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COMPETITIVE ANALYSIS OF TURKEY'S POLYPROPYLENE IMPORT MARKET

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ABSTRACT

The purpose of the study is to reveal possible trade partners of Turkey's polypropylene imports through competitive analysis. Polypropylene, a basic raw material, is used extensively in many sectors. Turkey stands out as the largest importer after China in world polypropylene market. Additionally, Turkey's rapidly growing automotive, construction and plastics industries lead to a continuous increase in the demand for polypropylene products, which makes it necessary to address the issue. In this direction, the world polypropylene industry has been examined within the scope of international trade data and the global competition analysis of Turkey's polypropylene imports has been revealed by the target market matrix method. Respectively, Saudi Arabia, Egypt and South Korea are the countries from which Turkey imports mostly. However, according to the results of the analysis, the Russia and India were included as the primary target countries for Turkish importers and Turkish market should be seen as an opportunity for global polypropylene exporters and investors. There are very limited studies in the selection of target markets for imports. Therefore, this study will contribute to the literature as the first polypropylene import market analysis.

Keywords: Competitive analysis, international trade, polypropylene market, Turkey's import

JEL Codes: F40, L10

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1. INTRODUCTION

According to David Ricardo's (1891), "The Theory of Comparative Advantage", a country should produce low-cost products for which it is more advantageous in production and import high-cost products. Foreign trade, commercial relations between countries, levels of specialization in different industries depending on different coefficient densities, different levels of development, proximity and distance between countries, existence of common borders, speaking the same language, common history, close cultural-traditional characteristics and depends on criteria such as commercial agreements among themselves (Balassa and Bauwens, 1987). Import activities, on the other hand, are considered an important dimension of international marketing, as it leads to an increase in exports by outsourcing and can be the most effective and efficient way to develop products for international markets (Albaum et al., 2016). At this point, a country has to import a product that it cannot produce due to various reasons such as insufficiency of technology, information, and capital.

Propylene is the second largest volume chemical produced worldwide after ethylene. The largest output of propylene is polypropylene, and it is an important raw material for the production of a wide variety of industrial products and organic chemicals such as acrylonitrile, propylene oxide and oxo alcohols (IHS Markit, 2020). Polypropylene can be used in many different areas such as packaging, textiles and household goods due to its easy processability and attractive cost/performance balance (Chen et al., 2007). Also, the automotive industry is an emerging market for polymer consumption, particularly for polypropylene, as it helps reduce vehicle weight in fuel efficiency (The Gulf Petrochemicals and Chemicals Association, 2021).

Polypropylene is one of the fastest growing commercial thermoplastic resins in the world. Polypropylene is a lightweight, versatile polymer with excellent chemical resistance, with relatively high stiffness and a high melting point compared to other polymers such as polyethylene. The global polypropylene market size is 117.8 billion dollars in 2020. Highlights of the polypropylene market; the increasing application of this material in fiber, raffia, film and sheet, and the increasing use of this material in vehicles as it increases the fuel efficiency of the automotive industry (Grand View Research, 2021). The highest consumption of polypropylene in the world is made by China. This is followed by Europe, North and South America and other Asian Countries (IHS Markit, 2020).

The main polypropylene consumption areas in the world are listed as follows: packaging materials, automotive industry components, films, plastic pipes, fiber and fibrous materials, sheets, plastic furniture and building elements (Genis, 2017). It is expected that global polypropylene consumption will continue to increase in the 2019-2024 period, with the impact of emerging markets in Asia, especially China. Propylene is demanded by Asian countries, followed by Europe, North America and South America (IHS Markit, 2020).

In recent years, developments in world trade that facilitate global foreign trade opportunities allow the free movement of products, capital and labor between countries, while increasing international competition (Baldwin, 2006). Turkey, which is among the developing

countries, needs a high amount of polypropylene and polyethylene for its industrial production. Petkim's polypropylene factory has an annual capacity of 144,000 tons. In 2020, Turkey imported 2,048,367 tons of polypropylene. Assuming that the Petkim factory is operating at full capacity, Turkey's total polypropylene need is 1,904,367 tons. In this case, it has the capacity to meet 7.0% of its annual need (Çukurova Development Agency, 2021). Although Turkey is one of the most important polypropylene importing countries in the world, domestic production is far from meeting the demand. Domestic consumption forecasts show that import dependency will reach 98% in the next few years. From this point of view, it is seen that Turkey is an important market for existing or potential petrochemical plants for polypropylene production (Pagev, 2015).

Due to the reasons mentioned above, it is considered important to investigate the polypropylene trade, which is valuable for both world trade and imports of Turkey. In addition, Turkey's current and future need for polypropylene increases the importance of this study. Although the subject is mentioned in the sectoral reports of various research institutions, there is a scientific article gap in the literature on the international trade of polypropylene. In particular, the fact that there is no import market research on Turkey's propylene import reveals the originality of the study. Accordingly, the purpose of the study is to examine the world polypropylene market within the scope of international trade data and perform global competition analysis of Turkey's polypropylene imports. In the study, first the determined objectives were included, then the methodology was explained, and the implementation of the application was shown. Finally, the conclusion part was formed with the help of the interpretation of the obtained findings.

2. OBJECTIVES

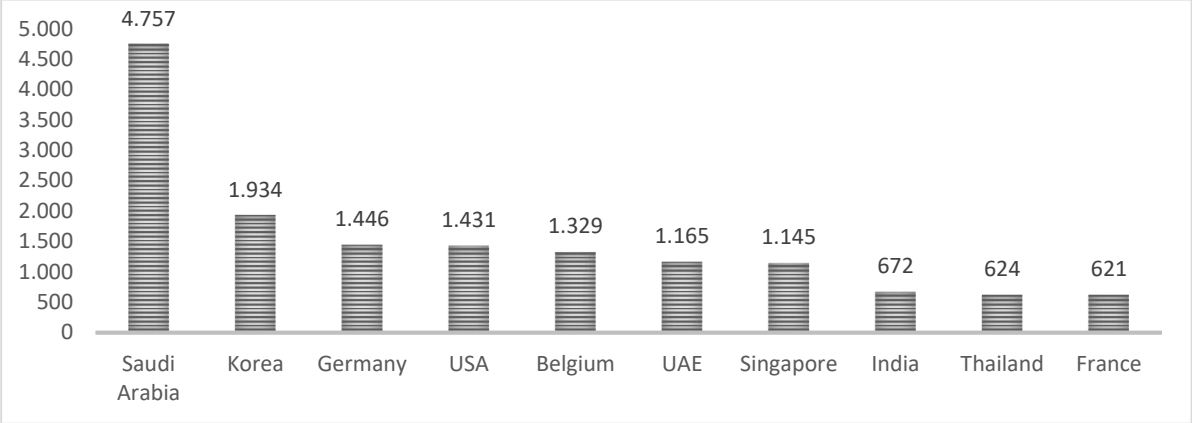
The aim of this study is, at first, to provide an overview of the world polypropylene industry. Secondly, to analyze the competitive structure of the Turkish polypropylene import market. Thirdly, to develop the Turkish polypropylene import target market matrix, and last, to discuss the results of this and to reveal the competitive structure in the exporting countries.

2.1. Overview of The World Polypropylene Industry

The global polypropylene market is controlled by several countries located in North America, Asia and Middle East regions (Samruk Kazyna, 2017). These manufacturers differ in terms of the technology they use and the quality of the products they produce. Especially the Middle East region has an important share in world exports. It is accepted that the leading producers of the region are Saudi Arabia, United Arab Emirates and Kuwait (GPCA, 2012).

The graph of the countries that export the most in world exports shows the top 10 exporting countries in 2020. When the image is examined, the countries with the highest world polypropylene exports in 2020 are sorted as; Saudi Arabia, South Korea, Germany, USA, Belgium, United Arab Emirates (UAE), Singapore, India, Thailand and France.

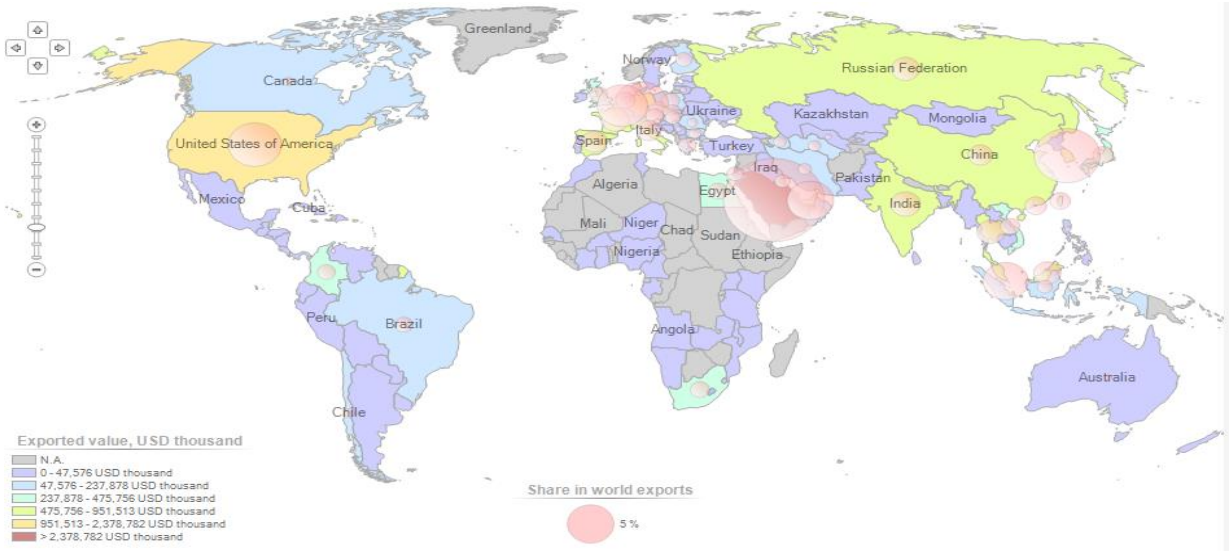
Figure 2.1. Top 10 Countries in World Export (2020, billion $)



Source: Developed by the authors. The data collected from trademap.org

The chart below shows the world map in terms of world polypropylene exports, its export value and its share in world exports. In 2020, world polypropylene exports amounted to 25.5 billion dollars. Looking at the regions with a share of over 5%, in line with the chart above; Saudi Arabia (18.6%), South Korea (7.6%), Germany (5.7%) and the USA (5.6%) create 37.5% of world exports.

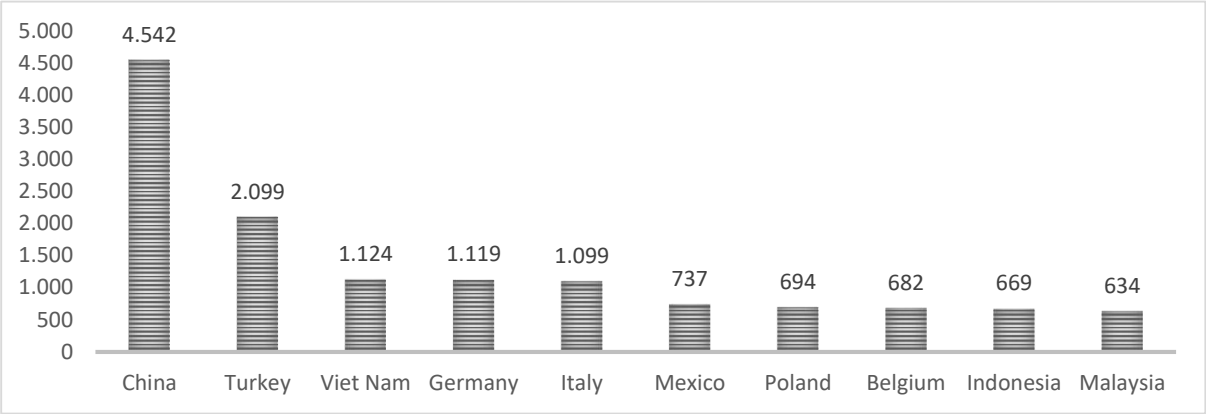
Figure 2.2. Polypropylene export world map and regions with a share of more than 5% from the world market



Source: trademap.org

The chart below shows the top 10 importing countries in the world. According to this, the countries that import the most polypropylene in the world in 2020 are; China, Turkey, Vietnam, Germany, Italy, Mexico, Poland, Belgium, Indonesia, Malaysia.

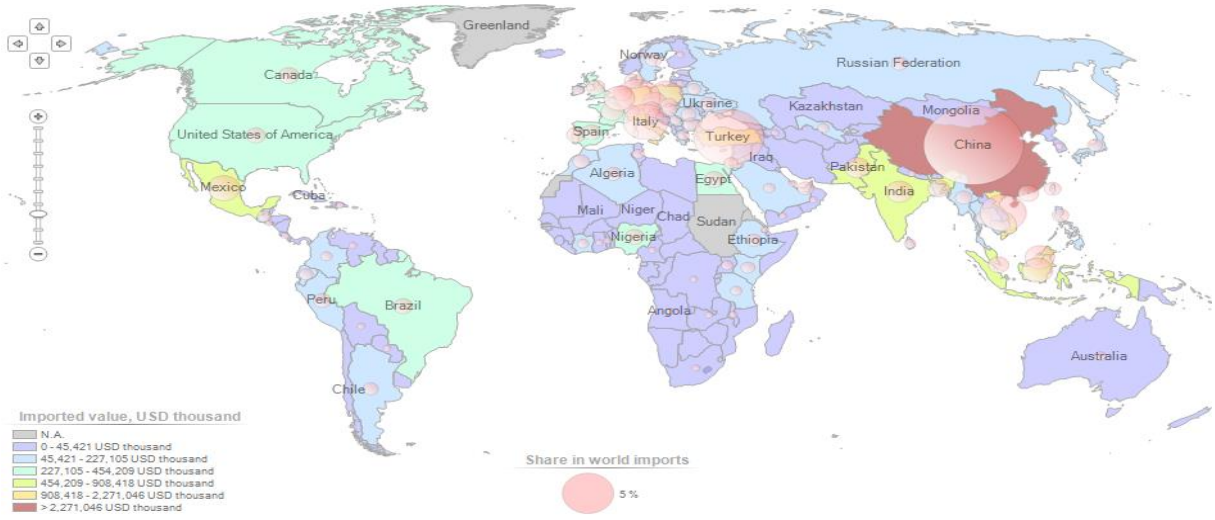
Figure 2.3. Top 10 Countries in World Imports (2020, billion $)



Source: Developed by the authors. The data collected from trademap.org

The figure below shows world polypropylene imports in terms of import value. In 2020, world polypropylene imports amounted to 27 billion dollars. Looking at the regions with a share of over 5%, China (16.8%), Turkey (7.8%), Vietnam (4.2%), Germany and Italy (4.1%) account for 37% of world imports. This is also confirmed by the chart above.

Figure 2.4. Polypropylene import world map and regions with a share of more than 5% from the world market



Source: trademap.org

2.2. Literature Review

In the literature, there are articles containing technical analysis on polypropylene as a material, and there are several sectoral commercial reports. However, the number of scientific studies on the international trade of polypropylene is very limited.

Boyce (1995) discussed the competitiveness of polypropylene within the framework of its market price and environmental effects. Ismail et al. (2008) focused on the export performance of polypropylene in Malaysia in their research. Genis (2017) conducted a research on the growth rate of polypropylene consumption for global markets and the Russian market

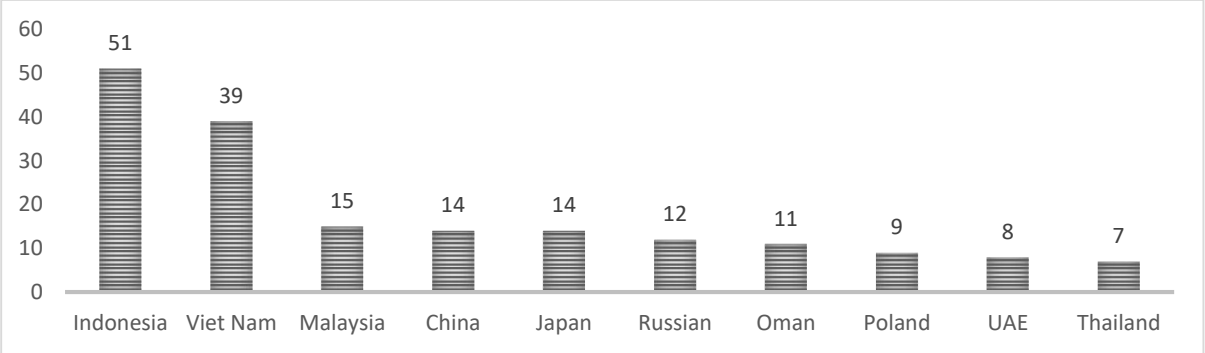
and stated its usage areas in the industry. Maddah (2016) made technical analyzes on polypropylene and explained its market and usage areas.

On the other hand, although there are number of studies focusing on export target market of variety trading products, there are very limited studies for the target market selection in importation. Therefore, this study will contribute to the academy as the first polypropylene import market analysis in the literature.

2.3. Surplus in Exporting Countries

The chart below shows the countries that increased their polypropylene exports the most in the 2016-2020 period. Countries that exported over 100 million dollars in the polypropylene business and increased their exports the most in the last five years are included. Indonesia comes first with an increase of 51%. After Indonesia, Vietnam ranks second with an increase of 39%, and Malaysia ranks third with an increase of 15%.

Figure 2.5. Surplus in Export Countries (among the countries over 100 million $) Top 10 countries in 2016-2020, %

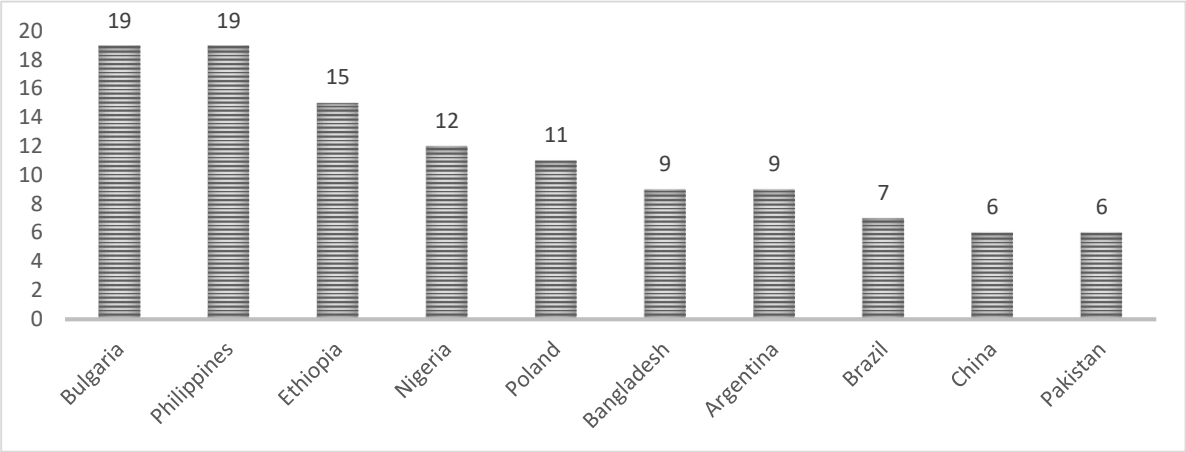


Source: Developed by the authors. The data collected from trademap.org

2.4. Shortage in Exporting Countries

The chart below shows the countries that increased their imports the most in the 2016-2020 period. The chart includes the countries with the highest imports of over $100 million in the last 5 years. Bulgaria was in the first place with an increase of 19%. After Bulgaria, the Philippines took the second place with an increase rate of 19%, and Ethiopia took the third place with an increase rate of 15%.

Figure 2.6. Shortage in Import Countries (2016-2020, %)

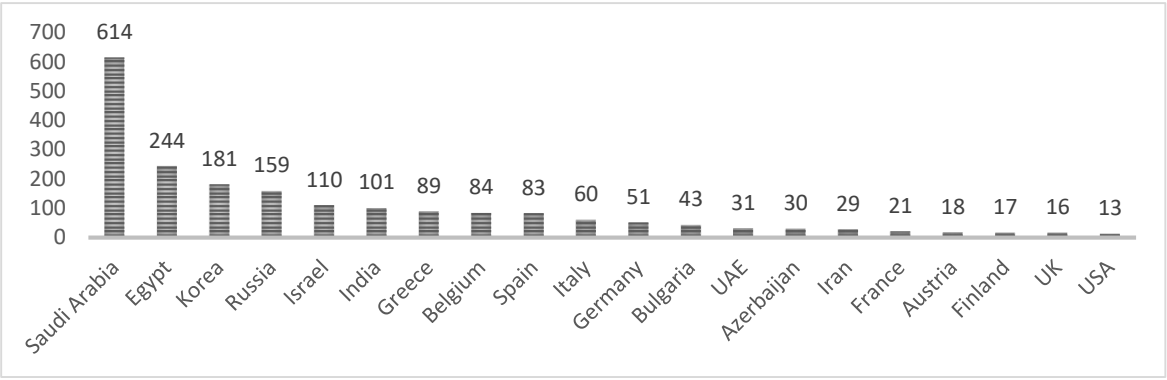


Source: Developed by the authors. The data collected from trademap.org

2.5. Turkey's Polypropylene Import

The chart below shows the top 20 countries from which Turkey imports the most in the propylene sector. When we look at the countries, Saudi Arabia ranks first with an import figure of 614 million dollars. After Saudi Arabia, Egypt ranks second with an import of 244 million dollars, and South Korea ranks third with an import of 181 million dollars.

Figure 2.7. Top 20 Countries of Turkey's Import (2020, Billion $)



Source: Developed by the authors. The data collected from trademap.org

3. METHODOLOGY

The "target market matrix" developed by Koç (2016), which makes commercial flows between countries filterable and focused on a single product basis, is used as a method in this study. This matrix provides the format required for the evaluation of big data in target market determination by seeing all possible criteria in a single table and expressing the criteria in numerical intervals. Moreover, different data sets are made target-oriented by changing their center of gravity with this matrix.

The statistical data used in this study were taken from Trademap, the database of the International Trade Center (ITC). The ITC database periodically collects and updates statistical data on the basis of 6-digit GTIPs from government sources. The data obtained were filtered based on the years 2015-2020 and used in the creation of the tables to be interpreted in the study.

4. FINDINGS

While determining the target import market, the ranking of six different indicators among the world countries was taken into consideration. Grading was made by subtracting the weighted score of these indicators according to the order of importance. This order of importance has been determined based on the opinions received from the experts of the companies that import this HS numbered product. The order of this evaluation method is as follows:

Table 4.1. Evaluation Method - Import/Export Status

Evaluation Method – Import/Export Status	Rank of Importance	Importance Coefficiencies
Top Exporting Countries in World Exports in 2020	6	1
Countries with the Most Imports by Turkey in 2020 in Quantity Indicator	5	2
Countries with the Most Imports by Turkey in 2020 in Unit Price Indicator	4	3
Closest Countries As Distance (km) in Turkey Imports	3	4
Countries with the Most Affordable Unit Price in USD in World Exports	2	5
Countries with the Most Affordable Unit Price in USD for Turkey Imports	1	6

According to these indicators, the first nine countries that came to us through various filters were classified as primary, secondary and tertiary country markets in the ranking. A weighted score came to the fore for each of them according to their primary, secondary and tertiary status:

Table 4.2. Market evaluation method

Evaluation Method - colour	Rank of Importance
Primary Market	1
Secondary Market	2
Tertiary Market	3

For example, when we look at the part of ‘Countries with the Most Affordable Unit Price in USD for Turkish Imports', that criteria is at the first position as a rank of importance and the coefficient is higher than the others. Therefore, the top three countries (primary market) in this criteria were multiplied by the weighting score come from that criteria, and each country earned

a point for this indicator. For each indicator, there is a score gain status depending on whether it is a primary, secondary or tertiary market.

When it comes to calculating the weight coefficient; for the criteria determined in rank of importance, a coefficient score was given based on the rank of importance. For example, a coefficient of 6 was assigned for the most important criteria and 1 for the least important criteria, and its percentage was determined according to these factors. According to this calculation, the coefficient scores of the criteria were calculated as follows:

Table 4.3. Coefficient Scores

Evaluation Method – Import/Export Status	Weighted Score
Top Exporting Countries in World Exports in 2020	4.761904762
Countries with the Most Imports by Turkey in 2020 in Quantity Indicator	9.523809524
Countries with the Most Imports by Turkey in 2020 in Unit Price Indicator	14.28571429
Closest Countries As Distance (km) in Turkey Imports	19.04761905
Countries with the Most Affordable Unit Price in USD in World Exports	23.80952381
Countries with the Most Affordable Unit Price in USD for Turkey Imports	28.57142857

For example, the ‘Top Exporting Countries in World Exports in 2020' is in the 6th order of importance and the lowest importance coefficient is 1 point. There are 6+5+4+3+2+1 = 21 points in total. In this case, the following calculation was made to extract the weighted score for this criterion:

(1/21) x 100 = 4.7619…

To give an example for the criteria in the 5th order of importance, the score obtained here is 2:

(2/21) x 100 = 9.5238…

In the second stage, there is a separate weighted score for the primary, secondary and tertiary markets that appear in the ranking. Here, in ranking of importance, the weighted score is as follows:

Table 4.4. Evaluation method – Colour

Evaluation Method - Colour	Weighted Score
Primary Market	50
Secondary Market	33.33
Tertiary Market	16.67

For each country, the product of these two coefficients under each criterion was determined as the corresponding, and finally, the countries with the most points were ranked, and the target import markets were determined.

First, ‘Countries with the Most Affordable Unit Price in USD for Turkey Imports' criteria was examined from the Trademap data. In 2020, the average amount of products imported by Turkey from exporter countries is 38,000 tons. Therefore, while determining the

markets in this indicator, the countries which Turkey imported 38.000 tons or more annually are taken as a basis. Accordingly, the primary markets were Russia, India and Saudi Arabia; secondary markets Bulgaria, Egypt and Greece; tertiary markets were identified as Israel, Spain and the Republic of Korea.

Secondly, 'Countries with the Most Affordable Unit Price in USD in World Exports' criteria was examined. For this criterion, the average amount is about 187,000 tons and the countries that are above this average were taken as a basis. Accordingly, the primary markets are Malaysia, India, Russia; secondary markets S. Africa, Brazil and the U.A.E.; tertiary markets were identified as Japan, Thailand and Saudi Arabia.

Thirdly, 'Closest Countries as Distance (km) in Turkey Imports' criteria was examined. Here, again, the countries that Turkey imported this product 38.000 tons or up were taken as the basis. Accordingly, the primary markets are Bulgaria, Greece and Germany; secondary markets Belgium, Egypt and Italy; tertiary markets were identified as Spain, Russia and Israel.

Fourthly, 'Countries with the Most Imports by Turkey in 2020 in Unit Price Indicator' criterion was examined. Accordingly, the primary markets are Saudi Arabia, Egypt and the Republic of Korea; secondary markets are Russia, Israel and India; tertiary markets were identified as Greece, Belgium and Spain.

Fifthly, 'Countries with the Most Imports by Turkey in 2020 in Quantity Indicator' criterion was examined. Accordingly, the primary markets are Saudi Arabia, Egypt and Russia; secondary markets are the Republic of Korea, India and Israel; tertiary markets were identified as Greece, Spain and Belgium.

Sixth and lastly, 'Top Exporting Countries in World Exports in 2020' criterion was examined. Accordingly, the primary markets are Saudi Arabia, the Republic of Korea and Germany; secondary markets U.S.A., Belgium and Singapore; tertiary markets were identified as U.A.E., India and Thailand.

Based on the above data, the scoring result, which was created with weighted coefficients, is given below. Accordingly, Turkey's target import markets were detected as:

- Primarily: Russia, India, Saudi Arabia

- Secondarily: Egypt, Greece, Bulgaria

- Tertiary: Republic of Korea, Israel, Spain

Considering the above-mentioned criteria, it will be advantageous for the importer companies located in Turkey to turn their route to these markets for the product HS coded 3902.10.

Table 4.5. Target Market Score by Weighted Averages

Rank	Countries	Target Market Score by Weighted Averages
1	Russıa	3,888.90
2	India	3,492.00
3	Saudi Arabia	3,254.05
4	Egypt	2,777.62
5	Greece	2,301.57
6	Bulgaria	1,904.67
7	South Korea	1,746.10
8	Israel	1,587.38
9	Spain	1,190.71

However, for each HS code, customs duty may occur in importer country depending on the exporter country. However, these customs duties may change or zero for countries with FTA signed by Turkey.

For the 3902.10 HS coded product, the customs duty is 6.5% if it is imported from countries outside the European Union, and 0% for products coming from European Union countries with an A.TR certificate (Republic of Turkey, Ministry of Trade).

According to these rates, a change may be required for the criteria of ‘Countries with the Most Affordable Unit Price in USD for Turkey Imports'. Because in the Trademap data, the determination was made according to the ranking of the unit prices (according to the specified average import amount). Accordingly, if 6.5% customs duty is added to the unit prices for countries outside the European Union, the import target market ranking will be as follows:

Table 4.6. Target Market Score by Weighted Averages

Rank	Countries	Target Market Score by Weighted Averages
1	Russia	3,888.90
2	India	3,492.00
3	Saudi Arabia	2,777.77
4	Bulgaria	2,380.95
5	Egypt	2,301.62
6	Greece	2,301.57
7	South Korea	1,746.10
8	Spain	1,666.71
9	Israel	1,587.38

5. DISCUSSION AND CONCLUSION

By 2020, the volume of world polypropylene trade has exceeded 50 billion dollars. Turkey is the country that imports the most polypropylene in the world, after China, with a share of 7.8% ($2.099 billion). Turkey's developed and ever-growing construction business, the

rising trend of the plastics industry, its investments in the automotive business and especially the new breakthrough in the electric automobile business show that the need for propylene will continue to increase in the coming years. The fact that the polypropylene supply in the country is far from meeting the demand made it necessary to analyze the polypropylene import market and formed the main purpose of this study. The important thing is to produce raw materials with high added value in Turkey. The duties paid while importing raw materials such as polypropylene and polyethylene, which the industry cannot meet domestically, adversely affect competition. It is known that when Turkey eliminates these disadvantaged issues, the plastics industry will further increase the added value it provides to the Turkish economy (Pagev, 2021).

If we come to the matrix part of the study, the target import markets for this product, which Turkey has an import surplus, were determined with the help of the matrix study and it was recommended that the product importers in Turkey import from these countries.

Markets were determined according to the following criteria:

- Top Exporting Countries in World Exports in 2020
- Countries with the Most Imports by Turkey in 2020 in Quantity Indicator
- Countries with the Most Imports by Turkey in 2020 in Unit Price Indicator
- Closest Countries as Distance (km) in Turkey Imports
- Countries with the Most Affordable Unit Price in USD in World Exports
- Countries with the Most Affordable Unit Price in USD for Turkey Imports

In the study, the averages determined for each criterion were taken into account and the markets were included in the evaluation accordingly. In addition, the ranking of importance was determined according to the opinions of industry experts and managers. As a result of these analyzes and studies; Russia, India and Saudi Arabia are primary target markets; Egypt, Greece and Bulgaria are secondary target markets; The Republic of Korea, Israel and Spain are tertiary target markets.

The study was carried out using secondary data and it was aimed to give guidance to the companies that import polypropylene. Based on the purpose of the article, target markets have been determined for the related product. Those who will do research on this subject should definitely make a coefficient research and score in the country ranking by paying attention to which factor is at the forefront throughout the sector. However, the accuracy of secondary data can be supported by field studies, which we call primary data, and the main reasons for the ups and downs observed in the sector in Turkey can be found.

In conclusion, the purpose of the study is to evaluate the world's polypropylene trade and to analyze Turkey's polypropylene imports. Its practical implications will be to guide the

companies operating in the polypropylene sector, and the managers will be able to benefit from the outputs of the study while developing their import strategies. Theoretically, it is a research on one of the important products in Turkey's imports; reveals the importance of the study and will contribute to the literature. It will also pave the way for future work. In future studies, researchers may focus on analyzing both exports and imports of Turkey's foreign trade by considering other products that demonstrate Turkey's competitiveness.

REFERENCES

Albaum, G., Duerr, E., & Josiassen, A. (2016). *International Marketing and Export Management. (Eighth Edition)*. Pearson Education Limited. Harlow, UK.

Balassa, B., & Bauwens, L. (1987). Inrta-Industry Specialisation in A Multi-Country and Multi-Industry Framework, *The Economic Journal*, Vol. 97, No: 388.

Baldwin, R. (2006). *Globalisation: The Great Unbundling(s)*, Globalisation Challenges for Europe and Finland, Secretariat of Economic Council.

Boyce, J. K. (1995). Jute, polypropylene, and the environment: a study in international trade and market failure. *The Bangladesh Development Studies*, 49-66.

Chen, H., Wang, M., Lin, Y., Chan, C-M., & Wu, J. (2007). "Morphology and mechanical property of binary and ternary polypropylene nanocomposites with nanoclay and CaCO3 particles", *Journal of Applied Polymer Science*, 106, 3409-3416.

Çukurova Kalkınma Ajansı. (2021). *Petrokimya ve kimya sektörü araştırma çalışması*. https://www.cka.org.tr/uploads/document_center_v/petrokimya-ve-kimya-sektoru-arastirma-raporu06102021-910.pdf

Genis, A. V. (2017). Analysis of the global and Russian markets of polypropylene and of its main consumption areas. *Russian Journal of General Chemistry*, 87(9), 2137-2150.

Gulf Petrochemicals and Chemicals Association (GPCA) (2012). *GCC Petrochemicals &Chemicals Industry 2012 Report*. https://www.gpca.org.ae/adminpanel/pdf/ff12e.pdf.

Ismail, A. Z. B. H., Selamat, S. B., & Ahmed, E. M. (2008). The Malaysian polypropylene industry outlook in facing ASEAN Free Trade Area (AFTA) deregulation. *International Business & Economics Research Journal (IBER)*, *7*(6).

IHS Markit. (2020). *Chemical Economics Handbook*. https://ihsmarkit.com/products/propylene-chemical-economics-handbook.html.

Jiang, X., Wang, T., Jiang, M., Xu, M., Yu, Y., Guo, B., & Zhu, B. (2020). Assessment of plastic stocks and flows in China: 1978-2017. *Resources, Conservation and Recycling*, *161*, 104969.

Koç, Y. (2016). *Yeni Nesil Dış Ticaret İstihbaratı, Veriyi Konuşturma Sanatı*. Kuzgun Kitap. Bursa.

Maddah, H. A. (2016). Polypropylene as a promising plastic: A review. *American Journal of Polymer Science*, *6*(1), 1-11.

Pagev. (2015). *Dünya ve Türkiye Polipropilen Raporu 2015*. https://pagev.org/upload/files/Hammadde%20Yeni%20Tebli%c4%9f%20Bilg.%203/D%c3%bcnya%20ve%20T%c3%bcrkiye%20Polipropilen%20Raporu%202015.pdf

Pagev. (2021). *Türkiye Plastik Sektör İzleme Raporu 2021/6*. https://pagev.org/upload/files/Plastik%20%20Sekt%C3%B6r%20Raporu%202021%20-%20Ocak%20-Haziran.pdf

Grand View Research (2021) *Polypropylene Market Size, Share & Trends Analysis Report By Type (Homopolymer, Copolymer), By Process (Injection Molding, Blow Molding), By Application, By End Use And Segment Forecasts, 2021 – 2028*. https://www.grandviewresearch.com/industry-analysis/polypropylene-market.

Republic of Turkey, Ministry of Trade. *Customs Guide*. https://gumrukrehberi.gov.tr/anasayfa.

Ricardo, D. (1891). *Principles of political economy and taxation*. G. Bell and sons.

Samruk Kazyna (2017). *Global Polypropylene Market Outlook*. https://www.sk.kz/upload/iblock/713/713c4a54b6fdb2183807bba0dc84cbb3.pdf.