



**MARKET STRUCTURE AND CONDUCT OF COWPEA (*Vigna unguiculata* L.)
MARKETING IN YOBE STATE, NIGERIA**

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ABSTRACT

The study analysed market structure and conduct of cowpea (*Vigna unguiculata* L.) Marketing in Yobe State Nigeria. Cowpea provides essential plant proteins, vitamins, and revenue for farming families however, market structure and conduct of cowpea have not been properly describe. The aim of the study was to described market structure and conduct of cowpea marketers in the study area. Primary data were collected with the aid of questionnaires. Using multistage sampling techniques, the data were collected from 142 producers-wholesalers, 144 wholesalers, and 182 retailers. The data were analysed using descriptive statistics and Herfindahl-Hirschman Index (HHI). The results indicated that; 98.59% of producers- wholesalers, 97.22% of wholesaler and 100% of retailers indicated that there were no restrictions on new players joining the market. However, Producers-wholesalers had HHI of 105.74, wholesalers had HHI of 149.20 and retailers had HHI of 83.18 indicating highly competitive market structure. Moreover, 91.55% producers-wholesalers, 93.75% of wholesalers and 68.68% of retailers revealed that they negotiated to determine the price of their cowpea products indicating market price is determine by demand and supply of the cowpea product. Most of the respondents were members of marketers' association indicating marketers assist them through market information sharing. Market structures are perfectly competitive due to respondents' absence of market dominance and misuse of market power in the study area. Further marketing studies on other crops needs to be carried out, taking into account producers-wholesalers as an additional marketing player in the marketplace.

Keywords: Conduct, Cowpea, Market, Structure, Yobe

INTRODUCTION

Most of cowpea production occurred in Africa especially in Niger, Nigeria, Burkina Faso, Mali, and Senegal. Nkomo, *et al* (2021) they further stated that Africa produces close to 5.2 million tons of the about 7.4 million tons of cowpeas produced worldwide. However, Walle *et al.* (2019) stated that cowpea is a versatile crop and adaptable to hot temperatures and drought, having a strong ability to connect with bacteria that fix nitrogen. As a result of this ability to fix atmospheric nitrogen, cowpea is produced in marginal areas with low soil fertility. The process of getting cowpea products from growers to end users is heavily influenced by marketing. Kebede and Bekeko (2020) claims that marketing makes it easier for cowpea products to go from the producer to the final consumers. Moreover, Udah (2020) states that marketing encourages specialization by emphasizing goods with comparative advantages, which boosts output and promotes economic progress. Through buying and selling, it generates profit as well, building capital for additional production. Udah (2020) claim that this encourages economic progress by eradicating poverty and shortages, in addition, marketing stimulates the economy by adding jobs in distribution, processing, storage, and purchasing and selling of goods. Furthermore, it unites rural and urban areas, promoting societal advancement. However, in Nigeria, where 78% of the population is involved in farming, agricultural marketing is essential to the country's economic growth (Nwuba and Nwaizugbo, 2020).

Market structure, according to Kumari (2021) refers to those market organizations that affect prices and competition, which have an impact on the performance of business enterprises. In addition, he says that the degree of product differentiation, the concentration of market power, the entry and exit requirements, and the flow of market information are the elements that make up market structure. According to Ejike *et al.* (2022) market conduct comprises of legal strategies, price, advertising, and



output policies, among other things. Market conduct also describe how buyers and sellers behave both among themselves and among each other, including price-taking, product differentiation, tacit collusion, and the abuse of market power. Panhans (2023) pointed out that technical factors determined a market's structure in SCP research, which in turn affected how businesses behaved (conduct) and how the market responded in terms of prices and output (performance). However, the structure, conduct, and performance of a market are some of the most important approaches for market analysis, according to Onuk *et al.* (2018). Concentration, which shows a situation in which a few number of large enterprises control the majority of the market, is a crucial factor in market structure study. They further pointed out that the supply response of agricultural products, particularly in the processing and marketing of cowpea, can be seriously affected by market structure, conduct, and performance. Meanwhile, this study took into account the new market actor (producer-wholesaler) that Abdulhamid *et al.* (2024) identified in Yobe State. Thus, the producers-wholesalers, wholesalers, and retailers of cowpea marketing in Yobe state were taken into consideration in this study.

Objective of the study were as follows;

- i. determine market structure of cowpea marketing in the study area
- ii. describe market conduct of cowpea marketing

METHODOLOGY

The Study Area

Yobe state share border with Bauchi, Borno, Gombe, and Jigawa, while to the north it borders the Republic of Niger. The majority of people reside in rural areas, the state is predominantly a rural state, and its economy is centered on agriculture, which includes crops, cattle, horticulture, fisheries, gum arabic, and palm trees (World Bank group, 2016). The vegetation of the State is generally under the threat of desertification; the state is characterized by two major seasons, rainy and dry season. The tropical continental air mass from the Sahara Desert is responsible for the dry season because of its coolness and dryness. The dryness lasts for about seven months with severe cold and harmattan wind from the Sahara Desert around November and lasts up to February; hot climate sets in around March and lasts till around May/June when the rainfall set in (Danlami *et al.*, 2018). According to Tee (2014), the state is situated in the north-eastern geopolitical zone of Nigeria, which is between latitudes 10° and 14° North and longitudes 11° 30' and 14°45' east.

Source and Method of Data Collection

Questionnaires were developed in accordance with the study's goals and accompanied by oral explanation for individuals who are uneducated were used to gather primary data from respondents. The primary data were gathered from the respondents between March and April 2024.

Sampling Techniques

Multistage sampling was used in this study, beginning with the purposive selection of three major regional markets; Potiskum, Gashu'a, and Nguru due to their high participant numbers. In the second stage, stratified sampling divided the population into three categories: producers-wholesalers, wholesalers, and retailers, with respondents chosen from each. Finally, random selection was applied to identify respondents within each cowpea marketing category.

Sampling Size

The sample size for the study was determined using Yamane sample size determination formula, as used by Adam (2020), Ikehi *et al.*, (2019) the Yamane's formula is given by;

$$n = \frac{N}{1+N(e)^2} \text{ (1)}$$

Where; n = sample size; N = sampling frame; e = level of precision

The sample size of study was determined based on population of 652 producers-wholesalers, 496 wholesalers and 3487 retailers obtained from the market officials during pre-visit survey 2023. The sample size of the study is calculated based on 95% confidence level and 7% level of precision adopted from Jonah *et al.*, (2020), as follows;



Producers/wholesalers:

$$n = \frac{652}{1+652(0.07)^2} = \frac{652}{4.19} = 155 \text{ _____ (2)}$$

Wholesalers:

$$n = \frac{496}{1+496(0.07)^2} = \frac{496}{3.43} = 145 \text{ _____ (3)}$$

Retailers:

$$n = \frac{3487}{1+3487(0.07)^2} = \frac{3487}{18.08} = 193 \text{ _____ (4)}$$

Additionally, Jonah *et al.* (2020) employed the proportionate sample size approach to establish the number of respondents that would make up the study's sample size. To calculate the number of respondents that make up the study's sample size, this study was likewise employ the proportionate sample size approach, details in Table 1

The proportionate sample size approach is given by;

$$NI = \frac{n}{N} \times Ni \text{ _____ (5)}$$

Where; NI = Sample size in each market; n = sample size; N = Sampling frame

Ni = Total number of marketers in each market

Table 1: Sample Size Distribution

Category of Marketers	Regional Market	Sampling frame	Sample size
Producers-Wholesalers	Potiskum	348	83
	Gashu'a	173	41
	Nguru	131	31
Subtotal		652	155
Wholesalers	Potiskum	251	73
	Gashu'a	137	40
	Nguru	108	32
Subtotal		496	145
Retailers	Potiskum	2153	119
	Gashu'a	908	50
	Nguru	426	24
Subtotal		3487	193
Total		4,635	493

Source: (Pre visit Survey, 2023)

After the questionnaires were distributed to the respondents, however, 142 questionnaires that were correctly completed and utilized for the data analysis were collected from producers-wholesalers, 144 from wholesalers, and 182 from retailers.

Methods of Data Analysis

Descriptive Statistics and Herfindahl-Hirschman Index (HHI); were used to analyse for the analysis.

The Herfindahl - Hirschman index (HHI) was give as:

$$HHI = 10,000 [(\frac{S_1}{S_T})^2 + (\frac{S_2}{S_T})^2 + (\frac{S_3}{S_T})^2 - - - - - + (\frac{S_n}{S_T})^2] \text{ _____ (6)}$$

Where:

S_i = Market share in naira for individual respondent in the study area

S_T = Total market share in naira of the respondents in the study area

Rule of Thumb

The HHI is split into three type of market:

- i. The market is Competitive if (HHI is below 1000),
- ii. Oligopolistic Market if (HHI is between 1000 and 1800), and,
- iii. Monopolistic Market if (HHI is above 1800), (Vary and Lee 2003)



RESULTS AND DISCUSSION

Market Structure

Market structure of the study area was discussed under the following subheading: Respondents' market entry and exit restrictions, access to market information, way of differentiating cowpea price and restriction on quantity supply, Source of market information and Respondents Herfindahl-Hirschman index (HHI)

Respondents' Market Entry and Exit Restrictions, Access to Market Information

Table 2 displayed the respondents' market entry and exit restrictions, access to market information, selling the same variety of Cowpea product and difference in Cowpea Price. According to finding of the study's 98.59% of producers- wholesalers stated that there were no restrictions on new entrants into the market, while 1.41% stated that there were some restrictions. Though 2.78% of wholesalers agreed that there were restrictions, 97.22% of them said there were no restrictions on new entrants into the market. Furthermore, all retailers 100% of them said there were no restrictions on new players joining the market. The Table also showed that all producers-wholesaler and retailer who responded to the survey indicated that there was no restriction on leaving the market, likewise 98.61% of wholesalers, only 1.39% of wholesalers endorsed that there was restriction for exiting the market. This implies that there was free entry and exit for cowpea marketing in the study area. Free entry and exit is a characteristic of competitive market structure. However, free entry and exit from an industry without cost is the foundation of the contestable market theory, according to Lelissa and Kuhil (2018). This can effectively prevent market monopolists from limiting their greed and giving up all likely high profits to enjoy. Habib (2017) Analysed Market Structure and Concentration in Nigeria (A Case of Kano State Rice Market), The population of the study consist of retail rice marketers in Kano state. Selected markets were Tudun Wada, Challawa, Dawanau and Garko rice markets. These markets were selected based on the concentration of rice marketing activities in the areas. In each of the markets, a sample census of markets was undertaken and 10% of each for the retailers and wholesalers were randomly selected because it covers the required number of respondents for the entire population that is statistically allowed, giving a sample size of 125 and 57 for retailers and wholesalers respectively. A total of 182 respondents were sampled for the study. Primary data was gathered using a structured questionnaire. His data were analysed using descriptive statistics and Gini coefficients. Their findings of his study revealed that reveals that 96% of the rice retailers believe that there are no entry restrictions whatsoever. 4% believe it is difficult to enter into the market. Barrier to entry and exit limits the number of sellers and buyers from entering and exiting the market. Wholesale rice marketers agree that there is 100% free entry and exit in the market without any form of restrictions. The Table 2, also shows that 97.89% of producers –wholesalers had access to market information, 2.11% indicated that they had no access to market information. 100% of wholesalers and retailers revealed that they access to market information. This suggested that cowpea marketers in the study area have available knowledge about the cowpea product in the market. Price discrimination in a market is generally occur as a result of lack of market information, where by some market actors selling the same product of the same quantity and quality to different buyers at different price in the same time at the same market. Buyers and sellers will be able to make better decisions if they have greater access to information about prices in various markets and the features of various products. The finding of the study was in line with that of Asogwa and Okwoche (2012) who Studied Marketing of Agricultural Produce among Rural Farm Households in Nigeria. The Case study of Sorghum Marketing in Benue State revealed that 89% of respondents believed that there was free flow of information in the market, while 11% disagreed. According to Olukosi *et al.* (2012), buyers and sellers can make decisions in the market environment in which they operate by using the market knowledge at their disposal.



Table 2: Respondents' Market Entry and Exit Restrictions, Access to Market Information

	Producers-wholesalers		Wholesalers		Retailers	
	Frequency	%	Frequency	%	Frequency	%
Entry Restriction						
Yes	2	1.41	4	2.78	0	0.00
No	140	98.59	140	97.22	182	100.00
Total	142	100.00	144	100.00	182	100.00
Exit Restriction						
Yes	-	-	2	1.39	-	-
No	142	100.00	142	98.61	182	100.00
Total	142	100.00	144	100.00	182	100.00
Access to Market Information						
Yes	139	97.89	144	100.00	182	100.00
No	3	2.11	-	-	-	-
Total	142	100.00	144	100.00	182	100.00

Source: Field Survey, 2024

Respondents' Way of Differentiating Cowpea Price and Restriction on Quantity Supply

Table 3 shows the distribution of the respondents' according to the way Cowpea price is differentiated, restriction on quantity supply and source of cowpea product. 66.42% of producers-wholesalers stated that cowpea prices change based on color, 87.59% said that they change based on size, and 6.57% indicated that they change based on product quality. Likewise, 82.22% of wholesalers say that cowpea prices differ based on color, 76.30% on size, and 8.89% on quality. 68.86% of retailers stated that cowpea prices fluctuate based on product color, 79.04% noted size, and just 2.40% indicated product quality. This suggests that variables like colour, size, and quality account for the variations in cowpea product prices. Ezenekwe and Uzonwanne (2018) stated that a market with perfect competition produces a uniform or homogenous goods; products that are equal in every way that is, without variations in quality, colours, packaging, etc. are said to be homogenous. This presumption eliminates quality disparities and competition between businesses in advertisement.

The Table also showed that, 97.89% of the producers -wholesalers, said that there was no limit on the amount of cowpeas supplied to the markets, whereas 2.11% said there was a limit on the amount of cowpea products supplied to the markets. There was no restriction on the quantity supplied in the markets, according to 96.53% and 96.70% of wholesalers and retailers, respectively; however, 3.47% and 3.30% of wholesalers and retailers, respectively, indicated that there was there was restriction on quantity supplied in the markets. Ejike *et al.* (2022), mention that product differentiation, output policies and pricing are among the conduct that can cause misuse of market power. Panhans (2023) mention that monopolists tend to limit output and product differentiation considers potential outcomes like cooperation, collusion, or open price rivalry.

Table 3: Distribution of the Respondents' According to the Way Cowpea Price is Differentiated and Restriction on Quantity Supply

	Producers-wholesalers		Wholesalers		Retailers	
	Frequency	%	Frequency	%	Frequency	%
Ways Cowpea Price Differentiated						
Colour	91	66.42	111	82.22	115	68.86
Size	120	87.59	103	76.30	132	79.04
Others: Quality	9	6.57	12	8.89	4	2.40
Total	220*	160.58*	226*	167.41*	251*	150.30*
Restriction on Quantity Supply						
Yes	3	2.11	5	3.47	6	3.30
No	139	97.89	139	96.53	176	96.70
Total	142	100.00	144	100.00	182	100.00

*Multiple Responses exist

Source: Field Survey, 2024

Source of Market Information of Respondents'

The sources of market information provided by respondents were shown in Table 4, which reveals that 84.89% of producers- wholesalers got their information from sellers, 82.01% from buyers, and 2.16% from radio. 86.11% of wholesalers received market information from cowpea sellers and 60.42% of buyers. 86.26% of retailers got their market information from sellers and 51.65% from buyers. The results demonstrated that insider market knowledge was shared by cowpea marketers. This would also help them with their marketing decisions. Habib (2017) reported that 61.6% of the retail rice marketers get market information concerning their products from nearby market. 13.6% from market officials, 9.6% get information through media source while 15.2% source their information from co-traders. Likewise, 91.2% of rice wholesalers mostly rely on nearby markets as their source of information. Only 8.8% believe to source their information about the market from co-traders. Similarly Abdulhamid *et al* (2022) who analysed structure and conduct of fresh tomato marketing in Bade Local Government Area of Yobe State, Nigeria with a sample size of 52 wholesales and 103 retailers and found that 92.3% and 97.7% of the wholesalers and retailers respectively had their source of market information through sellers of the tomato product. 3.8%, 1.9% and 1.9% of the tomato wholesalers had their source of information through poster, radio, and television, respectively and only 1% of the tomato retailers had their source of market information through radio and none from poster and television.

Table 4: Respondents' Source of Market Information

Source of Market Information	Producers-wholesalers		Wholesalers		Retailers	
	Frequency	%	Frequency	%	Frequency	%
Radio	3	2.16	-	-	-	-
Television	-	-	-	-	-	-
Posters	-	-	-	-	-	-
Sellers	118	84.89	124	86.11	157	86.26
Buyers	114	82.01	87	60.42	94	51.65
Total	235*	169.06*	211*	146.53*	251*	137.91*

*Multiple Responses exist

Source: Field Survey, 2024



Respondents’ Herfindahl-Hirschman Index (HHI)

The Herfindahl-Hirschman index (HHI) of the respondents was displayed in Table 5. The analysis revealed that producers-wholesalers had HHI of 105.74, while wholesalers had HHI of 149.20 and retailers had HHI of 83.18. Consequently, the study's findings showed that cowpea markets in the study area were competitive and unconcentrated for all three groups of market participants, making it impossible for them to maintain market dominance. Since there are numerous suppliers, each with a negligible market share, each trader is presumed to be a price taker since it is too small in relation to the market as a whole to influence pricing through changes in its own supply. However, enterprises offering similar goods, unrestricted entry and exit, perfect knowledge, and no firm with the ability to influence the market price are the attributes of a market system with perfect competition. The entrepreneurs are regarded as price takers, and the entrepreneurs’ are efficient in resources allocation. Vany and Lee (2003) stated that a market is considered unconcentrated if the HHI value is less than 1000. The study's Similar study was conducted by Gaya *et al.*, (2020) on Analysed Structure and Performance of Cowpea Marketing in Maiduguri Metropolitan Council and Jere L.G.A of Borno State, Nigeria and found a high level of competition among retailers, with retailers having a high HH index value of 0.026 and wholesalers having a HH index value of 0.57 which an oligopolistic market among wholesalers, which indicated a small number of wholesalers controlled the cowpea market.

Table 5: Respondents’ Herfindahl-Hirschman Index (HHI)

Marketers’ Categories	HHI
Producers-wholesalers	105.74
Wholesalers	149.20
Retailers	83.18

Source: Field Survey, 2024

Market Conduct

The following are the market conduct of the respondents; price determination, product advertisements, channel of advertisement, method of sale and association membership.

Respondents’ Price Determination, Product Advertisements and Channel of Advertisement

The respondents’ price determination, product advertisements and channel of advertisement were displayed in Table 6; According to the analysis, 8.45% of producers-wholesalers said they fixed the price of their cowpea products, while 91.55% said they arrived at the price through bargaining. In a similar vein, 93.75% of wholesalers said they negotiated to determine the price of their cowpea products, while 6.25% said they set the price. Similarly, 31.32% of retailers set prices, while 68.68% of retailers bargained to get their market price. This suggested that greater percentage of marketers in the study area arrived at price through bargaining power, which is an attribute of pure competitive market structure. The study also was in agreement with the findings of Ojo *et al.* (2016), who conducted a study on the efficiency of tomato fruit marketing in the Abuja Municipal Council Area of Nigeria, and discovered that neither the government nor any marketing cooperative had any fixed or regulated pricing for tomato products, instead, the price-bargaining power of supply and demand forces largely determined prices.

The study also revealed in the Table 6 that all producers-wholesaler, wholesaler, and retailer advertised their cowpea products. Zorinah (2016) stated that it is typical for businesses operating in oligopolistic markets to compete through non-price means like advertisements. The Table also showed that 98.59% of producers-wholesalers used a displayed channel of advertisement, 49.30% used verbal means, and 38.73% used telephones to promote their cowpea product. 50.00% of wholesalers used phone to advertise their cowpea products, 27.08% through verbal, and 97.22% used displayed channel. Retailers used verbal communication (22.53%), display (98.90%), and telephone (19.23%) as their advertising channels. Similarly, Zorinah (2016) who analysed of structure, conduct and performance of cabbage market in central district of Botswana, found out that market participants engaged in advertisement of their products, with 49% of producers having contracts and lists of regular buyers.



51% put adverts on gates, 72% of wholesalers used telephone, 28% through regional papers, and 42% of retailers used print media.

Table 6: Respondents' Price Determination, Product Advertisements and Channel of Advertisement

	Producers-wholesalers		Wholesalers		Retailers	
	Frequency	%	Frequency	%	Frequency	%
Price Determination						
Bargaining	130	91.55	135	93.75	125	68.68
Fixed Price	12	8.45	9	6.25	57	31.32
Total	142	100.00	144	100.00	182	100.00
Product Advertisement						
Yes	142	100.00	144	100.00	182	100.00
No	-	-	-	-	-	-
Total	142	100.00	144	100.00	182	100.00
Channel of Advertisement						
Telephone	55	38.73	72	50.00	35	19.23
Verbal	70	49.30	39	27.08	41	22.53
Radio/TV	-	-	-	-	-	-
Display	140	98.59	140	97.22	180	98.90
Total	265*	186.62*	251*	174.31*	256*	140.66*

*Multiples Responses Exist

Source: Filed Survey, 2024

Respondents' Method of Sale and Association Membership

Respondents' methods of sale and association membership were displayed in Table 7; the table showed that 91.55% of the producers-wholesalers made their sales through instance payment (pay and take), while 34.51% of them used contract method (take and pay later). Of the wholesalers, 30.56% sold by contract and 93.06% by instance payment. Retailers marketed their cowpea products in two ways: 10.44% through contracts and 96.70% through one-time payments. Contract sales are a sort of exclusive dealing arrangement that is most common in oligopolistic markets. Under these arrangements, the two parties to a contract are required by the terms of the contract to buy from or sell to each other. This might discourage potential new entrants from joining the market (Zorinah, 2016).

Table 7 also showed that 22.54% of producers-wholesalers were not members of cowpea marketers association, while 77.46% of them were members. In the same way, 82.64% of wholesalers belonged to the cowpea marketers association, whereas only 17.36% did not belong to the association. 36.81% of retailers were not members of the cowpea marketers association, while 63.19% of them were members. The majority of cowpea marketers in the study area were members of the cowpea marketers association, according to the study's findings. The presence of the cowpea marketers association may lead to collusion and prevent market competition among the market actors in the study area. The finding of the study was contrary to that of Katanga *et al.*, (2016) who studied Analysis of cowpea marketing channel in Kiyawa Local Government Area of Jigawa State, Nigeria. The results indicated that, 57.57% of the marketers were having membership of cowpea marketing association while the remaining 42.43 were not. Similarly, Abdulhamid *et al.* (2022) study structure and conduct of fresh tomato (*Solanum lycopersicum L.*) Marketing in Bade Local Government Area of Yobe State, Nigeria. Primary data were obtained from a random sample of 155 tomato marketers consisting of 52 wholesalers and 103 retailers and the data were collected using a semi-structured questionnaire. The data were analysed using descriptive statistics; the finding revealed that 94.2% of tomato wholesalers and 55.3% of tomato retailers are affiliated with the Gashua Vegetable Marketers' Association, while 5.8% and 44.7% of wholesalers and retailers, respectively, are not associated with any associations in the markets.

Table 7: Respondents' Method of Sale and Association Membership

	Producers-wholesalers		Wholesalers		Retailers	
	Frequency	%	Frequency	%	Frequency	%
Methods of Sale						
Take and Pay later	49	34.51	44	30.56	19	10.44
Instance payment	130	91.55	134	93.06	176	96.70
	179*	126.06*	178*	123.61*	195*	107.14*
Association Membership						
Yes	110	77.46	119	82.64	115	63.19
No	32	22.54	25	17.36	67	36.81
Total	142	100	144	100.00	182	100.00

*Multiples Responses Exist

Source: Filed Survey, 2024

CONCLUSION AND RECOMMENDATION

There were no market entry and exit restrictions in the study area, and the respondents had access to market information. The cowpea price differs in the market based on colour, size and quality of the products and there was no restriction on quantity supply in the markets. And most of the respondents arrived at the price of their product through bargaining power and sold it through contract and spot selling. The study also proved that cowpea markets structures in the study area were perfectly competitive markets. However, most of the respondents were members of cowpea marketers' association. Further marketing studies on other crops needs to be carried out, taking into account producers-wholesalers as an additional marketing player in the marketplace.

REFERENCE

- Abdulhamid, H., Onu, J.I., Giroh, Y. D., Yakubu, D., and Musa, A. (2022) Structure and Conduct of Fresh Tomato (*Solanum lycopersicum L.*) Marketing in Bade Local Government Area of Yobe State, Nigeria, *Nigerian Journal of Tropical Agriculture*, **25**: 24-35.
- Abdulhamid, H., Onu, J.I., and Tashikalma, A.K. (2024) Socio-Economic Characteristics and Market Performance of Cowpea (*Vigna unguiculata L*) Marketing in Yobe State, Nigeria, *Journal of Agricultural Economics, Extension & Social Sciences (JAEESS)*. **6**(2): 1 – 9.
- Adam, A.M. (2020). Sample Size Determination in Survey Research, *Journal of Scientific Research and Reports*, **26**(5): 90-97.
- Asogwa, B. C., and Okwoche V, A. (2012), Marketing of Agricultural Produce among Rural Farm Households in Nigeria: The Case of Sorghum Marketing in Benue State. *International Journal of Business and Social Science*, **3**: 1-9.
- Danlami, D., Gwari, M. B., Suleiman, S.S., and Bara, A. A. (2018) Temporal and spatial Variations of Ground Surface Visibility during Harmattan Season in North-Eastern Nigeria *Ceylon Journal of Science*, **47**: 337-346.
- Ejike, R.D., Lemchi, J. I., Eze, C.C. and Ohajianya, D. O. (2022) Market structure, Conduct and Performance of Beef Marketing: Evidence from Southeast, *Nigeria Journal of Agriculture and Food Sciences*. **20**(2): 208- 232.
- Ezenekwe, R. U and Uzonwanne, M. C (2018) Market Structure. <https://www.researchgate.net/publication/337399007> pp 1- 15
- Gaya, H.I.M., Tahir, A.D., Danladi, H. and Tanimu, B. (2020). Analysis of Structure and Performance of Cowpea Marketing in Maiduguri Metropolitan Council and Jere L.G.A of Borno State, Nigeria, *Journal of Agricultural Economics, Environment and Social Sciences*, **6**: 81 – 88.
- Habib, S. B (2017) Analysis of Market Structure and Concentration in Nigeria (A Case of Kano State Rice Market) IIARD *International Journal of Economics and Business*, **3**(5): 1- 11.
- Ikehi, M. E., Onu, F.M., Ifeanyieze, F.O., Paradang, P.S., Nwakpadolu, M.G., Ekenta. L. U., and Nwankwo, C.U. (2019). Survey on Sample Sizes of Postgraduate Theses in Agricultural



- Education and Extension in Universities of Nigeria, *Journal of Extension Education*, **31**(1): 6200 -6208.
- Jonah, S.E., Baba, G. S., and Umar, A.S.S. (2020). Analysis of Profitability of Sesame Production in Yobe state, Nigeria, *American Journal of Economics*, **4**(2): 46 – 69.
- Katanga Y. N., Hussain I., Wudil A. H. and Haruna U. (2016). Analysis of Cowpea Marketing Channel in Kiyawa Local Government Area of Jigawa State, Nigeria, *International Journal of Agricultural Policy and Research*, **4**(9): 157-201.
- Kebede, E and Bekeko, Z. (2020). Expounding the production and importance of Cowpea (*Vigna unguiculata* (L.) Walp.) in Ethiopia, *Cogent Food and Agriculture*, **6**(1): 1-22.
- Kumari, V (2021). Role of Agricultural Marketing in Economics, *Just Agriculture Multidisciplinary e-Newsletter*, **1**: 1-4.
- Lelissa T. B., and Kuhlil. A. M. (2018). The Structure Conduct Performance Model and Competing Hypothesis- A Review of Literature, *Research Journal of Finance and Accounting*, **9**: 1-14.
- Nkomo, G.V., Sedibe, M. M. and Mofokeng, M. A. (2021). Production Constraints and Improvement Strategies of Cowpea (*Vigna unguiculata* L. Walp.) Genotypes for Drought Tolerance, *International Journal of Agronomy*, **20**(2): 155-164. | <https://doi.org/10.1155/2021/5536417>
- Nwuba, C.O. and Nwaizugbo, I.C. (2020). Agricultural Marketing and Financial Empowerment of Rural Farmers in Anambra State, *EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal*, **6**(5):1-15.
- Ojo, A.O., Mustapha, A. and Ojo, M.A, (2016). Analysis of Marketing Efficiency of Tomato Fruits in Abuja Municipal Council, Nigeria, *Nigeria Journal of Scientific Research*, **15**(2): 1-6.
- Olukosi, J.O., Isitor, U.S., and Moses, O.Ode. (2012). *Agricultural Marketing and Prices, Principles and Applications*, 4th Edition PP 1 – 147
- Onuk, E.G., Abah, D., and Zaknayiba, D.B (2018), A Study of Structure, Conduct and Performance of Cowpea Marketing in Lafia Local Government Area of Nasarawa State, Nigeria, *Discovery Agriculture*, **4**: 1-9.
- Panhans, M.T. (2023) the Rise, fall, and Legacy of the Structure Conduct-Performance Paradigm, pp: 1-15 https://ipl.econ.duke.edu/seminars/system/files/seminars/3754_paper.pdf Visited 06 September, 2023
- Tee, N. T., Orsar, T. and Buhg, J. O. (2014). Prioritization and Cost and Returns Analysis of Selected Non Timber Forest Product in Yobe, Nigeria, *Journal of Development and Agricultural Economics*, **6**(12): 481-489.
- Udah, S.C. (2020). Agricultural Marketing as an Instrument of Development in Nigeria: A Review *Nigerian Agricultural Journal*, **51**(3): 121- 125.
- Vary. A. D., and Lee, C (2003). Stochastic Market Structure: Concentration Measures and Motion Picture Antitrust, Centre for Regulation and Competition, Institute for Development Policy and Management University of Manchester working paper no.52 pp 1-22
- Walle, T., Mekbib, F., Amsahi, B., and Gedil, M. (2019). Genetic Diversity of Ethiopian Cowpea [*Vigna unguiculata*(L) Walp] Genotypes Using Multivariate Analyses, *Ethiop. Journal of Agricultural Science*, **29**(3): 89-104.
- World Bank Group, (2016). North East Nigeria Recovery and Peace Building Assessment Volume 111 State Reports Federal Republic of Nigeria, *International Bank for Reconstruction and Development*, pp 1-60
- Zorinah, P. (2016). Analysis of Structure, Conduct and Performance of Cabbage Market in Central District of Botswana, A Thesis Submitted in Partial Fulfillment of the Award of a Master of Science Degree in Agricultural and Applied Economics University of Nairobi, PP 1 – 1.