Analysis of the Structure of the Pork Trade Market in the Traditional Market in Manggarai Area, East Nusa Tenggara Province

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ABSTRACT: This research was conducted based on the consideration that meat is a commodity that is always needed by the community to meet their nutritional needs. This study aims to determine the influence between pork price variables and determine the market structure of the traditional pork trade industry in Manggarai district. This research took place from January to March 2024 at the Inpres Market and Puni Market. This study was quantitative descriptive and interviewed 49 respondents and continued with elasticity tests, market share, Herfindahl-Hirsrchman Index and Relative Deviation Intercepts. The results of the study show that the structure of the pork trade market in the traditional market of Ruteng City, Manggarai Regency, East Nusa Tenggara Province is included in the monopolistic competition market. Every pork trading business in Ruteng City produces similar goods but has differences in several aspects, namely service, performance and other factors. The policy taken by pork traders in the traditional market of Ruteng City is a non-price policy. These non-price policies include promotion policies, product policies, service policies and family policies. The results of the research on the estimation of the structure of the pork trade market can be concluded that the structure of the pork trade market is classified as a monopolistic competition market because every pork trading business in the city produces similar goods but has differences in several aspects, namely service, performance and other factors.

KEYWORDS: Market Structure, Pork, Elasticity.

1. INTRODUCTION

Pork production in Manggarai district is the main final output of the pig farming business. Basically, the pig farming business in the Manggarai area consists of three types of production systems based on business objectives, namely breeding, fattening, and a combination of breeding and fattening. In the nursery business, farmers produce piglets and are raised to a weight of 23 kg and then sold to fattening type breeders. The results of the study by Kaka et al. (2020) found that in general, the purpose of livestock business in East Sumba-NTT is fattening for commercialization and breeding. Furthermore, the type of fattening business has a financially profitable prospect because it provides high income to realize the welfare of farmers. Therefore, both sellers and buyers of pork need to consider the market structure.

The combination of market structure can simply affect the market structure, because of the collection of various factors that affect the level of competence in the market. The market structure is determined by various factors such as the number of sellers and buyers, market share, level of technology mastery, elasticity of demand for a product, location, market entry barriers, efficiency level and several other factors. The types of market structures vary, but they can basically be grouped into two extremely different forms of markets, namely perfect competition markets and imperfect competition markets. Included in the imperfect competition market are the monopoly market, the oligopoly market, and the monopolistic competition market (Rahayu, 2013).

The market structure affects the ability of producers or traders to form prices. Producers and traders do not have the power to shape/influence prices in a perfectly competitive market, all market participants act as price takers. However, the ability to influence prices arises when the market structure is not perfect, even producers/traders can act as price makers if the market structure is monopolistic The meat sales system is differentiated based on the presence or absence of quality classification or grading on the meat sold (Arifin et al., 2016).

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the market structure of agricultural commodities is not perfect so traders have the power to influence market prices (Keraru et al, 2022).

This research was carried out based on the consideration that meat is a commodity that is always needed by the community to meet their nutritional needs, especially in the city of Ruteng, so the author conducted a research on "Analysis of the Estimation of the Market Structure of Pork Traders in the Traditional Market of Manggarai Region" to find out the influence between pork price variables and to find out the market structure of the traditional pork trading industry in Manggarai district.

II. RESEARCH METHODOLOGY

2.1. Research Materials

This research has been going on for two months, from January to March 2024 in Manggarai district at Inpres Market and Puni Market. This research is quantitative descriptive, namely by using the calculation of market share and market concentration. This research is classified as a survey research, which is a study that takes samples from one population and uses questionnaires as a tool in collecting basic data. The determination of the research sample is based on a pre-survey, data from the Mangagarai Regency Office, the largest number of traditional markets in Manggarai Regency is Langke Rembong District, which is 2 locations. Langke Rembong District is a central area, namely the capital of Manggarai regency and has a larger population than other areas. Therefore, the need for pork is certainly more than in other regions. In the two markets there are 54 pork traders, then the number of samples to be used in this study is 49 people.

2.2. Data Analysis

The stages of analysis in this study are as follows:

a. Analysis of respondent determination.

The analysis of respondent determination is based on Slovin's theory, with the formula:

$$n = \frac{N}{1 + Ne^2}$$

Description:

N = Number of samples

N = Number of population

E = Flexibility of inaccuracy due to tolerable sampling errors (%).

In this study, it is known that N is 54 pork traders, and e is set as 5%. So, the minimum number of samples taken by the researcher is:

$$n = \frac{57}{1 + (84 \ x \ 0.05^2)} \frac{57}{1.21} = 47.024 = 47 \text{ pork merchant}$$

b. Elasticity Test.

The elasticity calculation was carried out using several tests and formulas (Muhiddin, Maimunah & Deris Desmawan, 2021) for the formulation of the Oris herfindhal index as follows:

1)   Price Elasticity (E_h)

If Eh>1 then the demand for pork is elastic; Eh=1 then the demand for beef is elastic unity (Unitari); Eh<1 then the demand for pork is inelastic.

2)   Cross elasticity (EQ,s)

If the value of Ice is positive then the price of chicken is a substitute good; The value is positive, then the price of chicken meat is a complementary good. Elasticity testing formula:

$$Ed = \frac{\Delta Qd}{\Delta X1} \ x \ \frac{X1}{Qd}$$

Description:

ΔQd = Change in the number of requests

ΔX1= Change in the price of goods

X1 = Initial price

Qd = Number of initial requests

Ed = Elasticity of the demand

a.   Market Share

$$MSI = \frac{Si}{Stot} \times 100$$

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Description:
Msi = Company market share (%)
Si= Company sales (IDR)
Stot= Total sales of the entire company (IDR)

Market criteria:
1. Pure monopoly, when a company owns 100% of the market share.
2. The company is dominant, when it has 80% - 100% of the market share and without strong competitors.
3. The oligopoly is tight, if the 4 leading companies have 60%-100% of the market share.
4. The oligopoly is loose, if the 4 leading companies have 40% < 60% market share.

b.   Indeks Herfindahl-Hirsrchman

$$IH = \sum_{1-1}^{n-k} (\frac{x}{T})2$$

Description:
N = Number of companies in one industry
X = Average sales value (IDR)
T = Total average monthly sales value in industry (IDR)
IH = Herfindahl Index

Criteria:
0 – 20% = Perfect Competition Market
20 – 39%= Pure Competition Market
40 – 59%= Monopoly Competition Market
60 – 79% = Oligopoly Market
80 – 100% = Pure Monopoly Market

c. Relative Mean Deviation Intercept
This index is used to measure the extent to which the company's assets (size) and industry assets differ. If the percentage of high standard deviations shows that there are companies in the industry that dominate the market, on the other hand, if the companies compete evenly.

$$Intercept = \frac{D - average}{X - average} \times 100$$

Description:
D   = Deviasi relative Aaverage
X   = Average size of companies in the industry

III. RESULTS AND DISCUSSION
1. Elasticity
Elasticity is used to measure the structure of the market and is a number that shows the magnitude of the influence of each independent variable on the dependent variable. The data and analysis results of each of the variables studied are described in Table 1.

Table 1. Results of data analysis on various research variables

	Request Quantity (Kg/month)	Pork Prices (IDR/Kg)	Other Goods Prices (IDR/Kg)	Consumer Tastes
Total	75.443	9.175.000	3.857.000	751.8
Average	595,5	99.275	53.219	11,27

Source: Processed Data Research Results, 2024.

The elasticity of each free variable (Pi) to the bound variable (Qd)
Elasticity is calculated by the following formula:

$$E1 = \frac{dQ}{dP1} x \frac{P1}{Q}$$

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$$E1 = \beta1\frac{P1}{q}$$

Variable Price Demand Elasticity P1.

$$E1 = \beta1\frac{P1}{q} = 0,094 \text{ x } \frac{99.275}{595,5} = 15, 6706$$

Cross elasticity

$$E2 = \beta2\frac{P2}{q} = 0,018 \text{ x } \frac{53.219}{595,5} = 1, 6086$$

The results of the elasticity calculation in this study are presented in Table 2.

a. The elasticity of price demand shows that the independent variable of pork price P1 has an elasticity of 15.6704 showing that the demand for pork in the traditional market of Ruteng city is sensitive to changes in pork prices.

b. Elastisitas silang menunjukan variabel bebas harga barang lainCross elasticity shows that the independent variable of the price of other goods (chicken meat price) P2 has an elasticity of 1.6086 to the quantity of pork demand. The cross-elasticity of demand shows that the demand for pork trading in the traditional market of Ruteng city is slightly competitive with the price of other goods (chicken meat prices). Based on the results of the analysis, chicken meat is classified as a type of substitute goods that has a relatively small influence on the demand for pork

c. Based on the results of the calculation of the elasticity of pork demand, the result was obtained Ed = 15.6704 > 1, which indicates that the market structure of the pork trade business in the traditional market of Ruteng city is included in the monopolistic competition market and the goods are elastic. Based on the relationship between elasticity and total revenue, the company should not be too active in playing the price strategy because if the company increases the price, the revenue will decrease further which will eventually reduce the company's revenue. There are quite a lot of sellers and buyers, the goods that are traded are different patterns (*differentiated product*). The differences in patterns here include quality, color, size, shape, and others (Sirat et al., 2021). This difference can make it easier for consumers to choose meat according to the tastes and needs of each consumer.

Table 2. Results of elasticity calculation

Free Variable (X)	Coefficient (β)	Elasticity (€)
P_1 (Pork price)	0,094	15,6704
P_2 (Prices of other items)	0,018	1,6086

Source: Processed Data Research Results, 2024.

2.   Market Share and the Herfindahl-Hirsrchman Index.

The results of the calculation of market structure with the market share formula and the Herfindahl index are shown in Table 3. The results of the market share calculation are that none of the companies have a significant market share. Market share is the percentage of total sales in a target market obtained from a company (market potential divided by the number of sales) (Maimuna et al, 2022).

Table 3. Results of the calculation of the market structure with the market share formula and Herfindahl-Hirsrchman index

Sale Value (Rp)	Market Share (%)	IHH
8.190.427.000	100	0.01221

Source: Processed Data Research Results, 2024.

Based on the results of the testing, the market share criteria lead to a monopolistic competitive market. As a result of calculating the number of Herfindahl-Hirsrchman Index (IHH), this index has a value between more than 0 to 1. If the IHH is close to 0, it means that the structure of the industry in question tends to a monopolistic competitive market, while if the index is close to 1, then the structure tends to be close to monopoly. The result of the Herfindahl index is 0.01221 where the IHH is close to 0 which shows that the industrial structure tends to be a monopolistic market.

3. Intersept Deviasi Relatif

This index is used to measure the extent to which a company's assets (size) and industrial assets differ. If the percentage of high standard deviations shows that there are companies in the industry that dominate the market, on the other hand, if the companies compete evenly and closely. The following is the result of the calculation of the Intercept deviation method.

Intercept Deviation Formula:

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$$Intercept = \frac{D - average}{X - average} \times 100$$

Intercept Deviation Results:

$$Intercept = \frac{40729553,27}{109927361,23} \times 100\% = 0,37051333 \; x \; 100\% = 37,05 \%$$

Based on these calculations, it can be concluded that the result of the Relative Mean Deviation Intercept on the pork trade in the traditional market of Ruteng City, Manggarai regency is 37.05%, with this rule, the pork trade in the traditional market of Ruteng City is included in the monopolistic competition market.

The results of the study show that the structure of the pork trade market in the traditional market of Ruteng City, Manggarai Regency, East Nusa Tenggara Province is included in the monopolistic competition market. Every pork trading business in Ruteng City produces similar goods but has differences in several aspects, namely service, performance and other factors. The policy taken by traders in the pork trading industry in the traditional market of Ruteng City is a non-price policy. These non-price policies include promotional policies, product policies, service policies and family policies. This research is in line with the opinion of Sirat et al (2021) which states that the policies taken by companies in the trading industry include non-price policies such as product promotions and services.

CONCLUSION

The results of the research on the estimation of the structure of the pork trade market in Ruteng City, Manggarai Regency, NTT Province can be concluded that: the structure of the pork trade market is classified as a monopolistic competition market because every pork trading business in the city produces similar goods but has differences in several aspects, namely service, performance and other factors.

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