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Analysis of the Competitiveness of Indonesian Clove Exports to the Main Destination

Rusyqy Fuad Arsa Barus[1♥], Dwi Rachmina[2], and Nia Kurniawati Hidayat[3]

[1]Agricultural Economics Study Program, Faculty of Economics and Management, IPB University, Bogor, Indonesia
[2]Department of Agribusiness, Faculty of Economics and Management, IPB University, Bogor, Indonesia
[3]Department of Environmental and Resources Economics, Faculty of Economics and Management, IPB University, Bogor, Indonesia
♥Corresponding author email: rusyqyfuadarsa@gmail.com

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Abstract. Indonesia is the largest producer of cloves and one of the largest exporters of cloves in the world. In 2023, Indonesia's clove production reached 135,178 tons, with an export value of US$ 99,605,682. Indonesia's clove trade balance has been in surplus since 2017-2023. Between 2021 and 2022, there was a decrease in the export value of cloves to major destination countries. This was caused by Indonesia's high demand for cloves due to the presence of the kretek cigarette industry in the country. The aim of this research is to analyze the competitiveness of Indonesian cloves in its main export markets and examine the factors that influence the export of cloves to these key destination countries. This study uses Revealed Comparative Advantage (RCA) analysis, Export Product Dynamic (EPD), X-Model, and panel data regression. From 2011 to 2023, Indonesia had a comparative advantage in all destination countries. The highest comparative advantage was found in the United Arab Emirates, while the lowest was in Singapore. Indonesia has a competitive advantage in four countries: Bangladesh, India, Pakistan, and the United Arab Emirates, and these countries show optimism for the development of exports. The variables of Indonesian clove production and export prices have a positive and significant effect on the export value of Indonesian cloves.

Keywords: cloves; competitiveness; export; international trade

INTRODUCTION

The spice commodities of Indonesia have become one of the sub-sector plantation commodities with great potential in the international market. Clove commodities, have significant potential and opportunities to enhance the economy. Indonesia is one of the leading exporters of cloves in the international market, supported by the vast land available for cultivation. The trade balance of cloves in Indonesia from 2017 to 2023 has been in surplus, totaling US$ 36,902,110. Indonesia's clove production from 2018 to 2023 remains the largest compared to other competing countries, with an average annual production of 137,113 tons (Kementan, 2022). Indonesia competes with Madagascar, Tanzania, and Sri Lanka in exporting cloves to the international market (Nurhayati et al., 2018). The trends in export values between Indonesia and other exporting countries are presented in Table 1.

The development of clove export values between Indonesia and its competitor countries based on Table 1 shows that in 2022, Indonesia generated a clove export value of 56 million dollars, which has decreased compared to the last two years, placing it second after Madagascar. Indonesia's clove export value in 2022 decreased by 40.77% compared to the previous year. However, in 2023, Indonesian's cloves export value increased again by 75.02%. On average, Indonesia generates 108 million dollars in clove exports per year. Based on the average value, Indonesia ranks second with a lower export value compared to Madagascar. This is supported by the total clove production produced by Indonesia. However, since 2021-2023, Indonesia has been displaced from the first position, even though Indonesia produced more cloves than Madagascar during that period. The fluctuation in

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Indonesia's clove export value is caused by clove cigarette factories, which absorb clove production in the domestic market (Rhezamayye et al., 2020).

Table 1. Clove export values of the four largest clove-producing countries in the world from 2019 to 2023

Years	Export Value (US$)			
	Indonesia	Madagascar	Tanzania	Sri Lanka
2019	111,537,121	77,157,256	9,136,854	29,977,753
2020	176,540,022	63,427,723	17,079,233	16,959,078
2021	96,082,281	116,245,129	51,783,472	37,140,380
2022	56,909,146	291,675,386	42,119,893	21,266,723
2023	99,605,682	248,431,137	25,128,918	45,654,985
Average	108,134,850	159,387,326	29,049,674	30,255,292

Source: UN Comtrade 2024

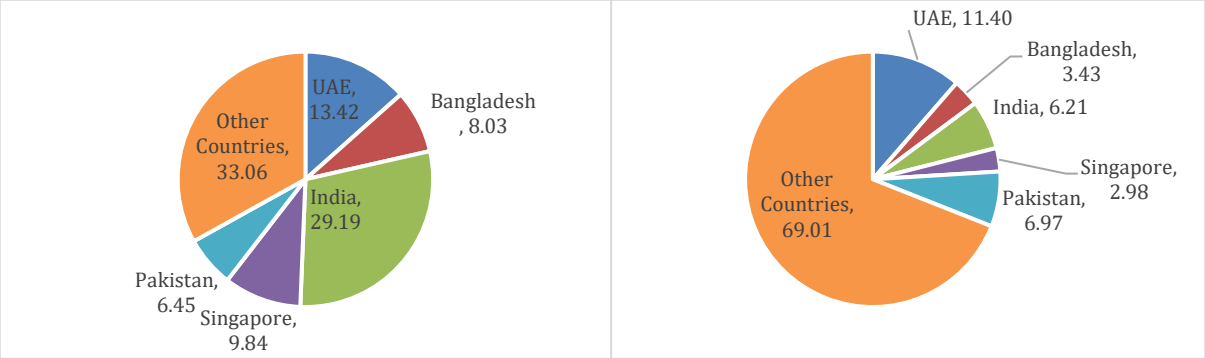

Figure 1. Main destination countries for Indonesia's clove exports in 2021 and 2022

The markets of Bangladesh, India, Pakistan, Singapore, and the United Arab Emirates became the main destinations for Indonesia's clove exports in 2021. In 2022, there was a decline in the export value of Indonesia's cloves to these main destination markets. The main destination countries for Indonesia's clove exports in 2021 and 2022 can be seen in Figure 1.

Based on Figure 1, India became the largest importer of cloves from Indonesia with a percentage value of 29.19%, in 2021 which decreased the following year to 6.21%. The United Arab Emirates imported 13.42% of cloves from Indonesia in 2021, and this decreased to 11.4% the next year. The next country to import cloves from Indonesia was Singapore, with a total of 9.84%, which also experienced a decline the following year to 2.98%. Bangladesh imported 8.03% in 2021 and decreased to 3.43% in 2022, while Pakistan imported 6.45% of cloves from Indonesia and saw an increase to 6.97% in 2022. It can be concluded that Indonesia underwent a notable decrease in its export market share in main destination markets between 2021 and 2022.

This change is due to the increasing domestic demand for cloves. Domestic clove demand has become a challenge for Indonesia in exporting cloves. The kretek cigarette industry uses cloves as the main raw material for producing kretek cigarettes. Suprihanti et al. (2018) mentioned that the kretek cigarette industry absorbs the majority of Indonesia's clove production, accounting for 80-90%, with cigarette excise revenue in 2017 reaching IDR 147,72 billion.

Countries that are the main destinations for Indonesia's clove exports also serve as

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export destinations for other exporting countries such as Madagascar, Tanzania, and Sri Lanka. When looking at the export share values of cloves from Indonesia and other exporting countries, Indonesia dominates only in the markets of Pakistan and Bangladesh. The largest export share of cloves from Indonesia among the five countries is in the Pakistani market, with a total share of 40.4%, followed by Bangladesh with a total share of 35.23%. Madagascar dominates the other three markets, namely India, Singapore, and the United Arab Emirates. There is a significant difference in the market share between Indonesia and Madagascar in India and Singapore. Based on the above description, the objectives of this study are: 1) to analyze the competitiveness of Indonesian cloves in the main export destination markets, and 2) to analyze the factors that influence Indonesia's clove exports to the main export destination countries.

METHODS

Types and Source of Data

The data used in this study are secondary data. The data utilized is panel data, which is a combination of time series data from 2011-2023 and cross-sectional data from five main export destination countries. The data analyzed includes the export value of cloves (HS0907) from Indonesia to the main destination countries (Bangladesh, India, Pakistan, Singapore, and the United Arab Emirates), Gross Domestic Product per capita, clove production, export prices, exchange rates, and other related data. The data sources are obtained from UN Comtrade, World Bank, UNCTAD, and FAOSTAT.

Data Analysis Method

Revealed Comparative Advantage (RCA)

Comparative advantage in a region, whether a country, province, or others, can be measured using the basic principle of the RCA method. Mathematically, the calculation of RCA is formulated as follows:

$$RCA = \frac{Xajt/Xtjt}{Wajt/Wtjt} \quad \ldots\ldots\ldots\ldots (1)$$

Xaj : Indonesia's clove export value to countries (India, UAE, Singapore, Pakistan, Bangladesh) (USD)
Waj : World's clove export value to countries (India, UAE, Singapore, Pakistan, Bangladesh) (USD)
Xtj : Indonesia's total export value to countries (India, UAE, Singapore, Pakistan, Bangladesh) (USD)
Wtj : World's total export value to countries (India, UAE, Singapore, Pakistan, Bangladesh) (USD)
t : Number of years

If the RCA value is greater than one (RCA > 1), then Indonesian cloves have a comparative advantage in the main destination countries. If the RCA value is less than one (RCA < 1), then Indonesian cloves do not have a comparative advantage in the main destination countries.

Export Product Dynamic (EPD)

Export Product Dynamics (EPD) is an indicator that measures the market position of a country's product. This EPD metric is capable of comparing the export performance of countries around the world. In addition to measuring market position, EPD can also determine whether a product's performance is dynamic or not. The EPD matrix consists of market attractiveness and business strength information. The combination of market attractiveness and business strength results in the product's position being classified into four categories: quadrant I rising star, quadrant II lost opportunity, quadrant III falling star, and quadrant IV retreat. The ideal market position is in the rising stars quadrant, while the undesired positions are lost opportunity, falling stars, and retreat.

$$\text{X Axis} = \frac{\sum_{t=1}^{n}\left(\frac{Xij}{Wij}\right)t \times 100\%}{T} - \frac{\sum_{t=1}^{n}\left(\frac{Xij}{Wij}\right)t \times 100\%}{T} \quad \ldots\ldots\ldots\ldots (2)$$

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$$\text{Y Axis} = \frac{\sum_{t=1}^{n}\left(\frac{Xwj}{Wwj}\right)t \times 100\%}{T} - \frac{\sum_{t=1}^{n}\left(\frac{Xwj}{Wwj}\right)t-1 \times 100\%}{T} \quad \text{.....(3)}$$

Where:

X_{ij} : Indonesia's clove export value to countries (India, UAE, Singapore, Pakistan, Bangladesh) (USD)
W_{ij} : World's clove export value to countries (India, UAE, Singapore, Pakistan, Bangladesh) (USD)
X_{wj} : Indonesia's total export value to countries (India, UAE, Singapore, Pakistan, Bangladesh) (USD)
W_{wj} : World's total export value to countries (India, UAE, Singapore, Pakistan, Bangladesh) (USD)
T : Number of years

X-Model

The X-Model is a combination of the estimated RCA and EPD values, where its use aims to determine the potential of exported commodities. The X-Model clustering can be seen in Table 2.

Table 2. X-Model clustering

RCA	RCA > 1	RCA < 1
EPD	*Rising Star*	*Rising Star*
	Lost Opportunity	*Lost Opportunity*
	Falling Star	*Falling Star*
	Retreat	*Retreat*
X-Model	Optimistic	Potential
	Potential	Less Potential
	Potential	Less Potential
	Less Potential	Not Potential

Panel Data Regression

The model proposed uses several independent variables, namely GDP per capita, production, export price, and Indonesia's exchange rate. The dependent variable in the equation model is the export value of Indonesian cloves.

$$LnX_{ijt} = \alpha_0 + \alpha_1 LnPDBC_{jt} + \alpha_2 LnProd_{it} + \alpha_3 LnHE_{ijt} + \alpha_4 LnNT_{jt} + u_{ijt} \quad \text{..... (4)}$$

Where:

Xijt : The export value of cloves from Indonesia to the main destination countries (India, UAE, Singapore, Pakistan, Bangladesh) in year t (US$)
$PDBC_{jt}$: GDP per capita of Indonesia in year t (US$.Person^{-1})
$Prod_{it}$: Clove production in Indonesia (Tons)
HE_{ijt} : Export price of Indonesian cloves to the main destination countries (India, UAE, Singapore, Pakistan, Bangladesh) in year t (US$.Kg^{-1})
NT_{jt} : The exchange rate of Indonesia against the currency of the main destination countries (India, UAE, Singapore, Pakistan, Bangladesh) (IDR.LCU^{-1})
Ln : Natural logarithm
α_0 : Intercept
u_{ijt} : Error term

RESULTS AND DISCUSSION

Analysis of Comparative Advantage of Clove Exporters in Major Destination Markets

The comparative advantage of Indonesian cloves in major destination markets can be measured using the Revealed Comparative Advantage (RCA) index. Indonesian clove exports to major destination countries are classified using the HS (Harmonized System) code HS 0907. The comparative advantage of Indonesian cloves is measured by comparing the share of Indonesia's clove export value to a major destination country within the total value of Indonesia's exports to that country with the share of global clove export value to that country within the total value of global

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exports to that country. The results of the RCA analysis for Indonesia and other exporting countries in the major destination markets are shown in Table 3 below.

Table 3. Average RCA value of Indonesian clove and other exporting countries in the destination market from 2011 to 2023

Exporter Country	Destination Country				
	Bangladesh	India	Pakistan	Singapura	United Arab Emirates
Indonesia	5.28	3.89	8.17	3.72	26.3
Madagascar	3269.46	2319.67	1694.36	4484.51	2466.68
Tanzania	0,00	83.76	22.22	1326.68	333.6
Sri Lanka	28.75	93.23	24.47	9.32	57.96

Sumber : Processed UN Comtrade data (2024)

The RCA analysis results based on Table 3 show that the average RCA value for four major exporting countries from 2011 to 2023 Indonesia, Madagascar, and Sri Lanka has an RCA value greater than one in all destination countries. Only Tanzania had an RCA value less than one in Bangladesh. This indicates that in all major destination countries, exporting countries like Indonesia, Madagascar, and Sri Lanka have a comparative advantage in clove commodities. Meanwhile, only Tanzania does not have a comparative advantage in Bangladesh, while the other four countries do have a comparative advantage in Tanzanian cloves. The reason Tanzania lacks competitiveness in Bangladesh is that Bangladesh is not among its primary export destinations.

The RCA value of Indonesian cloves is highest in the United Arab Emirates at 26.3 and the lowest in Singapore at 3.72. Compared to other exporting countries, Indonesia ranks the lowest, only surpassing Tanzania in Bangladesh. The low comparative advantage of Indonesia is due to the fact that Indonesian clove production is primarily used to meet domestic needs. The increasing demand for cloves in the domestic market has led to a decrease in clove exports, thus lowering its comparative advantage. The low RCA value is also due to countries that previously imported from Indonesia shifting to import from Indonesia's competitors. According to Alisia & Maria (2023), Indonesia is less competitive than Madagascar because it has yet to achieve specialization in clove trade, largely due to its high clove import rate. This is in contrast to Madagascar and other countries, where clove production is more export-oriented.

According to Siringoringo (2023), the low RCA value of Indonesia is due to the fact that, in addition to being a clove exporter, Indonesia is also the largest clove importer because it is one of the largest consumers of cloves. Indonesia's focus on meeting domestic demand for cloves has limited its emphasis on exporting to international markets (Suprihanti et al., 2018). In order to maintain relative competitiveness, Indonesia needs to monitor its clove import levels. One approach to achieving this is by enhancing domestic clove production (Anggrasari et al., 2021). Pehlivanoğlu et al. (2021) adds that one of the ways to enhance competitiveness is by improving the quality standards of the produced goods. Idris et al. (2022) also adds that specialization in products to be exported can enhance a country's comparative advantage.

The exporter country with the highest RCA value is Madagascar, which dominates in all destination markets. The highest RCA value obtained by Madagascar is in Singapore at 4484.51 and the lowest is in Pakistan at 1694.36. When compared to other exporting countries like Indonesia, Tanzania, and Sri Lanka, Madagascar's comparative advantage in cloves is significantly higher in the same

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countries. This indicates that Madagascar's cloves have the strongest comparative advantage or competitiveness compared to other exporting nations. Madagascar's focus on cloves has prioritized export over meeting domestic demand (Yuliansyah et al., 2023). Andrianandrasana et al. (2024) mentioned that Madagascar has implemented modern facilities in clove production, despite the higher costs compared to traditional approaches.

Analysis of Competitive Advantage of Clove Exporters in Major Destination Markets

To determine the market position of Indonesian cloves and assess the dynamics of export performance in the major destination markets, the Export Product Dynamics (EPD) analysis can be used. On average, from 2011 to 2023, Indonesian clove exports were in an ideal condition in Bangladesh, India, Pakistan, and the United Arab Emirates. The results of the EPD analysis for the four exporting countries to the destination country are presented in Table 4.

As shown in Table 4, the results of the EPD analysis for Indonesian cloves indicate a rising star position. This means that both the export market share of Indonesia and the share of Indonesian clove exports have increased in these markets (Hidayah et al., 2022). When the market is in the rising star position, Indonesia needs to maintain its export market as its export market share is growing dynamically (Hartanto et al., 2021). Meanwhile, in Singapore, Indonesian cloves are in a non-ideal position, as the market position is in retreat. This condition is caused by a decline in the export market share and the share of Indonesian clove exports in Singapore.

Table 4. Average EPD results of clove exporting countries in the five major destination countries from 2011 to 2023

Country	Average EPD			
	Indonesia	Madagascar	Tanzania	Sri Lanka
Bangladesh	*Rising Star*	*Falling Star*	*Rising Star*	*Rising Star*
India	*Rising Star*	*Rising Star*	*Lost Opportunity*	*Lost Opportunity*
Pakistan	*Rising Star*	*Rising Star*	*Lost Opportunity*	*Falling Star*
Singapore	*Retreat*	*Rising Star*	*Rising Star*	*Rising Star*
United Arab Emirates	*Rising Star*	*Falling Star*	*Rising Star*	*Rising Star*

In Singapore, Indonesian cloves are no longer in demand. Indonesian cloves have lost their popularity in Singapore, as Tanzania has become the country's primary supplier. Consequently, it may be strategically beneficial for Indonesia to withdraw from the Singaporean market. Indonesia needs to find new markets to compete with other exporters (Haryati et al., 2024). Madagascar's cloves are in the rising star position in India, Pakistan, and Singapore, while in Bangladesh and the United Arab Emirates, Madagascar's cloves are in a falling star position. The falling star position indicates that Madagascar's clove market share in these countries is declining (Nurhayati et al., 2018). Tanzania's clove market position is in the rising star in Bangladesh, Singapore, and the United Arab Emirates, while in India and Pakistan, Tanzania's cloves are in a lost opportunity position. This means that while Tanzania's clove export share is increasing in these countries, it is not dynamic.

Sri Lanka's cloves during the 2011-2023 period achieved a rising star position in Bangladesh, Singapore, and the United Arab Emirates. In India and Pakistan, Sri Lanka's cloves were in the lost opportunity and falling star positions. Indonesia must consider the export positions of competing countries, especially when they are in the rising star

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position. The development of clove production and quality in Indonesia needs to be improved, as higher quality is more in demand by partner countries. The use of trade agreements can also be explored to open wider access.

X-Model

Clustering of the market development potential of Indonesian clove commodities in major destination markets is carried out using the X-model method, combining the results of the RCA and EPD analyses to provide a more comprehensive explanation by considering both perspectives. The clustering was conducted to group export destination countries based on their market share and growth characteristics. The results of Indonesia's X-Model analysis for the destination countries are presented in Table 5.

Table 5. Results of the X-model estimation for Indonesian cloves in the five major destination countries from 2011 to 2023

Country	RCA	EPD	X-Model
Bangladesh	5.28	*Rising Star*	Optimistic Market
India	3.89	*Rising Star*	Optimistic Market
Pakistan	8.17	*Rising Star*	Optimistic Market
Singapore	3.72	*Retreat*	Less Potential
United Arab Emirates	26.30	*Rising Star*	Optimistic Market

Based on Table 5, the average RCA for Indonesian clove commodities in export destination countries is greater than 1. Furthermore, the market position of Indonesian cloves in export destination countries is in the rising star and retreat positions. In the markets of Bangladesh, India, Pakistan, and the United Arab Emirates, there has been significant growth in both export market share and product market share. Based on the RCA and EPD values obtained, these four markets can be categorized as optimistic markets for clove exports. The Singapore market is categorized as less potential due to Indonesian cloves lacking a competitive advantage, as shown by the EPD estimation results placing it in the retreat position, although it still has a comparative advantage. It is advisable for Indonesia to develop these four markets, as they offer significant potential for the expansion of Indonesian clove exports. To develop these optimistic markets, Indonesia needs to enhance market intelligence and establish cooperation through strengthened relations with partner countries whose market conditions are categorized as optimistic.

According to Pratama et al. (2020), the advantage of the vast land owned by Indonesia provides an opportunity for the country to export cloves. By improving efficiency in the production process, Indonesia has the potential to increase its clove exports. Dewi et al. (2021) mentioned that Indonesia's weakness in clove production lies in human resources, knowledge and technology, capital, and infrastructure.

Factors Affecting the Export Value of Indonesian Cloves

Results of the analysis of factors influencing Indonesian clove exports can be seen in Table 6. The independent variables used in the panel data regression are production, GDP per capita of Indonesia, export prices, and exchange rates. The coefficient of determination (R^2) is 0.6795. This means that the variation in the factors affecting the export value of Indonesian cloves can be explained by the independent variables used in this model by 67.95%, while the remaining 32.05% is explained by variables outside the model. In regression analysis involving panel data, classical assumption tests are deemed unnecessary. According to Gujarati (2012), panel data reduce the likelihood of bias by enhancing the information content, variability, and degrees of freedom, thereby improving the robustness of the analysis.

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Panel data regression results show that the clove production variable in Indonesia has a positive and significant effect on the export value of Indonesian cloves at a 1% significance level, with a clove production coefficient of 4.909578. This means that when the production of cloves in Indonesia increases by 1%, the export value of Indonesian cloves will increase by 4.9%, ceteris paribus. This result is in line with the research hypothesis, where an increase in clove production will raise the export value of cloves. This finding is consistent with studies by Wahdiana et al. (2023), which state that an increase in production fulfills domestic demand, and the surplus production is then exported to destination countries. Indonesia needs to further increase domestic clove production. This is because approximately 90% of the clove output is absorbed by the kretek cigarette industry, while 5% is allocated for export and the remainder for other purposes (Pinto et al., 2022).

Table 6. The results of the estimation of factors affecting Indonesian clove exports

Variables	Coefficient	t-statistic	Probability	Note
Konstanta	-51.23261	-3.389299	0.0013	
Production	4.909578	4.342017	0,0001	Significant
GDP Percapita	0.712841	0.627844	0.5327	Insignificant
Export Price	1.499468	6.028857	0,0000	Significant
Exchange Rate	0.037468	0.117044	0.9073	Insignificant
R^2 (R Square)	0,6795			
Prob (F-Stat)	0,0000			

The Gross Domestic Product (GDP) per capita variable has a positive effect on the export value of Indonesian cloves but does not have a significant effect at the 5% significance level. The coefficient for GDP per capita is 0.712841, with a probability of 0.5327. This result differs from the research hypothesis, which suggested that GDP per capita would negatively affect clove export values. Christianingtyas et al. (2023) mentioned that GDP has a negative and significant impact on exports in Indonesia. The sharp decline in exports is caused by an increase in GDP that is not accompanied by productivity in export-oriented industries.

The export price variable has a positive and significant effect on the export value of Indonesian cloves at a 1% significance level, with a coefficient value of 1.499468. This means that when the export price increases by 1%, the export value of Indonesian cloves will increase by 1.49%, ceteris paribus. This result is in line with the research hypothesis, where an increase in export prices will raise the export value of cloves. This is supported by research conducted by Akbar & Widyastutik (2022) and Ginting et al. (2021), which states that when the price of a commodity increases, the quantity offered by exporters will also increase. Sa'diyah & Darwanto (2020) state that an increase in export prices also has a positive impact on competitiveness, as price reflects the quality of the exported goods.

The exchange rate variable, based on the estimation results, has a positive effect but does not significantly affect the export value of Indonesian cloves at the 5% significance level. The coefficient value for the exchange rate variable is 0.037468 with a probability value of 0.9073. This is different from the study by Rhezamayye et al. (2020) and Azizah et al. (2024), which found that when the foreign currency is stronger than the domestic currency, it benefits exporters. This is because the quantity of exports will increase due to the higher prices.

CONCLUSION

Indonesian cloves have a comparative advantage in five major export destination

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countries, but they are the lowest compared to other exporting countries. The competitive advantage achieved by Indonesian cloves in Bangladesh, India, Pakistan, and the United Arab Emirates is in the rising star position, while in Singapore, Indonesian cloves are in the retreat position. This indicates that Indonesian cloves have an optimistic outlook for market development in Bangladesh, India, Pakistan, and the United Arab Emirates. The factors that significantly influence Indonesian clove exports to major destination countries include production and export prices. Indonesian clove production has a positive and significant effect on the export value because higher production can increase the export volume of cloves. Export prices also have a positive and significant effect on the export value, as increasing export prices will raise the export value based on export volume.

The recommendations are as follows: 1) Indonesia can increase its export share in Bangladesh, India, Pakistan, and the United Arab Emirates, which have both comparative and competitive advantages. The United Arab Emirates should be prioritized for improvement to achieve higher export values. 2) Production improvements can be made through infrastructure enhancements, optimization of technology, and providing extension services to farmers in order to produce high-quality and more consistent cloves, thus offering more value to consumer decisions. 3) Strengthening cooperation with trade partners is crucial to create price stability for clove exports, ensuring that export prices remain competitive, and allowing for more aggressive marketing efforts.

REFERENCES

Akbar, M., & Widyastutik. (2022). Analysis of Competitiveness, Dynamics, and Determinants of Main Commodity Export Demand from Indonesia to United Kingdom. *Jurnal Ekonomi Dan Kebijakan Pembangunan*, *11*(2), 108–131. https://doi.org/10.29244/jekp.11.2.2022.108-131

Alisia, R., & Maria. (2023). Competitiveness Comparison of Indonesia and Madagaskar Clove Export in the International Market. *Jurnal Ilmiah Mahasiswa Agroinfo Galuh*, *10*(1), 79–90. https://dx.doi.org/10.25157/jimag.v10i1.8645

Andrianandrasana, H. T., Campera, M., Viraina, F. F., Long, P. R., & Jones, N. (2024). Additional measures needed to ensure clove industry does not contribute to tree cover loss in Madagascar. *Forest Policy and Economics*, *169*, 1-15. https://doi.org/10.1016/j.forpol.2024.103333

Anggrasari, H., Perdana, P., & Mulyo, J. H. (2021). Keunggulan Komparatif Dan Kompetitif Rempah-Rempah Indonesia Di Pasar Internasional. *Jurnal Agrica*, *14*(1), 9–19. https://doi.org/10.31289/agrica.v14i1.4396

Azizah, I. N. N., Syaukat, Y., & Hidayat, N. K. (2024). Dampak Impor Input Kapas dan Tenaga Kerja terhadap Daya Saing Pakaian Jadi Indonesia di Negara Tujuan Utama. *Agro Bali : Agricultural Journal*, *7*(1), 246–255. https://doi.org/10.37637/ab.v7i1.1503

Christianingtyas, R. D., Lutfi, M., & Kurniawan, A. (2023). Pengaruh GDP dan Nilai Tukar Terhadap Ekspor di Indonesia. *Media Riset Ekonomi Pembangunan,* 1(3), 372-379. https://medrep.ppj.unp.ac.id/index.php/MedREP/article/view/92

Dewi, C., Achsanulnashir, & Widyono. (2021). Analisis Daya Saing Ekspor Kopi Indonesia Di Pasar Internasional. *Jurnal Administrasi Bisnis*, *1*(1), 25–31. https://doi.org/10.30596/ekonomikawan.v22i2.10987

Ginting, N. M., Rahmanta, R., & Lindawati, L. (2021). Analisis Daya Saing Kakao Olahan dan Faktor-Faktor yang

e-ISSN 2655-853X
https://doi.org/10.37637/ab.v8i2.2268

Mempengaruhi Daya Saing Kakao Olahan Provinsi Sumatera Utara, Indonesia di Pasar Internasional. *Agro Bali : Agricultural Journal*, *4*(3), 425–437. https://doi.org/10.37637/ab.v4i3.843

Gujarati, N. (2012). *Dasar-Dasar Ekonometrika*. Jakarta: Salemba.

Hartanto, T. R., Suharno, & Burhanuddin. (2021). Export Competitiveness of Indonesian Tunas-Skipjack Tunas-Eastern Littles Tunas in The United States of America's Market. *Jurnal Pengolahan Hasil Perikanan Indonesia*, *24*(2), 227–235. https://doi.org/10.17844/jphpi.v24i2.36075

Haryati, W., Novianti, T., & Hidayat, N. K. (2024). Daya Saing dan Determinan Ekspor Bawang Merah Indonesia: Sebuah Bukti di Kawasan ASEAN. *Agro Bali : Agricultural Journal*, *7*(2), 641–653. https://doi.org/10.37637/ab.v7i2.1732

Hidayah, M., Fariyanti, A., & Anggraeni, L. (2022). Daya Saing Ekspor Cengkeh Indonesia. *Jurnal Ekonomi Pertanian Dan Agribisnis*, *6*(3), 930–937. https://doi.org/10.21776/ub.jepa.2022.006.03.14

Idris, Z. Z., Ismail, N. W., & Ibrahim, S. (2022). Comparative Advantage and Competitiveness of COVID-19-Related Medical Products Exporters. *Journal of Competitiveness*, *14*(1), 61–79. https://doi.org/10.7441/joc.2022.01.04

Kementan. (2022). *Outlook Komoditas Perkebunan Cengkeh*. Jakarta: Pusat Data dan Sistem Informasi Pertanian Sekretariat Jenderal Kementerian Pertanian. https://satudata.pertanian.go.id/assets/docs/publikasi/OUTLOOK_CENGKEH_2022.pdf

Nurhayati, E., Hartoyo, S., & Mulatsih, S. (2018). Analisis Pengembangan Ekspor Cengkeh Indonesia. *Jurnal Ekonomi Dan Kebijakan Pembangunan*, *7*(1), 21–42. https://doi.org/10.29244/jekp.7.1.2018.21-42

Pehlivanoğlu, F., Erarslan, C., & Demir, S. (2021). Factors affecting competition in olive oil exports: Panel data analysis of selected countries. Case study. *Agricultural Economics (Czech Republic)*, *67*(12), 511–518. https://doi.org/10.17221/494/2020-AGRICECON

Pinto, J. da S., Suharno, S., & Rifin, A. (2022). Kinerja Ekspor Cengkeh Indonesia di Pasar India: Pendekatan Linear Approximate Almost Ideal Demand System (LA/AIDS). *Jurnal Agribisnis Indonesia*, *10*(2), 262–279. https://doi.org/10.29244/jai.2022.10.2.262-279

Pratama, A. P., Darwanto, D. H., & Masyhuri. (2020). Economics Development Analysis Journal Indonesian Clove Competitiveness and Competitor Countries in International Market Article Information. *Economics Development Analysis Journal*, *9*(1), 39–54. http://journal.unnes.ac.id/sju/index.php/edaj

Rhezamayye, V., Amir, I. T., & Abidin, Z. (2020). Faktor-Faktor Yang Mempengaruhi Ekspor Cengkeh Indonesia Tahun 2001-2015. *Berkala Ilmiah AGRIDEVINA*, *8*(2), 115–126. https://doi.org/10.33005/adv.v8i2.1805

Sa'diyah, P. F. I., & Darwanto, D. H. (2020). Indonesian cinnamon competitiveness and competitor countries in the international market. *Agraris*, *6*(2), 123–135. https://doi.org/10.18196/agr.6296

Siringoringo, V. (2023). Dampak Kebijakan terhadap Penawaran dan Permintaan Cengkeh Indonesia di Pasar Dunia. *Jurnal Agribisnis*, 25(1), 1–15. http://journal.unilak.ac.id/index.php/agr/article/download/10979/5214

Suprihanti, A., Harianto, H., Sinaga, B. M., & Kustiari, R. (2018). Dinamika Konsumsi Rokok Dan Impor Tembakau Indonesia. *SEPA: Jurnal Sosial Ekonomi Pertanian*

e-ISSN 2655-853X
https://doi.org/10.37637/ab.v8i2.2268

Dan Agribisnis, *14*(2), 183. https://doi.org/10.20961/sepa.v14i2.25016

Wahdiana, E., Tinaprilla, N., & Harmini. (2023). Dampak Pandemi Covid-19 Terhadap Kinerja Ekspor Cengkeh Indonesia. *Forum Agribisnis*, *13*(2), 193–202. https://doi.org/10.29244/fagb.13.2.193-202

Yuliansyah, E., Suprihanti, A., & Puspitaningrum, D. A. (2023). Analisis Keunggulan Komparatif dan Kompetitif Ekspor Cengkeh Antara Indonesia dan Madagaskar Di Pasar Dunia. *Jurnal Dinamika Sosial Ekonomi*, *24*(1), 98. https://doi.org/10.31315/jdse.v24i1.9760