A Comparative Study of the Indonesian and Brazilian Coffee Industry: A Porter's Diamond Approach

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Abstract

This research aims to describe the factors that lead Brazil to succeed in being the biggest coffee producer in the world. There are factors that the Indonesian coffee industry needs to learn and see Brazil as a benchmark in the coffee industry. The result of this analysis serves as industry solutions for the Indonesian coffee industry. Comparative analysis is performed by means of competitive advantage with Porter's Diamond Model theory approach. Qualitative method is used in analyzing the data by using interviews as primary data and journals, annual reports and books as secondary data.

Keywords

Industry Solutions, Brazilian Coffee Industry, Indonesian Coffee Industry, Competitive Advantage, Porter.

1. Introduction

Brazil and Indonesia were both introduced to coffee through a period of colonization. In 1727, the Portuguese introduced coffee to Brazil and was once predominantly consumed by European colonists, however, when demand in Europe and the United States expanded, exports began to increase. Because of this burgeoning demand, 1802 was a pivot year for exports, and by 1820, Brazil was producing 30% of the world's coffee (Topik 2019). Similarly, in Indonesia, coffee plants were introduced by the Dutch traders and colonials in the late 1600's. They launched coffee plantations in 1699, and by 1711, the first major commercial exports started to be known worldwide. Java coffee quickly became one of Europe's preferred sources for beans. Then, as a nation of thousands of islands, Indonesia's coffee plantations spread out to neighboring islands over the next century, some of which are the coffee producing region, i.e. Sumatra, Sulawesi, and Bali (Martauli 2018). However, the "coffee rust," a disease that destroyed the coffee industries of Southeast Asia, including Indonesia, in the mid to late 1800s, allowed Central and South America the opportunity to truly grow as a coffee area. Hence, in the 1910s, Brazil grew 80 percent of the world's coffee (Waller et al. 2007).

However, when other producing nations gradually recovered, the country's share of the market fell, but it never lost its position as the world's greatest producer. In the beginning of 1990s, Brazil's government deregulated a range of agricultural industries, including coffee. Farmers were given a lot of flexibility to experiment, seek their own buyers, and sell their crops in ways they see benefit for themselves. This momentum opened the doors to innovation and escalated development within the coffee industry, in short moments afterwards, Brazil became a world leader in the coffee industry. Coffee from Brazil became widely known and consumers started to buy single-origin coffees from the country (Chaddad & Jank 2006). To this period of time, Brazil continues to produce 30-40% of the world's coffee supply. Recently, in 2020, Brazil provided 63,4 million 60-kg bags which accounts for 37% of total world production whereas Indonesia contributed merely 7%, supplying 11,95 million 60-kg bags (International Trade Center (ITC), 2021).

Based on those numbers, Indonesia is left behind compared to Brazil. The gap that stands in between the Indonesian and Brazilian coffee productivity is very pronounced, hence Indonesia still needs to learn from Brazil on how to develop and improve its coffee industry in the future. Therefore, this research explores the factors that set two countries apart and shows some areas that could be useful as industry solutions for Indonesia. There are two reasons why this

research has become important: *First*, with globalization and the rising trend of the coffee market, acknowledging the competitive advantage will be a foundation to set strategies to improve the coffee industry. *Second,* there are many considerations and potential implications of implementing strategies for the coffee industry therefore, the Indonesian government needs to put it into consideration to adopt these strategies.

This paper is organized as follows. Section 2 gives a first look at the coffee commodity and its international market trend as well as the theory used for this research analysis. Section 3 provides a description of the method carried out in this research. Section 4 explains how data is collected within this research. Section 5 explores the comparison of the Indonesian and Brazilian coffee industry competitive advantage and identifies some potential industry solutions. Section 6 provides some concluding remarks.

1.1 Objectives

In a competitive environment, increasing national income is a country's ultimate goal. To do so, a natural plan is to grow market share either by decreasing costs from relying on enhanced productivity or by devising and introducing industry solutions. Therefore, through acknowledging the gap between Indonesia and Brazil's coffee industry, the objective of this research is to **(1)** present a cross-country analysis based on Porter Diamond Model competitiveness variables comparing Brazil and Indonesia, two of the world's major coffee producing countries, (2) analyzes the factors that made Brazil successful in being the biggest coffee producer and whether it can become a benchmark that serves as industry solutions for the Indonesian coffee industry.

2. Literature Review

Coffee is one of the world's most popular beverages as well as one of the most traded tropical commodities. The commodity is traded on major futures and commodities markets, most notably in London and New York (Morris 2018). The coffee market has been growing for the past few decades due to increasing consumption worldwide. In total, consumption has increased to approximately 167.68 million bags in 2020/21 from 164.46 million bags in 2019/20 (International Coffee Organization (ICO) 2021). Furthermore, coffee prices increased in January 2022, hitting 204.29 US cents/lb, continuing the steady rise from 2021. Arabica and Robusta are two of the most widely traded coffee varieties worldwide. In January 2022, the arbitrage between Arabica and Robusta coffees climbed by 3.9 percent to 135.07 US cents/lb, as assessed on the New York and London futures markets. Arabica, is responsible for approximately ¾ of the world's coffee production and robusta for the remaining quarter, with an average price of 266.60 US cents/lb and 109.71 US cents/lb in January 2022, respectively (ICO) 2022). The main reason arabica coffee is more popular than robusta is mainly because of its flavor. Arabica is regarded as good and specialty coffee due to its complex aroma and flavor. Robusta, on the other hand, has nuttier and more bitter properties and is more appreciated in the instant coffee market (Berampu et al. 2019). In comparison to arabica, robusta is much more productive, where it is able to be harvested several times a year. As well as the maintenance of the robusta plant is also cheaper than arabica. Hence, robusta coffee costs half as much as arabica coffee (Dias & Benassi 2015).

Coffee is one of the agricultural commodities that has a significant influence on economic growth and export earnings for both Brazil and Indonesia, as well as for other producing countries such as Vietnam, Colombia, and Ethiopia. In most coffee producing countries, coffee plantations are divided into Large Estate and Smallholders Estate. A large estate is a business entity / legal entity that is involved in the cultivation of plantation crops on controlled and monitored land and has obtained a business license issued by the government. Several studies have shown that estate companies have the capabilities to support big capital and investments on technology and research and development (R&D) which eventually lower the production price and make its product more competitive in the market (Font 2010; Lee et al. 2012; Reichman 2018). In contrast, smallholder farmers' capital tends to be more restricted and therefore, gains from production are less, especially when they compete in a large market. However, in niche markets, such as organic and certified high-quality coffee, smallholders are attractive. Nonetheless, it is difficult if they have to compete with retailer or manufacturer speciality items (Hernandez-Aguilera et al. 2018; Le & Jovanovic 2019; Sarirahayu & Aprianingsih 2018; Truong 2020). Brazil's biggest coffee-growing state, Minas Gerais, is home to some of the world's largest, most capital-intensive, and high-tech coffee businesses. The state is able to produce the same amount of coffee as Vietnam, the second largest coffee producer in the world (Fundação Getulio Vargas Projetos n.d.)**.** Furthermore, Brazil has continued to expand its arabica production, supported by its ability to sustain competitiveness factors to supply increasing demand for high quality coffee. In 2020, Brazil produced 63,4 million 60 kg bags of coffee with over 85 percent of arabica type from its total production. (Table 1).

Meanwhile in Indonesia, smallholder coffee accounts for approximately 95% of the land and coffee output in Indonesia with only less than a hectare per farm, the remaining share is owned by large estates. The majority of Indonesian coffee originates from Sumatra, although it also comes from Sulawesi, Kalimantan, Bali, Sumbawa, Flores and the country's easternmost province of Papua. More than three-quarters of Indonesian coffee is Robusta, with the remainder being the milder Arabica variety. The country's numerous coffee-growing regions produce beans with a wide range of tastes and attributes, and a handful of Indonesian highland Arabica coffees are well-known among coffee connoisseurs worldwide (Happyana et al. 2021; Purnomo et al. 2019; Suhandy & Yulia 2021). In Indonesia, coffee production in 2020 is estimated to reach 11,95 million 60 kg bags (Table 1). Indonesia's composition of arabica coffee accounts for around 14 percent of its total coffee production and the rest majority is robusta coffee (USDA 2021a). However, the Indonesian government showed optimism to increase production with more focus on arabica coffee (Direktorat Jendral Perkebunan 2020).

Table 1. Five world major coffee producing countries in 2020

No.	Country	Total Production (in thousand 60 kg bag)	Coffee Type		Major Production
			Arabica	Robusta	
1	Brazil	63,400	v	v	Arabica
2	Vietnam	29,000	v	v	Robusta
3	Colombia	14,300	v		Arabica
4	Indonesia	11,950	v	v	Robusta
5	Ethiopia	7,357	v		Arabica

Source: ICO, 2021

As with many commodities, the industry's success is dependent on the evolution of local costs and how effectively it adjusts to international pricing. In a competitive environment, a natural strategy to increase the competitiveness of its industry, such as cutting production costs, relying on increased productivity, or devising and introducing other product-related advantages is to cut production costs, rely on increased productivity, or devise and introduce other product-related advantages. (Ahearn 2021; Camargo et al. 2017; Lele & Goswami 2017; Praburaj 2018). Through acknowledging the gap between Indonesia and Brazil's coffee industry, Indonesia can identify the factors that made Brazil successful in being the biggest coffee producer and consider them as a benchmark that serves as industry solutions for the Indonesian coffee industry.

2.1 Theory

The majority of studies in the national competitiveness research area emphasize productivity, or national output per unit of input, as the most reliable measure of national competitiveness.(e.g., Berger 2008; Chen & Lin 2021; Cho & Moon 1998; Knežević Cvelbar et al. 2016; Sepashvili 2020; Shurchuluu 2002; Waheeduzzaman & Ryans 1996). Our approach is consistent with this research and Porter (1990), who later argued that productivity is the sole meaningful idea of national competitiveness. Porter's Diamond Model, widely regarded as the most widely used competitiveness theory today, provides a framework to evaluate differences of competitiveness levels and assists in determining the best approach to compete in the international market (Bakan & Doğan 2012; Smit 2010; Zhang & London 2013). Porter (1998) stated four elements, graphically depicted as a diamond are:

1. Factor conditions
2. Demand conditions
3. Related and Supporting Industries
4. Firm Strategy, Structure, and Rivalry

Additionally, two factors which are operating in the background:

1. Government
2. Chance

National competitiveness is determined by how these elements interact with one another. This model is the foundation for the analysis conducted in this study for both countries.

3. Methods

This research was conducted using both primary and secondary data. Interviews with experts and professionals in the coffee industry were used for primary data to see their expert perspectives on the issues raised by authors. Whereas for secondary data, the authors gathered data from published literature, annual reports, journals, books from established institution such as the Central Statistics Agency (BPS), International Trade Center (ITC), International Coffee Organization (ICO), Food Agricultural Organization (FAO), Indonesian Coffee Exporters (GAEKI), International Trade Centre, the Brazil Government Statistics, and the Indonesian Statistics, etc. This research employed qualitative methods in analyzing both primary and secondary data to answer the research questions.

In the comparison of the competitiveness of Indonesia and Brazilian Coffee Industry, the comparative advantage of both countries is collected for reference, while competitive advantage is examined using the Porter's Diamond model. Comparative advantage is acquired because it has been used in many researches as the main determinant of international production and trade patterns (Laursen 2015). The notion of revealed comparative advantage (RCA) is based on Ricardian trade theory, which states that trade patterns are determined by relative productivity differences between nations. RCA is used in many researches to compare the export market share of a particular sector in the world market (French 2017; Hoen & Oosterhaven 2006; Rifin, 2013; Wei & Chunming 2012). The purpose of using the RCA index in this research is to control for the former bias by providing a new index to determine Indonesia's comparative position in comparison with Brazil in the international coffee market. In the RCA index, the value of a commodity's competitiveness index has two possibilities: 1) If RCA>1, it can be said that country *j* has a comparative advantage in commodity *i* and is highly competitive. 2) If the RCA<1, it indicates a comparative disadvantage in commodity *i*, in other words, it indicates weak competitiveness. The higher the RCA value, the stronger the competitiveness (Laursen 2015).

4. Data Collection

Data collection is essential to maintain the integrity of this research hence, the authors have selected appropriate data collection instruments and delineated instructions for their correct use to reduce the likelihood of errors occurring. The process of gathering and measuring information on qualitative techniques includes observations, interviews, narrative analysis, and interpretivism analysis (Hox & Boeije 2005). This research employed primary and secondary data. The primary data is collected through interviews from professionals as well as experts and observers in the coffee industry, intending to learn their perspectives on the issues raised by this research and to obtain data that is not publicly available. The secondary data is gathered through a comprehensive literature review, from Central Statistics Agency (BPS), International Trade Center (ITC), International Coffee Organization (ICO), Food Agricultural Organization (FAO), Indonesian Coffee Exporters (GAEKI), World Trade Map, the Brazil Government, and the Indonesia Government, etc.

5. Results and Discussion

5.1 The comparative advantage of Brazilian and Indonesian coffee in the international market

To thrive in a world of ever-increasing competition, countries must have commodities that are competitive. Each must be aware of the level of competitiveness of its export in international marketplaces. The competitiveness of an industry is measured in order to find the best strategy to compete in the worldwide market (Porter 1990) This research offers an assessment of the competitiveness level of the Indonesian coffee industry compared to Brazil's, it examines at strategies of improvements for the Indonesian coffee competitiveness in the international market. As global coffee consumption grew from 2015 to 2020 (ICO, 2021), Indonesia must be able to seize the potential for its coffee industry to gain a larger proportion in the global market.

The comparative advantage of Brazilian and Indonesian coffee in the international market demonstrates its competitiveness. Brazil and Indonesia's Results of Estimated Competitiveness (RCA) of coffee export explains that Brazil has a higher comparative advantage compared to Indonesia. The RCA average of Brazil from the year 2010-2020 is 13.89, whereas Indonesia has an average of 3.46. The small RCA value indicates that the Indonesian comparative advantage is less than Brazil, which indicates that it still needs to be improved (Table 2).

Table 2. Brazil and Indonesia's Results of Estimated Competitiveness (RCA) of Coffee Export

Year	Brazil	Indonesia
2010	16.08	3.22
2011	15.76	2.56
2012	13.18	3.66
2013	12.69	4.30
2014	15.97	3.51
2015	15.81	4.33
2016	13.84	3.68
2017	11.76	3.90
2018	11.36	2.81
2019	12.86	3.32
2020	13.49	2.84
RCA Average	**13.89**	**3.46**

Source: International Trade Center (ITC), data processed

The concern about low productivity of the Indonesian coffee industry needs to be examined and solved immediately. The proposed industry solutions provided by authors may be helpful to increase Indonesia's coffee industry competitiveness.

5.2 Porter's Diamond: competitive advantage of Brazilian and Indonesian coffee industry

5.2.1 Factor conditions

Factor conditions, according to Porter (1990), refer to a country's position in terms of natural, human, technological, capital, and infrastructural resources. In short, these resources serve as the foundation for growth and profitability and productive activities.

The land area, coffee seedlings, fertilizer, labor, and infrastructure for the processing of coffee beans into final product or ready-to-drink coffee determines productivity in the coffee industry. (Morris 2018). Near the equator and with various interior mountainous regions on its main islands, Indonesia's geography and climate characteristics are ideal for coffee plantations. There are approximately 1.2 million hectares of coffee plantations across the country, containing 933 hectares of robusta coffee plantations and 307 hectares of arabica plants. Sumatra, Celebes and Java are the biggest production areas. The altitude in the production area averages between 1,110 to 1,600 m (Statistics Indonesia 2021). Certain regions are well-known for producing high-quality coffee, which has triggered a strong interest in Geographical Advantage, a geographical factor that gives coffee its added quality value in the coffee world (Neilson et al. 2018). However, quality is determined by a confluence of location and the post-harvest management system, with the latter being the most important element (Vicol et al. 2018). Compared to Brazil, Indonesia which consists of 95% smallholder farmers has low productivity, with only 811 kg per ha because of the use of labor intensive production from planting seed until the harvest is processed. (Statistics Indonesia 2021).

On the other hand, coffee plantations in Brazil cover approximately 1.9 million hectares and are projected to expand to 2.48 million hectares in 2021/2022 (United States Department of Agriculture (USDA 2021b). The majority of production takes place in the south-eastern states of Minas Gerais, So Paulo, and Paraná, where the environment and

climate are suitable for growing. Fundação Getulio Vargas Projetos reports that the availability of a large area, sufficient air resources, and geographical conditions in the form of a mountainous location are factors that encourage coffee production in Brazil. Arabica dominates both Brazil production, accounting for around 70% of total output while robusta accounts for the remaining 30%. As a result of the rising demand for specialty coffees, and by the implementation of appropriate agricultural strategies, producers are now investing in the development of a more complex and elaborated coffee variety (Topik 2019). Indonesia, in contrast to Brazil, lacks large estate coffee plantations and hence faces greater challenges in maintaining consistent production quantities and quality, causing its output to lose some competitiveness on the worldwide market.

Then this research propose an increase of large estate plantations across Indonesia to have the positive influence on increasing coffee production and agricultural strategies.

5.2.2 Demand conditions

The second component of the Diamond Model focuses on a country's demand conditions. When domestic demand has an overall expectation for 'high quality' products and services, according to Porter (1998), the industries are more likely to respond by upgrading their production capacity. To summarize, demanding customers force industries to become more sophisticated, which promotes high national competitiveness

In the international market, arabica coffee has a larger demand market than robusta mainly because of its flavor. Arabica is regarded as good and specialty coffee due to its complex aroma and flavor. Robusta, on the other hand, has nuttier and more bitter properties and is more appreciated in the instant coffee market (Berampu et al. 2019). In Indonesia, households, the food and beverage sector, and coffee cafés all contribute to domestic coffee demand (Berampu et al. 2019). Consumption in 2021/22 is expected to reach 4.7 million bags, up from 4.45 million bags in 2020/21 (USDA 2021a). Despite increasing, Indonesia's consumption is still lower than Brazil. Furthermore, lower consumer spending power tends to suppress demand for higher-quality or higher-priced coffee. Furthermore, the Indonesian coffee consumption trend is to blend coffee with other ingredients like milk, hence the robusta variety is more commonly demanded. The domestic market consumed over 150,000 metric tons of robusta per year in 2020. Internationally, approximately 65 percent of Indonesian coffee was shipped abroad, mostly to buyers in Japan, South Africa, Western Europe, and the United States. The majority of robusta exported is utilized in instant coffee and other industrial goods (Statistics Indonesia 2021).

On the other hand, Brazil stands out as the consumer of coffee: the country is the 3rd largest global consumer, behind only the European Union and the United States (Fundação Getulio Vargas Projetos). Brazil's domestic coffee consumption is expected to reach 23.655 million bags in 2021/22. An increase of almost 1% over the revised projection of 23.307 million bags for 2020/21. Among the main types of coffee, the class of roasted and ground coffee, including flavored and in capsules, represented around 66% of the total value of R$ 10.24 billion of industrial production in 2016. The main buyer of Brazilian coffee is the United States, followed by Germany, Italy, Belgium and Japan, which together account for about 60% of the total volume of coffee shipped (United States Department of Agriculture (USDA) 2021a).

Then this research propose Indonesia to increase the production of arabica coffee in order to meet larger international demand while also sustaining robusta coffee to supply for domestic demand.

5.2.3 Related and Supporting Industries

The third component of the Diamond Model looks at whether the country has clusters of sophisticated suppliers and related sectors, which are areas where businesses may coordinate throughout the value chain. As a result, an ecosystem of complementing sophisticated businesses provides technological spillovers and productivity gains that benefit the economy (Porter 1998).

Related and supporting industries have a significant role in strengthening Indonesian coffee's competitiveness. The coffee industry is of course very dependent on the ability of the upstream industry to provide superior seeds. As for the downstream production, the coffee processing sector, which turns raw materials into ground coffee, has developed across Indonesia, such as PT Sari Incofood Corporation (North Sumatra), PT Mayora Indah Tbk (Banten), PT Santos Jaya Abadi (East Java), PT Nestle Indonesia (East Java) and PT Aneka Coffee Industry (East Java), PT Torabika Semesta. These companies have increased the value of Indonesian coffee. Additionally, cafe owners and roasters are becoming more aware about sourcing high quality coffee, therefore, they often buy directly from farmers and build

relationships to sustain the quality of their coffee**.** The Association of Indonesian Coffee Exporters (GAEKI) is composed of Arabica and Robusta coffee exporters who are responsible for quota management. Furthermore, the Specialty Coffee Association of Indonesia (SCAI), which was founded in 2008, is dedicated solely to the production, export, and marketing of Arabica coffees from Indonesia. Farmers' cooperatives with 8,050 members, exporters, roasters, importers, and coffee shops are among the participants.

In Brazil, the Brazilian Coffee Industry Association (ABIC) was founded in 1973 and serves as the industry's most prominent regulatory body. Its operations span industry, retail, and consumer goods. Several programs are offered by the institution, all of which focus on the purity, quality, and sustainability of Brazilian coffee. ABIC now operates over 500 roasting and grinding companies across the country, with headquarters in Rio de Janeiro. It also provides its associates with a comprehensive database that includes macroeconomic studies, opinion and market polls, sectoral diagnosis, legal guidance in the areas of taxation, labor, constitutional, and consumer protection, a detailed register of companies, brands, and products, statistical production and consumption information, financial advisory, and business and technology development information, as well as sectoral diagnosis, legal guidance in the areas of taxation, labor, constitutional, and consumer protection, a detailed register of companies, brands, and products, detailed register of companies (ABIC). A key message here is that Brazil takes risk management seriously and is more sophisticated compared to Indonesia.

Then this research propose related and supporting industry of the Indonesia coffee industry to be more attentive and sophisticated towards the value chain of coffee.

5.2.4 Firm Strategy, Structure, and Rivalry

This factor looks at the environment in which industries are formed, structured, and developed, resulting in intense domestic competition both within and across industries. According to Porter (1990), when home rivalry is intense, the industries that survive often fare better in the international market. Furthermore, it promotes continuous improvement, which is usually a significant goal, and as a result, productivity rises.

Indonesia produces over 5.5 percent of the world's coffee, although coffee exports account for only 0.13 percent of GDP due to the country's extremely diversified economy (Vicol et al. 2018). Indonesia’s coffee production accounts for 90% of Robusta coffee which is a type known to have lower quality compared to Arabica, therefore, the price value is cheaper as well. Kaido et al. (2021) has found that Indonesian arabica coffee faces fundamental challenges which are quality inconsistency, price fluctuations, lengthy and bureaucratic export administration, absence of bank loans, and lack of government support. Indonesia's coffee productivity is currently 792 kg/ha per year, much below Brazil's 1,896 kg/ha per year (ICO 2021). In comparison to other coffee exporting countries, the Indonesian coffee products are not competitive enough in the international markets due to high production costs faced by exporters.

Coffee grown in Brazil is responsible for about a third of the world’s production, making Brazil by far the world's largest producer. The country is difficult to compete with its overall output of green coffee, arabica coffee, and instant coffee. Despite the nature of coffee price fluctuations Brazil's production capacity has shown resilience (Pronti & Coccia 2021). As well as the coffee frost up and this century’s climate change that have been affecting Brazil’s production, the country has managed to always find solutions to its problem. For instance, Brazil has been consistently using shade trees such as *Mimosa scabrella* (bracatinga) to protect coffee plants (Avelino et al. 2015; Caramori et al. 1996). Although climate change has significantly reduced the production of Arabica coffee, Brazil continues to study ways to mitigate and adapt the production of Arabica with the changing environment condition (Coltri et al. 2019; Mafra-Neto et al. 2022 p. 15; Tavares et al. 2018).

Then this research propose research and development to improve the strategy of Indonesia’s coffee industry and hence, be more resilience towards challenges.

5.2.5 Government Role

Government institutions, according to Porter's (1998) original definition, are an indirect element in explaining national competitiveness. In other words, the government has an impact on the four Diamond aspects. Furthermore, he maintained that government regulation and policies may modify factor circumstances and domestic demand conditions, and that capable and successful governments can typically enhance the environment in which competition occurs.

Despite the fact that Indonesia is a major coffee producer, the Indonesian government does not consider coffee to be a strategic priority. Government support is targeted towards commodities with a greater share of exports or regional tax bases, such as palm oil and cocoa (The Sustainable Trade Initiative (IDH) 2021). According to Edy Panggabean, Chairman of *Masyarakat Kopi Indonesia*,The government does not provide enough assistance for the national coffee industry. Seeds, knowledge transmission to farmers, and exporter convenience are only a few examples of areas where the government has not provided adequate support. He also said that Indonesia's coffee production has been declining in recent years. Panggabean emphasized that the government must be more aware and contribute a significant factor in resolving the output downturn. From his observation, the government is unaware of policies, which were made by themselves, were intended to assist, support and enhance the quality of coffee farmers, particularly small-holder farmers. He referred to the "farmers competency certificate policy" written in *Peraturan Menteri Pertanian Republik Indonesia No: 42/Permentan/SM.200/8/2016*. That policy, he recalled, could have been a huge stepping stone to better and enriched the knowledge of farmers.

In contrast to Brazil, the Brazilian government had been deregulating a range of agricultural businesses, including coffee, since the early 1990s. The goal of this change was to offer farmers more flexibility to experiment, find their own buyers, and sell in the manner that was most beneficial to them. This also gave the market the opportunity to purchase single-origin coffees from the nation. It ushered in a new era of innovation, propelling Brazil to the forefront of coffee research and processing processes. Brazil continues to generate over 30% of the world's coffee supply today (Chaddad & Jank 2006).

Then this research propose the Indonesian government to acknowledge and set regulations that are supportive towards stakeholders within the Indonesian coffee industry, especially for farmers.

5.2.6 Role of Opportunity

The role of opportunity is a factor that is beyond the control of the government, such as increasing competitiveness due to free trade or due to the existence of trading blocs (Porter 1998). The free market, for instance, provides an opportunity for any country to increase the competitiveness of its commodities abroad.

As a country that consists of thousands of islands, Indonesia is able to offer high quality coffee with various flavors. Over the last decade, the trend for specialty coffee has been rising and it has given Indonesia to a larger niche market. Their coffee to meet the criteria of sustainability and quality, as well as more directly commercializing it (Borrella et al. 2015). The domestic market which absorbs around 40% of overall production, and a niche market of pricey high-quality coffees is increasing in various regions of the nation, showing a potentially attractive development area where numerous enterprises are currently investing and thriving. Indonesia has the opportunity to supply to the fastly growing demand of that market (The Sustainable Trade Initiative (IDH) 2021). According to Edi Susmadi, Director of Indonesia Specialty Coffee, Indonesian farmers are working with key ministries to develop the country's coffee plantations while also revitalizing older ones through intensification initiatives. Susmadi predicted that Indonesian coffee output will reach 900,000-1.2 million tons per year in the next ten years when acreage was increased. Investment in the country's coffee business is required as both global and domestic demand rises. Because of technical advancements, the quality of the beans is predicted to improve in addition to the quantity.

As for Brazil, the projection for the country to still hold the biggest share in world coffee production is considerably big. Not only is it still widely known as a major sustainable source for coffee beans, but also its capability to keep up with the increasing demand of the world has made Brazil's position in the market stable. The industry is projected to harvest 55.74 million 60-kg bags in 2022, which is 16.8% more than in the previous year, but an amount that is significantly larger than most other producers are expecting (USDA 2021b).

Then this research propose Indonesia to invest more in coffee research and development to improve the production of high quality coffee while also increasing the acreage of coffee plantations area.

6. Conclusion

All stakeholders in the Indonesian coffee industry might benefit from the study's practical applications to enhance the competitiveness of the Indonesian coffee industry. This might be accomplished by first recognizing the difference between the Indonesian and Brazilian coffee industries as outlined in the results and discussions, and then putting the proposed solutions into action. Apart from the coffee industry, the industry solutions may be utilized by other similar sectors in other developing nations to increase their competitiveness. The findings have shown that Brazil, in many

ways, has shown to be a benchmark for the Indonesian coffee industry, ranging from coffee industry management, production system choices, innovation, and improvements as well as in the identification of fundamental flaws and the provision of remedies from the government. Finally, this research is anticipated to add to existing information, particularly concerning the coffee industry's competitive advantages and ways for improving them.

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