

MARKETING ANALYSIS OF BIG CHILLI IN SEMBALUN DISTRICT, EAST LOMBOK DISTRICT

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ABSTRACT. The aim of this research is to analyze the structure, behavior and performance of the large chili market in Sembalun District, East Lombok Regency. With 80 farmer respondents and 37 marketing institutions consisting of 17 collectors, 8 wholesalers and 12 retailers. The data sources used are primary data and secondary data. The method used in this research is snowball sampling. The research results show that the large chili market structure in Sembalun District is classified as a monopolistic competition market structure. The market behavior of the large chili buying and selling process in Sembalun sub-district forms six types of marketing channels involving five marketing institutions. The longest channel is the first channel, namely from Farmers - Village Level Collectors - District Level Collectors - Retailers and then Consumers. Prices for large chili commodities tend to be determined by traders. The most efficient performance of the large chili market in Sembalun District, seen from the indicators of marketing margin, farmer share and profit to cost ratio, is the VI marketing channel, namely farmers directly to consumers.

Keywords: Structure, Behavior, Performance, Marketing, Big Chili.

INTRODUCTION

Background Large chilies are one of the leading commodity crops which have an important role in the national economy. Not only is it marketed at the local level but it has become an export commodity. Apart from consumption as a spice, chilies are also used in medical aspects. Chili contains high nutrients such as carbohydrates, iron, protein, essential oils, fat, calcium, phosphorus (Setiadi, 2021)

The cumulative consumption of large chili peppers among the Indonesian people will reach 636.56 thousand tons in 2022. This amount will increase by 6.78% or 145.73 thousand tons from 2021, namely 490.83 thousand tons, and is the highest consumption in the last 5 years. Based on the results of the National Socio-Economic Survey, Indonesian people consume an average of 0.15 kilograms (kg)/capita/month of red chilies. This high level of consumption cannot be separated from Indonesia's culinary culture which uses a lot of red chilies as a basic spice or food flavoring (Susenias, 2021).

Production of large chilies in Indonesia will reach 1.48 million tons in 2022 and 1.36 million tons in 2021. This figure is an increase of 96,381 tons or 7.62% compared to 2020. West Java Province is the largest producer of large chilies in Indonesia in 2021. namely 343,067 tons. This amount is equivalent to 25.2% of the national large chili production. Then the province of North Sumatra with production of 210,220 tons or 15.45%. Then, Central Java as much as 169,282 tons or 12.44%. (National Statistics Agency, 2022). Meanwhile, West Nusa Tenggara's large chili crop production will be at 15,636.5 tons in 2022.

East Lombok Regency is one of the large chili production centers in West Nusa Tenggara Province. In particular, Sembalun District produces 1,948.2 tons of large chilies in 2022,

equivalent to 12.4% of the total large chili production in West Nusa Tenggara Province. Large chilies in Sembalun District are not only famous for their abundant production but are also known for being able to move the economy of the people of Sembalun District. Large chili traders in Sembalun District market large chili peppers to all large markets on Lombok Island, even large quality chili peppers are sent to the PT Indofood company.

The average price of large chilies in West Nusa Tenggara Province has increased every year, from Rp. 27,705 in 2017, to Rp. 36,530 in 2021 and Rp. 50,842/kg in 2022. The large increase in chili prices cannot be separated from the amount of production and distribution chains formed. The large number of marketing institutions involved indicates that the marketing system is inefficient and the farmer's share (the price received by farmers) is not comparable to the price paid at the consumer level. According to Anindita (2004), there are at least three causes of marketing inefficiency, namely: (1) long marketing channels, (3) high marketing costs, (3) market failure.

The general problem with marketing large chilies in Sembalun District is that farmers do not sell their products directly to the market because farmers do not have access to market information and transportation is limited. Apart from that, there is an attachment of farmers to the first marketing institution, namely collectors related to input costs such as fertilizer prices, seed prices, mulch prices and other costs so that farmers are bound to sell their crops to the first institution.

The length and shortness of the marketing channels formed from the interaction of marketing institutions will influence the prices received by consumers and the prices received by farmers as producers. However, so far it has not been found which part of the market institution determines the price of large chilies, apart from that it is not yet known what the market structure, behavior and performance is that is formed in the marketing process of large chilies in Sembalun District, East Lombok Regency.

Based on the background description above, the objectives of this research are as follows:
Analyzing the structure of the large chili market in Sembalun District, East Lombok Regency
Analyzing the behavior of the large chili market in Sembalun District, East Lombok Regency
Analyzing the performance of the large chili market in Sembalun District, East Lombok Regency

RESEARCH METHODOLOGY

The method used is descriptive, namely a method carried out by means of a survey. Locations were selected using purposive sampling. Respondents were determined using quota sampling. Sampling was carried out by accidental sampling. Meanwhile, the marketing institute's sampling technique uses snowball sampling. According to Nina (2014), this method is done by tracing the marketing flow of large chilies based on the respondent's information sources. Information starts from farmers to collectors and finally to retailers. The number of marketing institutions involved in marketing large chilies in Sembalun District is 117 people: consisting of 80 farmers, 17 collectors, 8 wholesalers and 12 retailers.

Market structure analysis is carried out at every interaction between marketing institutions that carry out sales and purchasing activities, then determines the market structure that is formed. The market structure can be seen from: Using the Herfindahl Hirschman Index (HHI) formula.

1. The Herfindahl Hirschman Index is another type of concentration measure that is often used to measure the level of market concentration. The Herfindahl Hirschman Index is the sum of the squares of the market shares of all companies in the industry, and is formulated as follows (Rekarti and Nurhayati, 2016):

$$HHI4 = P1^2 + P2^2 + P3^2 + P4^2$$

$$HHI4 = \sum Pi^2$$

Information: P_i = 1st Market Share, Sales Volume of 1st Market Player/Sum of Sales Volume of All 1st Market Players.

- P1 = Market Share of Company 1,
- P2 = Market Share of 2nd Company,
- P3 = Market share of 3rd Company
- P4 = 4th Company Market Share

2. Market Entry and Exit Barriers (MES)

Barriers to entry and exit from the market can be calculated using the Minimum Efficiency Scale (MES), which is the calculation of chili sales made by collectors against the total chilies in Sembalun District. Barriers to entry can be calculated using the formula:

$$MES = \frac{\text{Penjualan Cabai Besar Oleh Pengepul}}{\text{Jumlah Produksi Cabai di Kecamatan Sembalun}} \times 100$$

MES=(Large Chili Sales by Collectors)/(Total Chili Production in Sembalun District) x100 If the MES calculation results show more than 10 percent, it is indicated that the marketing of chilies has barriers to entry into the market (Jaya 2001).

The market behavior of large chili peppers was analyzed using a descriptive method, namely explaining the process of determining the price of large chili peppers and the forms of relationships that occur between marketing institutions. According to Asmarantaka (2014) market behavior is the participation of buyers and sellers carried out individually or in groups, both in the form of competitive relationships and negotiations with other participants to achieve marketing goals. Each marketing institution will carry out marketing functions according to its needs.

Market performance analysis is a combination of market structure and market behavior which shows mutual influence. The measurements of market performance are as follows:

- Marketing Margin

According to Asmarantaka (2014), marketing margin is the difference in the price paid by consumers (P_r) and the price received by producers. ($M=P_r-P_f$). This marketing margin includes all costs incurred by marketing actors so that the marketing margin can be formulated as follows: $M_i = C_i + \pi_i$

Information: M_i = Marketing margin at market level i C_i = Purchase costs at market level i , π_i = Marketing profit at market level i , $i= 1, 2, 3, \dots, n$.

- Farmer's share

Farmer's share is the share received by farmers or the percentage ratio of the price received by farmers to the price paid by final consumers (Limbond and Sitorus 1985). Mathematically, farmer's share can be formulated as follows: $FS=P_f/P_r \times 100\%$.

Information: F_s = Farmer's share, P_f = Price at farm level P_r = Price paid by final consumers

- Profit to Cost Ratio

Analysis The profit and cost ratio is the percentage of profits received by marketing institutions against marketing costs which is technically used to determine the level of efficiency (Limbond and Sitorus 1985) in: Puspitasari (2020). The profit and cost ratio formula for each marketing institution can be formulated as follows:

$$\text{Profit/Cost Ratio (\%)} = \frac{\text{Profit } (\pi_i)}{\text{Marketing Costs } (C_i)} \times 100\%$$

Information :

π_i = Marketing Institute Profit,

C_i = Marketing Costs

RESULTS AND DISCUSSION

Respondent Characteristics

Respondents in this research were farmers and traders. The indicators used to describe farmer respondents are age, education, farming experience and land area. The age group of large chili farmers in Sembalun District is 15-64 years. This means 100 percent during productive age with an average education level of only elementary and middle school, and an average of 8 years of farming experience. Meanwhile, the area of land cultivated by large chili farmers in Sembalun District is relatively narrow, because as many as 91% of large chili farmers work on fields of less than 0.5 Ha and farmers in the medium category are 7 people or 9%. The area of cultivated land according to Sajogyo, (1977) in Mahmud (2019) categorizes farmers into three groups, namely small farmers with a farming land area of <0.5 ha, medium farmers with a farming land area of 0.5-1.0 ha, and large farmers with farming land area >1.0 ha.

Meanwhile, the education level of large chili traders from 33 respondents showed that 20 people had graduated from high school, 2 people had a bachelor's level of education and 11 people had only completed elementary school with an average age ranging from 15-64 years, meaning that large chili traders in Sembalun District reached 100% productive. According to Kominfo, (2020), the productive age population is the population aged 15–64 years. Meanwhile, the unproductive population is the population aged <15 years and >65 years.

Market Structure Analysis

According to (Amaliawati 2017), market structure is a form of organizing products produced and marketed by various institutions or the way a market is organized which will influence the behavior of producers or companies. The aim of the market structure analysis is to see the level of competition and price determination for large chilies in Sembalun District.

Market Concentration

Table 1.1 Concentration Ratio Value of Large Chili Traders in Sembalun District 2023

Concentration of 4 Selected Market Institutions			
Market share (Pi)			
No	Volume (Kg)	(Pi)	Pi ²
1	24.000	7,38	54,47
2	39.500	12,15	147,53

3	42.000	12,91	166,80
4	57.800	16,23	263,35
amount			646,15

From the results of data analysis, it shows that the concentration ratio of large chili traders in Sembalun District, East Lombok Regency is 646.15. According to Siti, (2021) a concentration ratio of $100 < HHI < 1000$ is considered a low concentration. This means that the structure of the large chili market in Sembalun District is included in the structure of monopolistic competition.

Market Entry and Exit Barriers

Table 1.2 shows that the MES value is above 10%, namely 16.4%. This means that there are obstacles to entering or exiting the large chili market in Sembalun District. Barriers to entry are caused by several factors, including collecting traders having quite large capital. Collecting traders have access to market information about price developments for large chili peppers and have access to farmers as a source of input (partner farmers). Apart from that, collectors have wide access to district level collectors, both at the Paok Cut market, the Mandalika regional market and information on wholesalers.

Table 1.2 MES (Minimum Efficiency Scale) Value

No	Saller	Volume Sale (kg)
1	Collector1	5.000
2	Collector 2	5.000
3	Collector 3	7.500
4	Collector 4	8.500
5	Collector 5	8.500
6	Collector 6	9.400
7	Collector 7	9.500
8	Collector 8	12.000
9	Collector 9	17.000
10	Collector 10	18.500
11	Collector 11	19.500
12	Wholesalers	20.000
13	Wholesalers	21.500
14	Wholesalers	24.000
15	Wholesalers	39.500
16	Wholesalers	42.000
17	Wholesalers	51.800
Total Sales Amount		319.200
Total Large Chili Production in Sembalun District		1.948.200

Source: Processed Primary Data (2023)

Market Behavior

a. Analysis Marketing channel

In the marketing process for large chilies in Sembalun District, there are six types of marketing channels that are formed involving five marketing institutions. The existence of this marketing channel influences the level of distribution costs and prices paid by consumers. The data collection process for the performance of the large chili market starts from the farmer level to the consumer level

b. Marketing Function

1. Marketing Function at Farmer Level

Farmers are producers who act as large chili producers. Facility functions such as sorting are carried out by farmers directly on the land. The sorting process is carried out when large chilies are put into white burlap sacks. This means that before the harvest process, farmers prepare sacks at a price of IDR 5,000 per sack with a capacity of 50 - 60 kg per sack for independent farmers. Meanwhile, partner farmers will be prepared by the capital owner. The transportation function carried out by farmers is usually carried out from the harvest field to the roadside (accessible to vehicles/pickups). Meanwhile, if there is no vehicle access, farmers will carry out the transaction process at home, depending on the agreement of both parties. The promotion and price determination function at the farmer level marketing function is determined by several factors, including farmers will determine the price of large chilies if the availability of large chilies on the market is very small, while market demand is very high. In this position the price of large chilies will increase and the promotional function will not apply. However, if the price of large chilies decreases and the availability of large chilies among farmers is quite large, market demand is very limited. In this position, partner farmers will benefit, because all the large chili crops produced will definitely be sold and marketed by collectors. Meanwhile, independent farmers (not partners) will experience losses, because very few traders are looking for large chilies. In this position, there are quite a few farmers who do not harvest.

2. Marketing Function of Village Collector Traders Village level

collecting traders are traders whose function is to collect farmers' harvests, both partner farmers and independent farmers. Then it is distributed directly to wholesalers and collectors at the district level without carrying out a sorting process, because the sorting process has already been carried out by the farmers. Collecting traders will play the role of carrying out the transportation function from the farm road and then distributing it to all customers. Distribution costs from collectors to collectors at the regency level depend on the delivery destination. If the destination is Paok Cut Market, the cost is IDR 15,000, and IDR 20,000 to go to Mandalika Regional Market, Mataram City.

3. Marketing Function of Wholesalers

This marketing institution receives large chilies at home, delivered by collectors. The method of determining prices by this type of marketing institution depends on price developments in the market, especially seen from the amount of demand. Demand is known from communication media such as cellphones. This institution functions to sell large chilies to the islands of Java and Sumbawa. The distribution of large chilies uses fast expeditions, because large chilies are vegetable crops that do not last long.

4. Marketing Function of District Collectors

This marketing institution has two types, namely traders with a direct selling system in large markets and a supply system (sorting at home then wrapping in 5 kg plastic) and then distributing it to small market retailers. The direct selling system in large markets will give buyers the freedom to choose what they want. Apart from that, traders in this model accept buyers with various capacities, starting from ¼ Kg to unlimited according to their capacity, meaning that it is free, as long as the large chilies are sold out. So the remaining sorting will be sold at capital price, and this type of goods is usually called grade B (BS). For payment functions to direct retail traders in large markets, with a cash system (pay immediately). Meanwhile, siplay system traders will pay large chilies after they are sold out. Price information at this trading institution is decisive. Because they are in the direct transaction market, they are very familiar with price developments and the availability of large chilies on the market, including the level of demand. Therefore, this marketing institution is very important as a balancer and determinant in distributing large chilies evenly to all traditional market retailers.

5. Retailer Marketing Function

The function of this marketing institution is very important and determining in the process of distributing large chilies to the final consumers, because this institution is directly in the middle of consumers' lives or trades in the middle of people's lives. Information on the price of large chilies was obtained from district collectors. The sales capacity of this institution is an average of 1 kg - 5 kg. Meanwhile, transportation costs will be borne directly by the retailer's marketing agency. The sorting function is not carried out in this institution, because they already carry out the sorting directly when making a purchase.

c. Determining the Price of Large Chilies

The prices sold by farmers to collectors are based on price requests from buyers, both wholesalers and district level collectors. The price determination process in this model occurs when the availability of large chilies on the market still looks normal. This is different from the condition where the large chilies are starting to decrease. Usually in this condition farmers have a bigger role in determining the price of large chilies. The bargaining value of farmers when large chilies are scarce will determine the price of large chilies received by traders. However, most of the prices for large chilies are determined by traders. Market Performance Analysis Marketing performance in this research is related to the marketing margin of farmers' income, the ratio of profit to price. According to Anindita (2004), market performance is the extent to which traders' behavior provides the best contribution that can be achieved in accordance with marketing objectives. As for knowing market performance, these include: Comparison of marketing margins, share of prices received by farmers, and profit to cost ratio.

1. Marketing Margin

Based on the results of marketing margin data analysis, it shows that marketing channel I is the longest channel. The total marketing margin in channel I is IDR 16,143 with total marketing costs IDR 2,429. The total profit from this marketing channel is IDR 13,714. The high marketing margin is caused by the length of the marketing channel, because this marketing channel involves five market players, namely, farmers, village level collectors, district level collectors, retailers and final consumers.

Table 1.3. Large Chili Marketing Margin in Sembalun District 2023

	Marketing channel					
	I	II	III	IV	V	VI
Farmers						
Selling Price	13.857	15.000	13.800	14.250	14.250	28.000
Marketing costs						2.000
Profit						26.000
village collectors						
Purchase price	13.857	15.000	13.800			
Cost	469	322	349			
Selling Price	17.000	18.000	19.000			
Margin	3.143	3.000	5.200			
Profit	2.674	2.678	4.851			
Agent						
Purchase price		18.000	19.000	14.250		
Cost		2.022	688	4.086		
Selling Price		25.000	25.500	27.000		
Margin		7.000	6.500	12.750		
Profit		4.978	5.812	8.088		
District Collector						
Purchase price	17.000				14.250	
Cost	660				433	
Selling Price	23.000				23.500	
Margin	6.000				7.500	
Profit	5.340				7.067	
Retail Saler						
Purchase price	23.000					
Cost	1.300					
Selling Price	30.000					
Margin	7.000					
Profit	5.700					
Total Cost	2.429	2.344	1.037	4.086	433	2.000
Total Margin	16.143	10.000	11.700	12.750	7.500	0
Total Profit	13.714	7.656	10.663	8.088	7.067	26.000

The highest marketing costs for large chilies are in channel IV, namely Rp. 4,662. The high costs in this channel are because in the process of distributing large chilies the goods must be of high quality because in this channel the distribution destination is PT. Indofood, so the process requires special treatment, such as: the packaging used must use cardboard with a maximum capacity of 30 kg/cardboard, requires labor for the grading process, transportation uses special transportation at a fairly expensive cost, namely IDR 1,500/kg. The highest profit from large chili sales is in channel VI, namely, Rp. 28,000. because in this channel farmers directly sell their large chili production to consumers.

2. Farmers' Share

Table 1.4. Farmers Share in Large Chili Marketing Channels in Sembalun District 2023

No	Marketing Chanel	Famer Price Rp/Kg	Consumer Price Rp/Kg	Farmers Share (%)
1	Chanel I	13.857	30.000	46,19
2	Chanel II	15.000	-	-
3	Chanel III	13.800	-	-
4	Chanel IV	14.250	28.000	50,89
5	Chanel V	14.250	23.500	60,63
6	Chanel VI	16.000	28.000	100

Sumber: Data Primer Diolah (2023)

From the results of data analysis, it shows that the largest Farmer's Share received by farmers is in marketing channel VI, namely 100%, because the marketing channel for this type of marketing is very short. Meanwhile, in the first marketing channel Farmer's Share received by farmers was 46.19%. The length and shortness of the marketing channel affects the level of share received by farmers.

2.Profit to Cost Ratio

From the results of data analysis, it shows that the highest profit ratio in the large chili marketing channel in Sembalun Bearda District is channel VI, namely 13%, while the first channel is at 5.64% and the lowest profit is in channel three. Meanwhile, in channels III and II, the value of the profit to cost ratio is 10.28 and 3.26, which is very much higher than the profits from the first channel. However, in this marketing channel the researchers only reached the marketing institutions of large traders, because this channel is a large chili distribution channel to Sumbawa Island and Java Island. So the author used these two channels as a comparison in research on large chilies in Sembalun District.

Table 1.5. Marketing Profit Ratio of Large Chilies on Each Marketing Channel seen from the Total Marketing Costs in 2023.

No	Marketing Chanel	Total Marketing Cost (Rp/kg)	Total Profit (Rp/kg)	Rasio Profit/ Cost (%)
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1	Channel I	2.429	13.714	5,64
2	Channel II	2.344	7.656	3,27
3	Channel III	1.037	10.663	10,28
4	Channel IV	4.662	8.088	1,73
5	Channel V	333	7.067	21,41
6	Channel VI	2.000	26.000	13

The results of data analysis show that the highest marketing margin value is in marketing channel I, namely IDR 16,143, because this channel involves many marketing institutions. Meanwhile, the highest farmer acceptance is in marketing channel VI, because in this channel large chilies are received by consumers directly from producers. This means that farmers directly distribute large chilies to consumers. So from table 1.6. shows that all marketing channels in terms of marketing margin value, Farmer's share and profit to cost ratio show that they are very efficient. According to Limbong and Sitorus (1985), if π/C is more than one ($\pi/C > 1$), then the business is efficient, and if π/C is less than one ($\pi/C < 1$), then the business is inefficient. The more even distribution of profit and cost ratios, the more technically efficient the marketing system is.

Table. 1.6. Marketing Efficiency Standards from Margin value, Farmer's Share, Profit and cost ratio (π/C).

Marketing Efficiency	Channel I	Channel II	Channel III	Channel IV	Channel V	Channel VI
Margin	16.143	10.000	11.700	12.750	7.500	0
Farmers share	46,19	46,88	54,12	50,89	60,63	100
π/C	5,64	3,27	10,28	1,73	21,41	13

CONCLUSION

Geographically, the marketing of large red chilies starts from Sembalun sub-district, East Lombok Regency, to outside East Lombok Regency and between islands, using six marketing channels, namely: 1) Farmers – Village Collectors - District Collectors - Retailers and then Consumers, 2) Farmers – Wholesalers – East Java Wholesalers, 3) Farmers – Village Collectors – Wholesalers – Sumbawa Island Wholesalers, 4) Farmers – Wholesalers – Indofood, 5) Farmers – Village Farmers – Consumers, 6) Farmers - Consumers The large role of intermediary traders in the marketing of large red chilies has meant that chili prices are mostly determined by intermediary traders, thus forming a monopolistic competitive market structure. Most of the chili marketing channels are classified as less efficient, except for the sixth channel which is efficient, namely from farmers to final consumers.

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