Analysis of Competitiveness and Factors Influencing Indonesian Mangosteen Export Competitiveness in Hong Kong and China Markets

Rianta Chen Yohana Manik[1]
Student of Master in Agribusiness, Faculty of Agriculture, Universitas Sumatera Utara, Indonesia
Email: manikriantachen@gmail.com

Sri Fajar Ayu
Lecturer at Faculty of Agriculture, Universitas Sumatera Utara, Indonesia
Email: sfa@usu.ac.id

Rahmanta
Lecturer at Faculty of Agriculture, Universitas Sumatera Utara, Indonesia
Email: rahmanta1213@gmail.com

Abstract

The increase in Indonesia's mangosteen exports was quite large in the Hong Kong and China markets, thus making the competitiveness of the mangosteen fruit high. This potential can provide significant benefits for countries and exporters by increasing the volume of mangosteen exports to Hong Kong and China markets. This study aims to analyze the competitiveness of Indonesian mangosteen in the Hong Kong and China markets, to analyze the factors that affect the competitiveness of Indonesian mangosteen in the Hong Kong market and to analyze the factors that affect Indonesian mangosteen exports to the China market. The research method uses Revealed Comparative Advantage (RCA) and Export Product Dynamics (EPD) to analyze the competitiveness of Indonesian mangosteen waste in the international market. To find out the factors that affect the competitiveness of mangosteen in the Hong Kong and China markets, multiple linear regression analysis is used. The results showed that Indonesian mangosteen has strong competitiveness in the Hong Kong and China markets with a Rising Star position. Partially, the export volume of Indonesian mangosteen to Hong Kong has a significant effect on the competitiveness (RCA) of the Hong Kong mangosteen market, while the domestic price of Indonesian mangosteen, the export price of Indonesian mangosteen to the Hong Kong market, the export price of Thai mangosteen to the Hong Kong market and the export duty policy. Mangosteen does not have a significant effect on the competitiveness (RCA) of the Hong Kong mangosteen market. Simultaneously the export volume of Indonesian mangosteen to Hong Kong, the domestic price of Indonesian mangosteen, the export price of Indonesian mangosteen to the Hong Kong market, the export price of Thai mangosteen to the Hong Kong market and the export duty policy on mangosteen have a significant effect on the competitiveness (RCA) of Indonesian Hong Kong mangosteen market. Partially, the export volume of Indonesian mangosteen to China and the export price of

---

[1] Corresponding author

Indonesian mangosteen to China have a significant effect on the competitiveness (RCA) of Chinese mangosteen, while the domestic price of Indonesian mangosteen, the export price of Thai mangosteen to the Chinese market and the fruit export duty policy Mangosteen has no significant effect on the competitiveness (RCA) of Hong Kong mangosteen market. Simultaneously, the export volume of Indonesian mangosteen to China, the domestic price of Indonesian mangosteen, the export price of Indonesian mangosteen to the Chinese market, the export price of Thai mangosteen to the Chinese market and the export duty policy on mangosteen have a significant effect on the competitiveness (RCA) of mangosteen in Hong Kong market.

Keywords: Competitiveness, Export, Mangosteen Fruit.

Introduction:

Indonesia is one of the five largest mangosteen exporting countries as mentioned by *Kementerian Pertanian RI* (The Ministry of Agriculture) (2021) states that the world's five largest mangosteen exporting countries are China, India, Kenya, Indonesia and Thailand. The mangosteen fruit commodity has a worldwide market status, its marketing has entered the international market in several countries. The demand for mangosteen fruit commodities is very large, but where international demand for mangosteen fruit commodities has not been fulfilled. This creates an immense opportunity for Indonesia in exporting mangosteen to several countries, where exports of fresh fruit to the fruit market are not limited by quotas. This shows that Indonesia has a boundless prospect to increase the country's foreign exchange through mangosteen exports at the national market level. For this reason, Indonesian agricultural products must be able to compete in the international market by improving product quality whereas in free trade it is necessary to improve a better bargaining position (Yudha et al., 2022).

Badan Pusat Statistika (The Central Bureau of Statistics) (2021) notes that in 2020 there are three countries which are the main export destinations for Indonesian mangosteen fruit, namely Hong Kong with an export value of US$ 49.64 million (25.78 thousand tons), China with an export value of US$ 24, 36 million (10.91 thousand tons) and Malaysia with an export value of US$ 4.89 million (10.72 thousand tons). However, in 2021 the export value and export volume of Indonesian mangosteen decreased for the two main export destination countries, namely Hong Kong with an export value of US$ 23.38 million (7.89 thousand tons) and Malaysia with an export value of US$ 5.74 million (1 .65 thousand tons), while the value of exports to China increased by 84.15% from 2020 (US$ 44.86 million and 15.36 thousand tons).

Badan Pusat Statistika (2018; 2019; 2021) notes that the export value of mangosteen fruit from 2017 to 2021 has fluctuated, where 2019 the export value of Indonesian mangosteen decreased and will increase again in 2020, and will again decrease in 2021. The decline This export value occurred in line with the decline in Indonesia's mangosteen export volume. Pradipta and Firdaus (2014) stated that the competitiveness of Indonesian mangosteen, manga and guava fruit was low and the market position was at Lost Opportunity in several importing countries due to the average growth in exports of Indonesian mangosteen, mangoes and guava which had decreased so that they could not meet market demand for the export destination country. Apart from being based on the export volume of a commodity, several other factors can affect the value of the competitiveness of a commodity. Research conducted by Ginting and Lindawati (2021) states that the factors that can affect the competitiveness of a commodity in the international

market are export volume, the domestic price of a commodity in the country or area of research, the export price of a commodity from a country or region research, export prices of competitors or competitors, export duty policies have a positive and significant effect on competitiveness in the international market.

In this study, several factors were used that influenced the competitiveness of Indonesian mangosteen exports in the international market including the volume of mangosteen exports to destination countries, domestic prices of mangosteen fruits, export prices of Indonesian mangosteen to destination countries, export prices, competitor country mangosteen fruit (Thailand) and mangosteen export duty policy. Based on the background description, a study was conducted entitled Analysis of Competitiveness and Factors Influencing Indonesian Mangosteen Export Competitiveness in Hong Kong and China Markets.

Methodology:

Two methods are used to analyze the competitiveness of the mangosteen fruit in the Hong Kong and China markets, namely Revealed Comparative Advantage (RCA) and Export Product Dynamics (EPD), where RCA is for comparative analysis and EPD is for competitive advantage analysis.

Revealed Comparative Advantage (RCA) explains whether the mangosteen product has a comparative advantage over exports assessed based on the RCA index which is between 0 and greater than 0. The value 1 is considered the dividing line between comparative advantage and disadvantage. An increase or decrease in a country's RCA value shows the competitiveness of a country's exports compared to other exporting countries. The general formulation of RCA is as follows (Balassa, 1965):

$$RCA = \frac{\dfrac{X_{ij}}{Xj}}{\dfrac{X_{iw}}{Xw}}$$

Description:
RCA = Figures Revealed Comparative Advantage (Index)
X_{ij} = Indonesian mangosteen export value to Indonesian mangosteen importing countries (US$)
Xj = Indonesia's total export value to Indonesian mangosteen importing countries (US$)
X_{iw} = Value of world mangosteen exports to Indonesian mangosteen importing countries (US$)
Xw = Total world exports to Indonesian mangosteen importing countries (US$)

The RCA assessment is as follows:

    i.   If the RCA value is > 1, then Indonesian mangosteen has a comparative advantage above the world average so Indonesian mangosteen has strong competitiveness.

    ii.   If the RCA value < 1, then Indonesian mangosteen has a comparative advantage below the world average so mangosteen from Indonesia has weak competitiveness.

iii.   Export Product Dynamics (EPD) is used to identify competitive advantages and measure the market position of a country's products in a particular market usage.
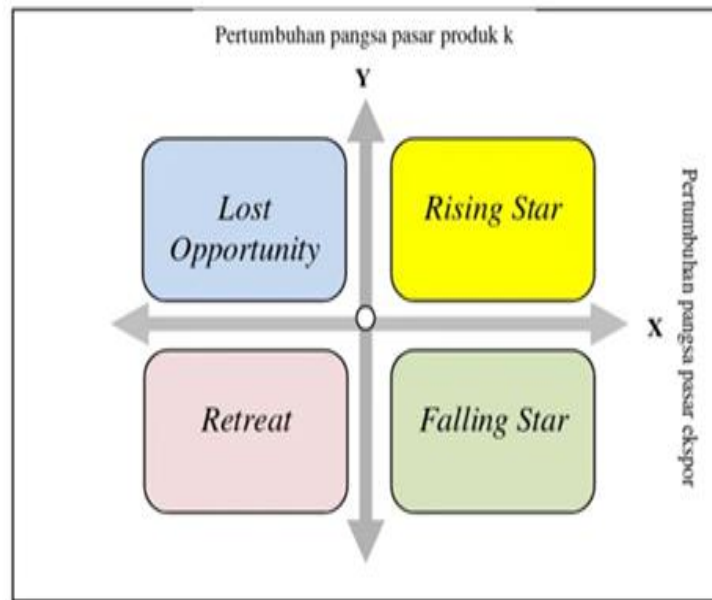

Figure 1. Matrix of Competitiveness Position (Export Product Dynamics (EPD) (Estherhuizen, 2006)

The competitiveness position matrix in each quadrant with the x-axis as export market share and the y-axis as product market share can be seen in Figure 1.

i.   Rising Star refers to the growth in commodity market share and total country market share in world trade. This shows that the share of the country's exports in the world market is increasing. This position is the highest market position, or you could say the most ideal market position because the market share of a commodity enables the country to make good use of market opportunities.

ii.   Lost Opportunity shows that the share of the commodity market is experiencing a decline while the total market share of countries has experienced growth in world trade. This situation is the most undesirable because it means lost opportunities for export share in the world market. A country has lost its share or opportunity to export goods produced in international markets.

iii.   Falling Star shows that there has been an increase in the commodity market share, but has decreased in total market share in world trade, so it is said that the country can make good use of the market. its total market share in the world market.

iv.   Retreat means that the product is no longer wanted on the world market. So this position is called a retreat, in the sense that the commodity retreats from the competitive market. This is because in this position the commodity market share as well as the country's total market share both experienced a decline in the world market.

The formula used in calculating this EPD, including (Sitanini, 2022):

Axis x: Growth of business strength or so-called export market share i

$$X \text{ Axis} = \frac{\sum_{t=1}^{n}\left(\frac{Xij}{Wij}\right)t \times 100\% - \sum_{t=1}^{n}\left(\frac{Xij}{Wij}\right)t-1 \times 100\%}{t}$$

Y-Axis: Growth in market attractiveness or called product market share

$$Y\text{-Axis} = \frac{\sum_{t=1}^{n}\left(\frac{Xt}{Wt}\right)t \times 100\% - \sum_{t=1}^{n}\left(\frac{Xt}{Wt}\right)t-1 \times 100\%}{t}$$

Description:

Xij	= Indonesian mangosteen export value to Indonesian mangosteen importing countries (US\$)
Xt	= Indonesia's total export value to Indonesian mangosteen importing countries (US\$)
Wij	= Value of world mangosteen exports to Indonesian mangosteen importing countries (US\$)
Wt	= Total world export value to Indonesian mangosteen importing countries (US\$)
T	= Number of years studied

After carrying out a competitiveness analysis, it can be identified which export destination countries for Indonesian mangosteen commodities have competitiveness both in terms of comparative and competitive advantages.

To find out objectives 2 and 3, a multiple linear regression test was carried out. Multiple regression analysis is often used to solve regression analysis problems which result in the relationship of two or more independent variables. The multiple linear regression equation models are as follows:

$$Y = a_0 + a_1 LnX_1 it + a_2 LnX_2 it + a_3 LnX_3 it + a_4 LnX_4 it + a_5 LnX_5 it + \mu_i$$

Description :

Y	= RCA Hong Kong (competitiveness of Indonesian mangosteen to the Hong Kong market) and RCA China (competitiveness of Indonesian mangosteen to the Chinese market)
a	= constant
X_1	= Indonesian mangosteen export volume to Hong Kong and China (tons)
X_2	= Indonesian mangosteen domestic price (Rp/Kg)
X_3	= Indonesian mangosteen export price to Hong Kong and China (US \$/Kg)
X_4	= Thai mangosteen export price to Hong Kong and China (US \$/Kg)
X_5	= Mangosteen export duty policy (dummy variable)
	Number 0, if mangosteen fruit export duty has not been applied
	Number 1, if the mangosteen export duty has been applied
$_1$- a_5	= Regression coefficient
i	= Number of observations

t   = The amount of time studied (1995 – 2021)

Results and Discussion:

Competitiveness of Indonesian Mangosteen in the International Market:

Comparative Advantage (RCA) of Indonesian Mangosteen: Competitiveness can be seen from a comparative advantage (RCA) and competitive advantage (EPD). The development of the competitiveness (RCA) of Indonesian mangosteen to the Hong Kong and China markets from 1995 – 2021 can be seen in Figure 2.
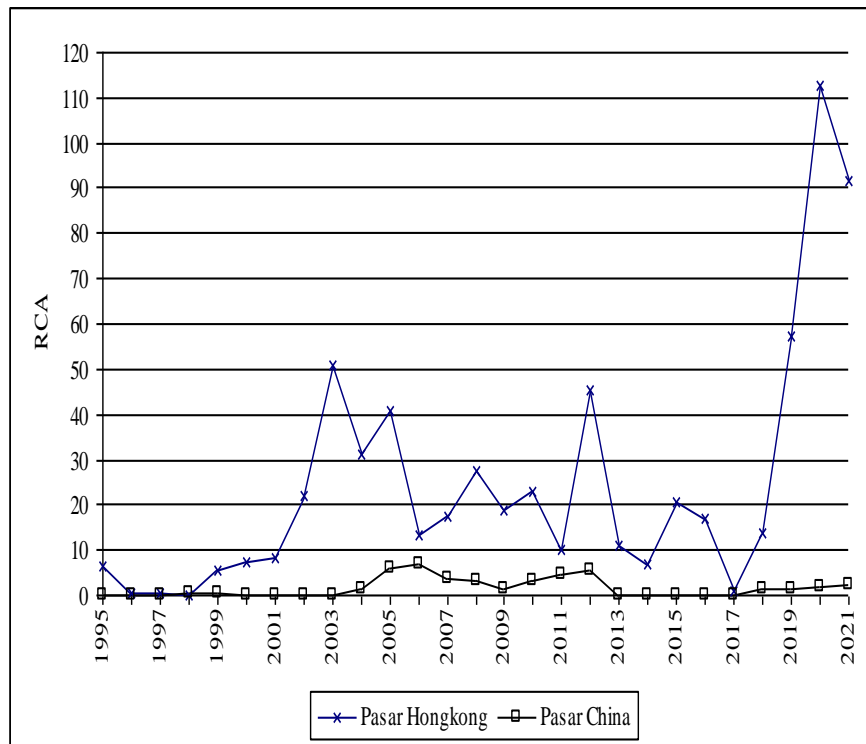

Figure 2: Competitiveness Development (RCA) of Indonesian Mangosteen to the Hong Kong Market and China Market in 1995 - 2021

Figure 2 shows that every year there is a difference in the competitiveness of Indonesian mangosteen exported to Hong Kong and the Chinese market. From 1995 to 1997, the competitiveness of Indonesian mangosteen in the Hong Kong market was higher than in the Chinese market, but in 1998, Indonesia's competitiveness in the Chinese market was higher than that in the Hong Kong market. From 1999 to 2021, the competitiveness of Indonesian mangosteen in the Hong Kong market has always been higher than in the Chinese market.

The competitiveness of Indonesian mangosteen to the Hong Kong market in 1996, 1997, 1998 and 2017 was low because the RCA was less than 1, while the rest had strong competitiveness. The competitiveness of Indonesian mangosteen to the Chinese market from 1995 – 2003 was low, while 2004 – 2012 had high competitiveness. In 2013 – 2017, it has low competitiveness. In 2018 – 2021, have high competitiveness. The decline in the competitiveness

of Indonesian mangosteen to the Hong Kong and China markets was caused by an increase in the export market for Thai mangosteen to the Hong Kong and China markets, resulting in a further reduction in the competitiveness of Indonesian mangosteen in the Hong Kong and China markets. Although there are differences in the competitiveness of Indonesian mangosteen in the Hong Kong and China markets, overall the competitiveness of Indonesian mangosteen in these two markets is high because the RCA values of the two mangosteens exported to the Hong Kong market and the Chinese market are greater than 1. The results of the study this is by research by Yudha et al., (2022) state that the competitiveness of Indonesian mangosteen exports shows an average RCA value of Indonesia in the Thai market (0.63) meaning that it is weakly competitive and does not have a comparative advantage, while the RCA value of Indonesian mangosteen in the Hong Kong and Malaysia markets respectively (28.16) meaning strong competitiveness and (12.69) meaning strong competitiveness.

Indonesian Mangosteen Competitive Advantage (EPD): To find out the competitive advantages of Indonesian mangosteen to the Hong Kong and China markets, the Export Product Dynamic (EPD) method was used. The EPD value of Indonesian mangosteen in the Hong Kong and China markets can be seen in Table 1.

Table 1: EPD Value of Indonesia, India and Thailand Mangosteen

Competitive advantage (EPD)	Position Value (X, Y)		Position Category
	X	Y	
Indonesia			
Hong Kong Market	0.3918	0.0215	*Rising Star*
Chinese Market	0.0855	0.0482	*Rising Star*
Thailand			
Hong Kong Market	0.6577	0.0743	*Rising Star*
Chinese Market	0.7833	0.0592	*Rising Star*
India			
Hong Kong Market	0.0181	0.0603	*Rising Star*
Chinese Market	0.0315	0.0309	*Rising Star*

Table 1 shows that the value of the EPD position of Indonesian mangosteen to the Hong Kong and China markets has positive X and positive Y values so this category is in the Rising Star position. Likewise, Thai and Indian mangosteen has a Rising Star position in the Hong Kong and China markets. Based on the calculation of competitive advantage using the EPD method, the result is that Indonesian mangosteen has strong competitiveness in the Hong Kong market and the Chinese market. This shows that the Indonesian mangosteen fruit in the international market has a strong and large share of the export market at the international market level. The results of this research are following research conducted by Pradipta and Firdaus (2014) that the EPD position of Indonesian mangosteen to China is in the Rising Star position. And research conducted by Yudha et al., (2022) also states that the Indonesian Trade Specialization Index (ISP) in the Hong Kong market tends to fluctuate, but almost every year the ISP value is close to 1 so that the average Indonesian ISP value is 1, which means it has strong competitiveness and is in the position of criteria for the stage of independence.

Factors Affecting the Competitiveness (RCA) of Indonesian Mangosteen to the Hong Kong Market:

The results of the regression test on the effect of mangosteen export volume, Indonesian mangosteen domestic prices, Indonesian mangosteen export prices, Thai mangosteen export prices and the policy of imposing export duties on the competitiveness of mangosteen in the Hong Kong market can be seen in Table 2.

Table 2: Multiple Linear Regression Test Results

Independent variable	Regression Coefficient	t-count	Sig.	Description
(Constant)	3.503	0.590	0.564	
Indonesian mangosteen export volume to Hong Kong	3.311E-6	5.009	0.000	Significant
Mangosteen Domestic Price	9.682	1.390	0.186	Not Significant
Indonesian mangosteen export price to Hong Kong	-2.738	-0.775	0.451	Not Significant
Thai mangosteen export price to Hong Kong	-3.742	-1.172	0.261	Not Significant
Mangosteen export duty policy	-0.816	-0.266	0.794	Not Significant
R² = 0.787 F-count = 10.327 Sig. = 0.000				

Table 2 shows the results of multiple linear regression tests to analyze the factors affecting the competitiveness (RCA) of Indonesian mangosteen in the Hong Kong market.

The multiple linear regression equation is as follows:

RCA Hongkong = $3{,}503 + 3{,}311E\text{-}6X_1 + 9{,}862X_2 - 2{,}738X_3 - 3{,}742X_4 - 0{,}816X_5$

The constant value of the regression model is 3.503, stating that when all variables in the research model are equal to zero (have no value), the level of competitiveness of Indonesian mangosteen to the Hong Kong market is 3.503 which is an influence from outside this regression model. The level of competitiveness of Indonesian mangosteen to the Chinese market is 3.503, meaning that Indonesian mangosteen to the Hong Kong market is highly competitive.

Coefficient of Determination (R²): The results of the analysis show that the coefficient of determination or R² is 0.787, meaning that 78.70% of the variation in the competitiveness variable (RCA) of Indonesian mangosteen to the Hong Kong market can be explained by variations in the volume variable of exports of Indonesian mangosteen to the Hong Kong market (X1), the domestic price of mangosteen. Indonesia (X2), the export price of Indonesian mangosteen to the Hong Kong market (X3), the export price of Thai mangosteen to the Hong Kong market (X4), the mangosteen export duty policy (X5) and the remaining 21.30% is explained by other variables not included in the model.

F test: Table 2 shows that the F-count is 10.327 greater than the F-table 2.685 with a significance of 0.000 at the level α = 0.05. This shows that the significance value of F is smaller than the probability value (0.000 <0.05), so there is an influence of the independent variable export volume of Indonesian mangosteen to the Hong Kong market (X1), the domestic price of Indonesian mangosteen fruit (X2), the export price of mangosteen fruit Indonesia to the Hong Kong market (X3), the export price of Thai mangosteen to the Hong Kong market (X4), the mangosteen export duty policy (X5) simultaneously has a significant effect on the dependent

variable, namely the competitiveness (RCA) of Indonesian mangosteen to the Hong Kong market.

Test t:

Effect of Indonesian Mangosteen Export Volume on Indonesian Mangosteen Competitiveness to Hong Kong Market: The regression coefficient value of the Indonesian mangosteen export volume variable has a positive sign with a regression coefficient value of 3.311E-6. This shows that partially the export volume of Indonesian mangosteen to the Hong Kong market has a positive and significant effect on the competitiveness of Indonesian mangosteen in the Hong Kong market. will increase the competitiveness of Indonesian mangosteens in the Hong Kong market by 3.311E-6 (0.000003311) per cent, meaning that an increase in the export volume of Indonesian mangosteens with increased demand from export destination countries will increase the export competitiveness of Indonesian mangosteens in the Hong Kong market.

The results of this study are following research conducted by Ginting and Lindawati (2021) which states that the export volume of a commodity has a positive and significant effect on the competitiveness of this commodity in the international market. The export volume of Indonesian mangosteen reflects the world's demand for Indonesian mangosteen. An increase in the export volume of mangosteen from Indonesia can also cause a decrease in the volume of mangosteen exports from other countries to the Hong Kong market. The decreasing export volume from competing countries will result in the increasing competitiveness of Indonesian mangosteen marketed in the Hong Kong market.

Effect of Indonesian Mangosteen Domestic Prices on Mangosteen Competitiveness to the Hong Kong Market: The regression coefficient value of the Indonesian Mangosteen domestic price variable (X2) has a positive sign with a regression coefficient value of 9.682. This shows that partially the domestic price of Indonesian mangosteen has a positive but not significant effect on the competitiveness of Indonesian mangosteen in the Hong Kong market. The regression coefficient is positive indicating that if the domestic price of Indonesian mangosteen increases by IDR 1/kg with ceteris paribus conditions, it can increase the competitiveness of Indonesian mangosteen to the Hong Kong market by 9.682 per cent, meaning that if domestic prices increase, then competitiveness will be higher because it will increase exports to export destination countries so that competitiveness is high both at home and abroad.

The results of this study are not to the research of Ginting and Lindawati (2021) which states that domestic prices have a positive and significant effect on the competitiveness of these commodities in the international market. An increase in domestic prices will encourage local producers to further increase their production by paying attention to the quality of the mangosteen that will be offered so that later Indonesian mangosteen will gain a place in the international market. However, because this variable does not have a significant effect on the competitiveness of Indonesian mangosteen exports, an increase or decrease in the domestic price of Indonesian mangosteen will not affect the export competitiveness of Indonesian mangosteen in the Hong Kong market.

Effect of Indonesian Mangosteen Export Prices to the Hong Kong Market on the Competitiveness of Indonesian Mangosteen to the Hong Kong Market: The regression coefficient value of the Indonesian mangosteen export price variable (X3) has a negative sign

with a regression coefficient value of -2.738. This shows that partially the export price of Indonesian mangosteen fruit to the Hong Kong market has a negative effect, but not significantly on the competitiveness of Indonesian mangosteen fruit to the Hong Kong market. The regression coefficient is negative, indicating that if the export price of Indonesian mangosteen to the Hong Kong market increases by 1 US$/kg in ceteris paribus conditions, then the competitiveness of Indonesian mangosteen fruit decreases to the Hong Kong market by 2.738 per cent. The average price of Indonesian mangosteen to Hong Kong is 1.019 US$/kg, while the average price of competing countries, namely Thailand, is 0.798 US$/kg. This means that the export price of Indonesian mangosteen is higher than Thailand, thus if the export price of Indonesian mangosteen increases, and the price increase is higher than that of competing countries, the competitiveness of Indonesian mangosteen in the Hong Kong market will decrease.

The results of this study are not following previous research conducted by Ginting and Lindawati (2021), which stated that the export price of a commodity has a positive and significant effect on the competitiveness of this commodity in the international market. However, because this variable does not have a significant effect on the competitiveness of Indonesian mangosteen exports, an increase or decrease in the export price of Indonesian mangosteen to the Hong Kong market will not affect the competitiveness of Indonesian mangosteen exports to the Hong Kong market.

Effect of Thai Mangosteen Export Prices on Indonesian Mangosteen Competitiveness to the Hong Kong Market: The regression coefficient value of the Thai Mangosteen export price variable (X4) has a negative sign with a regression coefficient value of -3.742. This shows that partially the export price of Thai mangosteen has a negative and significant effect on the competitiveness of Indonesian mangosteen in the Hong Kong market. The regression coefficient has a negative sign indicating that if the export price of Thai mangosteen increases by 1 US$/kg in ceteris paribus conditions, it will reduce the competitiveness of Indonesian mangosteen to the Hong Kong market by 3.742 per cent, meaning that if the export prices of Thailand's competitors to the Hong Kong market increase, but the export price is still below the export price of Indonesian mangosteen to Hong Kong, so Hong Kong as an importing country will choose Thailand over Indonesia as an exporter which has a lower price, so the export competitiveness of Indonesian mangosteen to the Hong Kong market will decrease.

The results of this study are not following the research of Ginting and Lindawati (2021), which states that export prices from competitive countries have a positive and significant effect on the competitiveness of these commodities in the international market. However, because this variable does not have a significant influence on the competitiveness of Indonesian mangosteen exports, an increase or decrease in the export price of Thai mangosteen to the Hong Kong market will not affect the competitiveness of Indonesian mangosteen exports to the Hong Kong market.

Effect of Export Duty Policy on Mangosteen Fruit on Competitiveness of Indonesian Mangosteen Fruit to Hong Kong Market: The regression coefficient value of the mangosteen export tax policy variable (X5) has a negative sign with a regression coefficient value of -0.816. This shows that partially the Indonesian mangosteen export duty policy has a negative but not significant effect on the competitiveness of Indonesian mangosteen fruit in the Hong Kong market. The regression coefficient with a negative sign indicates that there is an export duty policy, which will reduce the competitiveness of Indonesian mangosteen to the Hong Kong market by 0.816 per cent. The implementation of export duty rates by the government makes

exporters incur additional costs to cover these costs. The increase in the cost of exporting makes exporters earn smaller profits, which will reduce the volume of mangosteen exports to the Hong Kong market. The decline in export volume will make Indonesia's mangosteen competitiveness even lower. The implementation of the export duty policy is carried out to increase the competitiveness of mangosteen fruit in the international market, but it can also hamper the export of mangosteen fruit because the costs incurred are getting bigger.

The results of this study are following the research of Ginting and Lindawati (2022) which states that the export duty policy for a commodity has a positive and significant effect on the competitiveness of this commodity in the international market. An increase in export demand will increase Indonesia's export duty rates and Indonesia's export duty rates will significantly reduce export volumes. Indonesia's export duty policy on export destinations can increase domestic supply. However, because this variable does not have a significant effect on the competitiveness of Indonesian mangosteen exports, a change in the export duty policy for Indonesian mangosteen exports to the Hong Kong market will not affect the competitiveness of Indonesian mangosteen exports to the Hong Kong market.

Factors Affecting the Competitiveness (RCA) of Indonesian Mangosteen to the Chinese Market:

The results of the regression test on the effect of mangosteen export volume to the Chinese market, domestic mangosteen prices, Indonesian mangosteen export prices to the China market, Thai mangosteen export prices to the China market and the imposition of export duties on the competitiveness of mangosteen in the Chinese market can be seen in Table 3.

Table 3: Multiple Linear Regression Test Results

Independent Variable	Regression Coefficient	t-count	Sig.	Description
(Constant)	3,491	4,630	0,000	-
Indonesian mangosteen export volume to China	7,326E-7	5,803	0,000	Significant
Indonesian mangosteen domestic price	-1,744	-,940	0,358	Not Significant
Indonesian mangosteen export price to China	-1,928	-2,197	0,039	Significant
Thai mangosteen export prices to China	-1,351	-1,132	0,271	Not Significant
Export duty imposition policy	-0,520	-,875	0,391	Not Significant
R² = 0,703 F-count = 9,940 Sig. = 0,000				

Table 3 shows the results of multiple linear regression tests to analyze the factors affecting the competitiveness (RCA) of Indonesian mangosteen in the Chinese market. The multiple linear regression equation is as follows:

$$RCA\ China = 3.491 + 7.326E\text{-}7\ X1 – 1.744\ X2 – 1.928\ X3 – 1.351\ X4 - 0.520\ X5$$

Coefficient of Determination (R²): The results of the analysis show that the coefficient of determination or R^2 is 0.703, meaning that 70.30% of the variation in the competitiveness variable (RCA) of Indonesian mangosteen to the Chinese market can be explained by variations in the volume variable of exports of Indonesian mangosteen to the Chinese market (X1), the domestic price of mangosteen. (X2), the export price of Indonesian mangosteen to the Chinese

market (X3), the export price of Thai mangosteen (X4), the export tax policy on mangosteen (X5) and the remaining 29.70% is explained by other variables not included in the model.

Simultaneous Test (F-test): Table 17 shows that the F-count of 9.940 is smaller than the F-table of 2.685 with a significance of 0.000 at the level $\alpha = 0.05$. This shows that the significance value of F is greater than the probability value (0.000 <0.05), the independent variables are the volume of Indonesian mangosteen exports to the Chinese market (X1), the domestic price of mangosteen fruits (X2), the export price of Indonesian mangosteen to the Chinese market. China (X3), Thai mangosteen export prices (X4), and mangosteen export duty policies (X5) simultaneously have a significant effect on the dependent variable, namely the competitiveness (RCA) of Indonesian mangosteens in the Chinese market.

Partial Test (t-test):

Effect of Indonesian Mangosteen Export Volume on Indonesian Mangosteen Competitiveness to China Market: The regression coefficient value of the Indonesian mangosteen export volume variable has a positive sign with a regression coefficient value of 7.336E-7. This shows that partially the export volume of Indonesian mangosteen fruit has a positive and significant effect on the competitiveness of mangosteen fruit in the Chinese market. The regression coefficient is positive indicating that if the export volume of Indonesian mangosteen increases by 1 kg with ceteris paribus, it will increase the competitiveness of Indonesian mangosteen in the Chinese market by 7.326E-7 (0.0000007326) per cent.

The results of this study are in line with the research of Ramadhan and Fahmi (2022) which states that the volume of rubber exports in South Sumatra has a significant effect on RCA. The export volume of Indonesian mangosteen to the Chinese market is increasing. An increase in the export volume of mangosteen from Indonesia can also cause a decrease in the volume of mangosteen exports from other countries to the Chinese market. Based on data showing that mangosteen imports in the Chinese market were dominated by mangosteen, originating from Thailand, it is clear that in 2021 mangosteen reached an export weight or volume of 238,273,831 Kg, while from Indonesia it was only 15,320,951 Kg.

The Effect of Indonesian Mangosteen Domestic Prices on Mangosteen Competitiveness to the Chinese Market: The regression coefficient value of the Indonesian mangosteen domestic price variable (X2) has a negative sign with a regression coefficient value of -1.744. This shows that partially the domestic price of mangosteen has a negative but not significant effect on the competitiveness of Indonesian mangosteen in the Chinese market. The regression coefficient has a negative sign indicating that if the domestic price of Indonesian mangosteen increases by Rp. 1/kg in ceteris paribus conditions, it can reduce the competitiveness of Indonesian mangosteen to the Chinese market by 1.744 per cent, meaning that if the domestic price of Indonesian mangosteen increases, then the competitiveness of the fruit Indonesian mangosteen in the Chinese market will continue to decline.

The results of this study are not following the research of Ginting and Lindawati (2021), which states that the domestic price of a commodity has a positive and significant effect on the competitiveness of this commodity in the international market. And because this variable does not have a significant influence on the competitiveness of Indonesian mangosteen exports, if there is an increase or decrease in the domestic price of mangosteen in Indonesia it will not affect the competitiveness of Indonesian mangosteen exports to the Chinese market.

The Effect of Indonesian Mangosteen Export Prices on the Competitiveness of Indonesian Mangosteen Fruit to the Chinese Market: The regression coefficient value of the Indonesian mangosteen export price variable (X3) has a negative sign with a regression coefficient value of -1.928. This shows that partially the export price of Indonesian mangosteen has a negative effect, but not significantly on the competitiveness of Indonesian mangosteen in the Chinese market. The regression coefficient has a negative sign indicating that if the export price of mangosteen increases by 1 US\$/Kg in ceteris paribus conditions, it will reduce the competitiveness of Indonesian mangosteen to the Chinese market by 1.928 per cent. The average price of Indonesian mangosteen to China is 0.942 US\$/kg, while the average price of competing countries, namely Thailand, is 0.720 US\$/kg. This means that the export price of Indonesian mangosteen is higher than that of Thailand, thus if the export price of Indonesian mangosteen increases, and the price increase is higher than that of Thailand's competitor, then the competitiveness of Indonesian mangosteen in the Chinese market will decrease.

The results of this study are consistent with the research of Pradipta and Firdaus (2014) which states that export prices have a significant and negative effect on the volume of mangosteen exports to destination countries. The higher the price set, the lower the demand will be. This is not following the theory of the law of supply which states that the price and product offered are positively related, meaning that if the price of product increases, the goods offered by producers also increase and vice versa if the price of the product falls, the supply will also decrease. And producers will increase their production because they will get more profit. So it can be said that an increase in the export price of Indonesian mangosteen will cause the volume of Indonesian mangosteen exports to the Chinese market to decrease as well so that the competitiveness of Indonesian mangosteen exports will also decrease.

Effect of Thai Mangosteen Export Prices on Indonesian Mangosteen Competitiveness to the Chinese Market: The regression coefficient value of the Thai Mangosteen export price variable (X4) has a negative sign with a regression coefficient value of -1.351. This shows that partially the export price of Thai mangosteen has a negative effect, but not significantly on the competitiveness of Indonesian mangosteen in the Chinese market. The regression coefficient has a negative sign indicating that if the export price of Thai mangosteen increases by 1 US\$/Kg in ceteris paribus conditions, it will reduce the competitiveness of Indonesian mangosteen to the Chinese market by 1.351 per cent, meaning that if the export price of Thailand's competitors to the Chinese market increases, but the export price is still below the export price of Indonesian mangosteen to China, so China as an importing country will choose Thailand over Indonesia as an exporter which has a lower price, so the competitiveness of Indonesian mangosteen exports to the Chinese market will decrease.

The results of this study are not following the research of Ginting and Lindawati (2021), which states that export prices from competitive countries have a positive and significant effect on the competitiveness of these commodities in the international market. However, because this variable does not have a significant influence on the competitiveness of Indonesian mangosteen exports, an increase or decrease in the export price of Thai mangosteen to the Hong Kong market will not affect the competitiveness of Indonesian mangosteen exports to the Hong Kong market.

Effect of Export Duty Policy on Mangosteen Fruit on Competitiveness of Indonesian Mangosteen Fruit to China Market: The regression coefficient value of the mangosteen export tax policy variable (X5) has a negative sign with a regression coefficient value of -0.520. This

shows that partially the Indonesian mangosteen export duty policy has a negative and significant effect on the competitiveness of Indonesian mangosteen fruit in the Chinese market. The regression coefficient with a negative sign indicates that there is an export duty policy, which will reduce the competitiveness of Indonesian mangosteen in the Chinese market by 0.520 per cent. The existence of a mangosteen fruit export duty policy can reduce the competitiveness of Indonesian mangosteen fruit in the Chinese market. This is because exporters will incur greater costs to export mangosteen fruit to the Chinese market with the imposition of export duty rates.

The results of this study are following research by Permani (2013) which states that the greater the export tax that is applied, the producer surplus decreases while the consumer surplus and government revenue increase. However, because this variable does not have a significant effect, if it has not yet been implemented or if the export duty policy for Indonesian mangosteen fruit to the Chinese market has been in effect, it will not affect the export competitiveness of Indonesian mangosteen fruit in the Chinese market.

Conclusion:

Based on the results of the analysis, it can be concluded that Indonesian mangosteen has strong competitiveness in the Hong Kong market and the Chinese market with a Rising Star position. Partially, the export volume of Indonesian mangosteen to Hong Kong has a significant effect on the competitiveness (RCA) of mangosteen in the Hong Kong market, while the domestic price of Indonesian mangosteen, the export price of Indonesian mangosteen to the Hong Kong market, the export price of Thai mangosteen to the Hong Kong market and the customs policy release of mangosteen fruit does not have a significant effect on the competitiveness (RCA) of mangosteen in the Hong Kong market. Simultaneously, the export volume of Indonesian mangosteen to Hong Kong, the domestic price of Indonesian mangosteen, the export price of Indonesian mangosteen to the Hong Kong market, the export price of Thai mangosteen to the Hong Kong market and the export duty policy on mangosteen have a significant effect on the competitiveness (RCA) of mangosteen in Indonesia. Hong Kong market. Partially, the export volume of Indonesian mangosteen to China and the export price of mangosteen from Indonesia to the Chinese market have a significant effect on the competitiveness (RCA) of mangosteen in the Chinese market, while the domestic price of Indonesian mangosteen, the export price of Thai mangosteen to the Chinese market and the policy Mangosteen export duties do not have a significant effect on the competitiveness (RCA) of mangosteen in the Chinese market. Simultaneously, the export volume of Indonesian mangosteen to China, the domestic price of Indonesian mangosteen, the export price of Indonesian mangosteen to the Chinese market, the export price of Thai mangosteen to the Chinese market and the export duty policy on mangosteen have a significant effect on the competitiveness (RCA) of mangosteen in Indonesia. Chinese market.

Acknowledgement:

References

Badan Pusat Statistika. (2018). *Statistik Perdagangan Internasional Ekspor 20121*. Badan Pusat Statistika. Jakarta.

Badan Pusat Statistika. (2019). *Statistik Perdagangan Internasional Ekspor 2018*. Badan Pusat Statistika. Jakarta.

Badan Pusat Statistika. (2020). *Statistik Perdagangan Internasional Ekspor 2019*. Badan Pusat Statistika. Jakarta.

Balassa, B. (1965). Trade Liberalization and Revealed Comparative Advantage. *The Manchester School of Economic and Social Studies, 33*(2).

Estherhuizen, D. (2006). *Measuring and Analyzing Competitiveness in the Agribusiness Sector*: *Methodological and Analytical Framework*. Pretoria: University of Pretori

Ginting, N. R., & Lindawati. (2021). Analisis Analisis Daya Saing Kakao Olahan dan Faktor-Faktor yang Mempengaruhi Daya Saing Kakao Olahan Provinsi Sumatera Utara, Indonesia di Pasar Internasional. *Agro Bali: Agricultural Journal, 4*(3), 425-437.

Kementerian Pertanian RI. (2021). *Stastistik Data Volume dan Nila Ekspor subsektor Hortikultura Indonesia tahun 2014-2018*. Jakarta.

Permani, R. (2013). Optimal Export Tax Rates of Cocoa Beans: A Vector Error Correction Model Approach. *Aust J Agric Res Econ, 5*, 579-600.

Pradipta, A., & dan M. Firdaus. (2014). Posisi Daya Saing dan Faktor-Faktor yang Memengaruhi Ekspor Buah-Buahan Indonesia. *Jurnal Manajemen & Agribisnis*, *11*(2), 129-143.

Sitanini, A. (2022). Competitiveness Of Indonesian Coffee Exports To Japan. *Perwira Journal of Economics and Business (PJEB), 2*(2).

Yudha, E. P., E. Y. Sari, & Dan, A. N. (2022). Analisis Daya Saing Buah Manggis Indonesia di Negara Thailand, Hong Kong dan Malaysia. Agricore : *Jurnal Agribisnis dan Sosial Ekonomi Pertanian Unpad,7* (1), 79 – 87.