



**Nanjing Xiaozhuang University Undergraduate Thesis**

**The Export Competitiveness of Indonesia Wood Charcoal  
Briquettes**

School: School of Business

Name: Karebet Waqas Djihatama Asmara

Advisor: Lecturer Yu Xin

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## **ABSTRACT**

This study investigates Indonesia's competitive advantage in the international wood charcoal briquette market, focusing particularly on its exports to Asian and European regions of markets, as global demand rises for eco-friendly, high-quality fuel alternatives—especially for use in cooking and shisha—the importance of charcoal briquettes has grown. Indonesia benefits from abundant raw materials, especially coconut shells, allowing it to establish a strong presence in this sector. The research applies quantitative trade competitiveness frameworks, including the International Market Share (IMS), Revealed Comparative Advantage (RCA), and Trade Complementarity (TC) indices, alongside Porter's Diamond Model, to evaluate Indonesia's position against leading competitors such as China, Poland, the Philippines, and Ukraine. Findings show that Indonesia consistently maintains a high level of export performance and comparative advantage, particularly in the Middle East and parts of Asia. Strategic resource management and supportive industry-government collaboration are identified as critical for sustaining long-term growth in this sector. The study also highlights challenges including supply chain constraints and policy inefficiencies, offering recommendations to strengthen Indonesia's future export performance.

## **KEYWORDS**

Export competitiveness, IMS, RCA, TC index, Porter's Diamond Model

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Karebet Waqas Djihatama Asmara

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# CHAPTER 1

## INTRODUCTION

### 1 Background

#### 1.1 Export Condition in Indonesia

Indonesia has become Such competitive rivalry to many countries, thereby facilitating for various commodities such as refined petroleum, nickel and other to be exported throughout the world. However, these certain goods create more intensive labor on a large scale and need raw material that be sacred in the upcoming future, and with the limited domestic production, this commodity is less optimal for Indonesia's exports. However, with the increasing demand for charcoal briquettes from international markets such as the Middle East, Europe, and others, Indonesia can boost its exports and its production. This potential is supported by the abundant availability of raw materials, such as coal itself, which are widely distributed across the country with abundant sources.

Table 1.1a Source: *TrendEconomy.com* most Indonesia Export commodity

| <b>Export Commodity</b> | <b>Export Value (2022)</b> |
|-------------------------|----------------------------|
| Wood Charcoal Briquette | \$388.9 Million            |
| Petroleum Gas           | \$11.8 Billion             |
| Copper Ore              | \$8.89 Billion             |
| Lignite                 | \$8.29 Billion             |
| <b>Total Export</b>     | <b>\$78 Billion</b>        |

According to report by Eoc.world 2022, Indonesia export sector mineral fuels, mineral oils and product of their distillation record that (\$78 Billion) with Charcoal briquette is the biggest export in Charcoal HS4402 sector (388.9 Million)

followed by petroleum gas is the biggest exporter with as top main commodity for exporting by 3,7% or (\$11.8 Billion), Copper ore 2,78% or (\$8,89 Billion), and Lignite with 2,59% or (\$8,29 Billion) as main Indonesia export commodities. It's Expected to increase in the next year due to demand and supply dynamics that transcend national borders, often stemming from the need for products that cannot be sourced domestically. But however, why is Charcoal Briquette highlighted in this discussion? Since Indonesia has its other commodity with the biggest exporters of this commodity make it also important despite the value it gives, the existence of international trade provides numerous benefits and advantages to participating nations. Additionally, it allows a country to generate foreign exchange by exporting goods or services, which can fund imports and encourage economic growth (economic growth) (*Sudarmawan, 2023*).<sup>1</sup>

One of the factors that makes Charcoal Briquettes (HS4402) considered to have the potential to be exported is the quality of Indonesian coconut briquettes which are considered the best by the international market. Coconut Charcoal Briquettes are usually used as an alternative fuel in Europe or in the Middle East, Charcoal Briquettes are also used as a pipe-shaped suction device also called Shisha. Meanwhile, in Asia, such as South Korea and Japan, Charcoal Briquettes are used for cooking purposes because Charcoal Briquette products produce greater heat compared to coal briquettes. In conclusion Exports of Charcoal Briquette have a positive impact on the Indonesian economy.

According to the Ministry of Foreign Affairs, Indonesia has, for several years, been classified as one of the world's largest exporters of coconut products, including coconut charcoal briquettes. The graph above indicates that, despite annual fluctuations in the export volume of Indonesia's coconut shell charcoal briquettes, these remain the primary choice among consumers. This preference is reflected in the consistent export volume growth, which averaged a 6.12% annual growth rate between 2011 and 2023, with an average volume increase of 11,534 tons per year.

The highest export volume of Indonesian coconut shell charcoal briquettes during this period occurred in 2018, with a record 511,022 tons exported. The most significant

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<sup>1</sup> TURIYAH-FEB FAKTOR PENENTU VOLUME EKSPOR ARANG BRIKET TEMPURUNG KELAPA INDONESIA BERDASARKAN 8 NEGARA TUJUAN PDF ([repository.uinjkt.ac.id](https://repository.uinjkt.ac.id))

annual growth occurred in 2014, with a 41.18% increase from the previous year, translating to an additional 93,270 tons of coconut shell charcoal briquettes. However, a decline in exports has been observed over the past four years (2019–2022), with the most substantial decrease occurring in 2022, amounting to a reduction of 107,318 tons. This decline resulted in a 24.80% drop in export volume compared to 2021.

The data of 2023 by the TrendEconomy and Eoc World international export import shown that not only Indonesia as one of main exporter of this commodity.

Table 1.1b Source: *TrendEconomy.com* Wood charcoal export by each country in 2023

| Country of Charcoal Export | Export Value    | World Share (%) |
|----------------------------|-----------------|-----------------|
| Indonesia                  | \$388.9 Million | 28,49%          |
| China                      | \$147.3 Million | 10,79%          |
| Poland                     | \$93.1 Million  | 6,82%           |
| Philippines                | \$74.5 Million  | 5,45%           |
| Ukraine                    | \$74.4 Million  | 5,45%           |
| Namibia                    | \$55.8 Million  | 4,09%           |

## 1.2 Significance of the Study

Indonesia abundance of Coconut makes one of the advantages than other countries, but this didn't conclude that Indonesia has its own potential as the biggest exporter to many countries. Despite Indonesia Wood Charcoal Briquettes are well known internationally for its best quality and high demand. This research study aims.

- a. Analyse the export growth value of Indonesia's wood charcoal briquette to Asian and European Market against other competitor market?
- b. Analyse Does the price from China, Poland, Philippines, and Ukraine affect the Indonesia export growth competitiveness of European and Asian Market<sup>2</sup>.

<sup>2</sup> UNIVERSITAS ISLAM INDONESIA FAKULTAS BISNIS DAN EKONOMIKA

Analisis Ekspor Briket Arang Kelapa Indonesia ke Saudi Arabia Kode HS 4402 Periode 2002-2020

<https://dspace.uui.ac.id/bitstream/handle/123456789/47357/19313245.pdf?sequence=1&isAllowed=y>

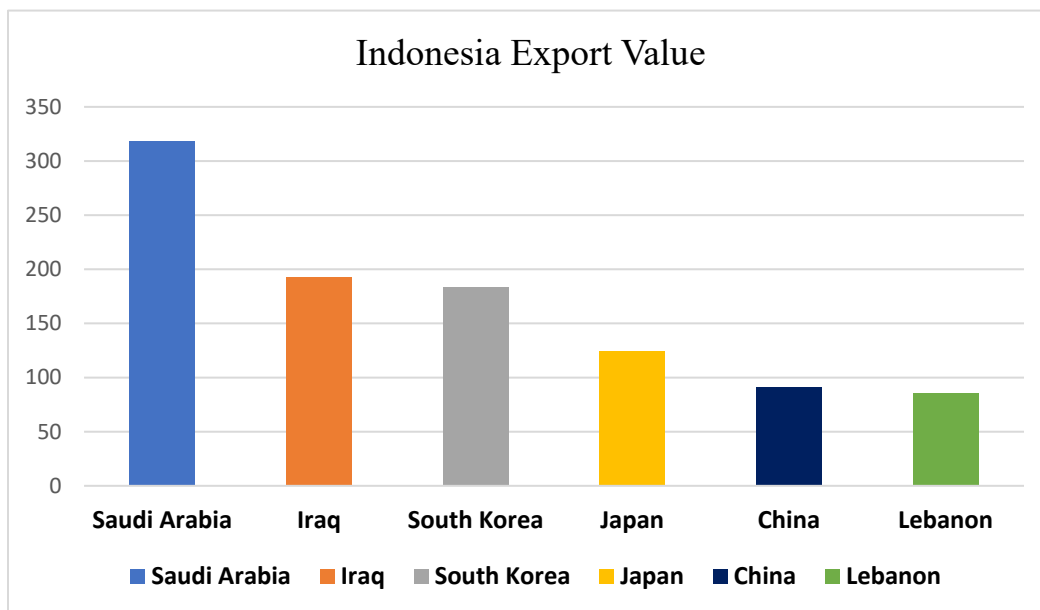
### 1.3 Objective and the cause of Study

- a. Benchmarking Indonesia's position against competing exporting country such China, Poland, Philippines, and Ukraine of Export Value and Trade Competitiveness with IMS, RCA, and TC indexes.
- b. Analyzing the Indonesia Competitiveness Advantage Strategies against other China, Poland, Philippines, and Ukraine competitors on charcoal briquettes export growth.

### 1.4 Current situation of Indonesian wood coal briquettes exports

As in the data given according to the *eoc.world* Indonesia export from 2016 up to 2022, the current situation of Indonesia Wood Charcoal Briquette export in such.

Graph 1.4a Source: *TrendEconomy.com* Showing Indonesia Export Value (US\$ Dollars)



According to a report published by *eoc.World*, this data shown Indonesia wood coal briquette export year on year ( *Yoy* ) on its main exporter and value of its exported. Indonesia wood charcoal briquette exports show a significant increase demand from mostly Asian countries. In 2022, Indonesia set a record by becoming the largest exporter to Saudi Arabia, followed by Iraq, South Korea, the Japan with \$819 Million of export value. This demonstrates that Indonesia has a strong demand presence in the Asian market. With whole export of nearly \$388,9 Million USD as of 2023, giving great opportunity for Indonesia to producing vast and good quality in broader market. Saudi,

Iraq, and South Korea shown a great demand from 2016 up to 2022, however in 2019 up to 2020 has been decreased of the export value because of pandemic Covid with damaging to global economy for extent period. Saudi Arabia Hold with \$318,4 Million, with the spike increase export value in 2022 with \$58,1 Million, its average hold to \$45,4 Million from 2016 to 2022, it means Indonesia wood charcoal briquette has big demand and effect to this imported country. Followed by second main importer, Iraq with total import of \$193 Million from 2016 to 2022, however with outstanding import value in 2022 Iraq hold the Second biggest importer value of \$54,7 Million and average import value of \$27,5 Million in entire period.

Nonetheless Iraq also has big demand of Indonesia charcoal briquettes that can be estimated increased in upcoming years. Other than these two countries, Indonesia also hold big export demand in South Korea with \$183 Million and increased value from 2021 - 2022 with \$21 Million up to \$28,2 Million, it can be concluding South Korea also has big demand and become Indonesia high role for exporting its commodity by next future years. Indonesia charcoal demand also imported on Asian countries such Japan, China, and Lebanon with minimal total import value of \$300,68 Million USD from 2016 until 2022. Hereby, Indonesia has important role on exporting charcoal throughout the Asian countries making it can be increased on future years.

Graph 1.4b Source: *TrendEconomy.com* Export Trend in Indonesia wood charcoal



This table shows the performance of export trend for wood charcoal has increasing year on year (yoy) this supported with available data 2014-2023 has drastically improved. This proven why the export has increased because wood charcoal

commodities in Saudi Arabia have an oligopoly market structure because only a few companies export wood charcoal commodities, and the demand for wood charcoal in Saudi Arabia is high. The small number of wood charcoal exporting countries is accompanied by the high demand in Saudi Arabia, causing Indonesia and China to dominate the wood charcoal market share in Saudi Arabia from 2014 up to 2019 (Bellalouna, 2021). In 2019 and 2021 Indonesia export has decline due to COVID-19 hitting the entire world market, resulting in limited goods and services coming or out the countries, despite the pandemic there was an increase due to the price of Indonesia wood charcoal in the world to 0.65 US\$ per kilo,<sup>3</sup> making the trade trend decreased until post covid whereas Indonesia export performance increased again to the latest year and expected to growth with the factor of Indonesia apply to European market and UK to offers international trade that include the commodity HS4402.

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<sup>3</sup> MEASURING THE COMPARATIVE AND COMPETITION OF INDONESIAN WOOD CHARCOAL EXPORTS IN THE SAUDI ARABIAN MARKET JOURNAL OF LAW AND SUSTAINABLE DEVELOPMENT 01-28 e03320 2024

## CHAPTER II

### LITERATURE REVIEW

#### 2.1 Theoretical Background

##### 2.1.1 Indonesia Charcoal Briquette export conditions

According to TrendEconomy ([www.trendeconomy.com](http://www.trendeconomy.com)), Indonesia's highest total export value is for HS 4402 products, amounting to USD 388,968,874. Coconut commodities have numerous benefits, one of which is the coconut shell. This can be developed into a commercial subsector to boost Indonesia's economy. Coconut shells, which were once rarely utilized, have now evolved into a commodity capable of competing in the international market. One of the derivative products from coconut shells is briquettes. According to (*Trademaps*) data from 2019, Indonesia exported 467,050 tons of briquettes worldwide.<sup>4</sup> Coconut shell charcoal briquettes are produced from coconut charcoal powder that is molded into various shapes, such as cubes, cylinders, and hexagonal blocks. The most produced shape is the cube-shaped briquette (Salim, 2016). Importers of coconut charcoal, including coconut shell charcoal briquettes, typically purchase raw materials in both semi-finished and finished forms. Entrepreneurs in Indonesia export these products to five major global markets: the Middle East, America, Europe, Russia, and Australia (Trademap, n.d.). Meanwhile, according to the official website of the Ministry of Trade, Indonesia has succeeded in recording its first export of 1 container of briquette charcoal products to Japan with an export value of US\$19,200 in 2022.<sup>5</sup>

Economic Condition, Although Indonesia has exported manufactured products (albeit with a relatively smaller value compared to non-manufactured products), dependency on imported raw materials and components remains a significant challenge in promoting exports. Therefore, efforts to enhance exports should focus on identifying and developing export-worthy manufactured products (those in demand globally) that primarily utilize domestically sourced components.

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<sup>4</sup> **POTENSI EKSPOR BRIKET TERHADAP PEREKONOMIAN INDONESIA**

Sinaga, G. Y. G., Jessica Ayu Katherine, Muhammad Daffa Akhsya, Putri Rahmadina, & Saied Idris Baidhowi, *Juremi: Jurnal Riset Ekonomi*, 2(5), 625–630. <https://doi.org/10.53625/juremi.v2i5.5181>

<sup>5</sup> Saudha Asbaha (2023). *Indonesia's potentially charcoal briquette export worldwide*. Coco Asbaha. <https://cocoasbaha.com/indonesias-potentially-charcoal/>

To achieve this, the government must play an active role in supporting the manufacturing sector by facilitating information exchange and establishing connections between domestic component producers and export-oriented manufacturers. Additionally, the government should provide opportunities for local enterprises, particularly small and medium-sized enterprises (SMEs), to produce components required by export manufacturers. This approach not only strengthens the domestic supply chain but also reduces reliance on imports, thereby enhancing the competitiveness of Indonesian exports in the global market.<sup>6</sup>

### 2.1.2 Theory of Economic Growth

According to the view of Classical economists, theory posits that the law of diminishing returns fundamentally constrains sustained economic growth. This principle suggests that growth cannot continue indefinitely. In the initial stages of economic development, when the population is relatively small and natural resources are abundant, the returns on investment tend to be substantial. Such conditions incentivize entrepreneurs to pursue further investments, thereby stimulating economic growth.

However, as population increases and finite resources—such as land—become increasingly scarce, the marginal productivity of additional labor diminishes. When the population exceeds an optimal threshold, individual productivity may decline to the point of being negative. This decline in productivity adversely impacts overall economic activity, leading to a reduction in societal welfare. As prosperity diminishes, the economy may eventually reach a point of equilibrium known as the "stationary state." At this juncture, the economy stabilizes at a relatively low level of prosperity, with no net growth occurring due to the constraints imposed by diminishing returns and resource limitations (Mangani, 2020).<sup>7</sup>

But in view of The *Theory of Economic Growth* by (W. Arthur Lewis), some

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<sup>6</sup> **Challenges and export strategies of Indonesia.**

*Fundamental Management Journal*, 2 Mangani, K. S. (2020). <https://doi.org/10.33541/fjm.v5i1.1673>

<sup>7</sup> **Analysis of work performance and export competitiveness in provinces of Indonesia,** Sriwijaya International Journal of Dynamic Economics and Business. Mangani, K. S. (2020). 4(1), 1–10. <https://sijdeb.unsri.ac.id/index.php/SIJDEB/article/view/33/61>

of the most elegant work of economic theorists in recent years has been concerned with the stability of economic growth. Starting by assuming capitalist institutions and habits, economists have built mathematical models which oscillate, or rise logistically towards a limit, or ultimately swing round from growth to secular decline. These results are achieved by assuming various coefficients, and various relations between parameters—for such matters as the propensity to save, or the birth rate, or the determinants of investment decisions. This work in turn has stimulated statistical enquiry to discover what relationships and coefficients best fit recent experience in the United States and other advanced economies. This work is essentially in consistency rather than evolution. It seeks to discover what the relationships and propensities are, and how far they are consistent with stable growth; it does not tell us why the coefficients are what they are, or why they change over time. The result is an indispensable tool for short-term analysis, to be used when we are enquiring into the history of some group during some short period of time, during which the basic institutions and attitudes can be assumed to change very little. But if we are concerned with long-term studies of changes in propensities, or if we wish to account for differences between groups or countries, we have usually to look beyond the boundaries of contemporary economic theory.

The enquiry into human action must be conducted at different levels. because there are proximate causes of growth, as well as causes of these causes. The proximate causes are principally three. First there is the effort to economize, either by reducing the cost of any given product, or by increasing the yield from any given input of effort or of other resources. This effort to economize shows various ways; in experimentation, or risk-taking; in mobility, occupational or geographical; and in specialization, to mention only its chief manifestations. If the effort is not made, either because the desire to economize does not exist, or else because either custom or institutions discourage its expression, then economic growth will not occur. Secondly, there is an increase of knowledge and its application. This process has occurred throughout human history, but the more rapid growth of output in recent centuries is associated obviously with the more rapid accumulation and application of knowledge in production. And thirdly, growth depends upon increasing the amount of capital or other resources per head. These three proximate causes, though clearly distinguishable conceptually, are usually

found together.<sup>8</sup> (W.A., 2003)

### 2.1.3 Export Competitiveness

The term "competitiveness" is widely used and often regarded as intuitive. However, it is conceptually ambiguous and open to diverse interpretations. Many economists argue that competitiveness is relevant solely at the firm level, dismissing the concept of "national competitiveness" as misleading or irrelevant (Krugman, 1996). Conversely, others contend that the lack of attention to national-level dimensions of competitiveness represents a significant shortfall in economic research and policymaking (Porter, 1990).

While nations themselves may not directly compete in global markets, geographic factors undeniably influence firm-level competitiveness. These factors include natural resource endowments, human capital, institutional quality, market accessibility, and other location-specific attributes. Competitiveness often arises from entrepreneurs leveraging comparative advantages unique to a particular region. In the context of a globally integrated economy—characterized by reduced transportation and coordination costs firms possess greater flexibility in choosing their operational locations, heightening the relevance of place-based competitiveness.

Moreover, competitiveness is not inherently a zero-sum game (Ciampi, 1996; Krugman, 1996), competitiveness is often measured through shifts in global market share. However, such metrics can obscure underlying vulnerabilities. For instance, nations may artificially bolster their apparent competitiveness through exchange rate manipulations, such as currency devaluation or maintaining persistently weak currency values (Boltho, 1996). Aggregating global market shares to the national level poses additional challenges, as export portfolios are continuously evolving. Some products may experience declining shares, while others capture a growing share of global markets.<sup>9</sup> (Farole)

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<sup>8</sup> *Theory of economic growth*

Lewis, W. A. (2003). (1st ed.). Routledge. <https://doi.org/10.4324/9780203709665>

<sup>9</sup> **Analyzing trade competitiveness: A diagnostics approach.**

Farole, T., Reis, J. G., & Wagle, S. (2010). The World Bank. <https://doi.org/10.1596/978-0-8213-8408-6>

#### 2.1.4 RCA Index

Balassa's (1965) RCA-index (RCAI) to measure the comparative advantages of an export item is the most widely used index. It is easy to understand and compute. RCAI is computed based on the share of the country's export of an item over the global exports of the same commodity by seek the competitiveness of Indonesia export market of the wood charcoal commodity. However, this index does not capture the import data, and the deficiency was made good by the works of *Stellian* and *DannaBuitrago* (2019).

The index suffers from other demerits, namely, it has size bias, it is asymmetric, and it does not possess additivity (*Stellian & Danna-Buitrago, 2022*). The RCA index by *Costinot et al. (2012)* is an econometrically based measure that fits the ex-ante nature of Ricardian comparative advantage. The RCA index by *Hoen and Oosterhaven (2006)* involves the difference between normalized exports of that country for a given product or between the weighted share of that product in total, or in other words The Revealed Comparative Advantage index is used to determine if a country has a comparative advantage in producing a particular good. It is based on the export performance of that good relative to the country's overall exports and compared with the global export performance of the same good.<sup>10</sup>

#### 2.1.5 TC Index

According to *Michaely, M. (1996)* is that The Trade Complementarity Index (TC Index) is used to assess the compatibility between the export structure of one country and the import needs of another. Essentially, it measures how well the export profile of one country matches the import demand of a partner country, which can indicate the potential for beneficial trade between the two economies.<sup>11</sup>

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<sup>10</sup> **Composite revealed comparative advantage index: A non-parametric approach.**

Chakrabarty, S. N., & Sinha, D. (2022). *Eurasian Journal of Business and Economics*, 15(30), 25–44. <https://doi.org/10.17015/ejbe.2022.030.05>

<sup>11</sup> **Trade preferential agreements in Latin America: An ex-ante assessment**

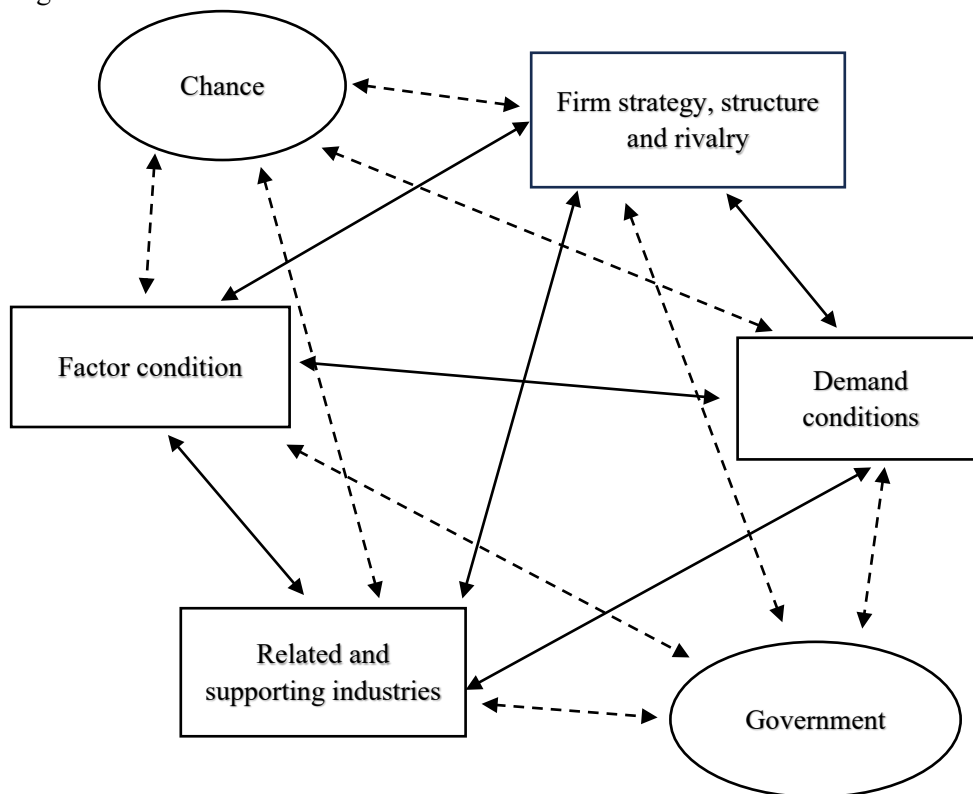
Michaely, M. (1996). The World Bank.

## 2.1.6 Porter's Diamond Modeling

This research method explained about four main determinants in diamond style models that attach each other's main factors in support of enhancement of the values and benefits against the international wood charcoal market.

We could consider the possible four possible determinants in such 1. *Factor conditions*, 2. *Demand condition*, 3. *Related and supporting industries*, and 4. *Firm strategy, structure and rivalry*. Moreover, this model is also promoted by two-point (*chance*) and (*government factors*). This model will create a structure that defines the rules of competition in each sector, playing a role in long-term competition (Sun et al., 2010)

Figure 2.1.6. Porter's Diamond Model



- a. *Factor condition*, Barragan (2005) explains that factor conditions are inputs used in production operations and the infrastructure needed to compete in certain industries. According to Porter (1990), the key to factor conditions is innovation. Porter (1990) further explains that the scarcity of resources can

drive a country to become more competitive, as they succeed in creating new things such wood charcoal briquettes,

- b. *Demand conditions*, about this factor Indonesia has become vast majority for its abundant raw material into high demand for global perspective, referring to the domestic market conditions in a country or international market condition, demand conditions are the most intriguing dimension as they relate to consumer characteristics (Gallagher, 2005). This becomes an essential part of enhancing competitiveness, as it fosters the creation of quality products due to the intensive reciprocal relationship between companies and customers.
- c. *Related and supporting industries*, it can be understood as industries related to companies that influence the enhancement of competitiveness. The presence of supporting industries fosters a competitive industrial environment and offers the exchange of new information and technology (Porter, 1998). Collaboration with related industries can lead to business success, as stated by the Global Institute of Flexible Systems Management (2018): 'cooperation within networks and constellations is one such arena of high relevance. With the support from SME (UMKM), government, and stocks of raw materials by wood charcoal.
- d. *Firm strategy, structure, and rivalry*, related to strategy, market structure, and competitive patterns in specific industries. Competition is a fundamental indicator in the formulation of company structure and strategy (Watchravesringkan et al., 2010). Competitive patterns influence the innovation process and ultimately enhance international performance (Tasevska, 2006).

Porter adds other supporting factors, namely the role of government and the factor of chance. Porter does not specify the nature of these two variables, whether their effects are positive or negative (Bakan & Doğan, 2012). The role of the government, as intended, is in policies and regulations that favor the growth of domestic industries, thereby indirectly enhancing the country's competitiveness.<sup>12</sup>

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<sup>12</sup> Implementasi model berlian Porter dalam penyusunan arsitektur strategik untuk pengembangan pembiayaan pertanian pada BMT. Prayoga, A. (2019). *Journal of Halal Product and Research*, 2(2), 86–87.

## CHAPTER III

### RESEARCH METHODOLOGY

This research adopts a quantitative approach based by calculation with economics analytical statistic to evaluate Indonesia export competitiveness on wood charcoal briquette market by achieving strategy export value and seeks advantage of Indonesia export with benchmarking methods. The study involves the application of key trade indices such International Market Share, Revealed Comparative Advantage (RCA Index), Trade Competitiveness (TC Index) alongside a qualitative evaluation using Porter's Diamond Model to understand structural factors affecting competitiveness. This methodology supported secondary data from The Observatory of Economic Complexity (OEC) world, and (TrendEconomy.com) with the export code of HS4402 as the main discussion.

#### 3.1 International market share

The research adopts with the method of International Market Share (IMS), IMS refers to the proportion of a country's exports of a specific product relative to the total global exports of that product. It is a key metric used to measure a country's competitiveness and dominance in the international market for a particular commodity or product by other competitors. In this method we use the data provided to calculate the export growth value dominant with given formulas by Year on Year (Yoy)

$$\mathbf{IMS} = \frac{X_{ij}}{X_{wj}}$$

##### 3.1.1 Key Components:

- A. *Export Value of Product by Country*: The monetary value of the product exported by the country being analysed (e.g., Indonesia's charcoal briquette exports).

B. *Total Global Export Value of Product*: The total monetary value of the product exported globally by all countries.

### 3.1.2 Result Interpretation:

IMS is expressed as a percentage of total market share that calculated between Indonesia export value within world value regarding of Charcoal Briquette commodity

- A higher IMS indicates a strong presence or dominance in the global market.
- A lower IMS suggests limited participation or low competitiveness in the market.<sup>13</sup>

Table 3.1.2 Source: TrendEconomy Wood Charcoal Briquette exporters (2015-2023)<sup>14</sup>

| Year | Indonesia | China  | Poland | Philippines | Ukraine |
|------|-----------|--------|--------|-------------|---------|
| 2023 | 23,86%    | 9,04%  | 5,71%  | 4,57%       | 4,57%   |
| 2022 | 19,69%    | 11,36% | 5,09%  | 4,45%       | 3,90%   |
| 2021 | 19,34%    | 11,58% | 7,14%  | 5,27%       | 4,89%   |
| 2020 | 19,30%    | 12,84% | 8,03%  | 3,58%       | 4,91%   |
| 2019 | 20,01%    | 11,91% | 5,98%  | 3,19%       | 4,73%   |
| 2018 | 20,83%    | 9,02%  | 8,41%  | 3,57%       | 4,95%   |
| 2017 | 20,21%    | 8,72%  | 8,21%  | 1,97%       | 4,99%   |
| 2016 | 16,86%    | 9,05%  | 8,24%  | 1,93%       | 4,23%   |
| 2015 | 16,54%    | 9,75%  | 6,51%  | 6,06%       | 3,34%   |

<sup>13</sup> A. Balassa, B. (1965). Trade liberalisation and "revealed" comparative advantage. *The Manchester School of Economic and Social Studies*, 33(2), 99–123. <https://doi.org/10.1111/j.1467-9957.1965.tb00050.x>

B. Hinloopen, J., & van Marrewijk, C. (2001). On the empirical distribution of the Balassa index. *Weltwirtschaftliches Archiv*, 137(1), 1–35. <https://doi.org/10.1007/BF02707598>

<sup>14</sup> TrendEconomy. (2024, November 7). Wood charcoal (including shell or nut charcoal) | Imports and Exports | 2023. [https://trendeconomy.com/data/commodity\\_h2/4402](https://trendeconomy.com/data/commodity_h2/4402)

### 3.1.3 Observation

According to the data collected by the EocWorld and Trend Economics supported with analytical methods of international market share, this indicate of different countries that has important role of exporting wood charcoal briquette (HS4402) with market share differ within other countries. From 2015 up to 2023 shown an almost consistent export from the fifth country with Indonesia as main topic to discuss, this indicate of good increase from 2016 to 2017 with approximately 19,86% increased respectfully of its total world share. Moreover in 2023 Indonesia increasingly with high export estimated 23,86% respectively that interestingly are significantly different with other countries where no shown of declination or increasing by total market share. In other side of Indonesia, it can be depicted China become the second world share of total export value with average trade of 10,36% from other exporter countries value, this shows China could become main competitors of Indonesia Wood Charcoal into upcoming years, the most highest value are in the 2020 with 12,84% respectively, but however it decreased into upcoming year until 2023 dropped to 9,04% of world total export value globally.

This still give a great performance and could potentially compete with Indonesia in upcoming batch. Interestingly Poland as a European Country has become the 3<sup>rd</sup> biggest world wood charcoal exporter by giving 7,04% average from 2015 up to 2023 that could give a competitive market from Indonesia to imported across global markets especially European markets. But however, Indonesia could still get the opportunity to compete in European with the regulation and quality that European markets demanded. 4<sup>th</sup> one is again in another easter Europe become the fourth biggest wood charcoal export with average of 4,50% this shows un-significantly compared to the competitive of this commodity, but interestingly it shows outstanding constant export value performance within Yoy. And in the 5<sup>th</sup> with most un-significantly is Philippines with only 3,84% respectively and showing a unstable export world share performance, by decreased in 2015 to 2016 by -68.15% and giving most unstable market of wood charcoal export country.

### 3.2 RCA index

Furthermore, of to analyse the Competitiveness and Advantage of Indonesia Export, this research adopts the RCA index or (RCAI) is a model to measure the comparative advantages of Wood Charcoal (HS4402), as said by RCA index is the benchmark measure of comparative advantages (Konstantakopoulou and Tsionas, 2019).<sup>15</sup> Additionally, as a method of aggregating the RCA of all or commodities of country reflecting the overall export potential of the country total value and desired by the world needs including tracking of growth on Indonesia wood charcoal export. In addition of the model calculations that are used with Balassa RCA Index, this given formula can be concluded to track the commodity export performance:

$$RCA_{i,j} = \frac{\left( \frac{X_{i,j}}{\sum_j X_{i,j}} \right)}{\left( \frac{\sum_i X_{i,j}}{\sum_{i,j} X_{i,j}} \right)}$$

#### 3.2.1 Interpretation

- If  $RCA_{ij} > 1$ , this country had revealed comparative advantage in exporting that commodity.
- If  $RCA_{ij} < 1$ , thus this country seems to have a comparative disadvantage in exporting that commodity.

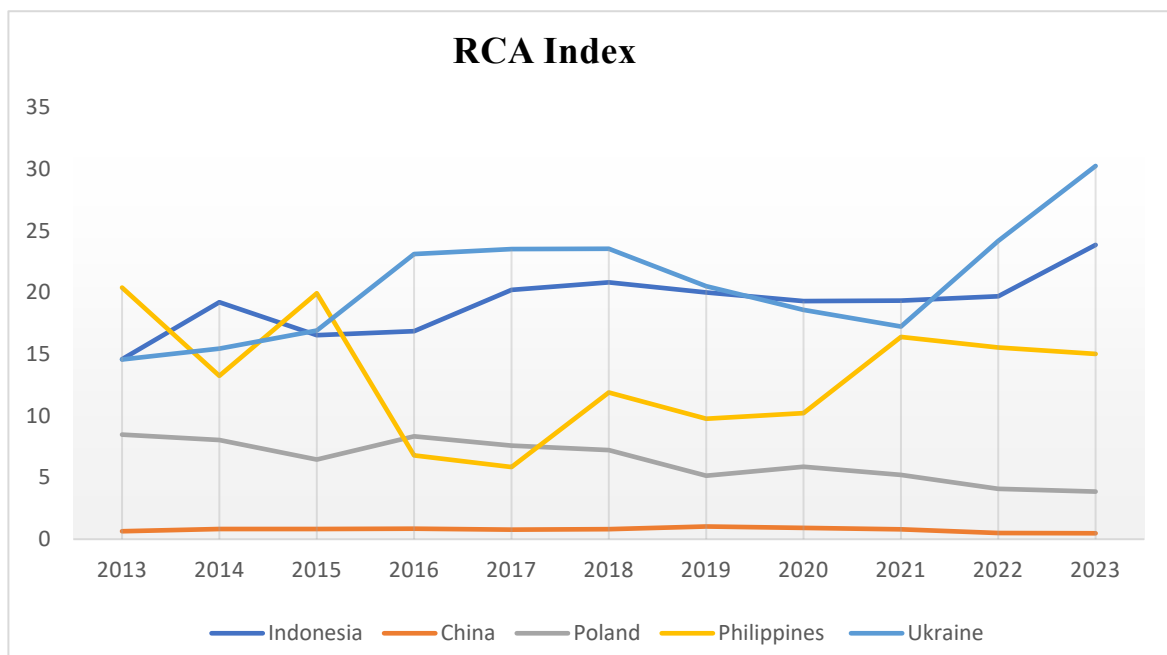
Table 3.2.1 Source: TrendEconomy Wood Charcoal Briquette exporters (2015-2023)

| Year | Indonesia | China | Poland | Philippines | Ukraine |
|------|-----------|-------|--------|-------------|---------|
| 2023 | 23,86     | 0,48  | 3,86   | 15,02       | 30,26   |
| 2022 | 19,69     | 0,50  | 4,09   | 15,54       | 24,18   |

<sup>15</sup> Stellian, R., & Danna-Buitrago, J. P. (2022). Which revealed comparative advantage index to choose? Theoretical and empirical considerations. CEPAL Review, (138), 45–70. <https://repositorio.cepal.org/handle/11362/48485>

|      |       |      |      |       |       |
|------|-------|------|------|-------|-------|
| 2021 | 19,34 | 0,80 | 5,21 | 16,40 | 17,24 |
| 2020 | 19,30 | 0,92 | 5,88 | 10,22 | 18,59 |
| 2019 | 20,01 | 1,03 | 5,15 | 9,77  | 20,51 |
| 2018 | 20,83 | 0,81 | 7,23 | 11,89 | 23,55 |
| 2017 | 20,21 | 0,78 | 7,59 | 5,85  | 23,52 |
| 2016 | 16,86 | 0,85 | 8,34 | 6,80  | 23,12 |
| 2015 | 16,54 | 0,82 | 6,46 | 19,94 | 16,92 |
| 2014 | 19,22 | 0,82 | 8,04 | 13,25 | 15,45 |
| 2013 | 14,59 | 0,65 | 8,48 | 20,40 | 14,57 |

Figure 3.2.1 Source: TrendEconomy.com Wood Charcoal Briquette exporters (2015-2023)



### 3.2.2 Observation

After thoroughly reviewing analyze from the data given according to the TrendEconomy, it can be concluded that the RCA index of Indonesia from first year of 2013 up to 2023 giving great extent. This data shows how robust export performance from various sector commodities (HS). Indonesia's Revealed Comparative Advantage (RCA) data for 2023 highlights the country's mixed trade competitiveness, with total RCA index with 23,86% in 2023 respectively of this specific commodity.

According to the data above RCA value for Indonesia is calculated as average trade for 10 years are 19,13%. Additionally with previous indicators provided by  $RCA > 1$  this country had revealed comparative advantage in exporting the commodity. Furthermore, the data explain that Indonesia has a substantial comparative advantage in this export sector with 23,86 > 1 in 2023 shown great extent of this data all year around, with stark contrast suggests that while Indonesia excels in specific sectors, its overall export portfolio remains unbalanced and dominated by underperforming areas relative to global benchmarks but however Ukraine has shown a strong commitment of Charcoal export with average of 20,71% from 2013 until 2023 respectively. To strengthen its global trade position, Indonesia must focus on enhancing its strong sectors to maintain competitiveness while addressing challenges in sectors with low RCA values through innovation, improved production capacity, and market access strategies.

In the other hand according to the RCA index, China imposed that the trade has no sign of significantly in the trade competitiveness on wood charcoal, with the average of 0,76% of the whole export making it the least competitive countries. This also followed Poland with 6,39% and Philippines by 13,18% this could potentially remain constant to some country nor increased in upcoming years.

### 3.3 TC index

In this empirical method studies the competitiveness advantage of specific commodities who become important trade from one country, it can be depict that Trade Competitiveness index (TCI) are designed to express as the ratio of a country's import and export balance of a product service to the total import and export of the same product nor service.

The expression could be concluded such as.

$$\text{TC Index} = \frac{X_{ij} - M_{ij}}{X_{ij} + M_{ij}}$$

Whereas the  $M_{ij}$  represents the import of the specific industry product or service in the

country, meanwhile Xij exemplifies the export of the specific product nor service to the country. With the function of TCI of determine the level of competitive advantage.

Table 3.3 Source: TrendEconomy.com Wood Charcoal Briquette exporters (2015-2023)

| Year | Indonesia | China  | Poland | Philippines | Ukraine |
|------|-----------|--------|--------|-------------|---------|
| 2023 | 0,997     | -0,288 | 0,391  | 0,996       | 0,958   |
| 2022 | 0,995     | -0,172 | 0,355  | 0,992       | 0,959   |
| 2021 | 0,992     | 0,054  | 0,389  | 0,974       | 0,942   |
| 2020 | 0,994     | -0,032 | 0,418  | 0,976       | 0,933   |
| 2019 | 0,995     | -0,014 | 0,276  | 0,995       | 0,933   |
| 2018 | 0,995     | 0,013  | 0,354  | 0,994       | 0,942   |
| 2017 | 0,995     | 0,395  | 0,393  | 0,993       | 0,956   |
| 2016 | 0,998     | 0,446  | 0,386  | 0,991       | 0,953   |
| 2015 | 0,997     | 0,447  | 0,375  | 0,998       | 0,949   |
| 2014 | 0,998     | 0,371  | 0,419  | 0,998       | 0,945   |
| 2013 | 0,997     | 0,230  | 0,445  | 0,993       | 0,948   |

### 3.3.1 Observation

The analysis of Indonesia's Trade Competitiveness Index (TCI) for wood charcoal briquettes during period of 2013-2023 reveals consistently high export competitiveness, this proven benchmarking set to analyse the competitiveness of one country specific commodity with  $TCI > 0$ , indicates export are at least three times higher than imports, from 2012-2023 Indonesia Trade Competitiveness Index are extremely high by  $0.997 > 0$ , respectively. These results underscore Indonesia's position as a dominant global exporter of this product, with exports vastly outweighing imports. Utilizing data from TrendEconomy, the study confirms that Indonesia's trade performance in wood charcoal briquettes has remained stable over time, reflecting a sustained comparative advantage in the global market. This finding emphasizes the sector's critical role in supporting Indonesia's export-driven trade strategy. Moreover, the average TC Index for Indonesia has proven with 0,996% respectively.

But according to the TC the trade competitiveness is happening between three countries, Indonesia, Philippines, and Ukraine. This can be depicted that Philippines with second closest TC index with average  $0,990\% > 0$  also presented with trade surplus near the strong trade competitiveness giving it big competitive advantages. Number 3<sup>rd</sup> Ukraine with trade surplus by  $0,947\% > 0$ , with the big market share to the European Market not to mention the TC index shown a big competitive advantage. Beside the Massive competitive advantage given by other countries, China and Poland in the other hand not showing a significant sign for TC index competitiveness advantage like the other countries. By analysis of  $TC > 0$ , China with  $0,131\% > 0$  and Poland on  $0,381\% > 0$  giving a not so highly competitive advantage like the other, instead China almost touched the trade balance of  $TC = 0$  with export of charcoal is equal to the imports, moreover the China trade conditions are merely  $TC < 0$  from 2019 until 2023 making it the import are greater than export of this case.

### 3.4 Potter Diamond Model

The Porter diamond model posits that national competitive advantage finds its source in a combination of strategic management in international trade economics. It simulates the influence and stimulates a large body of theoretical and empirical research. This could depict how Wood Charcoal HS4402 factors, demand, etc could describe the positions of Indonesia International market being.

#### 3.4.1 Factor Conditions

- a) *Natural resource*, Indonesia the world leading exporter of wood charcoal with number 1 according to the Eoc.world.com with worth USD \$388 Million in 2023 respectively by the TrendEconomy.com. This shows a great extent how massive and abundant supply of hardwood that ideal for charcoal productions. It's also been proven by accordance in Indonesia Trade Promotion Centre (ITPC) Osaka, (2022). Indonesia is indeed the largest exporter of charcoal products in the global market. This indicates that Indonesia's supply of charcoal is quite strong and that foreign markets have a significant interest in charcoal from Indonesia.

b) *Quality Standard recognition*, The perspective for Indonesia product has well known National and International as the Indonesia government shown Indonesian charcoal products have been certified with the Indonesian National Standard (SNI) had recognized by many countries, which classifies them into categories such as wood charcoal, metal smelting charcoal, coconut shell charcoal powder, and charcoal briquettes such as example of Indonesian charcoal products that have obtained the SNI certification generally meet the standards required by the Japanese Government in terms of moisture content, volatile content (except for SNI 01-1683-1989 / Wood Charcoal), fixed carbon, and caloric value (except for SNI 01-6235-2000 / Charcoal Briquettes).<sup>16</sup>

### 3.4.2 Relate and supporting industries

#### a) *Partnership industries.*

As in such growing of demand and fast-growing industries, Indonesia wood charcoal industry has created a collaboration with small enterprise SMEs for support National and International demand without detrimental others enterprise. According to the website [glowingcharcoal.com](http://glowingcharcoal.com), has stated that the company has established partnerships with numerous local coconut/wood farmers, creating long-term agreements that ensure a steady flow of raw materials. By working directly with farmers, Glowing Charcoal Indonesia not only guarantees its supply but also supports local communities and fosters an ecosystem where coconut and wood producers benefit from stable income and sustainable practices. These partnerships allow Glowing Charcoal Indonesia to remain resilient even as the industry grapples with raw material shortages. Clients and partners can rest assured that the company's operations are backed by robust sourcing strategies that prioritize consistency, quality, and sustainability.

### 3.4.3 Firm strategy, structure and rivalry

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<sup>16</sup> Indonesian Trade Promotion Center (ITPC) Osaka. (2022). Laporan analisis intelijen bisnis: Arang kayu (wood charcoal) HS 4402. <https://itpc.or.jp/wp-content/uploads/2023/01/3.-Charcoal-MB-2022.pdf>

### *a) Industry structure*

The research according to Melinda, F. (2022) has shown most of the concentration values of wood charcoal commodities are in the monopolistic competition market structure leading to oligopoly with a low level of concentration. The shape of the market structure based on the limitation dimension of the concentration ratio value of Joe S. Bain is oligopoly.<sup>17</sup> This is also supported by The DPR RI To ensure the success of the down streaming program, the Indonesian government must create a strong ecosystem, provide investment-friendly regulations, adopt the right technology, and establish a stable market to absorb the down streaming products in such like wood/ coconut charcoal as become one of the competitive commodities to Indonesia export industry.<sup>18</sup>

### *b) Analysis of Rivalry*

According to ITPC Osaka, stated Generally, Indonesia's competitors in the charcoal product export market, specifically HS 440290, are China, Malaysia, the Philippines, and Laos. The volume of charcoal imports by Japan from Indonesia has been steadily increasing from 2011 (US \$19.1 million) to 2015 (US \$25.2 million), while imports from China have been consistently declining by approximately US \$10 million over the same five-year period. Imports from Malaysia have remained constant without significant increases or decreases. The other competing countries have experienced significant annual fluctuations, ranging from US \$1-5 million. In other words, Indonesia, which has seen a significant rise in its export value to Japan, has been relatively advantaged compared to its competitors. Indonesia is the world's largest exporter of charcoal products under HS 4402, with exports valued at US \$185 million. Notably, charcoal products under HS 440290 account for US \$181 million of this total. Impressively, 18% of the global exports of charcoal products originate from Indonesia. The primary export destinations for Indonesia's charcoal products are

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<sup>17</sup> Sari, D. K., & Nugroho, R. A. (2017). Analisis daya saing ekspor produk perikanan Indonesia di pasar ASEAN. *Efficient: Jurnal Ekonomi Pembangunan*, 1(1), 1–10.

<https://journal.unnes.ac.id/journals/efficient/article/view/10273/2646>

<sup>18</sup> Rasbin. (2023, January). Trade balance and Indonesia's export structure.

Info Singkat, 15(2), 13–15. [https://berkas.dpr.go.id/pusaka/files/info\\_singkat/Info%20Singkat-XV-2-II-P3DI-Januari-2023-234-EN.pdf](https://berkas.dpr.go.id/pusaka/files/info_singkat/Info%20Singkat-XV-2-II-P3DI-Januari-2023-234-EN.pdf)

South Korea and, in second place, Saudi Arabia.

### 3.4.4 Demand Condition

#### a) *International Demand*

The primary demand of wood charcoal from Indonesia has shown great extent to the whole world with export record in 2023, according by the TrendEconomy data displayed export performance more than \$388,9 Million USD respectively. This is supported by the high demand conditions that throughout increased year by year, from Saudi Arabia as 18,9%, Iraq 12%, China 5,97%, Malaysia 5,88%, Korea 5,72% etc. In conclusion by each year from 2010 Indonesia has shown a constant increased export performance with international demand expanded thoroughly, this trade is shown from the figure 3.4d that biggest Indonesia demand comes from Middle east and Asian region in which has become main export from Indonesia.

Figure 3.4 Source: Eoc.World.com Import demand condition Indonesia export

| Year | Middle East | Asia  |
|------|-------------|-------|
| 2023 | 48,57       | 20,07 |
| 2022 | 47,96       | 22,46 |
| 2021 | 45,72       | 25,85 |
| 2020 | 45,03       | 27,42 |
| 2019 | 40,41       | 32,60 |

From this table can be conclude that Indonesia has great increase to the middle east region that wood charcoal from wood/coconut has become high demand for Sisha that vast majority has used across the regions. But however, the Indonesia Demand for this commodity has decrease from year to year in Asia region since many Asian countries are importing from other competitors such as China, Philippines and other. Charcoal quality may take the effect of this decreasing trend for Asia Market, so in other word Indonesia should paying

attention and increased from the down factors that make the Export in Asia are not popular such Middle east markets demand condition.

### 3.4.5 Role of Government

#### *a) Policy and Regulation*

The Indonesian government has implemented policies to promote sustainable forestry and regulate deforestation. However, enforcement challenges persist, especially concerning biomass production for export but according to the Domestic market the Perusahaan Listrik Negara (PLN), plans to implement 10% biomass in which it will rely from organic waste such as tree branches, rice waste, and wood industry waste rather than from actively logged forests.

### 3.4.6 Role of Chance

#### *a) Trade agreement*

According to Kementrian Perdagangan (Indonesian Ministry of Trade) This activity is a collaboration between the Directorate General of National Export Development of the Ministry of Trade and the Swiss Import Promotion Programme (SIPPO) in the context of updating and convince the product environment safety European Union regulations for wood products, thereby encouraging the acceptance of Indonesian wood charcoal product exports, especially in the European Union market. <sup>19</sup>

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<sup>19</sup> Direktorat Jenderal Pengembangan Ekspor Nasional. (2024, March). Analisis ekspor arang kayu Indonesia. Kementerian Perdagangan Republik Indonesia.  
<https://ditjenpen.kemendag.go.id/storage/publikasi/0HX4J2dleP7npQa6EmPtpJcC354a1QNDmhUWUQnA.pdf>

## CHAPTER IV

### CONCLUSION AND SUGGESTIONS

#### 4.1 Results and Suggestion of the Research

The methodology interprets how Indonesia wood charcoal export performance by using the given methods, in such, IMS (International Market Share, RCA, TC and Porter Diamond Modelling). According to the methodology can be depict that Indonesia shown a strong total world share with 19,86% and will continues increasing against other competitors, this support by another sector of RCA whereas reportedly  $RCA > 1$  explains that Indonesia has a substantial comparative advantage of  $23,86\% > 1$ . Making it Indonesia has strong Index with constant RCAs. Trade Competitiveness also is the important discussion point, the analysis shown Indonesia TC reveal consistency high export competitiveness overall to other competitors, where being proved that Indonesia from 10 Years in the past has shown  $0,997 > 0$ , this shown that almost perfect TC performance that shown Indonesia with dominant global exporter of this product, that reflecting sustained comparative advantage. Whole of this data concludes the core advantage of its export competitiveness with the Natural Resource and fast demand, according to ITPC Osaka 2022 and Journal Indonesia has significant role of exporting charcoal to the Japan until Middle east markets.

As high demand Indonesia also has abundant natural resources of raw materials such as coconuts nor wood with proactive measures commented by many resources, according to glowingcharcoal.com "**Indonesia** has taken proactive measures to secure a stable and sustainable supply of coconut shells. The company has established partnerships with numerous local coconut farmers, creating long-term agreements that ensure a steady flow of raw materials” and Indonesia as archipelago crossing by the equator line making Indonesia as a Tropical and Sub-Tropical where coconuts tress was abundant. Demand of Indonesia coconut/wood charcoal shown a massive demand to these two region continents such as Middle East and Asia, Middle east such as Saudi, Qatar, etc has shown 227,69% of total export from Indonesia by 2019-2023, Asia region sown 128,4% of the whole export from Indonesia. This can be concluded that according

to the related journal Middle east taken benefits of Indonesia charcoal to complete the shisha demand and Asian as Japan as leading market are using as barbeque necessity.

#### 4.1.1 Alternative Charcoal Resource

Indonesia currently is facing with high global demand use of firewood as Raw material to fulfil the demand; this is what the government and many of Companies truly concerns of Natural resource being massively exploit. According by *Cocologi* blog states that there are many alternative raw materials can be used rather than ordinary firewood such as coconut, there are various types of hardwood that are highly regarded and commonly utilized, particularly because of their superior durability, attractive appearance, and other qualities that make them suitable for a wide range of applications such as furniture making, flooring, and construction.

1. Mangrove

Mangrove trees, also known as '**bakau**' in Indonesia, grow abundantly along the country's extensive coastal areas. These trees are especially appreciated for their dense, durable wood, which is rich in energy content, making it ideal for use as firewood, charcoal production, and various other practical applications in both local and industrial settings.

2. Acacia

Species of acacia wood, such as *Acacia mangium* and *Acacia auriculiformis*, are widely found throughout Indonesia and are utilized for a variety of purposes, one of the most notable being charcoal production. Acacia wood is highly regarded for its high carbon content, which plays a key role in producing an efficient and long-lasting burn.

Charcoal made from acacia especially lump charcoal is known for generating high heat, producing minimal ash, and delivering consistent performance. These qualities make it an excellent choice for grilling and smoking, offering a flavourful and enjoyable cooking experience. Whether used in traditional methods or modern barbecuing, acacia charcoal remains a popular and trusted fuel source.

3. Tamarind Wood

The tamarind tree (*Tamarindus indica*) is native to tropical regions, including various parts of Indonesia. Its hardwood can be processed into high-quality

lump charcoal, which is appreciated for several desirable attributes. Tamarind charcoal is especially known for its high density, extended burn time, and reliable heat output.

In addition to its performance, it also imparts a pleasant aroma and a subtle smoky flavour to grilled foods, enhancing the overall cooking experience. Due to its versatility, tamarind wood charcoal is a preferred choice for a wide range of grilling and smoking applications, making it popular among both home cooks and professional chefs.

With the conclusion of this richness raw material from various wood and characteristic taste and description can be considered many alternatives can be used as the high quality, boosting the production innovation and achieved the world demand.

#### 4.1.2 Rejuvenation of the Raw Materials

According to the Indonesia International Trade forum and DPR (Dewan Perwakilan Rakyat) stated that coconut become one of the main sources for producing has fall, this later has been debunked of coconut export from Indonesia are by whole coconut instead of more valuable and high potential demand to the international market products. By this problem can be conclude that Indonesia Coconut should reducing the export of whole coconut, rejuvenating old coconut trees, and cultivating high-quality coconut varieties particularly the tall coconut type with high harvest rate. Additionally, productivity can be increased with applying intercropping methods (Dewan Perwakilan Rakyat, 2022) as its planting pattern has proven to boost coconut yields of raw materials more effectively than monoculture method.

#### 4.1.3 Government Role of Improving Export Performance

Accordance by the Indonesia Trade Organization has lies in another problem of export processes, Shipping companies are often unwilling to transport coconut shell briquettes, even though these briquettes are eco-friendly products made from waste materials. As a result, exporting briquettes to certain countries faces significant obstacles. Many shipping companies refuse to carry these products for unclear reasons and impose complicated requirements (Kompas, 2020), which resulted in stockpiles of

briquettes. Another issue is the involvement of foreign firms who were once buyers of domestically produced briquettes but are now illegally entering the domestic market, their presence has led for local producers to fulfil orders from importers are harder than before. And in some cases, it threatens healthy local products. Most of the coconut and wood charcoal producers in Indonesia are SMEs (Small Medium Entreprises). This industry is often run by household scale businesses and unskilled labor. This led to Indonesia competitiveness in RCA is the second highest according to the data given, many of the problem lies between export process and government involvement of SMEs producers are merely small.

By overcoming this problem, the Central Government established the regulation that facilitates the export of coconut and wood briquettes, collaborating with the private sector or industry associations to support the marketing distribution and government funds of charcoal produced by SMEs.

#### 4.1.4 Obtain Organic and Sustainability Certifications

Organic certification plays a vital role in enhancing the marketability of charcoal briquettes in developed countries such as those in Europe, North America, and Japan. Although conventional production techniques are still widely utilized across Indonesia, transitioning toward certified organic production can significantly improve access to these premium markets. Such an example of (ITPC Osaka) 2022, where Indonesia has established a International Quality Standard (SNI) make the product safe and according to the international law. But however, Consumers and importers in developed nations place high importance on environmentally friendly and health-conscious products, including organic-certified charcoal briquettes. Achieving such certification not only aligns with international sustainability standards but also increases the likelihood of securing substantial export contracts. Therefore, obtaining organic certification is a strategic move that can strengthen Indonesia's competitive advantage in the global charcoal briquette industry.<sup>20</sup>

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<sup>20</sup> Weira (2024, October 8). *Key requirements for successful charcoal briquette export from Indonesia*. <https://wiera-international.com>

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