www.bircu-journal.com/index.php/birci
Budapest International Research and Critics Institute-Journal (BIRCI-Journal)
Humanities and Social Sciences
ISSN 2615-3076 Online)
ISSN 2615-1715 (Print)
Budapest Institute

Competitiveness and Potential for Indonesian Coffee Export Market Development

Millenia Aurelia[1], Yusman Syaukat[2], A Faroby Falatehan[3]
[1,2,3]*Faculty Agricultural Economics, Institut Pertanian Bogor, Indonesia*
aureliamillenia@apps.ipb.ac.id

Abstract

Coffee is one of the plantation commodities that has an important role in Indonesia's economic activities. As one of the leading commodities in the plantation sub-sector, coffee still faces various challenges in international trade. The high level of competition between exporting countries encourages Indonesia to be able to improve the quality and productivity of coffee in order to compete in the international market, so this study was conducted to analyze the competitiveness and potential of the Indonesian coffee export market. This research was conducted on coffee commodities (HS 090111) using time series (2006 – 2020) and cross section 10 Indonesian coffee export destinations. This research uses RCA, EPD, and X-Model Potential Export. The results of the RCA analysis show that Indonesian coffee has comparative competitiveness in the export market, while the results of the EPD analysis show that Indonesian coffee is competitively competitive in all export markets, except for the Japanese market. Indonesian coffee exports in the Japanese market are in retreat. Further analysis with X-Model concludes that Indonesian coffee has the potential to develop an optimistic export market for the markets of Belgium, Italy, Malaysia, Egypt, and the Russian Federation, potentially to the United States, India, Germany, and United Kingdom markets. The Indonesian government is expected to encourage the development of coffee exports to the markets of Belgium, Italy, Malaysia, Egypt, and the Russian Federation as top priority destinations and the United States, India, Germany, and United Kingdom markets as potential export destination groups.

Keywords
export product dynamic; revealed comparative advantage; X-model potential Export

I. Introduction

The agricultural sector has an important role in the Indonesian economy. BPS (2020) stated that the agricultural sector contributed 15.46% to the Gross Domestic Product (GDP) in the second quarter of 2020. One of the agricultural sub-sectors that has great potential is the plantation sub-sector. The contribution of the plantation sub-sector in 2019 was 3.27% of the total GDP and 25.71% of the agriculture, forestry and fishery sectors. The plantation sub-sector is the leading sub-sector for the agricultural sector (BPS 2021).

The plantation sub-sector has several leading commodities, which have a real contribution to national income. One of the plantation commodities that has high economic value and has the potential to be developed is coffee. Coffee is one of the plantation commodities that has an important role in Indonesia's economic activities, both in meeting domestic demand and for export purposes. In 2019, Indonesia's coffee production reached 729 thousand tons with an area of 1.24 million hectares. Coffee production during the 2010-2019 period fluctuated, but on average experienced a growth of 0.79% per year. This

DOI: https://doi.org/10.33258/birci.v5i3.6031

is due to an increase in coffee area by an average of 0.39% per year (Center for Agricultural Data and Information Systems 2020).

In terms of productivity, Indonesian coffee productivity seems to fluctuate in the 2010-2019 period, but on average it grows by 0.20% per year. In 2019 it shows that based on business status, the highest coffee productivity is found in coffee plantations operated by the state (PBN) with productivity reaching 1,128.73 kg per hectare with a growth of 0.21%, followed by coffee productivity cultivated by private companies (PBS) was 871.12 kg per hectare with a growth of 2.37%, while the lowest was in coffee productivity cultivated by the people (PR) which was 776.46 kg per hectare with a growth of 0.40%. The low productivity of smallholder plantations is caused by production that tends to stagnate due to not being managed optimally, constrained by capital, inadequate information knowledge and plant management technology that is not optimal (Ministry of Agriculture 2019).

In 2019, the volume of coffee exports with the HS code 090111 (coffee, not roasted, not decaffeinated) was in first place with a proportion of 98.14% of Indonesia's total coffee exports. The development of Indonesia's coffee export volume in 2010 – 2019 fluctuated, but on average it grew by 1.65% per year. In 2019 the volume of coffee exports increased by 28.25% compared to 2018 or reached 359,053 tons (BPS 2020). This is due to an increase in domestic coffee production.

According to data from the International Trade Center (2021), there are 10 main destinations for Indonesian coffee exports. The United States is the largest market share for Indonesian coffee with an average share of export value reaching 14.74% per year. Then there are Japan, Germany, Malaysia, Italy, Egypt, Russia, United Kingdom, India, and Belgium. Development is a systematic and continuous effort made to realize something that is aspired. Development is a change towards improvement. Changes towards improvement require the mobilization of all human resources and reason to realize what is aspired. In addition, development is also very dependent on the availability of natural resource wealth. The availability of natural resources is one of the keys to economic growth in an area. (Shah, M. et al. 2020)

The development of coffee production in the international market every year tends to increase. The large potential of Indonesia's coffee trade is faced with various challenges, one of which is the increasing level of competition between producing countries for the share of imports in the international market. This is due to a change in the balance of the global coffee market, where there is a tendency for an oversupply of world coffee (Jamil 2019). The development of coffee production in the international market in the 2016 – 2020 period experienced an average growth of 3.54% per year (FAO 2021). In international market competition, during the 2006 – 2020 period, there were Brazil, Vietnam, and Colombia which had a higher coffee export value than Indonesia. In 2019, Brazil's export volume reached 2,230,877 tons and Brazil took the first position as a coffee producing country in the world (FAO 2020).

The development of the volume and value of Indonesia's coffee exports during the last ten years, namely 2010-2019 fluctuated but on average experienced growth of 1.65% and 4.49% per year, respectively. The growing trend of coffee exports is a potential for Indonesia to be able to develop Indonesia's total exports. In addition to the export value of coffee which tends to increase, the growth of coffee consumption in the world also increases every year. Based on ICO data (2021) the average growth of coffee consumption in the world is 1.11% per year. Seeing the great opportunity and potential of Indonesian coffee in the international market, this can be used to encourage increased exports and develop export markets. Increasing competitiveness and developing the export market for

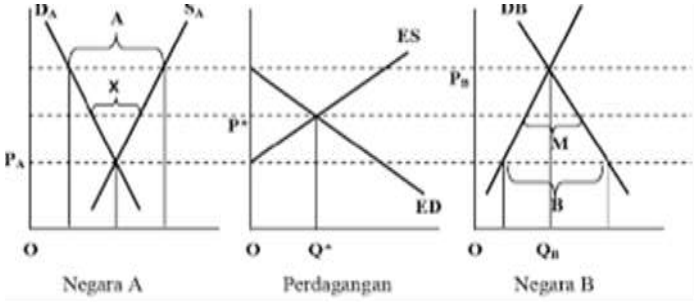
Indonesian coffee commodities is an important element if Indonesian coffee commodities are to survive in the international market, considering that competing countries have a fairly high export value compared to Indonesia (Suharno and Zuhdi 2016). The competitiveness of coffee between exporting countries in the international market is getting tighter due to the high supply of coffee in the international market. This shows that Indonesia needs efforts to increase competitiveness in winning market competition (Baso and Anindita 2018). Therefore, this study aims to analyze the competitiveness and potential of the Indonesian coffee export market. It is hoped that this research can serve as a reference for the government in formulating policies related to increasing competitiveness and developing the Indonesian coffee export market.

II. Research Method

2.1 Framework for Thinking

International trade is an activity carried out by companies or individuals from one country to another. The purpose of the trade is to meet the needs that must be met by a company or individual that has not been able to be produced by the company or individual itself. The benefits of trade between countries, companies or individuals from a country can easily enjoy goods produced by other countries that have not been able to be produced domestically. Countries that trade tend to adhere to an open economic system by carrying out export and import activities that can improve the welfare of countries that trade (Soemartoto 2004).

According to Salvatore (2014) international trade theory and policy is a microeconomic aspect of international economics because it relates to each country as an individual which is treated like a single unit, and relates to the relative price of one commodity. International trade theory is applied to problems of trade between individuals and trade between countries. The curve of international trade can be seen in Figure 1.



Source: Salvatore (2014)

Figure 1. *The curve of international trade between two countries*

Figure 1 shows the condition when before the occurrence of international trade, the price in country A was PA, PB. wasInternational market supply will occur if the international price is higher than PA, while international market demand will occur if the international price is lower thanPA. When the international price (P*) is equal to PAB will have an excess demand (ED) of B. If the international price is the same as PB, then country A will have an excess supply (ES) of A. So, from A and B ES and ED curves will be formed which will determine the price that occurs in the international market by P*. With this trade, country A will export coffee commodities of X while country B will import coffee commodities of M, where in the international market X is equal to M, namely Q*.

Coffee is one of the plantation commodities traded in the international market, and has a fairly important role for the national economy. Coffee plays a role as a provider of employment, a source of income, foreign exchange, encouraging regional development and agro-industry development. Indonesia has the potential to become a major world coffee producer. However, Indonesia is experiencing fluctuating growth in coffee export volume and its productivity is still relatively low, this will certainly affect its competitiveness (Ministry of Agriculture 2019).

Based on these problems, the purpose of this study is to analyze the competitiveness and development potential of the Indonesian coffee export market. This research uses Revealed Comparative Advantage (RCA), Export Products Dyanmic (EPD), and X-Model methods.

2.2 Data Collection

This study analyzed coffee commodities with the HS code 090111. The data used in this study was secondary data in the form of panel data, which was a combination of time series data and cross section. The time series data used are annual data from 2006 to 2020. cross section used are 10 export destinations for Indonesian coffee, namely, the United States, Belgium, India, Italy, Japan, Germany, Malaysia, Egypt, Russia, and the United Kingdom. Sources of data obtained from the Central Statistics Agency (BPS), Ministry of Trade, Directorate General of Plantations, Ministry of Agriculture, United Nations Commodity and Trade (UN Comtrade), International Coffee Organization (ICO), Food and Agriculture Organization (FAO), International Trade Center (ITC), Word Bank, World Economic Forum (WEF), International Coffee Organization (ICO), research journals, and other related literatures related to the international trade in coffee.

2.3 Analysis

Methods The analytical methods used in this research are Revalead Comparative Advantage (RCA), Export Product Dynamic (EPD) and X-Model Potential Export Products (X-Model) methods. RCA is one of the analytical tools to measure competitiveness in international trade. The RCA method was first discovered and introduced by Balassa in 1965, which is based on the Ricardian concept of comparative advantage. The RCA formula in this study is shown as follows:

$$\text{RCA} = \frac{\frac{Xij}{Xt}}{\frac{Wij}{Wt}}$$

Description: Xij is the value of Indonesian coffee exports to the main destination countries (USD), Xt is the total value of Indonesia's exports to the main destination countries (USD), Wij is the value of coffee exports world to the main destination country (USD), and Wt is the total value of world exports to the main destination country (USD).

RCA value > 1 indicates that Indonesian coffee has comparative competitiveness, and vice versa, if the RCA value < 1 indicates that Indonesian coffee does not have comparative competitiveness in the destination country market.

Export Products Dynamic (EPD) is one indicator that can provide an overview of the level of competitiveness. This indicator is able to measure the market position of a country's products for certain market purposes. In this method there is a matrix consisting of market attractiveness and business strength information. Market attractiveness is calculated based on the growth of demand for a product for certain market purposes, where business strength information is measured based on the market share of a country for certain market destinations. The combination of market attractiveness and business

strength results in the positional character of the product to be analyzed into four categories, namely “Rising Star”, “Falling Star”, “Lost Opportunity”, and “Retreat” (Figure 2).

Source: Estherhuzein (2006)

Figure 2. *Export Products Dynamic (EPD)*

The formula used in the calculation of this EPD method is as follows:

X-axis: Growth of export market share

$$\sum_{t=1}^{t} = \frac{\left(\frac{Xij}{Wij}\right)t \;X\;100\% - \left(\frac{Xij}{Wij}\right)t-1\;X\;100\%}{T}$$

axis: Growth of product market share

$$\sum_{t=1}^{t} = \frac{\left(\frac{Xj}{Wj}\right)t \;X\;100\% - \left(\frac{Xj}{Wj}\right)t-1\;X\;100\%}{T}$$

Description: Xij is the export value of Indonesian coffee commodities to destination countries (USD), Wij is the value of world coffee exports to destination countries (USD), Xj is the total value of Indonesia's exports to destination countries (USD), Wj is the total value of world exports to destination countries (USD), and T is the number of years of analysis used.

The *X-Model Potential Export* method is used to cluster the potential of Indonesian coffee in export destination countries. This method can combine the results of the RCA analysis and the results of the EPD analysis to see the competitiveness of Indonesian coffee from two sides, so that this research can be more comprehensive.

Table 1. Clustering analysis of X-Model Potential Export

RCA	EPD	X-Model
>1	*Rising star*	Pasar optimis
	Lost opportunity	Pasar potensial
	Falling star	Pasar potensial
	Retreat	Kurang potensial
<1	*Rising star*	Pasar potensial
	Lost opportunity	Kurang potensial
	Falling star	Kurang potensial
	Retreat	Tidak potensial

Source: Ministry of Trade (2013)

III. Result and Discussion

Indonesia's coffee export performance in the international market can be seen from its comparative advantage. This study analyzes the competitiveness of Indonesian coffee and coffee producing countries comparatively in the international market using the RCA method. RCA measures the market share of a country's exports in the same industry group as other exporting countries (Serin and Civan 2008). In this analysis, the RCA value of Indonesian coffee will be compared with other major producing countries in the world. The higher the RCA value, the higher the comparative advantage.

3.1 The Competitiveness of Indonesian Coffee in International Markets

Following are the results of the RCA analysis that informs the level of competitiveness of major exporting countries including Indonesia in exporting coffee to the world market for a period of 15 years (2006-2020). The four coffee exporting countries have competitiveness in the world market.

Table 2. RCA estimated value of coffee exporting countries in the world 2006 - 2020

Year	Indonesia	Brazil	Vietnam	Colombia
2006	6.49	23.86	34.24	67.18
2007	6.02	22.90	42.71	61.98
2008	7.36	21.52	34.29	51.04
2009	6.38	22.39	27.14	42.44
2010	4.57	22.96	22.61	42.03
2011	3.58	22.19	19.87	32.23
2012	5.23	19.04	24.46	25.31
2013	6.68	20.61	19.91	33.51
2014	5.34	24.94	19.84	41.17
2015	6.68	24.54	12.20	59.76
2016	5.79	21.87	14.06	65.05
2017	6.00	18.21	12.05	57.36
2018	4.68	18.96	12.04	56.64
2019	5.56	21.66	_	_
2020	_	.	_	_
_	_	_	_	**51.54**

Source: ITC (2021) processed

Based on the calculation of the estimated RCA value, it can be seen that in general the four coffee exporting countries in the world market each have an average RCA value above 1. This indicates that both Indonesia, Brazil, Colombia and Vietnam have a comparative advantage in the coffee trade on the world market.

In 2006-2020 Colombia had the largest average RCA score of 51.54. This shows that Colombian coffee has a comparative advantage or stronger competitiveness among Brazil, Vietnam, and Indonesia. In 2020, Colombia has an RCA value of 75.94 while Indonesia only has 4.77. Colombia is known as an exporter of Arabica coffee. The higher price of arabica coffee compared to robusta coffee is one of the reasons for the high export value of Colombia in the world market compared to Indonesia.

Indonesia occupies the last position with an average RCA for 2006-2020 of 5.68. This shows that the HS 090111 type of coffee exported by Indonesia has a comparative

advantage in the world market but is still unable to compete with coffee exported by Colombia, Brazil and Vietnam.

The trend of the movement of the RCA Index which is relatively lower compared to other countries indicates that Indonesia's coffee exports are relatively stagnant. According to Sinta *et al. (*2014) the productivity of Indonesian coffee plantations is still relatively low, the absence of post-harvest handling by farmers is also one of the main reasons why Indonesian coffee exports are still unable to compete with other coffee exporting countries. This condition is in line with the results of research by Baroh *et al.* (2014) which shows that coffee has the sixth largest competitiveness compared to 9 other main Indonesian export commodities. In addition, these conditions are generally caused by low prices at the farm level. This is a consequence faced by farmers. Farmers who dominate Indonesian coffee production (94.53%) do not have a bargaining position when dealing with traders, so farmers are only*price takers*. This low price ultimately reduces the motivation of farmers to cultivate their coffee.

3.2 Competitiveness of Indonesian Coffee in Destination Countries and Export Market Potential

Based on the results of the analysis using the RCA method, during the period 2006 to 2020, the competitiveness of Indonesian coffee commodities in each market has a comparative advantage that is quite varied. Indonesian coffee commodities have different competitiveness values in each market. But overall, Indonesian coffee commodities in ten export destination countries have strong competitiveness.

Source: ITC (2021) processed

Figure 3. *Average RCA value of Indonesian coffee in the market of export destination countries in 2006-2020*

The results of the analysis of the average RCA show that Indonesian coffee has a strong comparative advantage and competitiveness in each market studied. The position of competitiveness with the highest average value of comparative competitive advantage is in Egypt with an average RCA value of 35.22, then ranks second and so on, followed by the United Kingdom, Russian F, Belgium, Germany, Italy, India, United States, Malaysia, and Japan.

The competitiveness of Indonesian coffee in these ten markets needs to be maintained and improved, especially in markets where although the average competitiveness is positive, the average competitiveness growth is negative. These markets are the United States market with an average RCA growth of -1.35% per year, the Italian market -0.41% per year, and the Egyptian market -0.51% per year. If this negative RCA

growth is ignored, it will certainly reduce the competitiveness of Indonesian coffee commodities in these markets. Some of the factors that cause this include changes in the market share of Indonesian coffee commodities to Indonesia's total exports and changes in the market share of world commodities to total world exports. In addition, fluctuations are also caused by changes in the export market share of other competing exporting countries (Kusuma 2015).

Another analysis of the competitiveness of Indonesian coffee commodities is carried out using the EPD method. This method measures the market position of Indonesian coffee commodities for the main market objectives studied. In addition, this method can also show the dynamic or not the performance of Indonesian coffee commodities. The results of the EPD analysis show that the export market for Indonesian coffee commodities is in different positions. Not all coffee export markets are in a *rising star*, because some markets are in a *lost opportunity*, *falling star*and *retreat*. Table 3 presents the results of the analysis of EPD calculations in each of the main markets.

Table 3. Results of EPD analysis of Indonesian coffee in destination markets for 2006-2020

Countries	Growth X (%)	Growth Y (%)	Market Position
United States	-0.122	2,247	Lost Opportunity
Belgium	19,684	0.325	Rising Star
India	-0.006	2,807	Lost Opportunity
Italy	1,572	3,912	Rising Star
Japan	-0.799	-2,924	Retreat
Germany	2,996	-0.226	Falling Star
Malaysia	2,209	2,933	Rising Star
Egypt	1,054	4,363	Rising Star
Russian F	107,099 6,625	Rising	Star
United Kingdom	7,631	-0.942	Falling Star

Source: ITC (2021) processed

Indonesian coffee exports are in a position *rising star* in the markets of Belgium, Italy, Malaysia, Egypt, and Russian F. This shows that Indonesian coffee commodities have competitiveness and positive trade dynamics in each of these markets. Trade in Indonesian coffee commodities in these markets has experienced an additional*fast growing product*. In the United States and India markets, Indonesian coffee commodities are in a *lost opportunity*. This indicates that the coffee commodity in this market has lost its share of the export market. This can be seen from the negative value of its export market share growth. In the German and United Kingdom markets, the coffee commodity is in a *falling star*, and in the Japanese market it is in a retreat position.

In the United States market, the growth in the export market share of coffee commodities was negative. This was due to a decline in the value of Indonesian coffee exports to the United States market in 2017. However, on the other hand, the total imports of coffee from the United States market experienced an increase that year. This happened because in that year the United States imported more coffee from the Brazilian market than from Indonesia. The growth of Indonesia's coffee export market share is also negative in the Indian market. This was due to a decrease in the value of Indonesian coffee exports in the Indian market in 2014, 2017 and 2018. However, on the other hand, in that year the

total import of coffee in the Indian market increased. This happened because that year India imported more coffee from the Vietnamese market than from Indonesia. This indicates that Indonesian coffee is still unable to compete with coffee exported by Vietnam.

In the German and United Kingdom markets, product market share growth is negative. This shows that the value of Indonesia's total exports to this market when compared to the value of the world's total exports to that market tends to decline from year to year.

In the Japanese market, Indonesian coffee commodities are in a *retreat*. In this position, the level of demand for Indonesian coffee in the Japanese market has decreased, as well as the level of coffee exports originating from Indonesia, so that the growth of the Indonesian coffee market is no longer dynamic in Japan. This also shows that the Indonesian coffee commodity is no longer in demand by the market or is experiencing a decline. This is characterized by the negative growth value of the Indonesian export market share (X) and the negative growth in the Indonesian product market share (Y).

X-Model analysis was carried out to cluster the potential for coffee market development by considering the results of the RCA and EPD analysis that had been obtained. By using this method, the results of the competitiveness analysis under study become more comprehensive because they look at the competitiveness of Indonesian coffee commodities from two sides at once, namely from the RCA and EPD sides. From this analysis, the potential for developing the coffee commodity market will be known. The market development potential is divided into four clusters, namely optimistic market development potential, potential market development potential, less potential market development potential, and non-potential market development potential. Table 4 presents the results of the x-model analysis of Indonesian coffee.

Table 4. Results of x-model of Indonesian coffee in export destination countries in 2006 - 2020

Destination Country	RCA	EPD	X-Model
United States	7.92	Lost Opportunity	Development of potential market for
Belgium	13.72	Rising Star	Development of optimistic market
India	9.81	Lost Opportunity	Development of potential market of
Italy	11.02	Rising Star	Development Upbeat market
Japan	2.57	Retreat	Market development lacking potential
Germany	13.58	Falling Star	Market development potential
Malaysia	6.85	Rising Star	market development
Egypt	35.22	Rising Star	Upbeat market development
Russian F	28.91	Rising Star	Upbeat market development
United Kingdom	32.88	Falling Star	Potential market development

Source: ITC (2021) processed.

Based on the analysis results, coffee commodity exports have the potential for optimistic market development in the markets of Belgium, Italy, Malaysia, Egypt, and Russian F. In these markets, Indonesian coffee commodities have strong competitiveness and are in a *rising star*, while in United States, India, Germany n, and United Kingdom coffee commodity exports have potential market development potential. This is because coffee commodities have strong competitiveness in these markets, however, this commodity is in a *lost opportunity* or *falling star*, while in the Japanese market coffee

exports have less potential for market development, because even though coffee strong competitiveness, but this commodity is in a *retreat* in the Japanese market.

Based on the results of the *x-model analysis of potential export products*, it was found that the development of Indonesian coffee exports should be mainly developed in the markets of Belgium, Italy, Malaysia, Egypt, and Russian F. These markets are the most optimistic markets to provide opportunities out of the ten markets studied. However, apart from these markets, other potential markets to be developed are the United States, India, Germany, and United Kingdom markets.

IV. Conclusion

Based on the results of the research obtained, Indonesian coffee has comparative and competitive competitiveness in the international market. The development of the Indonesian coffee export market is still optimistic about providing opportunities for the Belgian, Italian, Malaysian, Egyptian and Russian F markets, as well as the development of potential coffee exports in the United States, India, Germany and United Kingdom markets.

Suggestion

In order to develop and improve the competitiveness of coffee, the government needs to know and choose which country's market to be exported. If the government wants to develop coffee exports with the HS code 090111, the government should export to Belgium, Italy, Malaysia, Egypt and Russian F as the main priority destination, then the second priority can choose potential countries such as the United States, India, Germany, and United Kingdom.

Acknowledgments

The authors would like to express their gratitude to Mr. Yusman Syaukat and A. Faroby Falatehan for their assistance during the author's postgraduate education at the Bogor Agricultural Institute; Central Bureau of Statistics (BPS), and Trade Map, Ministry of Agriculture who have helped the author in obtaining the information and data needed in writing this article.

References

[BPS] Badan Pusat Statistik. (2020). Produk Domestik Bruto atas harga konstan 2010. [diakses 2020 Nov 15] Tersedia pada: https://bps.go.id.

[BPS] Badan Pusat Statistik. (2020). Statistik Kopi Indonesia 2019. Jakarta (ID) : Badan Pusat Statistik

[ICO] International Coffee Organization. (2021). World Coffee Consumption. [diakses 2021 Okt 1] Tersedia pada: http://www.ico.org/

[ITC] International Trade Centre. (2021). Berbagai terbitan [Internet]. [diunduh 2021 Okt 12]. Tersedia pada: https://intracen.org

[KEMENTAN] Kementrian Pertanian. (2020). Outlook Komoditas Perkebunan Kopi. Jakarta (ID) : Pusat Data dan Sistem Informasi Pertanian

Balassa B. (1965). Trade Liberisation and Revealed Comparative Advantage. The Manchester School: UK

Baroh I, Setiawan B, Hanani N, Koestiono D. (2014). Indonesian Coffee Competitiveness in the International Market: Review from the Demand Side Variables. International

Journal of Agriculture Innovations and Research. 3(2): 605-609.
Baso RL dan Anindita R. (2018). Analisis Daya Saing Kopi Indonesia. Jurnal Ekonomi Pertanian dan Agribisnis. 2(1): 1-19
Eita JH. (2008). Determinants of Namibian Exports: A Gravity Model Approach, The Journal of Developing Areas. 50(4): 1-12
Esterhuizen. (2006). Measuring and Analysing Competitiveness in The Agribusiness Sector: Methodological and Analytical Framework. University of Pretoria: Pretoria.
Gul N & Yasin HM (2011). The Trade Potential of Pakistan: An application of the gravity model. The Lahore Journal of Economics. 16(1): 23-62.
Kanaya, I & Firdaus, M. (2014). Daya saing dan permintaan ekspor produk biofarmaka Indonesia di negara tujuan utama periode 2003-2012. Jurnal Manajemen dan Agribisnis. 11(3): 183–198.
Maulana, A & Kartiasih, F. (2017). Analisis ekspor kakao olahan Indonesia ke sembilan negara tujuan tahun 2000–2014. Jurnal Ekonomi dan Pembangunan Indonesia. 17(2): 103–117.
Shah, M. et al. (2020). The Development Impact of PT. Medco E & P Malaka on Economic Aspects in East Aceh Regency. Budapest International Research and Critics Institute-Journal (BIRCI-Journal). P. 276-286.
Suharno & Zuhdi, F. (2016). Analisis Daya Saing Ekspor Kopi Indonesia dan Vietnam di Pasar ASEAN 5. Jurnal Ekonomi Pertanian. 26(3): 152-162.