Vol. 14, No. 6 (2025): 2327 - 2337 http://dx.doi.org/10.23960/jtepl.v14i6.2327-2337

JURNAL TEKNIK PERTANIAN LAMPUNG

ISSN 2302-559X (print) / 2549-0818 (online)
Journal homepage : https://jurnal.fp.unila.ac.id/index.php/JTP

Competitiveness of Indonesian Cocoa in Major Export Destination Countries Using Porter's Diamond Model Approach

Risqi Firdaus Setiawan[1,✉], Teguh Soedarto[1], Hamidah Hendrarini[1], Mubarokah[1]

[1] Agribusiness Study Program, Faculty of Agriculture, Universitas Pembangunan Nasional "Veteran" Jawa Timur, Rungkut Madya Street No. 1, Gunung Anyar, 60294, Surabaya, INDONESIA.

Article History:

Received : 06 September 2025
Revised : 28 September 2025
Accepted : 06 October 2025

Keywords:

Cocoa,
Comparative advantage,
Competitive advantage,
Export competitiveness,
Porter's Diamond Model.

Corresponding Author:
✉ Risqi.f.agribis@upnjatim.ac.id
(Risqi Firdaus Setiawan)

ABSTRACT

Indonesia is one of the world's leading cocoa producers, yet its contribution to global value-added cocoa exports remains relatively low. This structural gap highlights the need to evaluate not only production capacity but also the competitiveness of Indonesian cocoa in international markets. This study aims to evaluate the competitiveness of Indonesian cocoa exports in four main destination countries: India, China, Malaysia, and the Philippines. Data sources were obtained from UM Comtrade, ITC Trademap, International Cocoa Organization (ICCO), and BPS. The analysis was conducted by combining methods of the Revealed Comparative Advantage, Export Competitiveness Index, and the Porter's Diamond Model. The results show that Indonesia still has a comparative and competitive advantage in several markets, especially India. The average RCA value was 10.41 in Malaysia, 9.42 (China), 5.40 (India), and 3.97 (the Philippines). Meanwhile, the ECI value is greater than one, namely 1.21 (India), 1.09 (China), 1.08 (Malaysia), and 1.05 (the Philippines). These advantages, however, are volatile and highly dependent on natural resource factors. Weak domestic demand, inconsistent quality standards, limited downstream industry capacity, and fragmented policy coordination remain key structural challenges. This research emphasizes that strengthening competitiveness not only requires the maintenance of comparative advantage, but also its transformation into a sustainable competitive advantage through institutional reform, cross-sector policy integration, and value-added product innovation.

1. INTRODUCTION

Indonesia is one of the world's leading cocoa producers, but its contribution to the value-added cocoa trade is still relatively low. Most of Indonesia's cocoa exports are still in the form of raw beans, showing that the national cocoa downstream and industrialization process is not optimal (Napitupulu *et al*., 2022). The added value generated from processed products has great potential to strengthen the competitiveness and contribution of this sector to the national economy (Tupamahu & Apituley, 2021).

The quality of Indonesian cocoa beans is one of the main factors that limit competitiveness in the export market. Low fermentation rates and non-uniform post-harvest practices lead to non-compliance with international quality standards, which has an impact on low demand from key markets (Sari *et al*., 2024). On the other hand, limited technology adoption and lack of training for farmers lead to weak innovation transfer at the production level (Rada & Sukadana, 2023).

The growth in the consumption of processed cocoa products in Asia, especially in China and India, presents significant market opportunities for producing countries such as Indonesia. The rise of the middle class and shifting

consumer lifestyles are driving the demand for high-quality chocolate products (Rahmadona *et al*., 2023). However, Indonesia's export volume to these markets is still much lower than the existing potential (Nugraha *et al*., 2022). Ironically, countries such as Malaysia and Singapore that are not major producers of cocoa have shown superior export performance in processed cocoa products. Through import-based industrialization strategies, these countries have succeeded in exporting high-value products such as butter and powder with high efficiency (Anggoro & Widyastutik, 2016). This condition shows that excellence in exports is not only determined by the production capacity of raw materials, but also by the supporting industrial structure (Hapsari & Yuniasih, 2020).

In the context of national policy, downstream efforts through the cocoa bean export duty policy have indeed been implemented, but the impact is still uneven. Many small and medium business actors have not had access to processing facilities and infrastructure support (Nabhani, 2022). In addition, the policy of the cocoa agribusiness sector is considered to have not been comprehensively coordinated between the technical ministry, the private sector, and research institutions (Sari *et al*., 2024). Supporting infrastructure, such as distribution roads, storage facilities, and port access, is also a major obstacle to the development of national cocoa export competitiveness. Development inequality between the main cocoa-producing areas and the processing industry centers leads to high logistics costs (Rada & Sukadana, 2023). The lack of research and development innovation in superior varieties and processing technologies also weakens the innovative capacity of this sector (Nugraha *et al*., 2022).

Previous studies have generally examined the competitiveness of Indonesian cocoa exports at the national aggregate level, focusing primarily on overall export values or volumes. Such an approach does not adequately capture the heterogeneity of export destination markets, particularly in terms of socio-economic conditions, trade regulations, and demand structures. A more contextualized analysis is therefore required to formulate strategies that are both specific and relevant to each importing country (Augustin *et al*., 2021). This highlights a clear research gap, as the diversity of market dynamics across destination countries has not been sufficiently addressed in prior studies (Rahmadona *et al*., 2023).

Taking into account these dynamics and complexities, this study aims to analyze the level of comparative and competitive advantage of Indonesian cocoa exports in the main destination markets, namely Malaysia, the Philippines, China, and India. In addition, this study aims to explore how the Porter Diamond Model framework is able to explain the role of domestic and external determinants in supporting Indonesia's cocoa export performance. The implications of this research are expected to make a substantive contribution in formulating strategies to increase the competitiveness of the cocoa sector, as well as become an applicable guide for policymakers, industry players, and academics in strengthening Indonesia's position in the cocoa global value chain.

2. MATERIALS AND METHODS

2.1. Location and Research Object

This research is focused on four main cocoa export destination countries of Indonesia, namely Malaysia, the Philippines, China, and India. These countries were purposively selected based on several criteria: (1) their significant contribution to Indonesia’s total cocoa exports, (2) the dynamic growth of demand over the last two decades, and (3) their structurally and policy-wise diverse market characteristics. Quantitatively, Malaysia has historically contributed around 28–32% of Indonesia’s cocoa export value, China around 20–25%, India approximately 15–18%, and the Philippines about 10–12%. These figures underline the strategic importance of the selected countries, which together account for more than two-thirds of Indonesia’s cocoa exports. The variation in contribution also reflects different market positions, where Malaysia represents a processing hub, China and India are emerging consumption markets, and the Philippines plays a role as a regional partner. Thus, the inclusion of these four countries provides a comprehensive representation of Indonesia’s cocoa export competitiveness across both traditional and emerging markets.

The object of research in this study is the export of Indonesian cocoa products, which are categorized based on the HS classification code 1801 to 1806. These products include: HS 1801: Cocoa beans, raw or roasted; HS 1803: Cocoa paste; HS 1804: Cocoa fat and oil; HS 1805: Cocoa powder without added sugar and HS 1806: Chocolate-based products and their derivatives

2.2. Data Source

This research uses secondary data sourced from official and credible institutions, both national and international. The main data on the volume and value of Indonesia cocoa exports based on the HS 1801–1806 classification was obtained from UN COMTRADE, ITC Trademap, and BPS, which was then used to analyze the export performance, market position, and competitiveness of Indonesian cocoa products. In addition, comparative data on global production and exports was collected from FAOSTAT to assess Indonesia's relative position in the global context. To support structural analysis within the framework of the Porter Diamond Model, qualitative data were obtained from national policy reports of the Ministry of Trade and the Ministry of Agriculture, industry publications, as well as the results of relevant academic and empirical studies. The data range used covers the years 2000 to 2022 to capture long-term dynamics, including downstream policies and global market changes (Adelina *et al*., 2020). The validity of the data is maintained through triangulation between sources and testing for consistency with the supporting scientific literature.

2.3. Data Analysis

This study uses quantitative and qualitative approaches to analyze the competitiveness of Indonesian cocoa exports to four main destination countries: Malaysia, the Philippines, China, and India. The methods used include Revealed Comparative Advantage (*RCA*), Export Competitiveness Index (*ECI*), and Porter Diamond Model. The *RCA* is used to measure the comparative advantage of Indonesian cocoa products in the international market. The formula for *RCA* according to Balassa (1965) is:

$$RCA_{ijt} = \frac{(X_{ijt}/X_{jt})}{(W_{ij}/W_{it})} \quad (1)$$

where RCA_{ijt} is *RCA* index value, X_{ijt} is export value of cocoa commodities from cocoa-producing countries, X_{jt} is total export value of cocoa commodities from cocoa-producing countries, W_{it} is the export value of cocoa commodities from the world, and W_t is total export value of cocoa commodities from the world.

An *RCA* value of greater than 1 ($RCA > 1$) indicates that a country has a comparative advantage in the product. An *RCA* value equal to 1 ($RCA = 1$) suggests that the country's export share of the product is proportionally the same as the world average, indicating a neutral position. Conversely, an *RCA* value of less than 1 ($RCA < 1$) reflects that the country does not have a comparative advantage in the product.

The Export Competitiveness Index (*ECI*) is used to assess the overall competitiveness of exports. The *ECI* formula is:

$$ECI = \frac{\left(\frac{X_{ij}}{X_w}\right)t}{\left(\frac{X_{ij}}{X_w}\right)t-1} \quad (2)$$

where X_w is world cocoa export value (USD/year), and t is time period, and $t - 1$ is the previous time period

An *ECI* value of greater than 1 ($ECI > 1$) indicates that the export of the product has a competitive advantage, showing a positive growth trend compared to the previous period. An *ECI* value equal to 1 ($ECI = 1$) reflects a stable condition, where the product's export competitiveness remains unchanged. Conversely, an *ECI* value of less than 1 ($ECI < 1$) suggests a decline in competitiveness, indicating that the product's export performance is deteriorating relative to the previous period.

Porter's Diamond Model, This model consists of six elements that determine national competitiveness, namely: factor conditions, domestic demand conditions, related and supporting industries, corporate strategies and structures, government roles, and external opportunities. In this study, qualitative data were obtained from multiple sources, including national policy documents, academic publications, and industry reports, which were cross-validated through literature triangulation. The analysis was conducted using a content analysis approach combined with a scoring system to assess the strength of relationships among elements. Each interrelation was categorized into three levels strong, weak, or absent based on the frequency, consistency, and empirical support identified in the reviewed sources. This model provides conceptual guidance for assessing the strengths and weaknesses of national industrial systems in responding to global market dynamics (Ayon Poce *et al*., 2024).

3. RESULTS AND DISCUSSION

3.1. Indonesian Cocoa Production and Trade Trends

As one of the main cocoa producing countries in the world, Indonesia has a strategic position in the global supply chain of this commodity (Meidrieswida, 2024). However, in the last two decades, the dynamics of cocoa production, export, and import show symptoms of an imbalance that need to be examined more deeply. Based on the graph in Figure 1, national cocoa production increased significantly until it peaked in 2009 with a total of about 820,000 tons. However, this trend is not sustainable, where in the last five years, cocoa production has continue to decline from 734,800 tons in 2018 to 632,120 tons in 2022, equivalent to a decrease of about 14%, along with the shrinking planting area from 1.56 million hectares to 1.39 million hectares, or a reduction of approximately 11% (BPS, 2024). This decline is closely correlated with the age of old plants, pest and disease attacks, as well as low technology adoption and farmers' access to quality agricultural inputs (Faizah *et al*., 2023). This dynamic is reinforced by the findings of Ananda *et al*. (2020) and Putri & Prihtanti (2020), who stated that in addition to land area and labor, low productivity is also a major obstacle, with a yield of only about 0.5 tons/ha. In addition, the dependence on smallholders of around 95% of total production makes the sector vulnerable to price fluctuations and minimal industrial-scale technological intervention.

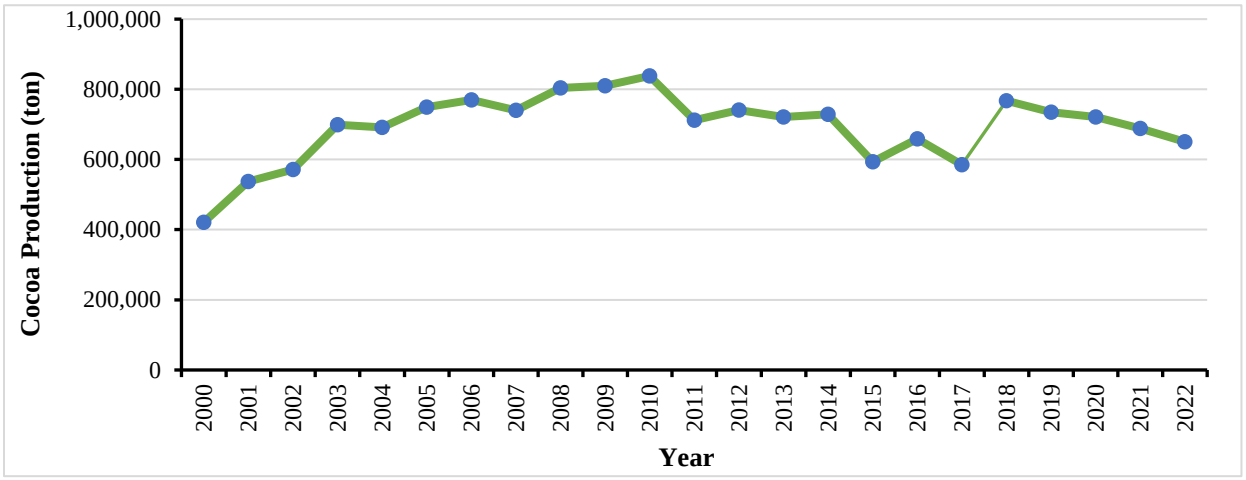

Figure 1. Cocoa production trends in Indonesia 2000 – 2022 (UN Comtrade, 2024)

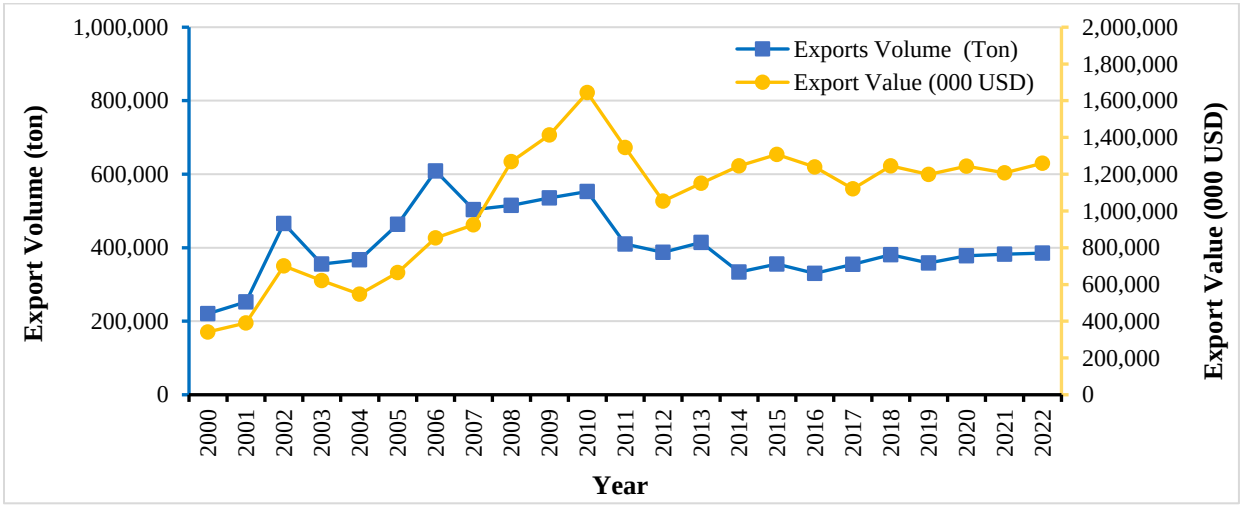

Figure 2. Trends in Indonesian cocoa export volume and value in the international market 2000 – 2022 (UN Comtrade, 2024)

This decline in cocoa production directly affects export performance, as shown in Figure 2. Although Indonesia occupies a position as one of the world major cocoa producers, export data shows quite sharp fluctuations in volume. Putri & Prihtanti (2020) show that domestic cocoa prices significantly affect export volumes, while other variables such as exchange rates and international prices have a less dominant impact. This shows that the challenges in the cocoa trade are more structural in domestic nature than external pressures. In addition, the downstream of cocoa products, which has been encouraged since 2010, has also changed the export pattern from raw beans to processed products, although it has not been balanced with adequate downstream industrial capacity (Fahmid *et al*., 2022). As a result, there is an imbalance between production potential and export realization, where Indonesia exports are still behind other producing countries such as Côte d'Ivoire and Ghana, which control more than 60% of the global market (Fuady & Suryani, 2023).

Figure 3 illustrates the paradoxical situation where Indonesia, as a major producer, is experiencing an increase in cocoa imports in the form of fermented cocoa beans from other countries. These imports are carried out by the domestic processing industry to meet export demand for value-added processed products, which cannot be met by domestic supply due to the inconsistent quality of local cocoa beans. Fahmid *et al*. (2022) explained that local cocoa fermentation standards and quality are still inconsistent, so industry players choose to import from countries such as Ecuador and Ivory Coast. Furthermore, Nurun Nisa' *et al*.'s (2022) research shows that in the global competitiveness map, Indonesia's position for cocoa bean exports is in the "lost opportunity" quadrant, while countries such as Nigeria and Ivory Coast are in the "rising star" position. This indicates that although Indonesia has a comparative advantage, weaknesses in terms of quality, infrastructure, and value chain integration hinder the realization of competitive advantage.

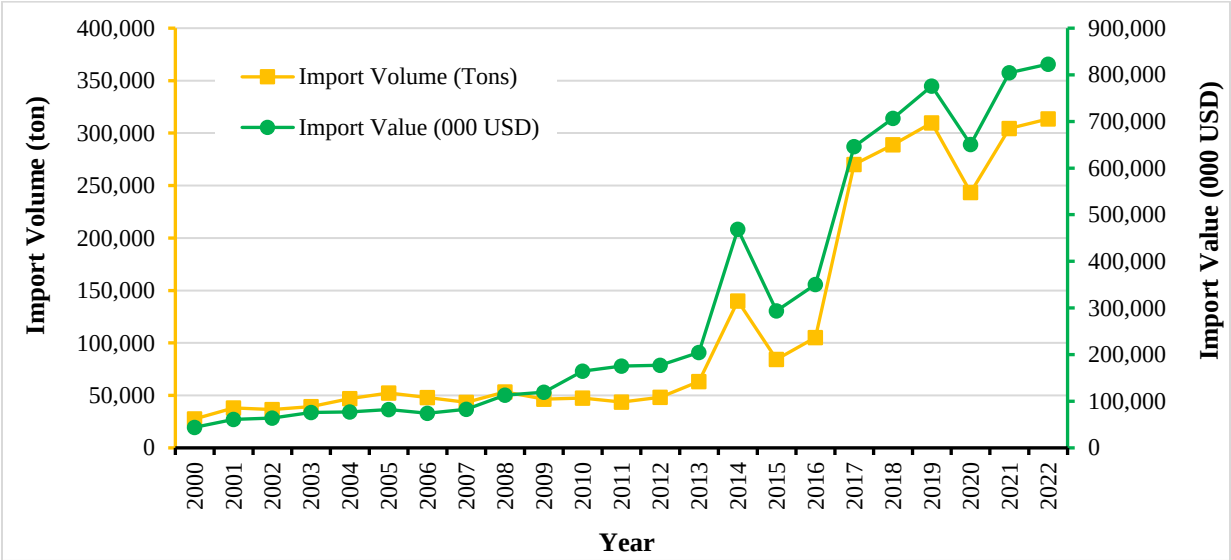

Figure 3. Trends in volume and value of Indonesian cocoa imports in the international market 2000 – 2022 (UN Comtrade, 2024)

Overall, the analysis of the three aspects of production, export, and import shows the existence of a structural paradox in the Indonesian cocoa industry (Tóthmihály & Ingram, 2018). On the one hand, Indonesia is the world's main producer, but on the other hand, dependence on imports and stagnation of exports signals an imbalance between upstream and downstream. Agribusiness reform, community garden revitalization, and post-harvest infrastructure improvement are strategic steps to strengthen competitiveness and achieve a sustainable competitive position in the global market (Neilson *et al*. 2020; Fudjaja, 2024).

3.2. Comparative Advantages of Indonesian Cocoa Exports

Indonesia, as one of the largest cocoa producers in the world, has a strategic role in the global cocoa trade. However, an analysis of the comparative advantages of Indonesia's cocoa exports to major destination countries such as

Malaysia, China, India, and the Philippines shows complex dynamics over the past two decades. Based on the results of the analysis in Figure 4, the RCA value of Indonesian cocoa exports in Malaysia has the highest average of 10.41, followed by China at 9.42, India at 5.40, and the Philippines at 3.97. However, the downward trend in the value of RCA in several countries, especially Malaysia and China, indicates structural challenges in maintaining the competitiveness of Indonesia's cocoa exports.

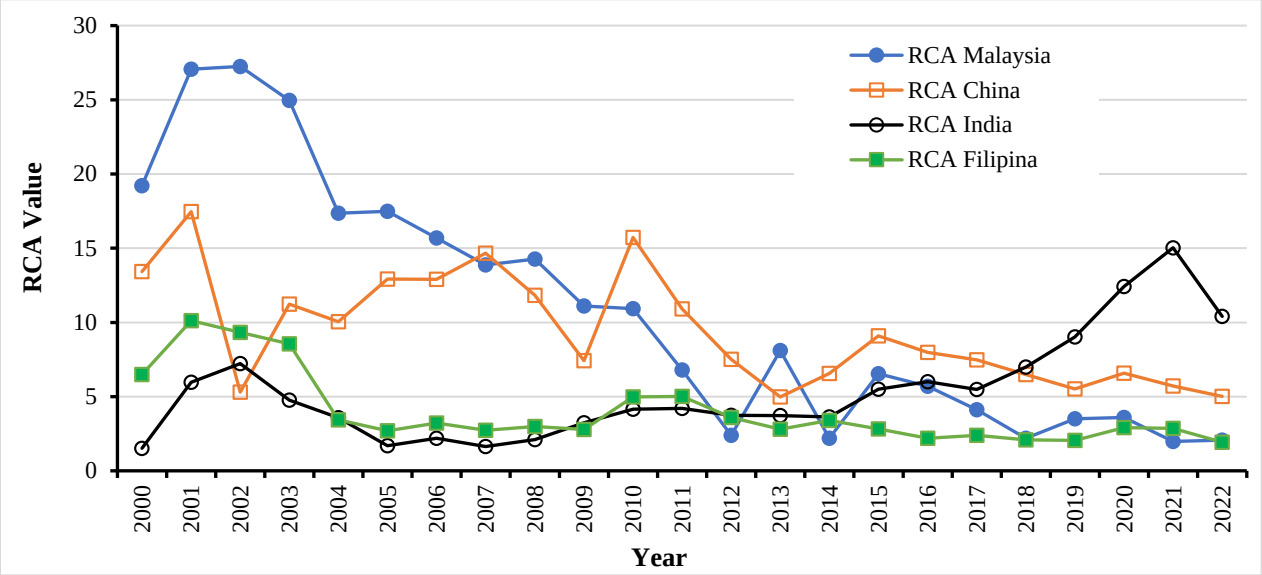

Figure 4. RCA value of Indonesian cocoa exports to main destination countries 2000 – 2022.

In the Malaysian market, the value of the RCA of Indonesian cocoa exports has decreased significantly since the early 2000s. This decline is mainly driven by increasing competition from West African countries such as Ivory Coast and Ghana, which consistently supply cocoa beans of higher quality at more competitive prices. In addition, Indonesia's export duty policy on raw cocoa beans, designed to promote domestic downstream processing, unintentionally reduced the supply of raw beans to Malaysia's processing industry. This policy shift weakened Indonesia's comparative advantage in the Malaysian market, as Malaysia depends on raw bean imports for its large-scale cocoa processing sector. Research by Susanti *et al*. (2024) confirms that although Indonesia still holds a comparative advantage, the RCA value has steadily decreased.

In the Chinese market, the RCA value of Indonesian cocoa shows sharp fluctuations. While rising middle-class consumption has fueled increasing demand for chocolate products, Indonesia faces major challenges in meeting China's strict quality and food safety standards. Low fermentation levels, inconsistent post-harvest practices, and weak certification systems reduce Indonesia's competitiveness compared to suppliers from Africa and Latin America. As a result, despite having a comparative advantage, the RCA values tend to decline. Research by Azizah *et al*. (2024) highlights this consistent downward trend.

In the Indian market, the RCA value of Indonesian cocoa shows a positive upward trend in recent years. This improvement is supported by India's rapidly expanding food and beverage industry, which demands large volumes of cocoa, coupled with India's limited domestic cocoa production capacity. Additionally, Indonesia has been able to supply processed cocoa products such as cocoa powder that meet the needs of Indian manufacturers, giving Indonesia a comparative advantage in this growing market. Research by Fadillah *et al*. (2023) confirms that Indonesia's comparative advantage in India is strong, particularly in processed products.

In the Philippine market, the RCA value of Indonesian cocoa has been relatively stable but shows a slight decline in the last five years. This is due to the growth of domestic cocoa cultivation programs in the Philippines, aimed at reducing import dependence, and rising competition from other ASEAN suppliers such as Vietnam. In addition,

Indonesia's export performance in the Philippines has been constrained by logistical inefficiencies and relatively high transaction costs compared to regional competitors. To maintain its comparative advantage, Indonesia needs to improve quality consistency and expand its processed cocoa product portfolio. Research by Rojaba & Jalunggono (2022) also finds that Indonesia's RCA values in Malaysia and the Philippines are on a downward trend.

3.3. Competitiveness of Indonesian Cocoa Exports Using ECI

The results of Indonesia's ECI analysis of cocoa to the four main destination countries Malaysia, China, India, and the Philippines throughout 2000–2022 show that Indonesia has a fairly stable average competitive competitiveness with values above 1, namely 1.08 for Malaysia, 1.09 for China, 1.21 for India, and 1.05 for the Philippines. This is shown in Figure 5, which illustrates the pattern of Indonesian cocoa export competitiveness in each destination country.

India emerged as the export destination country with the highest ECI value, reflecting the high demand of India's domestic industry for Indonesian cocoa products. India's ECI value even reached 1.95 in 2012 and 1.66 in 2015, indicating significant export growth momentum. This is in line with research by Satria *et al*. (2021), which shows that the demand for chocolate in India is increasing sharply as the middle class develops and the consumption of cocoa-based processed foods. In addition, the Indian market also does not have sufficient domestic supply, which makes Indonesia a strategic partner in the supply chain.

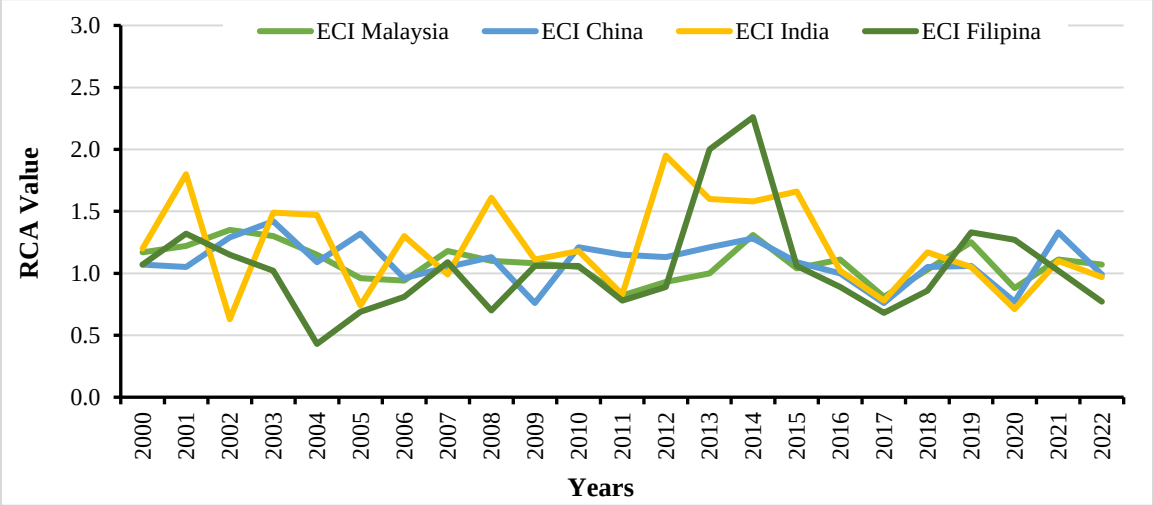

Figure 5. ECI value of Indonesian cocoa exports to destination countries 2000 – 2022

On the other hand, the Malaysian market shows different dynamics compared to other Indonesian cocoa export destination countries. Despite being geographically close and having close trade ties, the trend of Indonesian cocoa ECI in Malaysia tends to fluctuate, reflecting the diversification of import sources by Malaysia and the changing needs of the processing industry in the country including from West Africa. Nonetheless, the highest ECI values in Malaysia in 2002 of 1.35 and 2014 of 1.31 indicate that when Malaysia's processing industry requires large supplies, Indonesia remains the main provider due to logistics efficiency and competitive pricing (Susanti *et al*., 2024). The study by Fadillah *et al*. (2023) also emphasized that the country's ability to provide sustainable supply is a key determinant of export excellence in the cocoa sector.

The ECI value of Indonesia's cocoa exports to China averaged 1.09, reflecting a fairly strong competitive position. China is a strategic market as chocolate consumption has increased sharply in the last decade. Despite the decline in the ECI in 2009 and 2017, the increase in the ECI to 1.42 in 2003 and 1.33 in 2021 indicates an opportunity for market expansion. This finding is strengthened by Leonard (2018) who stated that the competitiveness of agricultural products in China is very sensitive to processing innovations and rapidly changing consumer preferences, a condition that can be an opportunity for cocoa exports from Indonesia.

The Philippine shows an average ECI value of 1.05. Years 2013 and 2014 were the peak of achievement with values of 2.00 and 2.26. This due to the limitations of Philippine domestic production which fail to meet the needs of the local food and chocolate processing industry. Nevertheless, the ECI trend after 2016 shows a decline, indicating Indonesia competitiveness challenges in the market. This shows the importance of quality improvement strategies, supply chain efficiency, and long-term trade partnerships to maintain export sustainability (Rangkuty *et al*., 2019).

The strategy to enhance the competitiveness of Indonesia's cocoa exports must be aligned with the conditions of each destination market. In India, the high ECI reflects strong opportunities for supply chain integration, which can be leveraged through expanding processed cocoa exports and establishing long-term trade partnerships. In Malaysia, the fluctuating ECI indicates intense competition with West African suppliers, requiring improvements in quality, traceability, and export logistics efficiency. In China, the upward trend of ECI highlights significant potential that can be captured by strengthening certification systems and diversifying products to match consumer preferences. Meanwhile, in the Philippines, the relatively low ECI calls for greater supply chain efficiency and stronger regional trade cooperation to maintain Indonesia's market position (Suryana *et al*., 2022).

3.4. Competitiveness of Indonesian Cocoa Exports Using Porter's Diamond Model

The analysis of the competitiveness of Indonesia's cocoa exports through the Porter's Diamond Model approach highlights how the main elements, namely factor conditions, demand conditions, supporting industries, company structures and strategies, the role of the government, and external opportunities interact to shape the competitiveness of a sector. Based on Figure 6, it can be seen that the conditions of factors, such as tropical climate, land availability, and agricultural labor, are the only elements that are strongly connected to almost all other components (Utami *et al*., 2018). However, this comparative advantage has not been fully converted into a competitive advantage due to weak relationships between other strategic elements, especially domestic demand, the role of governments, and global market opportunities.

Domestic demand for processed cocoa products in Indonesia is still relatively low, so it does not encourage innovation and quality improvement in terms of producers. This condition is an important challenge for the development of the downstream cocoa industry, because an active domestic market should be the main driver of product diversification and efficiency before penetrating the export market (Satria *et al*., 2021).

Figure 6 also shows that supporting industries, such as logistics infrastructure, post-harvest facilities, and certification bodies, are still not interacting optimally with elements of the company's structure and strategy. This hinders the productivity and consistency of the quality of Indonesian cocoa exports, which often lose out on traceability and sustainability compared to products from Côte d'Ivoire (Kindangen *et al*., 2017; Widyastutik & Arianti, 2013). In this context, research by Nugraha *et al*. (2023) confirms that Indonesia only excels in terms of volume, not the quality or efficiency of the export system. On the other hand, Hlushchenko & Nevmerzhitskyi (2020); Sergeeva & Grigoryan, (2022); Starov, (2024); noted that the vertical integration of supporting industries is essential to improve the competitiveness of agricultural products in the global value chain.

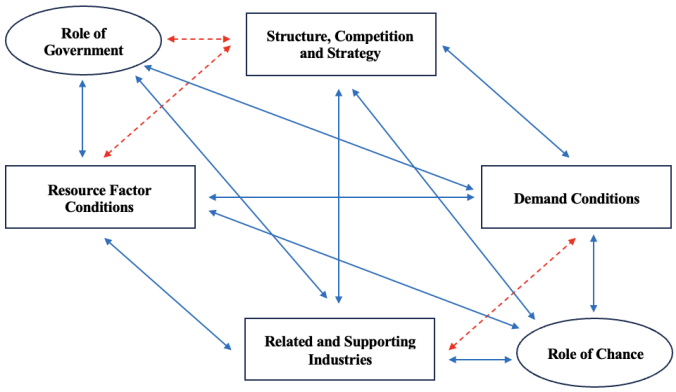

Figure 6. Interrelationship between components in the Porter's Diamond Model of Indonesian cocoa in the international market.

The government's role as a catalyst for strengthening Indonesia's cocoa competitiveness still shows weak connectivity, especially in the implementation of downstream policies that have not been supported by innovation incentives, MSME assistance, or massive research partnerships. The cocoa bean export duty policy has indeed succeeded in reducing seed exports and increasing exports of processed products, but its impact is still limited to regulatory aspects and has not touched the strengthening of the industrial ecosystem as a whole (Nabhani, 2024; Suryana *et al*., 2022). Njinyah (2018); Obi-Egbedi *et al*. (2021) show that effective government policies in cocoa exports are not enough to be tariff-based, but must also include increasing institutional capacity and industry readiness to compete in an increasingly complex global market.

Visualization of Porter's Diamond shows that the competitiveness structure of Indonesia's cocoa exports is still partial, with the dominance of natural factors as the main driver and weak linkages on other systemic aspects. To form a sustainable competitive advantage, it is necessary to strengthen the connectivity between model elements through cross-sectoral strategies involving the government, industry, academia, and markets so that Indonesia is not only a supplier of raw materials, but also a major player in the global cocoa industry (Indah *et al*., 2018; Fahmid *et al*., 2022).

4. CONCLUSION

This research shows that Indonesia still maintains a comparative and competitive advantage in cocoa exports, particularly to India, China, Malaysia, and the Philippines. The RCA analysis consistently recorded values above 1.0, with an average of 10.41 in Malaysia, 9.42 in China, 5.40 in India, and 3.97 in the Philippines, confirming Indonesia's comparative advantage across these markets, although the downward trends in Malaysia and the Philippines highlight the challenges of sustaining this position amid stronger competition and shifting domestic policies. The ECI results, averaging 1.12 throughout the study period, also indicate relatively strong competitiveness, yet fluctuating in response to supply quality, international trade standards, and global market preferences. Porter's Diamond Model further reveals that Indonesia's competitiveness is still largely dependent on basic factor conditions such as climate and land but is not adequately supported by an integrated industrial structure, as reflected in weak domestic demand, limited supporting infrastructure, low innovation capacity, and the absence of synergistic coordination between government and industry actors. The structural weaknesses in demand, innovation, and governance reduce the potential for long-term competitiveness, while the government's downstream policy and supporting industry development remain fragmented and insufficiently aligned with market demands. Strengthening Indonesia's position in the global cocoa value chain therefore requires a cross-sectoral strategy that encompasses institutional reinforcement, increased investment in downstream industries, and improvements in export quality standards, while aligning downstream policies with research incentives, human resource development, and public–private partnerships. These findings, reinforced by both RCA and ECI results, provide a strong empirical foundation for the formulation of national agribusiness policies and create opportunities for further research on innovation-based competitiveness transformation and systemic integration.

REFERENCES

Adelina, S., Wibowo, R.P., & Hasyim, H. (2020). Analysis of the export determinants of Indonesian cocoa with gravity model approach. *International Journal of Research*, *7*(10), 66-75.

Ananda, R., Iskandar, S., & Afriyatna, S. (2020). Analisis faktor–faktor yang mempengaruhi volume ekspor dan produksi kakao di Indonesia. *Societa: Jurnal Ilmu-Ilmu Agribisnis*, ***6***(2), 144–151. https://doi.org/10.32502/jsct.v6i2.826

Anggoro, R., & Widyastutik, W. (2016). Non-tariff barriers and factors that influence the Indonesian cocoa export to Europe. *Signifikan: Jurnal Ilmu Ekonomi*, ***5***(1), 1–12. https://doi.org/10.15408/sjie.v5i1.3131

Augustin, N.P., Prasetyo, E., & Santoso, S.I. (2021). Analysis of competitiveness and export trends of Indonesian cocoa to the five destination countries for 2010–2019. *Agricultural Socio-Economics Journal,* ***21***(3), 215–222. https://doi.org/10.21776/ub.agrise.2021.021.3.6

Ayon Ponce, G.I., Álvarez Indacochea, A.A., Salazar Moran, A.L., Baque Sánchez, E.R., Hernández-Ramírez, J., Arboleda Puerta, J.E., Camero Ortiz, E.L., Corredor-Torres, J.E., Tovar-Quintero, J., & Rincón-Guio, C. (2024). Enhancing competitiveness in cocoa associations: An integral project management approach based on Porter's Diamond Model. *EnPress Journals,* ***8***(2),

2872. https://doi.org/10.24294/jipd.v8i2.2872

Azizah, A.S., Lasmana, T.A., & Asmara, G.D. (2024). Analisis daya saing ekspor biji kakao Indonesia di pasar internasional tahun 2011–2021. *PROSENAMA, **4**,* 67–78. https://prosenama.upnjatim.ac.id/index.php/prosenama/article/view/70

BPS (Badan Pusat Statistik). (2024). *Statistik Kakao Indonesia 2023*. Accessed on 10 November 2025 from https://www.bps.go.id/id/publication/2024/11/29/ed255af0c9059f288fb7e1de/statistik-kakao-indonesia-2023.html

Balassa, B. (1965). Trade liberalisation and "revealed" comparative advantage. *The Manchester School*, ***33***(2), 99–123. https://doi.org/10.1111/j.1467-9957.1965.tb00050.x

Fadillah, F., Wulandari, S.A., & Zainuddin, Z. (2023). Analisis daya saing ekspor kakao Indonesia ke negara mitra perdagangan utama periode 2012–2021. *Jurnal MeA (Media Agribisnis)*, ***6***(3), 1025–1037. http://dx.doi.org/10.33087/mea.v9i2.260

Fahmid, I.M., Wahyudi, W., Salman, D., Kariyasa, I.K., Midadan Fahmid, M., Agustian, A., Perdana, R.P., Rachman, B., Darwis, V., & Mardianto, S. (2022). "Downstreaming" policy supporting the competitiveness of Indonesian cocoa in the global market. *Frontiers in Sustainable Food Systems, **6**.* https://doi.org/10.3389/fsufs.2022.821330

Fahmid, I.M., Wahyudi, W., Salman, D., Kariyasa, I.K., Midadan Fahmid, M., Agustian, A., Perdana, R.P., Rachman, B., Darwis, V., & Mardianto, S. (2022). "Downstreaming" policy supporting the competitiveness of Indonesian cocoa in the global market. *Frontiers in Sustainable Food Systems, **6**.* https://doi.org/10.3389/fsufs.2022.821330

Faizah, S.N., Jamhari, & Masyhuri. (2023). Integrasi pasar biji kakao Indonesia dengan pasar dunia. *Jurnal Agro Ekonomi, **41***(1), 39–49.

Fuady, V., & Suryani, N. (2024). Evaluasi perdagangan kakao Indonesia di pasar internasional: Analisis berdasarkan Trade Dependence Index (TDI). *Jurnal Bisnis Digital*, ***4***(2), 631–641.

Fudjaja, L., Ryadha, R., Saadah, S., Viantika, N.M., Ridwan, M., & Darma, R. (2024). Fostering cocoa industry resilience: A collaborative approach to managing farm gate price fluctuations in West Sulawesi, Indonesia. *Open Agriculture, **9***(1). https://doi.org/10.1515/opag-2022-0312

Hapsari, T.T., & Yuniasih, A.F. (2020). The determinant factors of Indonesian competitiveness of cocoa exports to Germany. *Jurnal Ekonomi Pembangunan*, ***18***(1), 75–84.

Hlushchenko, S.I., & Nevmerzhitskyi, V.M. (2020). Features of integrated interaction of agricultural market entities. *Actual Problems of Innovative Economy and Law, **3***(7), 42–46. https://doi.org/10.36887/2524-0455-2020-3-7

Indah, P.N., Harya, G.I., Pratiwi, L.F.L., & Widayanti, S. (2018). Analysis of factors influencing processed cocoa industry in East Java, Indonesia. *Proceedings of the International Conference on Science and Technology (ICST 2018).* https://doi.org/10.2991/icst-18.2018.133

Kindangen, H., Hartoyo, S., & Baga, L.M. (2017). Perkembangan produktivitas, luas lahan, harga domestik, permintaan dan ekspor biji kakao Indonesia periode 1990–2013. *Jurnal Manajemen dan Agribisnis*, ***14***(2), 118–129. https://doi.org/10.17358/jma.14.2.118

Leonard, T.A. (2017). Kausalitas ekspor Indonesia ke Tiongkok dengan inflasi Indonesia, suku bunga dasar Tiongkok, dan nilai tukar Indonesia. *Economics Development Analysis Journal, **6***(4), 430–438. https://doi.org/10.15294/edaj.v6i4.22299

Meidrieswida, A.G. (2018). Pengaruh jumlah produksi kakao, harga kakao dunia, nilai tukar, dan harga ekspor kakao terhadap ekspor kakao di Indonesia. *Jurnal Dinamika Ekonomi Pembangunan, **1***(2), 73-79. https://doi.org/10.33005/jdep.v1i2.416

Nabhani, I. (2024). Down-streaming impact to the competitiveness of Indonesia cocoa. *Khazanah Sosial, **6***(1), 1-11. https://doi.org/10.15575/ks.v6i1.33343

Napitupulu, D.A., Gabriel, P.Y., Sirait, R., & Prayoga, R. (2024). Analisis daya saing kakao Indonesia di pasar internasional. *Journal of Agribusiness, Social and Economic (JASE), **4***(1), 38-43. https://doi.org/10.32585/jase.v4i1.5022

Neilson, J., Dwiartama, A., Fold, N., & Permadi, D. (2020). Resource-based industrial policy in an era of global production networks: Strategic coupling in the Indonesian cocoa sector. *World Development, **135**,* 105045. https://doi.org/10.1016/j.worlddev.2020.105045

Njinyah, S.Z. (2018). The effectiveness of government policies for export promotion on the export performance of SMEs cocoa exporters in Cameroon. *International Marketing Review, **35***(1), 164–185. https://doi.org/10.1108/IMR-05-2016-0103

Nugraha, A.T., Wiranthi, P.E., & Arum, A.S. (2021). Competitiveness analysis of Indonesia's processed cocoa exports. *Agribusiness*

Journal, ***15***(1), 1-8.

Nurun Nisa', D.P.J.I., Darsono, D., & Antriyandarti, E. (2023). Daya saing biji kakao di pasar Malaysia. *Jurnal Kawistara,* ***13***(2). https://doi.org/10.22146/kawistara.77200

Obi-Egbedi, O., Hussayn, J., & Oluwatayo, I. (2021). Trade liberalization policy and competitiveness of cocoa beans exports in Nigeria (1961-2017). *Zeszyty Naukowe SGGW W Warszawie - Problemy Rolnictwa Światowego*, ***21***(1), 4–15. https://doi.org/10.22630/PRS.2021.21.1.1

Putri, R.K., & Prihtanti, T.M. (2020). Faktor-faktor yang mempengaruhi volume ekspor kakao Indonesia tahun 2007–2017. *Jurnal Ekonomi Pertanian dan Agribisnis*, ***4***(3). https://doi.org/10.21776/ub.jepa.2020.004.03.08

Rada, N.E.A., & Sukadana, I.W. (2024). Factors affecting the competitiveness of Indonesian cocoa exports. *International Journal of Economics and Management Sciences,* ***1***(4). https://doi.org/10.61132/ijems.v1i4.375

Rahmadona, L., & Nauly, D. (2023). Analisis daya saing kakao olahan Indonesia di negara tujuan utama dunia. *Jurnal Agrosains dan Teknologi,* ***8***(1), 39–46.

Rangkuty, D. M., Efendi, B., & Ardian, N. (2019). Trend ekspor Indonesia ke 3 negara ASEAN Singapura, Filipina dan Laos (SFL). *Jurnal Akuntansi dan Ekonomika,* ***9***(2), 243-252.

Rojaba, M., & Jalunggono, G. (2022). Daya saing ekspor biji kakao Indonesia di pasar internasional periode 2011–2020. *JISMA: Jurnal Ilmu Sosial, Manajemen, dan Akuntansi,* ***1***(4), 501-508. https://doi.org/10.59004/jisma.v1i4.187

Sari, C.D.P., Robiani, B., Mukhlis, M., & Teguh, M. (2024). Analisis daya saing industri pengolahan kakao Indonesia. *Edunomics Journal,* ***5***(2), 206-213.

Satria, F.M., Nugraha, A., Yudha, E., & Ernah, E. (2021). Faktor-faktor yang mempengaruhi permintaan industri hilir domestik terhadap biji kakao. *Agricore: Jurnal Agribisnis dan Sosial Ekonomi Pertanian Unpad*, ***5***(2). https://doi.org/10.24198/agricore.v5i2.30800

Sergeeva, N.V., & Grigoryan, S.A. (2022). Integrasi vertikal sebagai cara untuk meningkatkan efisiensi ekonomi perusahaan agraria. *Prosiding II Konferensi Ilmiah All-Russia "Science, Technology, Society"*, 239-243.

Starov, I. (2024). Modeling the restructuring processes of agricultural enterprises considering integration trends. *Actual Problems of Innovative Economy and Law,* ***5***, 64–68. https://doi.org/10.36887/2524-0455-2024-5-13

Suryana, A.T., Nugrahapsari, R.A., & Hasibuan, A.M. (2022). Tinjauan kritis terhadap kebijakan hilirisasi kakao di Indonesia. *Forum Penelitian Agro Ekonomi*, ***40***(1).

Susanti, A., Kezia, A., Sitepu, R.K.K., Sabrina, R.I., Husain, M.A., Yohanna, D., Andika, R., & Luthfiah, N.F. (2024). Analisis daya saing ekspor kakao Indonesia di pasar Malaysia. *Jurnal Penelitian Manajemen dan Inovasi Riset,* ***2***(3), 255–262. https://doi.org/10.61132/lokawati.v2i3.899.

Tothmihaly, A., & Ingram, V. (2018). How can the productivity of Indonesian cocoa farms be increased? *Agribusiness,* ***35***(3), 439–456. https://doi.org/10.1002/agr.21595

Tupamahu, Y. M., & Apituley, M. R. (2022). Export competitiveness of Indonesian cocoa commodities and derivative products in the international market in conditions before and after the export duty determination. *Agrikan: Jurnal Agribisnis Perikanan,* ***15***(2). https://doi.org/10.52046/agrikan.v15i2.1413

UN Comtrade. (2024). International Trade Statistic Database (online). https://comtradeplus.un.org/TradeFlow

Utami, T.A. (2018). Analisis Daya Saing Ekspor Biji dan Produk Olahan Kakao Indonesia (Periode Tahun 2012-2016). [*Undergraduated Thesis*], Brawijaya University. https://repository.ub.ac.id/id/eprint/9709/1/FULLTEXT SKRIPSI.pdf

Widyastutik, W., & Arianti, R.K. (2013). Strategi kebijakan mutu dan standar produk ekspor dalam meningkatkan daya saing (studi kasus produk ekspor biji kakao). *Jurnal Manajemen dan Agribisnis,* ***10***(2), 98-108.