



## Analysis of Cowpea (*Vigna unguiculata*) Marketing and Price Trends in Selected Markets of Argungu Local Government Area, Kebbi State, Nigeria

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Received: Sep 27, 2020; Accepted: Nov 28, 2020; Published Online: Dec 15, 2020

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### Abstract

The study analyzed cowpea marketing and price trends in selected rural and urban markets of Argungu Local Government Area, Kebbi State, Nigeria. A single-stage sampling technique was used for sample selection. The samples were collected from purposively selected Kara markets in Argungu (reference market), Felande, Gulma, Lailaba and Sauwa (supplying markets) from the selected Districts. Primary data were obtained from a sample of 100 marketers with the aid of the structured questionnaire. Descriptive statistics and spatial price model were employed in analyzing the data. Results of the analysis shows an average age of marketers to be 34 years, 69% were married and 62% have formal education with an average household size of 8 persons. However, 73% were discovered not join any cooperative association while 79% of them do not have access to credit to finance their business. Analysis of spatial aspects of pricing efficiency showed that the positive price spread is slightly high, even after considering plausible levels of unmeasured transaction costs. The trend in price revealed higher price per bag during the off-season (₦27, 000/bag) in July and August and low (₦15, 000) during harvest (October, November, December and January). Temporal aspects showed considerable risk was involved in storage operations to achieve high profits. The marketing channels identified in the study area were; Farmers, Village merchants, Wholesalers, Retailers, Processors and finally the Consumers. The constraints identified in the study area were lack of access to credit (25.69%), inadequate market information (24.59%), inadequate market infrastructure (22.65%), provision of quality product (16.02%) and poor storage facilities (11.05%). It is recommended that sellers should form cooperatives that can support them in provision of physical facilities and better dissemination of market intelligence and facts. Accordingly, to alleviate the problem of access to credit in the study area, awareness campaign and provision of such credit facilities at affordable level by the relevant stakeholders (State and Local Government authorities) could be an excellent performance in enhancing the marketing activities in the study area.

**Keywords:** Analysis; Cowpea; Marketing; Price-Trend; Market; Argungu

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### 1. Introduction

Agricultural production plays an important role in the economic development of Nigeria. However, several problems are associated with the various activities involved in the production and marketing sectors. The fundamental role of marketing in improving rural income and in the general development of any economy of the world cannot be overstated. In fact, one of the major roles of Agricultural marketing is to transport items of trade from surplus to shortage areas. Cowpea (*Vigna unguiculata*) is one of such materials of trade in the Nigerian Agricultural sector. Cowpea marketing includes all the activities involved in transporting cowpea from the area of production to the needed location by the final consumer. It includes series of business costs which are reflected in the proportions of the marketing margin.

These margins differ amongst brands, types, location and over time [1].

Cowpea (*Vigna unguiculata*) is one of the most ancient crops known to man. It is an important source of plant protein in the developing world and most especially in West Africa; it is the most important economically and nutritionally indigenous African legume crops, especially in West and Central Africa. The basic for the marketing structure of cowpea to be well organized and professionally planned cannot be over emphasized. It enhances the pace of economic development by boosting specialization, generation of foreign exchange earnings, expansion of an exchange economy, provision of returns and occupation opportunities aimed at marketing agents, [2].

In performing the roles of marketing, products pass through various marketing agents or intermediaries called market channels. These market intermediaries are the wholesalers and retailers and both play an important role in the marketing system [3]. Variability in product prices among markets could be unfavorable to the marketing system and the economy at large. It could cause resources allocation inefficiency among sellers and consumers depending on the source of variability. It might also upsurge poverty level between low income earners in the humanity [4, 1]. Price of cowpea is highly unstable between seasons and consumers pay different amounts for the same product in different markets separated by just a few kilometers [1]. Accordingly, prices of agricultural products differ from month to month and even from day to day. Prices likewise differ between different grades of a product and also vary between different markets.

Producers habitually assent to lower prices as they are unaware of the market prices or since they lack the time, money or resources to transport cowpea grains to the market [5]. Features influencing price setting are: grain quality, selling time, transport, storage, market tolls, and levies [6].

Sustainability of agricultural events is hinged on active price system. In the recent past, the market for agricultural produce in Nigeria has revealed a pattern of long-term price fall and short-term price instability [7, 1]. The instability in price of agricultural produces in Nigeria has been credited to several factors including variances in bargaining power among consumers, recurring earnings fluctuation amid sellers and consumers, seasonality of production, natural shocks such as flood, pests, diseases, and inappropriate response by farmers to price signals [8-10]. Thus, the broad aim of this study were to analyze cowpea marketing and price trends in some markets in the study area and the specific objectives were to:

- i. Describes the socio-economic characteristics of cowpea marketers in the study area
- ii. Identify the marketing channels of cowpea in the study area
- iii. Determine the trend in price of cowpea in rural and urban markets in the study area
- iv. Describe the constraint encountered in marketing of cowpea in the study area.

## 2. Methodology

### 2.1 The Study Area

The study was conducted in Argungu Local Government Area of Kebbi State, Nigeria. The area is situated along the Sokoto River with the geographical position of approximately Latitude 12° 44'N and Longitude 4° and 31' E. As of 2006, Argungu had an estimated population of about 47,064 thousand people [11], and most of them

are largely dependent on Agriculture as their main source of earnings. The area is a major agricultural center and the town is also a major local market center for rice, millet, sorghum, cowpea, fish, cotton, cattle, goat, and sheep.

Argungu, as the main city of the Local Government Council, has eleven districts which are; Alwasa, Gotomo, Gulma, Lailaba, Felande, Kokani North, Kokani South, Sauwa/kaurarsani, Tungar-zazzagawa, Bubuće and Galadima wards. Most of its inhabitants are Kabawa (a subgroup of the Hausa), but there are clusters of Fulani, Arewa (Arawa), and Tienga (Kengawa) people. Argungu is famous for its annual Argungu International Fishing Festival and Kanta Museum which carries a great history.

### 2.2. Sampling and Sampling Procedure

A single-stage sampling technique was used for sample selection. The stage involved the purposive selection of Kara market in Argungu town as a reference market while Felande, Gulma, Lailaba and Sauwa markets as the supplying markets from the selected districts. Finally, a simple random sampling technique was employed to select 20 respondents from each market. This brought a total of one hundred (100) marketers in all used as sample size.

### 2.3. Data Collection

Primary data was used for the study and was obtained through the structured questionnaires, interviews and market surveys to generate information on;

- a) Marketers socio-economic characteristics such as age, gender, household size, educational status, marketing experience, years spend in the business, business size, etc.,
- b) Constraints faced by the marketers,
- c) Mode and Costs of storage, Source of supply, Mode and Costs of Transportation and other Handling costs, and
- d) The monthly sales price of cowpea from various markets for the previous year (12 month).

### 2.4 Analytical Techniques

The tools of analysis used to achieve the objectives of the study were; Descriptive statistics and Spatial price model.

## 3. Results and Discussions

### 3.1 Socio-economic Characteristics of Cowpea Marketers

Age is one of the demographic factors that are useful to describe traders experience and networking. Table 3.1 shows the age distribution of sampled traders. Majority of the marketers (67%) have age range of 20-39 years. The minimum age observed was 18 years, the maximum was 67 years and the average were 34 years. The average age of 34 years obtained from the cowpea marketers (Table 3.1) indicate that they were still in their active productive years which could lead to high level of market efficiency. This implies that the marketers are strong, agile, and active and can participate adequately in marketing activities.

**Table 3.1:** Distribution of Cowpea Marketers according to their Socio-economic Characteristics

Variable	Frequency	Percentage (%)
<b>Age</b>		
< 20	3	3.00
20 – 29	41	41.00
30 – 39	26	26.00
40 – 49	18	18.00
50 and Above	12	12.00
<b>Household Size</b>		
1-5	42	42.00
6-10	36	36.00
11-15	12	12.00
16-20	8	8.00
21 and Above	2	2.00
<b>Cooperative membership</b>		
Non member	73	73.00
Member	27	27.00
<b>Educational level</b>		
Non formal education	38	38.00
Primary education	21	21.00
Secondary education	30	30.00
Tertiary education	11	11.00
<b>Marital Status</b>		
Single	27	27.00
Married	69	69.00
Divorced	4	4.00
<b>Access to Credit</b>		
No Access	79	79.00
Access	21	21.00

Source: Field survey, 2018

The significance of household size in agriculture hinges on the fact that there is appreciable number of persons and availability of labour supply to accomplish various farm operations for cowpea production and marketing, the amount of farm produce retained for domestic consumption and the marketable surplus are all determined by the size of the farm household. Table 3.1 shows the distribution of cowpea marketers by household size. Majority of the marketers 42% had household size that ranged from 1-5 persons in their family. The maximum family size observed was 23 persons with a minimum of 1 person and average of 8 persons. This implies that the marketers in the study area might have advantage of family labour availability if many household members participate in marketing activities.

Table 3.1 revealed that the majority of cowpea marketers (about 73%) do not participate in any cooperative association. The minimum years of marketing association was 1 year, the maximum was 25 years and the average were 8 years. The effect of this result where majority (73%) do not belong to any cooperative is that most of the cowpea marketers in the study area do not enjoy the assumed benefits related to co-operative societies via merging of resources together for worthy expansion, efficiency and effective management of resources in addition to profit maximization.

Level of education regulates the level of chances available to improve livelihood plans, improve food security then lessen the level of poverty. Result presented in Table 3.1 revealed that about 38% of cowpea marketers had Non formal education, about 21% of the respondents had only primary education, and 30% had secondary education while about 11% had tertiary education. However, altogether about 62% of the marketers had formal education. This indicates that the cowpea marketer's educational level is a little low.

In rural communities, marriage is a respected and prestigious institution that bestows social status and recognition on people. The result in Table 3.1 shows the distribution of the marital status of marketers in the study area. The significance of marital status with regards to agricultural production and marketing may perhaps be described in terms of source of family labour. It is expected that family labour may possibly be available with married household heads. Thus majority (69%) of the cowpea marketers are married, 27% of the cowpea marketers were single while 4% were divorced. This implies that about 69% of the marketers interviewed in the study area have family responsibilities.

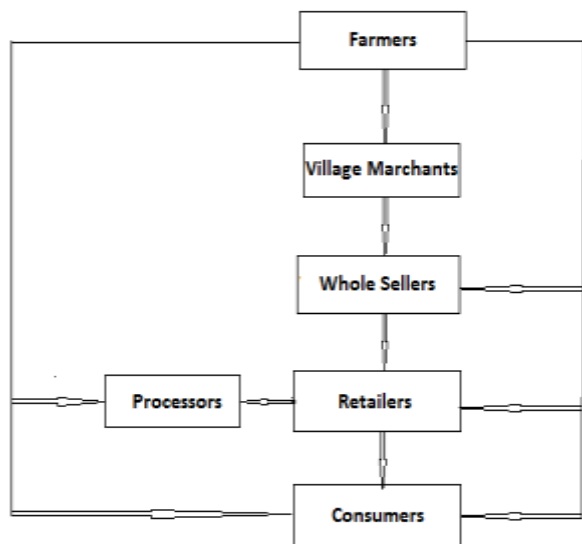
Adequate funding is required by marketers to finance all cowpea marketing activities. However, a large number of marketers face serious shortage of funds to finance their cowpea marketing activities. They obtained their funds through formal and informal sources as presented in Table 3.1 the results indicated that the majority (79%) of marketers had no access to credit to finance their cowpea marketing activities while 21% had access to credits. This low access to credit could be attributed to the fact that government do not often grants financial credit to large numbers of marketers in the rural areas.

### 3.2 Marketing Channels of Cowpea in the Study Area

Knowing the channels of marketing cowpea is a key to the success of many farmers and commodity marketing organizations. Cowpeas are produced mainly by small-scale farmers in the study area. The study found that a typical farmer in the study area will sell less than one bag (80-100 kg) at period. Sales are made primarily to farm-gate or local traders performing most bulky work. Producers may sell their full sacks directly to either rural

assemblers or to rural-urban wholesalers. These two sets of traders also act as commission agents. Sometimes producers sell to other farmer-traders.

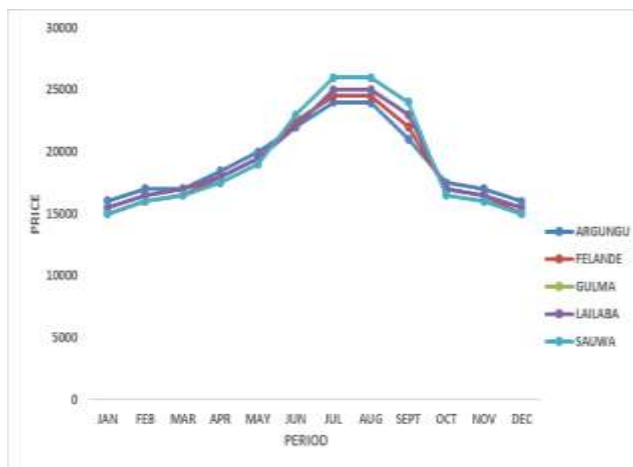
Farmers living close to urban centers sell the produce directly to urban consumers or to urban-retailer commission agents who in turn, sell to processors that make the cowpea into finished ready to serve product and consumers. This implies that the principal players in cowpea marketing channels in the study area are producers (farmers), Village Merchant, Wholesalers, Retailers, Processors and Consumers. Farmers also sale directly to wholesalers and retailers which in turn sale to processors and consumers or from farmers directly to consumers in some cases as shown in Figure 3.1 below.



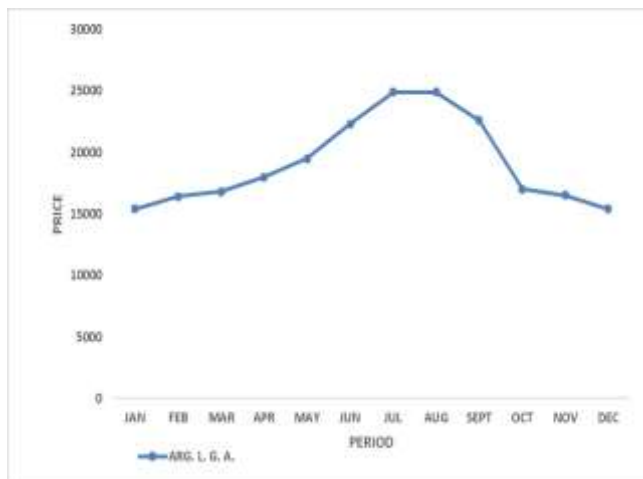
**Figure 3.1:** Cowpea marketing channels in the study area. Source: Field survey, 2018

### 3.3 Price Trend Analysis of Cowpea Marketing

Price trend helps to predict the future movement of a stock based on past data. It is based on the idea that what happened in the past years gives traders an idea of what will happen in the future. The price trend showed the pattern of price variability of cowpea produce across the markets selected in the study area. One important thing to note is that their pattern of price variation is seasonal in nature Figure 3.2.



**Figure 3.2:** Cowpea Price Trends in the Five Selected Markets. Source: Field survey, 2018



**Figure 3.3:** Average Price Trend of Cowpea in The Study Area. Source: Field survey, 2018

Figure 3.2 depicts the nature and patterns of variability of cowpea marketing in selected markets over a specified period of Twelve Months (2018). The result showed undulated fluctuations in the price of cowpea during the period of investigation. There is harmony in price dispersion of cowpea in rural and urban market. This means that, the pattern of fluctuations in price of cowpea is almost similar for urban and rural markets. This can be attributed to the fact that the crop has so many uses. The price is highest (₦27,000/bag) during the off-season (July and August) and lowest (₦15,000/bag) during the harvest period (October, November, December and January) in most cases. The price of cowpea is lowest in those markets that are closer to the production side of the crop. In May the price of cowpea sharply increases in the study area as can be seen by the rise in price from ₦19,000 to ₦22,500 per bag. Resulting in inconsistencies nature in price of cowpea in rural and urban markets; it is proposed that, there is a strong sign of symmetric price transmission mechanism or market integration in the prices.

### 3.4 Marketing Constraints of Cowpea Traders

The major marketing problems that the sampled cowpea traders faced in the study area were lack of access to credit facilities, lack of market information, inadequate marketing infrastructure, provision of quality product and poor storage facilities as presented in Table 3.2 which was then ranked according to severity.

**Table 3.2:** Constraints faced by Cowpea Marketers

Constraining Factors	Frequency	Percentage	Rank
Poor access to credit	93	25.69	1 <sup>st</sup>
Poor market information	89	24.59	2 <sup>nd</sup>
Inadequate market infrastructure	82	22.65	3 <sup>rd</sup>
Provision of quality product	58	16.02	4 <sup>th</sup>
Poor storage facilities	40	11.05	5 <sup>th</sup>
<b>Total</b>	<b>362*</b>	<b>100.00</b>	

Source: Field survey, 2018 **Note:** \* Multiple Responses

Lack of access to credit was one of the marketing problems limiting operation and expansion of trading activities in the study area as reported by sample traders and ranked 1st by majority (25.69%) of the respondents. Religious factor was mainly associated with problem in accessing credit as most of the traders are Muslims, thus did not like to take loan with interest. Likewise, absence of collateral, high interest rate of micro finance institutes was among the other reasons. Because of these reasons, about 25.69% of sampled respondents did not obtain any credit from financial institution and credit is a very strong factor that is needed to acquire or develop any enterprise; its availability could determine the extent of marketing and production capacity.

Market realities is a market enabling function that plays bigger role in refining marketing decisions of traders through lessening of information asymmetry. However, 24.59% of traders opine lack of market institution responsible for providing market information even though they were prepared to pay for services. This was ranked 2nd. Sellers and buyers are not well informed about the sources of food supply and thereby reducing potential efficiency in the markets. About 22.65% of the cowpea marketers indicated inadequate marketing infrastructure which ranked 3<sup>rd</sup>. Facilities such as clean environment, communication facilities, and health facilities, fire facilities, financial institutions, security services, water and toilets facilities are lacking in majority of the markets.

Delivery of quality products by producers to the market were trailed by good prices. On the other hand, about 16.02% of the traders stated the existence of products quality problem in the study area and was ranked 4th.

Thus, the problem compelled producers to accept lower prices unlike the neighboring growers producing the same product. Consideration to unified extension system that can accommodate grain marketing is very significant in the study area. About 11.05% of the marketers indicate poor storage facilities as constraints across the markets investigated. This constraint has been ranked the 5th challenge across the markets studied. Good storage and warehousing facilities such as lock-up stores, silos, barns are lacking in most of these markets.

### 4. Conclusion

The study revealed marketers in the study area are very energetic (average age of 34 years), majority were married and have formal education (69% and 62% respectively) which indicates marketers in the study area are generally responsible with level of education that could encourage the adoption of new innovations. Given the result of this study, the most effective way to regulate cowpea price fluctuations over time and between market-pairs is through efficient cowpea storage system which will reduce storage cost, asymmetric market information to enable traders knows when to store and the quantity to store. Inter-market price difference can also be reduced through well-organized transportation system. It could be concluded that the pricing system of cowpea marketing in the study area are slightly inefficient. This is because the marketers (wholesalers) were making more than normal profit in most cases than the other marketers. This price spread across different markets could be attributed to inadequate information dissemination among marketers about the price of cowpea in different markets. Poor access to credit as a constraint to cowpea marketers was ranked 1<sup>st</sup> in the study area as revealed from the result, therefore to alleviate the problem of access to credit in the study area, awareness campaign and provision of such credit facilities at affordable level by the relevant stakeholders (State and Local Government authorities) could be an excellent performance in enhancing the marketing activities in the study area.

### 5. Acknowledgement

We sincerely wish to express our deep appreciation and gratitude to Kebbi State University of Science and Technology, Aliero for providing us with enabling environment to conduct the research.

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