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COMPARATIVE ADVANTAGE AND EXPORT TRADE SPECIALIZATION OF INDONESIA'S NON-CITRUS ESSENTIAL OILS IN THE GLOBAL MARKET, 2015–2024

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Abstract

Non-citrus essential oils are natural resource–based export commodities with significant potential in international trade. Competition with major exporting countries and the dynamic development of the global market share require a comprehensive analysis of Indonesia's export position and competitiveness. This study aims to analyze the comparative advantage, trade specialization, and dynamic export position of Indonesia's non-citrus essential oils relative to competing countries during the 2015–2024 period. The analytical methods employed include the Revealed Comparative Advantage (RCA), Trade Specialization Index (ISP), and Export Product Dynamics (EPD). Secondary data were obtained from UN Comtrade, ITC Trade Map, and Statistics Indonesia. The results show that Indonesia possesses a strong comparative advantage, as indicated by an increase in the RCA value from 3.45 in 2015 to 7.57 in 2024, accompanied by a rise in export market share from 3.16% to 8.38%. The ISP analysis yields an average value of 0.14, with an increasing trend from −0.19 in 2016 to 0.57 in 2024, indicating a shift in Indonesia's status from a net importer to a net exporter. Furthermore, the EPD analysis places Indonesia in the Rising Star position with X-axis = 17.96 and Y-axis = 2.927, indicating that Indonesia's export market share growth aligns with increasing global demand. These findings confirm Indonesia's substantial potential to strengthen its position as a major exporter of non-citrus essential oils in the international market.

Keywords: ***non-citrus essential oils, export competitiveness, comparative advantage, trade specialization, export dynamics.***

INTRODUCTION

Non-citrus essential oils are agro-industrial plantation commodities that play a vital role in international trade. They are used as raw materials in various industries, including perfumes, cosmetics, pharmaceuticals, food, and aromatherapy. Global demand for non-citrus essential oils continues to grow in line with the development of natural-based industries and increasing consumer preference for organic and sustainable products.(Nurcahyani & Salqaura, 2023). DataITC Trade Map (2025)shows that the global export value of non-citrus essential oils (HS 330129) increased from approximately USD 1.90 billion in 2015 to USD 2.36 billion in 2024, with an average trade value of USD 2.21 billion and an average annual growth rate of approximately 3%. This trend reflects the stability of the global non-citrus essential oil market. Demand comes primarily from the cosmetics, pharmaceutical, and aromatherapy industries in various countries.(Baser & Bonello, 2025)This situation places producing countries like Indonesia in a strategic position in the global trade chain for non-citrus essential oils.(Zamani et al., 2025).

Indonesia is one of the main producers of non-citrus essential oils such as patchouli, clove, vetiver, and vetiver, supported by the biophysical advantages of tropical regions and the availability of plantation raw materials.(Nurcahyani & Salqaura, 2023)Non-citrus essential oil commodities are an important part of Indonesia's natural resource-based exports. Based onITC Trade Map (2025), global demand for non-citrus essential oils continues to increase and will reach more than USD 2.35 million in 2024. During the 2015–2024 period, the value of Indonesia's non-citrus essential oil exports fluctuated, from around USD 60,319 in 2015 to USD 197,556 in 2024. Indonesia's export share also increased from 3.16% in 2015 to 8.38% in 2024, indicating a strengthening of Indonesia's position as a non-citrus essential oil exporter in the global market.(ITC Trade Map, 2025).

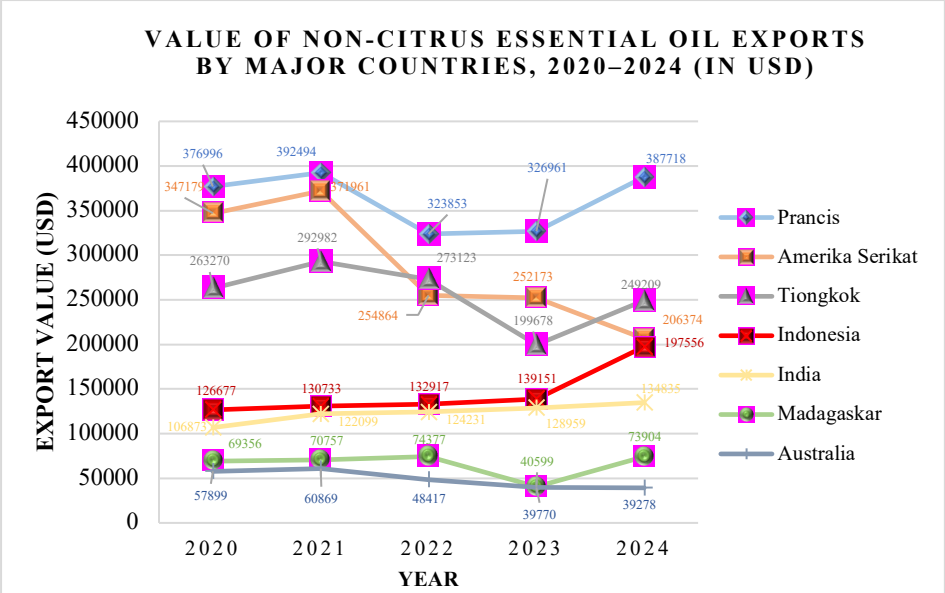


Figure 1. Export Value of Non-Citrus Essential Oils by Major Countries 2020–2024

Despite showing an upward trend, Indonesia's position remains below several major exporting countries. In 2024, France recorded an export share of 16.45%, while the United States recorded 8.75%, reflecting the dominance of a few countries in the global non-citrus essential oil trade. This relatively concentrated market structure indicates that competition in the non-citrus essential oil trade in the international market is increasingly fierce. Countries such as France, the United States, China, India, Madagascar, and Australia have advantages in production efficiency, technological innovation, and the ability to meet international quality standards.(Lestari et al., 2023).

On the other hand, Indonesia's non-citrus essential oil export performance remains influenced by various external and internal factors. Disruptions to the global supply chain during the COVID-19 pandemic, rising logistics costs, and changes in industrial demand have all impacted the stability of this commodity's exports.(Huda et al., 2021). In addition, limited industrial downstreaming, product quality standardization, and international certification remain challenges in increasing the competitiveness of Indonesian non-citrus essential oils in the global market.(Tarigan et al., 2024)This condition indicates that the superiority of natural resources has not been fully followed by strengthening industrial competitiveness.

A number of previous studies have shown that Indonesian non-citrus essential oils have quite strong export competitiveness potential.Huda et al. (2021)shows that Indonesian patchouli oil has a comparative advantage in several international markets.Lestari et al. (2023)AndNurcahyani & Salqaura (2023)found that Indonesian non-citrus essential oils have positive export competitiveness based on international trade indicators.Tampubolon & Yuliawati (2025)shows an increase in the competitiveness of Indonesian non-citrus essential oil exports using the Revealed Comparative Advantage (RCA), Trade Specialization Index, and Export Product Dynamic (EPD) approaches. However, most studies still focus on specific commodities or specific export destination countries, so that the analysis of the aggregate competitiveness of non-citrus essential oils in the HS 3301.29 trade group in the global market is still limited.

Based on these conditions, competitiveness analysis is crucial for understanding the strategic position of Indonesia's non-citrus essential oil exports within the global trade structure. Competitiveness analysis serves not only as a tool for measuring export performance but also as a basis for formulating strategies for strengthening the agro-industry and increasing the added value of plantation commodities.(Sitepu & Nainggolan, 2024)Therefore, this study aims to analyze the dynamics of Indonesia's non-citrus essential oil export competitiveness in the global market using the Revealed Comparative Advantage (RCA), Trade Specialization Index, and Export Product Dynamic (EPD) approaches in the 2015–2024 period.

MATERIALS AND METHODS

This study uses a descriptive quantitative approach to analyze the competitiveness of Indonesian non-citrus essential oil exports in the global market. The study was conducted through desk research from October 2025 to January 2026, encompassing data collection, processing, analysis, and report preparation. The quantitative approach was used to systematically describe the dynamics of international trade in non-citrus essential oil commodities based on trade statistics indicators.

The data used is secondary time series data for the 2015–2024 period, covering the export and import values of non-citrus essential oil commodities with HS code 3301.29. The data was obtained from several official sources, namely the United Nations Commodity Trade Statistics Database (UN Comtrade), the International Trade Center (ITC Trade Map), and the Central Statistics Agency (BPS).

The research analysis unit covers seven major non-citrus essential oil exporting countries in the global market: Indonesia, France, the United States, China, India, Madagascar, and Australia. These countries were purposively selected because they consistently have significant export values and represent the global trade structure of HS 3301 commodities.29(ITC Trade Map, 2025; UN Comtrade, 2025).

Data collection was conducted using a documentary study technique, namely the collection of international trade statistics from official databases and relevant scientific literature. The data collected included export value, import value, total world exports, and market share of non-citrus essential oil commodities.

Data analysis was conducted using a descriptive-comparative approach with three main analysis tools, namely Revealed Comparative Advantage (RCA) used to measure the comparative advantage of Indonesia's non-citrus essential oil exports compared to the world average.(Adiguna et al., 2022). Mathematically, RCA is formulated as follows:

$$RCA = \frac{X_{ij}/X_{it}}{X_{wj}/X_{wt}} \quad (1)$$

where RCA is the comparative advantage index;$X_{ij}$is the value of non-citrus essential oil commodity exports (HS 3301.29) from the country to the global market; is the total value of all commodity exports from the country to the global market; is the world export value of non-citrus essential oil commodities; and is the total value of all commodity exports worldwide. The notation indicates the exporting country, indicates the non-citrus essential oil commodity, indicates the total of all commodities, and indicates the world. An RCA value greater than 1 indicates a comparative advantage in international trade.$iX_{it}iX_{wj}X_{wt}ijtw$

Competitive competitiveness is analyzed using the Trade Specialization Index (TSI) to determine a country's position as a net exporter or net importer of non-citrus essential oil commodities.(Widodo, 2009). ISP is formulated as follows:

$$ISP_{ij} = \frac{X_{ij} - M_{ij}}{X_{ij} + M_{ij}} \quad (2)$$

Where$ISP_{ij}$is the Trade Specialization Index for non-citrus essential oil commodities; is the value of non-citrus essential oil commodity exports from country ; and is the value of non-citrus essential oil commodity imports by country . The notation indicates the exporting country, while indicates the non-citrus essential oil commodity. The ISP value ranges from −1 to +1, where positive values indicate that a country has export specialization (net exporter), while negative values indicate import specialization (net importer)$X_{ij}iM_{ij}\ iij$(Widodo, 2009).

Furthermore, Export Product Dynamic (EPD) analysis is used to identify the competitive position of Indonesian non-citrus essential oil exports in global trade based on export market share growth and global demand growth. This method is used to observe the dynamics of changes in a commodity's export competitiveness in international trade and complements analyses of comparative advantage and trade specialization.(Adiguna et al., 2022).The EPD calculation is carried out using two main indicators, namely growth in export market share as the X axis and growth in product market share in the world as the Y axis, which is formulated as follows:

X-axis, export market share growth:

$$\text{X-axis} = \frac{\sum_{t=1}^{T}\left[\left(\frac{X_{ij}}{W_{ij}}\right)_t \times 100\% - \left(\frac{X_{ij}}{W_{ij}}\right)_{t-1} \times 100\%\right]}{T} \quad (3)$$

Y-axis, product market share growth:

$$\text{Y axis} = \frac{\sum_{t=1}^{T}\left[\left(\frac{X_t}{W_t}\right)_t \times 100\% - \left(\frac{X_t}{W_t}\right)_{t-1} \times 100\%\right]}{T} \quad (4)$$

where is the export value of non-citrus essential oil commodities of country i, is the world export value of non-citrus essential oil commodities, is the total export of non-citrus essential oil commodities, is the total world exports, and is the number of observation years.$X_{ij}W_{ij}X_tW_tT$

The EPD analysis results are classified into four categories: Rising Star, Falling Star, Lost Opportunity, and Retreat. This analysis is used to observe the dynamics of changes in the competitiveness of Indonesian non-citrus essential oil exports during the study period.

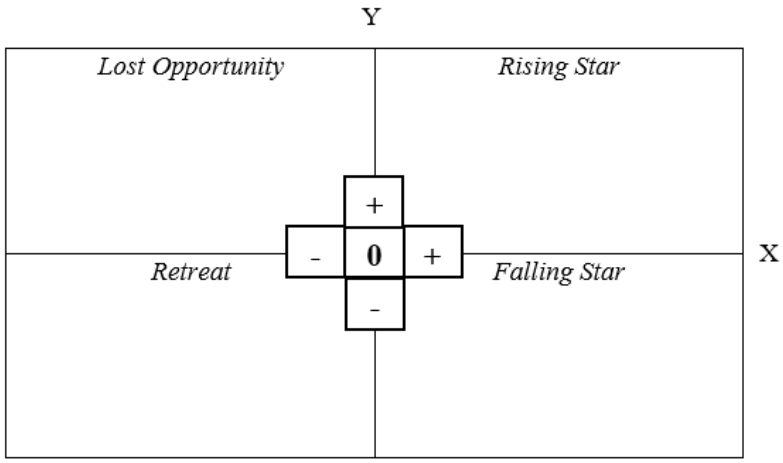
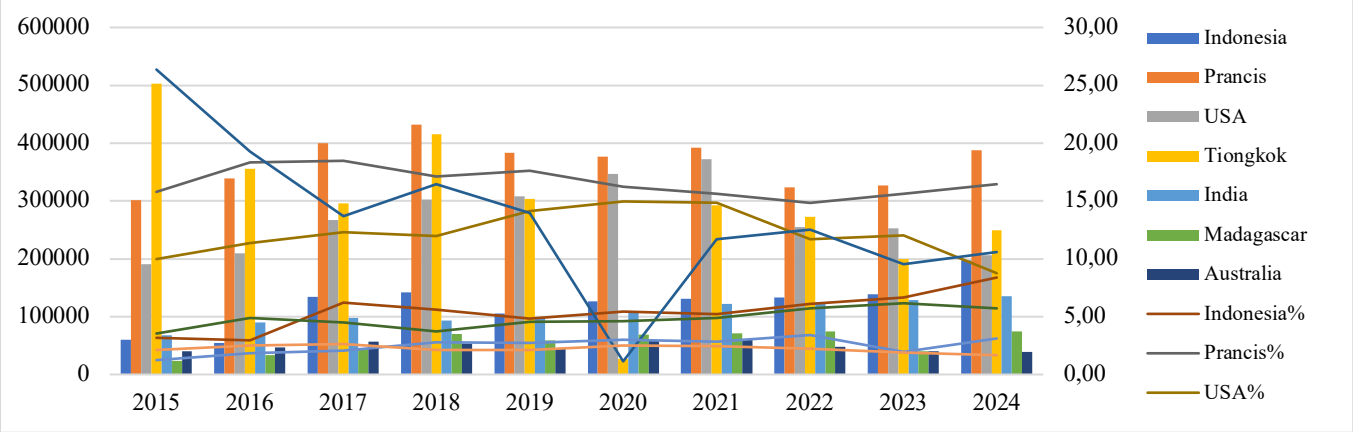


Figure 2.Competitive Position and Business Strength in the Export Product Dynamic (EPD) Matrix
Source:Esterhuizen (2006)

All data processing was performed using Microsoft Excel software. The analysis results are presented in tables and graphs to facilitate interpretation of the dynamics of Indonesia's non-citrus essential oil export competitiveness in the global market.

RESULTS AND DISCUSSION



Indonesia shows a significant upward trend in its export share, from 3.16% in 2015 to 8.38% in 2024. This increase indicates Indonesia's strengthening position in the global non-citrus essential oil trade. Conversely, China's market share declined from 26.36% in 2015 to 10.57% in 2024, while France maintained a relatively stable position at 15–18% throughout the study period. India showed a gradual increase from 3.54% to 5.72%, while the United States remained stagnant with a market share of around 9–15%. Madagascar and Australia have relatively small market shares but still contribute significantly to the global market structure. The development of export share shows that Indonesia is one of the countries that has experienced the most consistent increase in market position during the research period, amidst a global competitive structure that is still dominated by several major exporters.

Comparative Advantages of Non-Citrus Essential Oils

The Revealed Comparative Advantage (RCA) calculation shows that Indonesia has a strong comparative advantage in non-citrus essential oil exports during the 2015–2024 period. Indonesia's RCA value increased from 3.45 in 2015 to 7.57 in 2024. This condition indicates that the contribution of non-citrus essential oil exports to Indonesia's export structure is greater than the world trade average. An RCA value greater than one indicates that the commodity has comparative competitiveness in the international market.(Balassa, 1965; Widodo, 2009).

Table 1. RCA Values of Non-Citrus Essential Oils in the Global Market, 2015-2024 Period.

Year	Indonesia	French	United States of America	China	India	Madagascar	Australia
2015	3.45	5.23	1.09	1.9	2.2	103.67	1.82
2016	3.25	5.96	1.25	1.45	2.99	134.87	2.11
2017	6.47	6.19	1.4	1.06	2.67	127.79	2.01
2018	6.02	5.81	1.39	1.28	2.22	177.82	1.6
2019	5.4	5.93	1.61	1.05	2.64	198.4	1.46
2020	5.85	5.94	1.84	0.08	2.92	267.15	1.71
2021	4.98	6.04	1.87	0.77	2.73	229.7	1.55
2022	5.15	6	1.4	0.86	3.11	239.82	1.36
2023	6.07	5.79	1.41	0.67	3.38	142.02	1.21
2024	7.57	6.27	1.01	0.71	3.1	293.03	1.15
Average	5.42	5.92	1.43	0.98	2.80	191.43	1.60

Source:ITC Trade Map (2025), After Processing

The increase in the RCA value indicates a strengthening position for Indonesia's non-citrus essential oil exports in the global market. Increased domestic production capacity and utilization of tropical natural resources support the cultivation of essential oil-producing plants such as patchouli, cloves, and citronella. Global demand for natural-based products in the cosmetics, pharmaceutical, and aromatherapy industries also drives export expansion of these commodities.(Misra et al., 2024).

Madagascar exhibits the highest RCA value, with a significant increase from 103.67 in 2015 to 293.03 in 2024. This value reflects a very high level of export specialization in certain essential oil commodities. The country's export structure relies heavily on high-value essential oil commodities such as clove oil and other aromatic products that have strong demand in the global market.(Zamani et al., 2025).

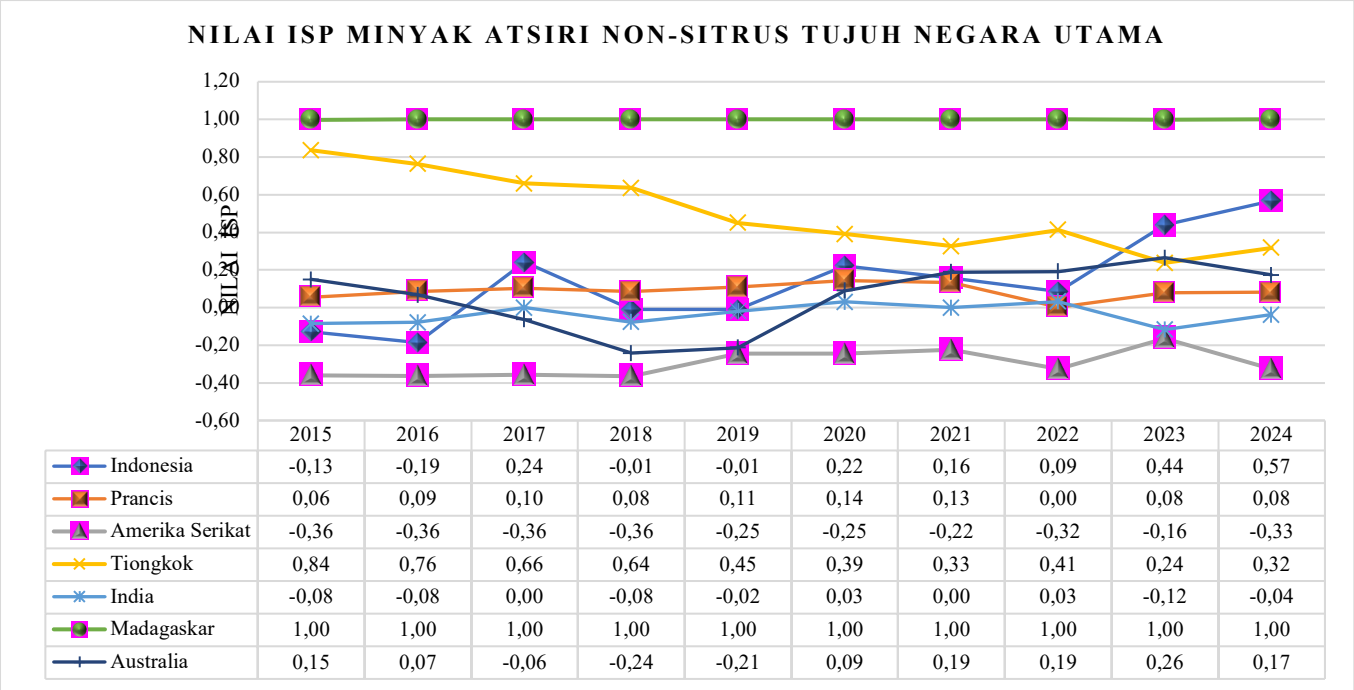
France has a relatively stable RCA score of 5–6. This reflects the country's role as a global hub for the perfume and cosmetics industry. The essential oil industry's value chain is integrated with the perfume and personal care product manufacturing sector.(Ivanova et al., 2025)India exhibits moderate but consistent RCA values in the range of 2–3. This reflects its stable essential oil production capacity and its role as a supplier of aromatic raw materials to the international market.(Misra et al., 2024).

The United States and Australia show relatively low RCA values in the range of 1–2. This indicates that non-citrus essential oils are not a major sector in their export structures. China shows a downward trend in its RCA value, from 1.90 in 2015 to 0.71 in 2024. This indicates a decline in its comparative advantage in non-citrus essential oil trade. This change is related to the transformation of its industrial structure and China's increasing export focus on high-value-added manufactured products within the global value chain.(Gereffi et al., 2022).

Indonesia experienced a significant increase in its comparative advantage during the study period. Non-citrus essential oils are increasingly playing a role in the national export structure and have the potential to be further developed as a leading agro-industrial commodity. This finding aligns with research.Tampubolon & Yuliawati (2025)which states that the increase in the competitiveness of Indonesian essential oil exports is supported by the superiority of natural resources, increased production capacity, and growth in global demand for natural-based products.

Non-Citrus Essential Oil Trading Orientation

The analysis of the Trade Specialization Index (ISP) shows the transformation of Indonesia's non-citrus essential oil trade orientation from a net importer to a growing exporter during the period 2015–2024. Based on Widodo's (2009) classification, the increase in the ISP value from negative at the beginning of the period to 0.57 in 2024 places Indonesia in the Growth Stage with a value range of 0.01–0.80. The shift in value from negative to positive reflects a structural transition from import dependence to a net exporter position with increasingly strong domestic production capacity.



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Indonesia	-0,13	-0,19	0,24	-0,01	-0,01	0,22	0,16	0,09	0,44	0,57
Prancis	0,06	0,09	0,10	0,08	0,11	0,14	0,13	0,00	0,08	0,08
Amerika Serikat	-0,36	-0,36	-0,36	-0,36	-0,25	-0,25	-0,22	-0,32	-0,16	-0,33
Tiongkok	0,84	0,76	0,66	0,64	0,45	0,39	0,33	0,41	0,24	0,32
India	-0,08	-0,08	0,00	-0,08	-0,02	0,03	0,00	0,03	-0,12	-0,04
Madagaskar	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
Australia	0,15	0,07	-0,06	-0,24	-0,21	0,09	0,19	0,19	0,26	0,17

Figure 4. ISP Value of Non-Citrus Essential Oils for the Period 2015-2024
Source:ITC Trade Map (2025), Processed

Madagascar is in the Export Specialization Stage (Maturity Stage) with an ISP value approaching +1. This condition indicates a very dominant export orientation and a high level of product differentiation.(Tampubolon & Yuliawati, 2025)The United States is in the negative range, thus entering the Import Substitution Stage, reflecting dependence on external supplies. France and Australia are in the Expansion Stage with moderate positive values. India is near the trade equilibrium point, with values ranging from -0.51 to 0.00. The strengthening of Indonesia's ISP value is the result of the interaction of various mutually reinforcing structural factors. The advantages of tropical agroclimate and biodiversity provide a competitive and sustainable production base.(Anwar et al., 2022)The downstreaming policy strengthens processing capacity and increases the creation of domestic added value.(Tampubolon & Yuliawati, 2025). The implementation of international quality standards and certification expands access to premium market segments with higher margins.(Lestari et al., 2023). Export market diversification acts as a mechanism to mitigate concentration risk and maintain the stability of export revenues.(Nurcahyani & Salqaura, 2023). This situation places Indonesia in a phase of strengthening its competitiveness toward more mature export specialization. This level of maturity still lags behind Madagascar, which has already achieved full specialization. Improving quality consistency, developing high-value-added products, and strengthening downstream industrial integration are strategic prerequisites for driving the transition to the Export Specialization Phase.

Dynamic Position of Export Competitiveness

ResultsAnalysis shows that most of Indonesia's non-citrus essential oil export destinations are in the Rising Star category, reflecting Indonesia's increasing market share in the growing import market. Countries in this category include India, the United States, France, China, Germany, Belgium, Mexico, Brazil, Switzerland, Japan, Italy, and Vietnam.

Table 2. Position of Indonesian Non-Citrus Essential Oils in Main Destination Countries,

Country of destination	Indonesia's Share 2015 Si_0	Indonesia's Share 2024 Si1	Change in share (X-axis) Δ si	Market growth (Y-axis) ΔW	Quadrant Position
India	32.24	36.92	0.05	0.82	*Rising Star*
American	12.16	13.33	0.01	0.01	*Rising Star*
Dutch	14.81	6.75	-0.08	1.49	*Lost Opportunity*
French	9.63	11.50	0.02	0.22	*Rising Star*
Spanish	31.55	0.25	-0.06	0.29	*Lost Opportunity*
Singapore	42.41	37.81	-0.05	0.03	*Lost Opportunity*
China	13.94	19.20	0.05	2.12	*Rising Star*
English	5.61	7.28	0.02	-0.06	*Falling Star*
German	6.31	8.64	0.02	0.20	*Rising Star*
Belgium	0.00	15317.35	153.17	0.18	*Rising Star*
Mexico	22.89	23.23	0.00	0.10	*Rising Star*
Brazil	15.44	15.58	0.00	1.07	*Rising Star*
Türkiye	6803.58	23.22	-67.80	3.07	*Lost Opportunity*
Switzerland	16.93	19.93	0.03	0.71	*Rising Star*
Egypt	5319.45	13059.53	77.40	-0.39	*Falling Star*
Japan	3.25	5.03	0.02	0.16	*Rising Star*
Italy	480.13	1685.00	12.05	0.95	*Rising Star*
Malaysia	7804.45	4431.96	-33.72	0.21	*Lost Opportunity*
Vietnamese	3657.07	9309.95	56.53	1.38	*Rising Star*
Australia	3082.63	4.93	-30.78	-0.08	*Retreat*

Source:UN Comtrade (2025)After Processing

Indiashows an increase in Indonesia's market share from 0.32 in 2015 to 0.37 in 2024 with a Δsi value of 0.05 and market attractiveness growth of 0.816. This condition indicates the strengthening of Indonesia's export competitiveness along with the increasing demand for non-citrus essential oil imports in the Indian market. The United States is also in the Rising Star position with an increase in market share from 0.12 to 0.13 despite relatively low market attractiveness growth (ΔW of 0.009). This condition demonstrates Indonesia's ability to maintain penetration in markets with a high level of competition.

France and Germany also ranked as Rising Stars, showing increasing market share and positive import growth. This reflects Indonesia's growing role as a supplier of non-citrus essential oil raw materials for the perfume, cosmetics, and pharmaceutical industries in Europe. Belgium's market share growth was significantly higher due to its relatively small initial export value, which should be interpreted with caution due to its low initial base effect.

China is showing a Rising Star position with a Δsi of 0.05 and very high market attractiveness growth (ΔW of 2.121). This indicates that Indonesia has successfully leveraged the increase in import demand to significantly expand its market share. Vietnam and Italy also show Rising Star positions, with increasing market share and relatively strong import growth. Several markets are in a Lost Opportunity position, where import demand increases but Indonesia's market share declines. Countries in this category include the Netherlands, Spain, Singapore, Turkey, and Malaysia. The Netherlands and Spain showed market share declines of -0.08 and -0.06, respectively, despite relatively high import growth. This situation indicates that Indonesia has not been able to optimally capitalize on market expansion, possibly due to increased competition from other supplier countries or changes in product quality standards. Singapore tooIndonesia is in a Lost Opportunity position. The decline in market share reflects increased competition in Singapore's role as a regional re-export hub. Turkey and Malaysia show a similar pattern of declining market share despite increasing import demand, indicating challenges in maintaining Indonesia's export competitiveness.

The market thatThe UK and Egypt are in a Falling Star position. This indicates an increase in Indonesia's market share in a market experiencing declining demand. The UK experienced negative import growth (ΔW of -0.062), but Indonesia's market share increased. This demonstrates Indonesia's ability to maintain its relative position compared to other suppliers in a contracting market. Egypt exhibits a similar pattern, with declining market attractiveness (ΔW of -0.390) but a significant increase in Indonesia's market share. Australia is aIndonesia is the only country in retreat, marked by a decline in Indonesia's market share (Δsi of -30.78) and negative market growth (ΔW of -0.075). This condition indicates market contraction and a decline in Indonesia's export competitiveness, making the Australian market a low priority in its medium-term export strategy.

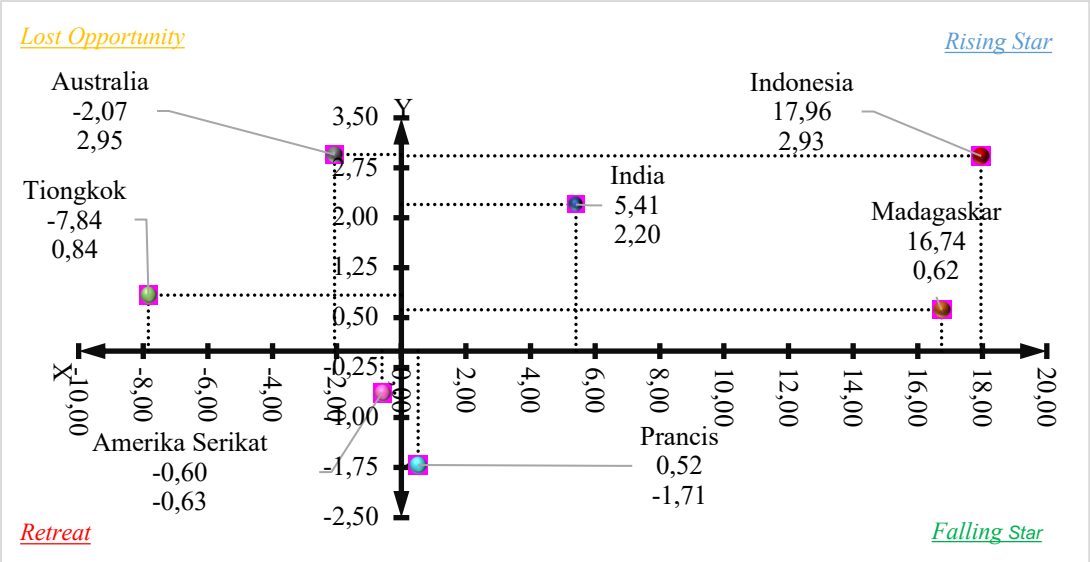


Figure 5. Position of Non-Citrus Essential Oil Products in Indonesia and Competing Countries for the Period 2015-2024
Source:UN Comtrade (2025), Processed

ResultsExport Product Dynamic (EPD) analysis shows that Indonesia's non-citrus essential oils are in the Rising Star position, reflecting an increase in export market share in line with growing global demand. These findings indicate that Indonesia is able to strengthen its position in the global essential oil trade by capitalizing on market expansion. This increase in market share is related to the availability of aromatic plant raw materials in tropical regions and a relatively competitive production structure, allowing Indonesia's non-citrus essential oil exports to grow sustainably. Comparisons between countries reveal different competitive dynamics. Madagascar and India also occupy the Rising Star position, indicating increasing export market share amidst growing global demand. France is in the Falling Star position, the United States is in the Retreat position, while China and Australia have been in the Lost Opportunity position for some periods. These differences in position indicate that exporting countries' ability to respond to market growth varies, so changes in market share reflect variations in each country's competitiveness.

Indonesia's Rising Star position indicates that export growth coincided with an increase in global market share. This pattern demonstrates that Indonesia not only benefits from growing global demand but is also able to maintain a competitive position compared to competing countries. Opportunities to strengthen export competitiveness can be achieved through improving product quality, production efficiency, and developing downstream industries that can increase the added value of essential oils. These findings align with research.Adiguna et al. (2022)which shows that agro-industrial commodities with positive market share growth have sustainable export prospects in the global market.

CONCLUSION

Based on the research results, it can be concluded that:

1. Indonesia's non-citrus essential oils have strong and increasing comparative competitiveness, with a consistent RCA value above one and a significant increase from 3.45 in 2015 to 7.57 in 2024. This increase demonstrates the strengthening role of commodities in the national export structure and Indonesia's competitive position in the global market.
2. Indonesia is competitively ranked as a Rising Star in most major destination countries, as indicated by increased market share in India (0.32 to 0.37; Δsi = 0.05) and strong market attractiveness growth in China (ΔW = 2.121).

However, several markets remain in the Lost Opportunity, Falling Star, and Retreat categories, reflecting competitive dynamics and the need for export strategy adjustments.

3. Indonesia's trade performance demonstrates a transformation toward becoming a net exporter with potential for sustained expansion, as evidenced by an increase in the ISP value to 0.57 by 2024, placing Indonesia in the Growth Stage. However, to achieve a more mature level of export specialization similar to Madagascar, Indonesia still needs to strengthen industrial downstreaming, quality consistency, and the development of high-value-added products.

Suggestion

1. Accelerating downstreaming and strengthening the domestic processing industry to transform established comparative advantages into sustainable competitive advantages. Developing high-value-added derivative products is a strategic step to propel Indonesia toward a more mature stage of export specialization.
2. Improving product, and standardization in accordance with international standards is essential to maintain a competitive position in growing markets and address competitive pressures in several export destination countries. Strengthening certification and quality control systems is a key prerequisite for penetrating the premium market.
3. Developing the essential oil industry in an integrated manner from upstream to downstream so that increasing export performance not only strengthens Indonesia's position in the global market, but also encourages job creation, improved farmer welfare, and greater contributions to national economic growth.

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