



UNLOCKING THE ECONOMIC BENEFITS OF CHILLI PEPPER (*Capsicum Annum*)  
MARKETING: EVIDENCE FROM RINGIM LOCAL GOVERNMENT AREA OF  
JIGAWA STATE, NIGERIA

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ABSTRACT

The study analysed the economic benefits of Chilli pepper marketing in Ringim Local Government of Jigawa State, Nigeria. A two-stage sampling technique was employed to select 100 Chilli pepper marketers for this study. The study comprised of two major market actors which are wholesalers and retailers. Primary data were collected using structured questionnaires. The data collected were analysed using descriptive statistics, gross margin, and market margin analysis. The results revealed that most of the Chilli marketers were females (62.0%), married (88.0%), and had formal education. The study revealed a net market margins of ₦1,737.3 and ₦1,723.7 per basket for chilli pepper wholesalers and retailers respectively. The marketing efficiency of 163.78% for retailers while 178.48% for wholesaler which shows resources were effectively utilized in the study area. The study concludes that Chilli pepper marketing in the study area was profitable. Even though the profit is based on seasonality with more profit margin during the festive periods, while the high marketing efficiency ratios for both wholesalers and retailers reveals the effective use of resources. The study recommends that males should be encouraged to participate more in Chilli pepper marketing to ensure gender balance of the trade. Create financial access linkage for Chilli pepper marketers through relevant stakeholders such as microfinance organizations. Provision of training through extension agents on ways to improve shelf life of Chilli pepper to minimize spoilage.

**Keywords:** Benefits, Chilli, Marketing Pepper and Potentials

INTRODUCTION

Marketing has its own economic value by giving it form, time, place, utility to products and services (Prasetyo *et al.*, 2023). A market in economic terms refers to any arrangement that brings the interaction of buyers and sellers. This interaction could be direct contact or indirect contact (letters, telephone and fax) between buyers and sellers. The market is generally believed to be a point or avenue for buying and selling, a place where demand and supply forces interact. These interactions determine the market price and quantity of the product. A pair or set of goods would fall under the same market and interact amongst themselves based on how close they are in terms of the satisfaction derived from them by the consumers i.e. how substitutable they are (Putra *et al.*, 2021). Chilli pepper, also known as *Attaruhu* in northern Nigeria, is one of the veggies farmers believe they are not losing anything on its production (Abubakar, 2023). Pepper is a common vegetable utilized across the world. Pepper cultivation is one of the most profitable industries in Nigeria and around the world. These peppers are known as *ataroho*, *shombo*, *ata ijosi*, and *tatase* in Nigeria (Veggiegrow, 2023).

The distribution of pepper over time in Nigeria has helped in facilitating its availability to areas where it is not heavily produced. Some of the major distribution channels of pepper in Nigeria follow the normal chain of from producers to the wholesalers, retailers and finally the consumers



(Lawal *et al.*, 2021). According to Yahaya *et al.*, (2020) the economic transaction of pepper in urban areas of Nigeria is conducted through wholesale to retail markets. However, some considerable amount is sold in small street markets through informal channels such as vacant fields, roadsides stalls and on mats. These informal channels contribute to the widespread of the commodity's accessibility. Pepper is one of the most difficult crops to preserve because their post-harvest life span is short; without drying or other preservation method, a great proportion often end as waste. This spoilage represents not only a loss for producers but also contributes to increased market prices and diminished profitability for traders (Henri-Ukoha *et al.*, 2023). Another challenge in Chilli pepper marketing that should be addressed is the lengthy and marketing chain of the participants as it hinders marketing efficiency and contribute to increased consumer prices (Yahaya *et al.*, 2020), while on the demand side, consumers are faced with sky rocketing prices of Chilli pepper.

Despite, the prices fluctuation, there is still limitation in the research and it has not been deduced if this phenomenon is beneficial to the producers (Diansari *et al.*, 2023). Chilli pepper marketing in Jigawa State by marketers are faced with notable losses. Significant proportion of the commodity is lost to spoilage while awaiting sale, primarily due to inadequate preservation and storage techniques (Adewoyin *et al.*, 2023). Chilli pepper holds substantial importance in Nigerian agriculture, research on its marketing remains limited. Only few studies have been conducted on the analysis of Chilli pepper marketing in Nigeria. For example, studies by Oyewo *et al.* (2018), and have examined profitability and efficiency while Yahaya *et al.* (2020) analysed the economic analysis of Chilli pepper processing, though these studies largely focus on production rather than comprehensive market analysis. The present study aims to address these gaps by providing insights into marketing efficiency, price dynamics, and structural challenges in the Chilli pepper supply chain. The findings will offer valuable information for policymakers and researchers seeking to improve Chilli pepper marketing systems in Nigeria.

### **Objectives of the study**

The broad objective of the study was to analyse the economic benefits of Chilli pepper marketing in Ringim local government area of Jigawa State, Nigeria, while the specific objectives were to:

- i. describe the socio-economic characteristics and market information of Chilli marketers;
- ii. describes the marketing channels of Chilli marketing,
- iii. determine the cost and returns from chilli pepper marketing;
- iv. identify constraints faced by Chilli pepper marketers in the study area

## **MATERIALS AND METHODS**

### **The Study area**

The study was carried out in Ringim Local Government Area (LGA) of Jigawa State, Nigeria. Established in 1976, Ringim is geographically located between latitudes 11°–13° North and longitudes 8.0°–10.15° East. Ringim is also recognized as an educational and commercial center within the state. Agriculture is the main occupation of residents in Ringim local government area, engaging approximately 70% of the population, while the remaining 30% are involved in other economic activities (National Population Census, 2006). The agricultural calendar in the area is influenced by two distinct climatic seasons: the rainy season and the dry season (Harmattan). The rainy season begins around May or June and ends in September or October while the



Harmattan season, characterized by cold, dusty winds blowing from the Sahara Desert, starts from late December to March. Annual rainfall in the area ranges from approximately 600 to 900 mm, and temperatures can drop to between 12°C and 18°C in January, particularly during the peak of the Harmattan. The diversity of crop production in Jigawa State reflects both seasonal patterns. During the rainy season, farmers cultivate crops such as millet, sorghum, cowpea, groundnuts, sesame, rice, maize, sweet potatoes, Bambara nuts, watermelon, cassava, cotton, okra, and Roselle. The dry season farming production include tomatoes, pepper, onions, wheat, sugarcane, carrots, cabbage, lettuce, maize and a host of other leafy vegetables. This dual-season farming practice contributes significantly to food security and the local economy.

### **Sampling procedure and sample size**

A two stage sampling procedures was employed for this study. The first stage involved purposive selection of three (3) markets, based on high concentration of Chilli pepper marketing activities, which are Ringim, Sankara and Beguwa respectively. The second stage involved random selection random selection of marketers from the selected locations, while home based marketers were also randomly selected for this study. A total 100 Chilli pepper marketers were selected for the study.

**Table 1: Sampling frame and size selection for chilli pepper marketers in the study area**

<b>Market Location</b>	<b>Sampling Size</b>
Ringim	48
Yan Dutse	13
Sankara	20
Home based marketers	19
<b>Total</b>	<b>100</b>

**Source:** Field Survey (2024)

### **Method of data collection**

Data for the study were collected through the use of a structured questionnaire administered through trained enumerators. Data collected includes socio-economic characteristics of the Chilli pepper marketers, quantities of inputs used and the costs, quantity of output, information on marketing channels and constraints associated with Chilli marketing in the study area.

### **Analytical techniques**

The analytical tools that were used to achieve the objectives of this study are descriptive statistics, market margin, gross margin analysis, and marketing margin. Gross margin was used to determine profitability as well as to determine actual performance of the enterprise. Gross margin refers to the total income derived from an enterprise less the total variable cost incurred in the enterprise. It is total sales less total variable cost of production and is specified as:

$$GM = \text{Total Sales} - \text{Total variable cost} \quad \dots(i)$$

$$\text{Total variable cost} = C1 + C2 + C3 + C4 + C5 + C6 \quad \dots(ii)$$

Where;

C1 = Cost of Chilli pepper produced, C2 = Cost of seasoning and other spices, C3 = Cost of transportation, C4 = Cost of packaging, C5 = Cost of labour, C6=Cost of storage.



$$\text{Marketing margin (\%)} = \frac{\text{Selling price of pepper} - \text{Cost price of pepper}}{\text{Selling price of pepper}} \times 100 \quad \dots \text{(iii)}$$

## RESULTS AND DISCUSSION

### Socio economic characteristics of Chilli pepper marketers in the study area

The result in Table 2 shows the socio-economic characteristics of chill pepper marketers in the study area. Age is a pivotal demographic factor that significantly affects the efficient allocation of resources, reflecting individuals' capacity to work, willingness to progress and attitudes towards various socio-economic aspects. The mean age for wholesalers were within the age brackets of 36-42 years, while that of retailers were between 21-28 years. This shows marketers were in their active productive age in the study area. The finding is in line with Alabi and Anekwe (2023) where he discovered that Chilli farmers were in their active productive age. Gender dynamics plays a crucial role in the market structure, most (62%) of Chilli pepper marketers were females while (38%) were males, which shows Chilli pepper marketing was a female dominated enterprise in the study area. This is contrary to the finding of Olukotun *et al*; (2022) observed that most of the Chilli pepper marketers were males in a similar study in Kaduna State, Nigeria. Most wholesalers (86%) and retailers (62%) were married, this finding corroborates with that of Tahir *et al*. (2021) where they discovered that majority of Chilli farmers were married. The study shows that a significant majority of wholesalers and retailers involved in chili pepper marketing possess secondary education, comprising (44%) of wholesalers and (60%) of retailers. The results reveals that most (32%) of wholesalers had tertiary education, (14%) of them reported having no formal education, while (10%) had completed only primary education. The retailers reported that most (28%) had tertiary education, 10% had no formal education, while 2% had primary education in the study area.

Furthermore, the study reveals that majority (92%) of wholesalers gather information on the supply of chili peppers through personal observation, with (28%) accessed information via extension agents. On the other hand, majority (94%) of retailers obtain information about the supply from interactions with other pepper traders, and only (10%) have access to extension agents. The result for pricing information reveals that (94%) of retailers learn about prices from other traders, (46%) using personal observation and 2% relying on extension agents. Majority (96%) of wholesalers acquire pricing information through their own observations, and (6%) from extension agents. This network of interaction significantly enhances the marketer's access to current market prices and other vital market factors due to their engagement with fellow traders and reliance on personal observation. The producers are the first point in Ringim local government area marketing channel, from there the commodity is moved to the wholesalers, retailers, and middlemen like agents or aggregators. The activities of these middlemen could be an advantage through them, time, place and possession gaps that separate goods from those who want them are overcome. They are better equipped by the virtue of their extensive contacts, experiences and scale of operations to offer firms or individuals more than they can do themselves. Besides, they are better placed to finance, move, store commodities and disseminate marketing information. The

study also shows that (42%) of wholesalers purchase the commodity from the farm gate only while (58%) purchase pepper from other sources like from trucks and middlemen.

**Table 2: Socio-economic characteristics of marketers in the study area**

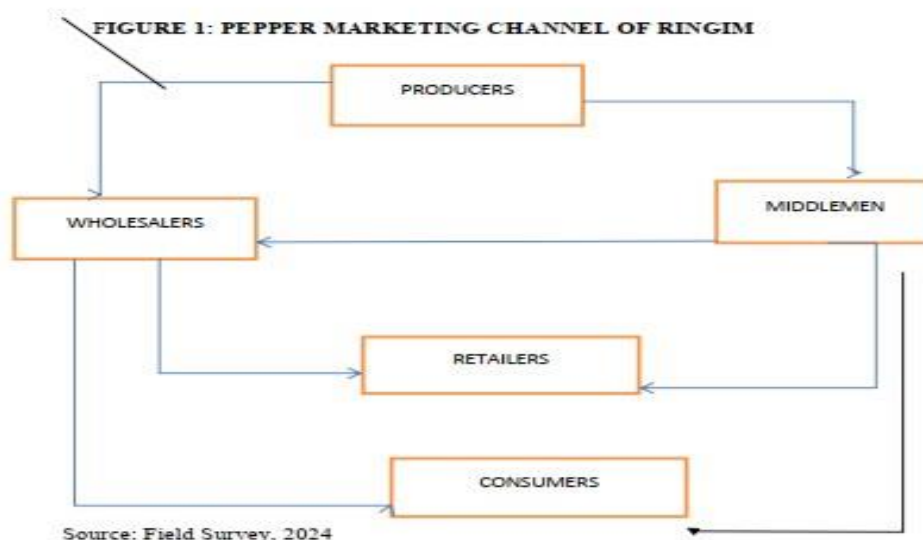
Variables	Wholesalers		Retailers	
	Frequency	Percentages	Frequency	Percentages
<b>Age</b>				
15-21	2	4	19	38
22-28	1	2	10	20
29-35	6	12	11	22
36-42	30	60	7	14
43-49	11	22	3	16
<b>Sex</b>				
Male	19	38	19	38
Female	31	62	31	62
<b>Marital Status</b>				
Married	43	86	31	62
Single	7	14	19	38
<b>Level of Education</b>				
No formal Education	7	14	5	10
Primary	5	10	1	2
Secondary	22	44	30	60
Tertiary	16	32	14	28
<b>Source of information</b>				
Personal Observation	46	92	47	94
Extension agent	14	28	5	10
<b>Price information</b>				
Interaction with traders	48	96	47	94
Personal information	43	86	23	46
Extension agent	3	3	1	2
<b>Point of Sale</b>				
Farm gate	21	42		
Farm and others	29	58		
<b>Point of sale</b>				
Wholesale	-	-	32	64
Others	-	-	18	36
<b>Point of sale of retail and wholesale of the respondent</b>				
Retailer, wholesaler, consumers	12	24		
Retailer and consumers	32	64		
Retailer and Wholesalers	4	8		
Retailers	2	4		
Consumers	-	-	50	100

Source: Field Survey, (2024)

\*\*Multiple response was allowed for sources of information-point of sales\*\*

### Market channel and point of sales of Chilli pepper in the study area

The market channels of chill pepper marketing were presented in Figure 1. The results shows that movement of Chilli pepper starts with the producers or farmers, then moves to the middlemen or direct sales to wholesalers. The wholesalers in turns sales to retailers who then in turn sales to the final consumers in the study area. The channels and points of sales helps market participants to identify effects marketing structure in the study area.



### Costs of marketing services by wholesaler and retailers

The breakdown of the wholesale and retail costs incurred in the marketing of Chilli pepper marketing were presented in Table 3. The costs of wholesaling consist of the charges for storage, transportation, loading and off-loading of the commodity and tax paid to the government summing up to an average of ₦1,060.7 while the cost of retailing sum up to an average of ₦966.3. These costs tend to vary slightly from each other, which might be due to the differences in cost between the two categories is a reflection of the difference in riskiness of investment of the two categories. Efforts at reducing these costs will no doubt improve the efficiency of the marketing system in the study area.

**Table 3: Costs of marketing service per basket for wholesalers and retailers**

Marketing Services	Wholesalers		Retailers	
	Average cost per unit (₦)	Percentage (%)	Average Cost per unit (₦)	Percentage (%)
Transportation	313.4	29.55	306	31.70
Storage	232	21.90	210.2	21.75
Loading	87.1	8.22	75.5	7.81
Refrigeration	25	2.40	0	0
<b>Total</b>	<b>1060.7</b>	<b>100</b>	<b>966.3</b>	<b>100</b>

Source: Field Survey, (2024)

### Marketing margin of Chilli wholesalers and retailers in the study area

The marketing margin of wholesalers and retailers were presented in Table 4. The results shows that wholesalers recorded average cost of ₦1,060.7 per chili pepper basket sold, and market margin of ₦2,798 per Chilli pepper basket sold, while the average cost of retailers per Chilli basket sold was 966.3, and market margin market of ₦2690. The net market margin of ₦1,737.3 and ₦1,723.7 was recorded for wholesalers and retailers respectively. This shows that Chilli pepper marketing is a profitable venture, although due to seasonality within the different period of the year in the study area. The results in Table 5 also indicates the various marketing margins of marketers by periods reveals that from the 1<sup>st</sup> to 3<sup>rd</sup> month after harvest. The first quarter (1-3

months after harvest) retailers have marketing margin of 15.63% while wholesalers have 19.73%, in the second quarter retailers have marketing margin of 19.66% and wholesalers 20.92% while in the third quarter (during festivities) wholesalers have a margin of 28.78% and retailers 25.6. This margin of below 50% indicates an average return on investment in providing the marketing services. It could be concluded that the marketers get a fair share of the profit realized in the marketing of pepper in the study area. This is in line with the findings of Olukotun *et al.* (2022) where they discovered that chill pepper making was a profitable enterprise in Kaduna State, Nigeria.

**Table 4: Market margin for wholesalers and retailers in the study area**

Marketers	Farm price/Basket (₦)	Selling price/Basket (₦)	Average cost /Basket (₦)	Market Margin (₦)	Net Margin (₦)
Wholesalers	10170	12968	1060.7	2798	1737.3
Retailers	10476	13166	966.3	2690	1723.7

Source: Field Survey, (2024)

**Table 5: Average Market margin for wholesalers and retailers by periods in the study area**

Market period	Wholesalers	Retailers
	Average cost per unit (%)	Average cost per unit (%)
1-3 months	19.73	15.63
4-7 months	20.92	19.66
Festive periods	28.78	25.68

Source: Field Survey, (2024)

### Efficiency of Chilli pepper marketers in the study area

The efficiency of Chilli pepper for wholesalers and retailers were presented in Table 6. The result shows that the marketing efficiency of retailers was 178.40% while that of wholesalers was 163.78%, which shows that both retailers and wholesalers are utilizing inputs efficiently. The study reveals that entry into pepper marketing in the study area is free because marketers are not made to pay any form of registration before bringing his produce to the market. The result shows that majority (90%) of Chilli pepper marketers agreed that there is no hindrance to entry into the market while 10% of the marketers gave some personal reasons such as over congestion of the market, low hygiene standards in and around the market.

**Table 6: Market efficiency for wholesalers and retailers in the study area**

Marketers	Marketing Efficiency
Wholesalers	163.78
Retailers	178.48

Source: Field Survey (2024)

### Constraints faced by Chilli pepper marketers in the Study Area

The study revealed that of the problems faced by marketers in the study area lack of storage facilities ranked first with (63%) reported that red pepper being a highly perishable farm produce, needs to be stored properly in order to minimize losses due to deterioration in quality. The result shows that (60%) of Chilli marketers identified high cost of transportation facilities, (32%) of them identified poor market in the various market environment, (14%) highlighted unfavourable government policies and the activities of task forces as a major problem in the marketing of the commodity, (23%) identified the activities of middlemen in the marketing of the commodity as a



major problem, while (12%) identified poor market information as one of the problems encountered in marketing of the commodity. The reason why storage is a major problem could be attributed to the perishable nature of the commodity even while on the shed this is in accordance with the findings of Tahir *et al.* (2024). The finding also corroborates with that of Rueben *et al.* (2024) where they discovered that inadequate access to finance was among the major constraints faced by Chilli pepper farmers in Taraba, State, Nigeria.

**Table 7: Constraints faced by Chilli pepper marketers in the study area (n=100)**

Constraints	Frequency	Percent	Ranking
Inadequate access to finance	75.0	75.0	1 <sup>st</sup>
Inadequate of storage facilities	63	63.0	2 <sup>nd</sup>
High cost of transportation facilities	60	60.0	3 <sup>rd</sup>
Poor market information	32	32.0	4 <sup>th</sup>
Activities of Middlemen	23	23.0	5 <sup>th</sup>
Unfavorable government	14	14.0	6 <sup>th</sup>

Source: Field Survey, 2024 \*\*\*Multiple response was allowed\*\*\*

## CONCLUSION AND RECOMMENDATIONS

The study reveals a complex yet relatively efficient marketing system that is significant to the rural economy of the study area. The study concludes that chill marketing was female dominated, active productive age, and educated. This shows the role women play along the Chilli pepper value chain in the study area. There were variations among the chili pepper retailers and wholesalers in terms of age and mode of operation regarding market information which indicates a sustainable enterprise in the study area. The results for marketing margin revealed that Chilli was a profitable commodity, while the high marketing efficiency ratios for both wholesalers and retailers reveal the effective use of resources. Based on the finding from the study the following recommendations were suggested:

- Encourage more male participation in Chilli pepper marketing to ensure gender balance of the trade.
- Create financial access linkage for Chilli pepper marketers through relevant stakeholders such as microfinance organizations.
- Provision of training through extension agents on ways to improve shelf life of Chilli pepper to minimize spoilage.
- Educate marketers more on the effectiveness of a good market information among marketers to increase their profit margin in the study area.

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