

## Original Article

# Marketing analysis of cabbage in Kaduna metropolis, Kaduna state, Nigeria

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### ABSTRACT

The study examined marketing analysis of cabbage in Kaduna metropolis. Purposive and random sampling techniques were used to select the 100 cabbage marketers used for this study. Data were collected from the cabbage marketers using structural questionnaires. The data were then analyzed using descriptive statistics and market margin analysis. The result indicated that about 69.0% of marketers were male and about 100.0% are between the ages of 21–60 years. The market margin analysis values that ranged between 30.33 and 31.49% showed that cabbage marketing has a good profitable margins in the study areas, the result of channel of marketing cabbage revealed that the main market chain in cabbage marketing is from the farmers who are the producers to wholesalers to retailers and finally to consumers. However, the result also revealed that cabbage marketers in the study area were also faced with three major challenges namely; spoilage of cabbage, bulkiness lack of preservation facilities, and poor storage facilities. It is recommended that cabbage marketers should form cooperative society to pool their resources together to enable them find solution to the identified problems to be more efficient in the marketing of cabbage.

**Keywords:** Analysis, cabbage, constraints, Kaduna, marketing

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## INTRODUCTION

Cabbage (*Brassica oleracea*) is an important vegetable crop that is widely grown in across the World. It is one of the main cash crops of the season. Cabbage is commercially cultivated for its large and leafy head that is rich in Vitamin C. It is generally believed to have originated from the wild, leafy, and non-heading types of vegetable which are found growing in Europe.<sup>[1]</sup> It is regarded as the most important member of the Cruciferae or mustard family and has remained one of the world's leading vegetable crops.

Vegetables are nutritionally important to man as they provide the much needed vitamins, minerals, and fiber. They are important protective food and highly beneficial for the maintenance of health and prevention of diseases. They contain valuable food ingredients which can be successfully utilized to build up and repair the body. Vegetables are valuable in maintaining alkaline reserve in the body. They are valued mainly for their high vitamin and mineral contents. There

are different kinds of vegetables. They may be edible roots, stems, leaves, fruits, and seeds. Each group contributes to diet in its own way. Fleshy roots are high in energy value and good sources of Vitamin B. Seeds are relatively high in carbohydrates and proteins. Leaves, stem, and fruits are excellent sources of minerals, vitamins, water, and roughage. The level of vegetable consumption in Nigeria is rising annually due to greater appreciation of their food value.<sup>[2]</sup> A distinct class of vegetables in Nigeria is the exotic vegetables. They are known for their unique taste, nutritional value, and various health benefits. They help keep a balance between the fluids of the body. Agricultural markets provide an important mechanism for efficient coordinated economic exchange.<sup>[3]</sup> The well-functioning of the horticulture marketing system depends on its organizational structure and how efficient the marketing channels are in moving products from farm-gate to final consumers at prices that ensure fair returns to all market participants.<sup>[4]</sup> Structure, conduct, and performance analysis is key to understanding how the cabbage market in Kaduna State functions in terms of its structure and the behavior of the

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market participants based on the type of market structure they are exposed to. The market structure and conduct of market actors determine the performance of the market in terms of prevailing prices, net returns, margins, and costs.

However, there is a little empirical information on the structural organization of the cabbage market in Kaduna State, the nature of different market participants, and the subsequent impacts on the performance of the market. There might be a number of reasons as to why only a few firms supply more agricultural products in the country. For example, the reasons may be that the government licenses only few. Cabbage is one of the most popular vegetables in the world because of its adaptability to a wide range of climatic conditions and soil types, ease of production and storage, and its food value. In Nigeria, production of this important vegetable is mostly carried out in the north especially Plateau State.<sup>[5]</sup> Kaduna state is the home of exotic vegetables including cabbage because of its cool weather condition. Other exotic vegetables cultivated on the Plateau include: Lettuce, cucumber, and carrot. They are termed exotic because these are species of vegetables that are not indigenous to Nigeria. They are primarily cultivated in the temperate regions of the world.

Nigeria is blessed by nature with vast resources; both human and land to boost optimum output in agriculture to be able to adequately cater for the food/diet requirement of her populace. The weather/climate condition supports the production of most crops. Majority of Nigerians have annexed these endowments of nature by going into agriculture as more than 70% of the population is involved in farming.<sup>[6]</sup> Yet poverty in the land, especially in the northern part of the country, is paradoxically equal to the percentage of the populace involved in farming. Majority of these farmers reside in the rural areas and poverty is more predominant in these areas.<sup>[7]</sup> They found that an increasing number of Nigerians are living in absolute poverty in the rural areas. This logically connotes that since majority of the populace in the rural areas are farmers, then the fangs of poverty are on these farmers despite the natural endowment. Some of the contributory factors leading to farmers poverty in Nigeria are that agricultural holdings are small and scattered, and farming is carried out with simple tools. Large-scale agriculture is not common. Smallholder farmers, who use simple production techniques and bush-fallow cultivation, cultivate areas of one-half to two hectares each and contribute two-thirds of farm production.<sup>[8]</sup>

The cash earned from this enterprise can contribute significantly to food security at the household level and enable farmers to attain a degree of financial independence, yet poverty still looms. Thus, probing the question, are these farmers producing optimally and efficiently. This study therefore examines the profitability analysis of the cabbage marketing in Kaduna metropolis.

## METHODOLOGY

### Study Area

The study was conducted in Central, Kawo, Sabo, Kakuri, and Mando markets. The five markets are located within Kaduna metropolitan town. Kaduna state is located within the Guinea Savannah Region on latitude 10°32' E and longitude 7°17' N. It has an estimated annual rainfall of about 1000–1500 mm per annum and a land mass area of about 3174.5 sq/km. The state has contributed immensely to the Nigerian economy especially in the area of agricultural production of major crops such as cabbage, tomato, yam, cassava, maize, millet, and pepper. The selected markets are known for marketing of various agricultural products and by-products such as garri, cassava flour, yam flour, cabbage, tomatoes, pepper, maize, beans, yam, sweet potatoes, Irish potatoes, onions, okra, and other vegetables. The markets have several tribes and ethnic groups such as Yoruba, Hausa, Ibo, and Fulani land other locals interacting together harmoniously.

### Sampling Procedures

Two stage sampling techniques were used for the study. The first of sampling technique is the purposive selection of five markets in Kaduna metropolis. The markets selected purposively are Central, Kawo, Sabo, Kakuri, and Mando markets, respectively. The second stage of sampling is the random sampling of cabbage marketers in the selected markets. 20 cabbage marketers were selected from each market making a total of 100 cabbage marketers that were used for the study.

### Method of Data Collection

Primary data were used for the study. The primary data were collected through the use of well-structured questionnaire. Personal interview was also conducted for illiterate people who can neither read nor write.

### Analytical Tools

The analytical tools used to analyze the data to achieve the objectives of the study include: Simple descriptive statistics, flow chart, and market margin analysis.

### Simple Descriptive Statistics

Simple descriptive statistics such as tables, frequency distribution, and percentage were used to achieve objectives I and IV.

### Flow Chart

Flow chart was used to achieve objectives II of the study.

### Market Margin Analysis

Marketing margin analysis was used to achieve objective III of the study.

The market margin analysis will be specify as follows:

$$MMC (T) = \frac{SPC - CPC}{SPC} \times 100$$

Where MMC = Market margin for cabbage

SPC = Selling price of cabbage

CPC = Cost price of cabbage.

## RESULTS AND DISCUSSION

### Socioeconomic Characteristics of the Respondents

The information on the socioeconomic characteristics of cabbage marketing in Kaduna metropolis was considered. Information on variables such as age, gender, education level, and marketing experience was gathered for the study.

#### Age of the Respondents

Table 1 shows the distribution of respondents based on their age. About 52.00% of the respondents are between the age of 21 and 30 years, 29.00% have an age range of between 31 and 40 years, 13.00% of the respondents age ranges between 41 and 50 years, while only 6.00% are 51–60 years. The result reveals that 100.00% of the cabbage marketers are still in their working age group of between 21 and 60 which signifies that they still possess the energy and strength to carry out their marketing activities effectively. The mean age value for the cabbage marketers was 32.66 which fall sort of the mean age of 42.50 and 45. 25 for wholesalers and retailers of cabbage marketing in Abia state of Nigeria as reported by Osondu *et al.*<sup>[9]</sup> in their study.

#### Gender of the Respondents

Table 1 indicated that 69.00% of the respondents are males while 31.00% are female. This shows that cabbage marketing is not gender bias in the study area. This result revealed that the males are more involved cabbage marketing than the females in Igabi local government area. The result was in agreement with the findings of<sup>[10]</sup> which stated that men were the main providers of the household and supports the family more than women.

#### Marital Status of Respondents

Table 1 showed that 49.00% of the respondents are married, 34.00% are still single, 12.00% are widow, and 5.00% are divorce or divorcee. This reveals that married people are more into marketing of cabbage than the singles. This might be as a result of the singles migrating from place to place while the married are looking for income to sponsor their children to schools, settle medical bills, feeding, and shelter.

#### Household Size of Respondents

Table 1 shows that 50.00% of the respondents had household size that ranges between 1 and 5 persons, 38.00% of the

**Table 1: Socioeconomic characteristics distribution of the respondents**

Variable	Frequency (F)	Percentage
Age range		
21–30 years	52	52.00
31–40 years	28	28.00
41–50 years	13	13.00
51–60 years	06	06.00
Gender		
Male	69	69.00
Female	31	31.00
Marital status		
Single	34	34.00
Married	49	49.00
Divorcee	05	05.00
Widow	12	12.00
Household size		
1–5 persons	50	50.00
6–10 persons	38	38.00
11–15 persons	12	12.00
Educational level		
No formal education	19	19.00
Primary education	24	24.00
Secondary education	28	28.00
Tertiary education	29	29.00
Year of experience		
1–5 years	60	60.00
6–10 years	37	37.00
11–15 years	03	03.00
Total	100	100.00

Field Survey, 2022

respondents had household size that ranges between 6 and 10 persons, and 12.00% of the respondents had household size that ranges between 11 and 15 persons. The result revealed that about half of the respondents have household size that ranges between 6 and 15 people which shows that their labor need may be complemented by the family in addition to hired labor,<sup>[10]</sup> stated that family size or household size is the total number of individuals who live within and feed in the household. A household is made up of head, wives, and children and to some extent family relatives.

#### Educational Status of the Respondents

Table 1 shows that 29.00% of the respondents had tertiary education, 28.00% of the respondents received primary education, 24.00% of the respondents had secondary education, and 19.00% of the respondents had no formal education. The result revealed that about 81.00% of the cabbage marketers had

formal education which might have positive effect on their rate of accepting new innovations concerning marketing strategies. This implies that reasonable populations of the respondents are educated and due to their education level, it will be easier to adopt new technologies in marketing and deal with problems of risk and uncertainty in marketing.<sup>[10]</sup>

**Years of Experience of Respondents**

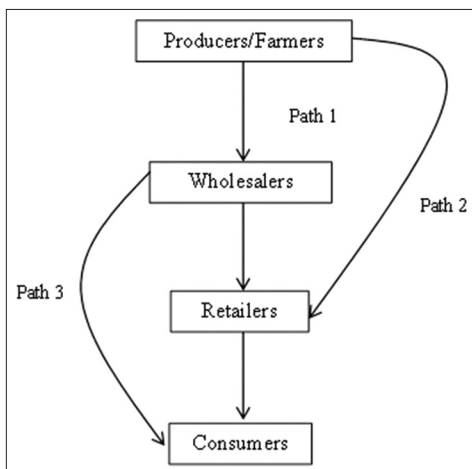
The result of years of experience of respondents is presented in Table 1. The result revealed that 60.00% of the respondents have 1–5 years “experience in cabbage marketing 37.0% have 6–10 years” experience, and 3.00% have about 11–15 years of experience in cabbage marketing This showed that majority of the cabbage marketers in the study area have an experience in cabbage marketing that is <6 years and above which showed that only few of the marketers have good knowledge of cabbage marketing as well as having good management skill just as the saying goes that experience is the best teacher. This also implies that farmers with longer years of experience are less cautious of undertaking new risk, thus implore and adopt new method to enhance their willingness and eagerness to economic position.

**Channel of Marketing Cabbage in the Study Area**

The marketing channel for cabbage in the study area is presented in Figure 1. The figure shows that the channel of cabbage marketing is interwoven with about three different marketing chains identified. The first chain is from the farmers to wholesalers to retailers and finally to the consumers. The second path is that the retailers by cut the wholesalers and purchase cabbage at the farm gate from the farmers directly while the third path is that sometimes the consumers by cut the retailers to buy cabbage from the wholesaler directly.

**Marketing Margin Analysis of Cabbage in the Study Area**

The result of marketing margin analysis of cabbage marketing in Kaduna metropolis is presented in Table 2. The result shows



**Figure 1:** Marketing channels for cabbage in the study area

that the marketing margin in the five markets fell between the ranges of 30.33 and 31.49. The lowest market margin per bag of cabbage was recorded for Central market and highest was obtained for Mando market. The result signifies that there is differential in both the cost and selling prices of cabbage in all the five markets. The result revealed that the entire market margin in all the markets was low which signifies that cabbage marketing in the study area has low profit. Marketers of cabbage in the study area only get small share of the profit.,<sup>[11]</sup> asserted that high marketing margin reflects a high level of profitability.

**Constraints Hindering Marketing of Cabbage in the Study Area**

The result of Table 3 shows the various constraints hindering cabbage marketing in the study area. Three major problems were identified to be the major constraints militating against cabbage marketing in the study area. Cabbage spoilage accounted for 76.00% of the constraint hindering cabbage marketing as indicated by the marketers which was followed closely by 74.00% of the respondents who identified lack of preservation facilities as the second major constraint militating against the sales of cabbage in the study area. The third major constraint against cabbage marketing in the five selected markets is the lack of storage facilities (70.00%). Other constraints identified but not that serious include poor and low sales of cabbage (40.00%) and high cost of transportation (38.00%) and fluctuation in cabbage price. (38.00) According to the result, the low sales observed might be as a result of

**Table 2: Marketing margin of cabbage in the study area per bag**

Market	CP (Naira)	SP (Naira)	MM	MM (%)
Central	8500.00	12200.00	0.3033	30.33
Kawo	9600.00	14000.00	0.3143	31.43
Sabo	9400.00	13700.00	0.3139	31.39
Mando	87000.00	12700.00	0.3149	31.49
Kakuri	9100.00	13200.00	0.3106	31.06

Field survey 2022. CP: Cost price for a bag of cabbage in Naira, SP: Selling price for a bag of cabbage in Naira, MM: Marketing margin

**Table 3: Constraints hindering cabbage marketing in the study area**

Problem	*Frequency (F)	Percentage
Price fluctuation	38	38.00
Spoilage of cabbage	76	76.00
Lack of storage facility	70	70.00
High transportation cost	38	38.00
Poor and low sales	40	40.00
Lack of preservation facility	74	74.00

Field survey, 2022. \*Multiple responses

high selling price of cabbage and dwindling in the economy of the nation that resulted into scarcity of money which force the citizens to only purchase essential commodities like major foodstuffs. The high spoilage of cabbage experienced in this study may be attributed to the fact that both storage and preservation facilities were lacking in the study area.

## CONCLUSION

The study was carried out to examine the analysis of cabbage marketing in five selected markets in Kaduna metropolis of Kaduna state. Primary data were collected by the use of structured questionnaires and personal interview. The result showed that 100.00% of marketers are in their active age of between 21 and 60 years, while about 81.00% of the marketers had one form of education and the others. Three paths of channel of marketing were identified. The result of the marketing margin showed that cabbage marketing is profitable venture in the study area. However, spoilage of cabbage, lack of preservation facilities, and lack of storage facilities were identified as the major constraints hindering cabbage marketing in the study area. Based on the result, it is concluded that cabbage marketing in the study area is quite profitable and a good venture to imbibe in for self-reliance and self-employment. Based on the result gotten from this study, the following recommendations are therefore suggested: There is a need for a processing and preservation facilities to be provided so as to reduce the level of spoilage of cabbage and loan facilities should be provided to the marketers to enable them expand their business.

## REFERENCES

1. Grubben T, Denton MM. Marketing system of marine fish in Bangladesh. *Bangladesh J Agric Econ* 2016;24:127-42.
2. Haruna N. *Marketing of Agricultural Products*. 5<sup>th</sup> ed. New York: McMillan Publishing Company; 2013. p. 624.
3. Dorward K, Kydd WE. *Principles of Marketing*. 10<sup>th</sup> ed. New Delhi: Hall of India Pvt. Ltd.; 2015. p. 5-12.
4. Feyissa Y. Impact of government financial incentives on peri urban vegetable production in Botswana. *J Hortic For* 2019;3:264-9.
5. Ogedegbe D, Ogbomo L. *A Primer on Marketing Channels and Margins*. New York: Lyme Rimer Publishers Inc.; 2013.
6. Usman D. In: Buckley A, editor. *Empirical Analysis of Market Concentration Across the Industry in the Essence of Business Economics*. New Delhi: Prentice-Hall; 2015. p. 82.
7. Aigbokhan M. Assessment of production constraints, crop and pest management practices in peri-urban vegetable farms of Botswana. *Egypt Acad J Biol Sci* 2013;1:1-11.
8. Metz S. *Measures of Market Concentration*. Available <https://www.revisionguru.co.uk/index.htm> [Last accessed on 2019 Sep 15].
9. Osondu CK, Nwadike FC, Ijioma JC, Udah SC, Ugboaja CI. Marketing performance of salad vegetables: The case of cabbage marketing in Abia State, Nigeria. *Int J Agric Sci Res Technol Exten Educ Syst* 2014;4:151-62.
10. Rahman SA, Ogunbile AO, Tabo R. Factors affecting adoption of KSA III and ICS.V 400 sorghum varieties in Guinea Sudan Savannah of Nigeria. *J Crop Res Agro For Environ* 2002;1:21-30.
11. Abbot JC, Makeham JP. *Agricultural Economic and Marketing in the Tropics*. London: Longman Group Ltd.; 1986.



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