey, 2019.

e) *Market margin of cashew nut marketers in the study Area*

a. Relative marketing margins for cashew nut marketers in Kogi, Nasarawa and Kwara

The result in Table 6 reveals the relative marketing margins for the different categories of cashew nut marketers in Kogi, Nasarawa and Kwara States respectively. It can be seen that in Kogi State, the percentage gross marketing margin for merchants, village agents, LBAs and farmers were 25.83, 15.80, 42.86 and 44.79 respectively. This implies that for every hundred naira paid by the consumers for the purchase of cashew nuts,₦25.83, ₦15.80, ₦42.86 and ₦44.79 covered marketing cost and profits. The Marketers 'share of gross marketing margin for merchants, village agents, LBAs and farmers were an average of 73.50, 87.23, 71.56 and 57.03 per 80 kilogramme, respectively. This result reveals that village agents received the largest share of the marketing margin and producers had the smallest. The implication of this result is that village agents with the lowest percentage marketing margin were more efficient than other categories of marketers.

For NasarawaState, the percentage gross marketing margin for merchants, village agents, LBAs and farmers were 26.50, 12.77, 28.44 and 42.97 respectively. This implies that for every hundred naira paid by the consumers for the purchase of cashew nut, ₦26.50, ₦12.77, ₦28.44 and ₦42. 97 covered marketing cost and profits. The Marketers 'share of gross marketing margin for merchants, village agents, LBAs and farmers were an average of 74.17, 84.20, 57.14 and 55.21 per 80 kilogramme. Also, the village agents had the largest share of the marketing margin while the farmers had the smallest share of the marketing margin. This result is similar to that of the survey carried out by Gachena and Kebebew (2014) on coffee marketing cost and margins in South WestEthiopia; who reported that the producers had the lowest market share.

Table 6 also shows that the percentage gross marketing margin for merchants, village agents, LBAs and farmers were 26.50, 12.77, 28.44 and 42.97 respectively for Kwara State. The percentage gross

marketing margin for merchants, village agents, LBAs and farmers were 35.18, 24.29, 50.46 and 59.92 respectively. This implies that for every hundred naira paid by the consumers for the purchase of cashew nut; ₦35.18, ₦24.29, ₦50.46 and ₦59.92 covered marketing cost and profits. While the Marketers 'share of gross marketing margin for merchants, village agents, LBAs and farmers were an average of 64.82, 75.71, 49.54 and 40.08 per 80 kilograms. This result was not different from that of Kogi and Nasarawa State as village agents still had the highest percentage gross margin which might be due to their close proximity to the farmers and other categories of marketers as well as through vertical integration by the combination of cashew nut production with marketing which to some extent will reduce the marketing cost.

Relative marketing margins for cashew nut marketers in Kogi, Nasarawa and Kwara (pooled) When comparing the results of the three States as a whole (Table 7), the gross earnings from the sales of cashew nut in Kogi State was ₦2,973,685.88 while the cost of purchase/80kg bag was ₦2,174,732.28. The gross earnings from cashew nut sales in Nasarawa State was ₦2,695,253.35 with the purchase cost /80kg bag was ₦1,713,527.31. While the gross earnings from the sales of cashew nut in Kwara State ₦3,166,839.01/80kg bag with a purchase cost of ₦1,805,659.04. The percentage gross marketing margin for Kogi was the lowest (26.87%) followed by that of Nasarawa State (36.42%) and then Kwara State (42.98%). This means that marketers of cashew nut in Kogi State performed better than cashew nut marketers in Nasaswa and Kwara State. While cashew nuts marketers in Nasarawa State performed better than their counterparts in Kwara State.

Variables	Merchants	Village Agents	Local Buying Agent
Kogi State			
Gross earnings from sales(₦/)	3,146,989.90	1,117,814.51	7,293,580.25
Purchase cost (₦/)	2,312,977.00	975,045.45	5,219,066.67
Gross marketing margin(₦/)	834,012.90	142,769.05	2,074,513.58
Percentage gross marketing margin (%)	26.50	12.77	28.44
Marketers' share of gross marketing margin (%)	73.50	87.23	71.56
Nasarawa State			
Gross earnings from sales(₦/)	2,314,280.99	1,120,184.57	7,160,049.38
Purchase cost (₦/)	1,716,462.81	943,215.79	4,091,456.79
Gross marketing margin(₦/)	597,818.18	176,968.78	3,068,592.59
Percentage gross marketing margin (%)	25.83	15.80	42.86
Marketers' share of gross marketing margin (%)	74.17	84.20	57.14
Kwara State			
Gross earnings from sales(₦/)	3,879,130.85	1,597,937.56	6,515,578.50
Purchase cost (₦/)	2,514,545.45	1,209,823.69	3,227,816.67
Gross marketing margin(₦/)	1,364,585.40	388,113.87	3,287,761.83
Percentage gross marketing margin (%)	35.18	24.29	50.46
Marketers' share of gross marketing margin (%)	64.82	75.71	49.54

Table 6: Estimated marketing margins by cashew nut marketers' category in Kogi, Nasarawa and Kwara States

Source: Field survey, 2019.

Variables	Kogi	Nasarawa	
Gross earnings from sales(₦/)	2,973,685.88	2,695,253.35	
Purchase cost (₦/)	2,174,732.28	1,713,527.31	
Gross marketing margin(₦/)	798,953.60	981,726.04	
Percentage gross marketing margin (%)	26.87	36.42	
Marketers'share of gross marketing margin (%)	73.13	63.58	

Table 7: Estimated relative marketing margins (pooled for all cashew nut marketers categories) in Kogi, Nasarawa and Kwara States

Source: Field survey, 2019.

b. Estimated relative marketing margins for the various categories of cashew nuts marketers in Kogi, Nasarawa and Kwara (Pooled)

Estimated relative marketing margins for the various categories of cashew nut marketers in Kogi, Nasarawa and Kwara (Pooled) is shown in Table 8. As indicated in Table 8, the gross earnings from sales per Naria/80kg bag of cashew nut was ₦3,397,458.23, ₦1,306,887.05, ₦7,169,958.64 and ₦435,171.23 for merchants, village agents, LBAs and producers respectively. And the gross marketing margin among marketers in the study area was N966, 978.05, ₦225, 566.35, ₦2, 797,736.42 and ₦246, 749.83 in the same order as above. Village agents had the largest marketers' share of gross marketing margin

(82.74%) followed by merchants (71.54%) then LBAs (60.98%) and lastly the producers (43.30%). The highest value of market share of 82.74% by village agents was an indication that favorable proportion of the consumer price goes to the village agents. One of the major reasons for this is that the village agents perform the role of a producer as well as a merchant thereby reducing their marketing cost. And the main reasons for the low producers share may likely be the fact that the producers price is affected by marketing costs (physical and transaction costs), concentration of market power in the hands of few, both and internationally and locally and lack of market supporting institution in the study areas (Gachena and Kebebew, 2014).

Variables	Merchants	Village Agents	Local Buying Agent
Gross earnings from sales(₦/)	3,397,458.23	1,306,887.05	7,169,958.64
Purchase cost (₦/)	2,430,480.18	1,081,320.71	4,372,222.22
Gross marketing margin(₦/)	966,978.05	225,566.35	2,797,736.42
Percentage gross marketing margin (%)	28.46	17.26	39.02
Marketers'share of gross marketing margin (%)	71.54	82.74	60.98

Table 8: Estimated relative marketing margins for cashew nut marketers categories (pooled for Kogi , Nasarawa and Kwara

Source: Field survey, 2019.

c. Differences in average revenues of cashew nuts marketers across the States

Presented in Table 9 is the result of the ANOVA test of the differences in average revenues of cashew nuts marketers across the State. This result revealed that the average revenue among cashew nuts marketers across the three States was significantly different from one another with F = 3.575 (P < 0.029). Hence, the null hypothesis which states that, there are no significance differences in the average revenue among cashew nuts marketers across the three States was rejected and alternative one was accepted. Thus, there were significant differences in the average revenue among cashew nuts marketers across the three States. And the Turkey B test (Table 10), revealed that revenue was higher in Kogi and Kwara than Nasarawa State.

d. Differences in market margins of cashew nuts marketers across the States

Also Presented in Table 11 is the result of the ANOVA test of the differences in market margins of cashew nuts marketers across the State. This result revealed that the marketing margin among cashew nuts marketers across the three States was not significantly different from one another with F = 2.43 (P <0.089). Hence, the researcher fail to reject null hypothesis which states that, there are no significance differences in the market margin among cashew nuts marketers across the three States . Thus, there were significant differences in the market margin among cashew nuts marketers across the three States in the cashew nuts supply chain, and Nasarawa State had the highest market margin in the cashew nuts supply chain. The Turkey B test (Table 12), revealed thatthere was no significant difference in the market margin across the three States at 0.05 % level of significance.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	29616365526515.150	2	14808182763257.574	3.575	.029
Within Groups	1627965401172348.500	393	4142405600947.452		
Total	1657581766698863.800	395			

Table 9: The summary of the analysis of variance of the differences of the average revenue of all the cashew nuts marketers in Kogi, Nasarawa and Kwara State

	State	N	Subset for alpha = 0.05	
			1	2
Tukey B	Nasarawa State	132	1434356.06	
	Kogi State	132	1715670.45	1715670.45
	Kwara State	132		2101507.58

Table 10: Turkey B Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	17848547719843.984	2	8924273859921.992	2.430	.089
Within Groups	1443598646626992.000	393	3673278999050.870		
Total	1461447194346836.000	395			

Table 11: Summary of the ANOVA

	State	N	Subset for alpha = 0.05
			1
Tukey B	Nasarawa State	132	1408842.39
	Kogi State	132	1667200.92
	Kwara State	132	1928870.16

Table 12: Turkey B test

IV. CONCLUSION

This study examined the performance of cashew nut markets in North Central Nigeria. All the participants in the cashew nuts market chain studied, made profit and village agents had the largest marketers' share of gross marketing margin. The comparison of percentage gross marketing margin across the three States revealed that Kogi was had lowest (26.87%) followed by that of Nasarawa State (36.42%) and then Kwara State (42.98%). Hence this study concludes that marketers of cashew nuts in Kogi State performed better than cashew nut marketers in Nasarawa and Kwara State. The highest value of market share of 82.74% by village agents was an indication that favorable proportion of the consumer price goes to the village agents.

REFERENCES

[1.] Adejo, P.E., Adejo, E, G, Zakari, J. 2018 Evaluation of The Profitability and Performance of Youth Participation In Cashew Nut (AnacardiumOccidentale) Marketing In Ankpa Local Government Area Of Kogi State, Nigeria. *J. Asian Rur. Stud.* 2(1): 49-56.

[2.] Adesanya, K. A., Agboola-Adedoja O. M., Adelusi A. A., Ogunwolu A. Q., Ugwu A. C., Alli A. M. and Akinpelu O. A. (2021). Opportunities in Nigerian cashew nut value chain. *World journal of Advanced Research and Reviews*, , 09(01), 168–174.

[3.] Agbongiarhuoyi, A. E. Aigbekaen E. O.andAkinbile L.A. (2008). Awareness of Cashew products potentials and market information among Farmers in Kogi State, Nigeria.*Journal of Agricultural and Biological Science*

[4.] Agbongiarhuoyi, A. E.1, Uwagboe, E. O.1, Agbeniyi S. O.1, Famuyiwa B. S.1, Shittu, T. R. 1.(2020). Analysis of Farmers' Cashew Nuts Marketing Channels and Information Frequency: Implications for Cashew Sustainability in Nigeria. *Multidisciplnary Academic journal publisher* 12(3), retrieved from http://www.sciencepub.net/rural.

[5.] Akanni, K. A. and A. A. Adams, (2011). Assessment of Pricing Efficiency and Levels of Concentration in Cashew Nuts Market in South Western Nigeria.*Journal of Agricultural Science and Technology* B 1 353-359. , ISSN 1939-1250.

[6.] Anegbeh, P. O., Esekhade, T. U., Abolagba, E. O., Ogwuche, P., Afolabi, K. D. and Balogun F. E. (2017).Analysis of profitability of mixed farming in rubber-based agroforestry systems in Nigeria.D*irect Research Journal of Agriculture and food Science*. Vol. 5(1), pp 26-34**.**

[7.] Ani, D. P. (2015). Market Integration and pricing efficiency of Soyabeans in Benue and Enugu State, Nigeria. A dissertation presented to the department of agricultural Economics, University of Nigeria Nsukka in partial fulfillment of the requirement for the award of Doctor of Philosophy (PHD) in Agricultural Economics University of Nigeria, Nsukka (published).

[8.] Ayoola, J. B. andAyoola, G. B. (2015). An Assessment of Factors Influencing the Use of Information and Communication Technologies in Maize Marketing in North Central Nigeria.International conference of Agricultural

VOL. 3, NO. 4, Network (ARPN).retrieved from www.arpnjournals.com

Economists (ICAE) 29th Milano August 8-14, 2015.Agriculture in Interconnected world. Pp15.

[9.] Collaborative Africa Budget Reform Initiative (CABRI), (2019).Policy Dialogue The role of governments in developing agriculture value chains 2019 www.cabri-sbo.org

[10.] Chemonics International Inc. for: The United States Agency for International Development (USAID)-Nigeria September (2002a). Industry Action Plan Nigerian Cashews industry.pp 19.

[11.] Chemonics International Inc. Prepared for: The United States Agency for International Development (USAID)-Nigeria September (2002)b Subsector Assessment of the Nigerian Cashew Industry. Pp 1-44.

[12.] Farayola, C. O. Akintonde, J.O. Awoyemi, S.O. and Akintaro, O. S.(2013). Economic analysis of cashew nut marketing among produce buyers in Ogbomosho metropolis of Oyo State International *Journal of Agriculture Innovations and Research* Volume 2, Issue pp1-7.

[13.] Gachena, D. and Kebebew, S. (2014). Analysis of Coffee Marketing Cost and Margins in South West, Ethiopia Journal of Economics and Sustainable Development Vol.5, No.15.Retrieved from www.iiste.org.

[14.] Mutayoba V. and Ngaruko, D. (2015).Market performance and farmers' choice of marketing channels of high value crops in Tanzania.International Journal of Economics, Commerce and Management United Kingdom Vol. III, Page 276. Retrieved from *http://ijecm.co.uk.*

[15.] National Population Commission and ORC Macro. 21 April 2009 Retrieved from: <http://www.measuredhs.com/pubs/pdf/SR101/SR101 NG03.pdf.

[16.] Nugawela, P. and Oroh, R. (2005). Cashew Sub-sector Strategic Framework: Using Cashew Sector Markets for Pro-poor Growth in Nigeria. Monograph Series No. 1, Department for International Development (DFIPrOpCom-Draft report -31-05-05.Pp 28.

[17.] Oladejo, J. A. (2015). Profitability and structural analysis of cashew nut market in Oyo State, Nigeria. International Journal of Agricultural Policy and Research Vol.3 (3), pp. 114-221, March 2015 .Retrieved from :http://www.journalissues.org/IJAPR/.

[18.] Olagunju, F. I. (2014). Comparative Advantage and Competitiveness of Cashew Crop in Nigeria: The Policy Analysis Matrix. ICAEM: The 6th International 2014 Conference on Agribusiness Economics and Management, Waterfront Insular Hotel, Davao City, Philippines.

[19.] Olusegun, A. (2016). From tree to trade: improving cashew quality, quantity and investment promotion. Nigerian Export Promotion Council at the 10th Annual ACA World Cashew Festival & Expo, Organized By African Cashew Alliance(ACA), Bissau, Guinea Bissau. 19-22 SEPTEMBER, 2016 pp 21.

[20.] Salau, S. A., Popoola, G. O. and Nofiu. B. N. (2017). Analysis of cashew nuts marketing in Kwara State, Nigeria. Journal *of Agriculture and Human Ecology* 1(1): 34- 44.
(www.findlatitudesandlongitudes.com).