

Analysis of the red chili market structure in Bandar Lampung (case study in koga market)

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Received : 01 December 2022

Revised : 31 December 2022

Accepted : 02 January 2023

ABSTRACT: Chili is a very important vegetable commodity for Indonesian people. Based on the results of BPS data processing, the price elasticity figure for red chili is around -0.82 (inelastic), this means that chili is a commodity that cannot easily be replaced or recognized as a staple item. but this does not reduce consumer demand not to use chili in everyday life. The demand for red cayenne pepper at the Koga market has decreased since the Covid-19 pandemic. The high price of chili also affects the demand for purchase and consumption of chili. Therefore, it is necessary to carry out a market analysis related to the price of red cayenne pepper at the Koga Market, Bandar Lampung City. The purpose of this study is to analyze what market structure is formed in the red chili commodity at the Koga Market in Bandar Lampung. In this study used quantitative research methods. The samples used in this study were all traders of red cayenne pepper in the Koga Market, Bandar Lampung. The calculation results obtained a CR4 value of 0.6666 and an IHH value of 1531.887. Based on these two indicators, the market structure for red cayenne pepper is at a moderate concentration level and the market structure is oligopoly. 6666 and IHH value of 1531.887. Based on these two indicators, the market structure for red cayenne pepper is at a moderate concentration level and the market structure is oligopoly. 6666 and IHH value of 1531.887. Based on these two indicators, the market structure for red cayenne pepper is at a moderate concentration level and the market structure is oligopoly.

Keywords: chili, market structure

Citation:

D Pratiwi, T Andarwangi, C Yolandika. (2023). Analysis of the red chili market structure in Bandar Lampung (case study in koga market). *Economic, Management, and Social Sciences (ECOMANS)*, 2 (1), Page. 7-12 DOI: <http://dx.doi.org/10.56787/ecomans.v2i1.23>



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INTRODUCTION

Prices of agricultural commodities, especially horticultural commodities, always fluctuate and tend to increase. This resulted in food price volatility and inflation. Agricultural commodity price fluctuations are caused by natural disasters, seasonal production, inadequate storage facilities, and farmers' inappropriate response to price signals (Agnellia, M. A. D. D., Ustriyana, I. N. G., & Djelantik 2016). Favorable prices spur more production. However, the majority of farmers have limited capital to respond to price changes. Efficient marketing of agricultural commodities will benefit producers and consumers because production surpluses in one place can be channeled to other places that experience a deficit with reasonable trading costs (Kusumah, 2018). Market efficiency is an equilibrium condition in which all profitable opportunities can be exploited by each marketer in accordance with the costs incurred (Anggraini et al., 2022; Hutasoit, 2022). If the price difference between markets is smaller than the transfer fee, it can be said that the market is running efficiently. However, if the price difference between markets is greater than the transfer costs, it can be concluded that the market is running inefficiently (Anindita, 2013)

Spatial market integration refers to price movements in spatially separated markets or the extent to which demand and supply shocks that arise in one market are transmitted to other markets in geographically different locations. According to (Anindita, 2004). Market integration is defined as the ability to sell products between markets where demand, supply and transaction costs in different markets determine prices and trade flows simultaneously and transmit price shocks from one market to another. Therefore, price transmission and market integration can show the marketing performance that occurs (Anggraini et al., 2022; Sidqi, 2022). Spatial market integration has relevance to the agricultural sector because agricultural



commodities are often bulky, perishable, and production is concentrated in one location, while consumption is concentrated in another which often results in expensive transportation costs. In addition, the functioning of markets and marketing channels is very important to know the impact of various economic policies, such as macroeconomic and trade policies (Sheyoputri & Abri, 2021).

According to (Eliyatiningsih & Mayasari, 2017), market integration is determined by the behavior of traders and market conditions, marketing infrastructure associated with transportation, communication and storage facilities that lead to high marketing margins. Government policies can also affect markets through price stabilization policies, trade restrictions, and regulations related to transportation. (Kusumah, 2018) stated that the behavior of oligopoly and collusion between traders determines the occurrence of market integration.

Chili is a very important vegetable commodity for Indonesian people. Based on the results of calculations from the Republic of Indonesia's Central Statistics Agency (BPS) data for 2020, the average chili consumption is around 1.77 kg/capita/year. Based on the results of BPS data processing, the price elasticity figure for red chili is around -0.82 (inelastic). This means that chili is a commodity that cannot easily be replaced or known as a staple item (Utoyo & Yolandika, 2018b, 2018a). However, the price of chili can affect the amount of consumer demand for chili. The city of Bandar Lampung itself is a big city and is the capital of Lampung Province, this makes this city the center of the economy in Lampung. Chili prices in Bandar Lampung City continue to fluctuate at any time, but this does not reduce consumer demand not to use chili in everyday life, but people only reduce chili consumption when the price of chili is high in the market (Yolandika, 2016, 2022). Koga Market is one of the traditional markets located in Kedaton District, Bandar Lampung City. The price for red cayenne pepper in this market ranges from IDR 65,000 – IDR 70,000/Kg. This price is still considered a normal price because in 2021 the price of red cayenne pepper has touched IDR 100,000. The demand for red cayenne pepper at the Koga market has decreased since the Covid-19 pandemic. The high price of chili also affects the demand for purchase and consumption of chili. Therefore, it is necessary to carry out a market analysis related to the price of red cayenne pepper at the Koga Market, Bandar Lampung City. Based on the background of the problem above,

METHOD

Time of Research and Determination of Samples

In this study, researchers will analyze the structure of the red bird's eye chili market in Bandar Lampung's Koga Market so that researchers use quantitative research methods. According to (Sugiyono, 2014) Quantitative research is defined as a research method based on the philosophy of positivism, used to examine certain populations or samples, data analysis is quantitative or statistical, with the aim of testing established hypotheses (Handayani et al., 2018; Utoyo et al., 2018; Yulinda et al., 2023). The samples used in this study were all traders of red cayenne pepper in the Koga Market, Bandar Lampung. This research was conducted in August 2022.

Data Types and Sources

This research uses primary data that comes from interviews with traders of red bird's eye chilies at Pasar Koga Bandar Lampung. Some literature is also used from books, journals, and official websites to serve as a reference for comparison.

Data analysis

Market Structure Analysis

Market structure is an analysis that depends on the physical dimensions related to the number of companies or producers involved, the number of factories in the market, the distribution of factories or companies in various sizes and concentrations, product descriptions to product differentiation to barriers to market entry. The market structure is also seen through the number of buyers and sellers in red chili marketing activities at the Koga Market in Bandar Lampung. This study uses a quantitative approach so that to process the data tabulation is done first (Handayani et al., 2018; Utoyo et al., 2018; Yolandika et al., 2016).

1. Concentration Ratio for Biggest Four (CR4)

Analyzing the market structure is done by analyzing the CR4 and the Hirschman Herfindahl Index (IHH). To analyze CR4, the following formula is used.

$$CR4 = Ms1 + \dots + Ms4 \times 100\%$$

Description: Ms = market share

The Concentration Ratio for Biggest Four (CR4) is or market structure analysis which is often used to determine the degree of concentration of the four largest market shares in a region (Hendri et al., 2022). Usually this concentration is measured at least in the four companies with the largest market share and at most the eight largest companies. If you already have four companies with the largest market share, then you just need to add them up. CR4 criteria according to Anindita (2004) are as follows:

1. $CR4 < 0.4$ then the market structure is perfect competition (competitive) or monopolistic competition (monopolistic competition needs to be seen if there is product differentiation or not)
2. $0.4 < CR4 < 0.8$ then the market structure is oligopoly/oligosopnic (often if the CR4 value is above 60-80% it is called a tight oligopoly and values CR4 between 40-60% is called a loose oligopoly, despite this definition often unclear because it measures oligopoly/monopoly power can be tested through market power but discussed at an advanced level.
3. $CR4 > 0.8$, the market structure tends to be monopoly/monopsony.

2. Hirschman Herfindabl Index (IHH).

The Hirschman Herfindal Index is an analytical tool that aims to determine the degree of concentration of buyers in a market area, so that a general picture of the balance of the bargaining position of producers and buyers can be known.

$$IHH = (Cr1)^2 + (Cr2)^2 + \dots + (Crm)^2$$

Description: Kr = Concentration ratio

Table 1. Market Structure Criterion based on the IHH Index

No.	Level Concentration	Ratio Concentration	Market Structure	IHH
1	Tall	80% – 100%	Monopoly	1,800 – 10,000
2	Currently	50% – 80%	Oligopoly	1,000 – 1,800
3	Low	0% – 50 %	Competition Perfect	0 – 1,000

Source : (Anindita, 2004)

RESULT AND DISCUSSION

The market structure can be analyzed through two main indicators, namely CR4 and IHH or the Hirschman Herfindal Index by first calculating the concentration ratio. The concentration ratio is an element of market structure that is often used in industrial economic studies in analyzing SCP (Hendrik et al., 2021; Yolandika, Anggraini, et al., 2021; Yolandika, Berliana, et al., 2021; Yolandika et al., 2017). Often the starting point for research on industrial organization is a description of market structure, and concentration ratios. These two are the most frequently used measurement approaches. Concentration is a combination of the market shares of some of the largest companies (Leading Firms) in an industry. Calculation of concentration to find out how the market structure of a particular industry can be seen from the sum of the sales value of certain companies to total industry sales, or better known as market share.

$$\begin{aligned}
 CR4 &= \text{Total concentration of 4 (four) market companies that have the largest market share} \\
 &= 0.2564 + 0.1538 + 0.1538 + 0.1026 \\
 &= 0.6666
 \end{aligned}$$

Based on the results of data analysis, a CR4 value of 0.6666 was obtained. This indicates that the CR4 value is in the category $0.4 \leq CR4 \leq 0.8$. The CR4 value of 0.666 or 66.66% is between 60% -80%, which means that the market structure for the red bird's eye chili commodity at the Bandar Lampung Koga Market is an oligopoly

Apart from using CR4, another indicator used is IHH. Based on IHH 1531.887 calculations, it is at a moderate concentration level and an oligopoly market structure

$$\text{IHH} = (100 \times 0.2564)^2 + (100 \times 0.1538)^2 + (100 \times 0.1026)^2 + (100 \times 0.0513)^2 + (100 \times 0.1026)^2 + (100 \times 0.1026)^2 + (100 \times 0.1538)^2 + (100 \times 0.0769)^2 = 1531.887$$

The oligopoly market structure itself is a market structure dominated by a few business actors which has a large scale of production or capital that produces homogeneous goods. An oligopoly market consists of several producers (two to five producers), whereas if it consists of two companies called duopoly.

The oligopoly market has an impact on business competition as well as for consumers. These impacts include that it will be difficult for new competitors to enter the market because usually the industry that is formed from this oligopoly market requires solid capital (capital intervention) and certain skills, which are new in the production process. Efficiency level will be achieved if it is produced on a large scale. Therefore only few producers operating in the market, the result is that it is very likely that producers existing producers will influence each other and work together to determine market prices, determine the figures for the production of goods and services (related to the quantity production of goods and services), which can then affect other producers, both of which already exist (existing firms) or those that are still outside the market (Sumarni, 2022).

CONCLUSION

Based on the results of the research that has been done, the following conclusions are obtained. (1) In the CR4 calculation, a value of 0.6666 is obtained, meaning that it is in position $0.4 \leq CR4 \leq 0.8$, meaning that the market structure is oligopoly. The CR4 value is 66.66%, which is between 60% - 80%, meaning that the oligopoly is tight; and (2) In the IHH calculation, a value of 1531.887 is obtained, which means that this value is at a moderate concentration level and an oligopoly market structure.

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