# ARTIFICIAL INTELLIGENCE APPLICATIONS IN E-EXPORT: TURKIYE ANALYSIS

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## ABSTRACT

**Purpose-** The purpose of this study is to  analyzes will be made about how artificial intelligence applications in e-export and how it will affect Turkey's export capacity and productivity with the innovations it will bring in the context of technology. It is researched how e-export can play a more active role with artificial intelligence in the context of public, private sector and individuals.

**Methodology-** The methodology of the study will be analyzed through literature review and secondary data. Based on the analysis, grouping (topic and keywords) clustering will be emphasized and interpreted. The study was made in the form of compilation from different sources.

**Findings-** The analysis reveals that the secondary data analysis, based on artificial intelligence and big data are evaluated, the countries with which Turkey cooperates in e-export are European, Asian and African countries. It is seen that  the transactions made with these countries based on artificial intelligence, they can be considered as subjects that need to be studied because they are mostly new technologies. When the subject of e-export and artificial intelligence is examined by countries, its place and strategic importance in international trade can be seen. This situation occupies an important place especially in terms of Turkey's e-export.

**Conclusion-** Based upon the analysis findings it may be concluded that It has been seen that the cooperation of academia and private sector is important in the applications of artificial intelligence in e-export, especially in applications in Turkey. Turkey's e-export performance is contributed by public policies and especially by the systems developed by the Ministry of Commerce to make exporters easier and more efficient transactions by giving importance to this area. As a result of these practices, it is aimed that there will be an increase in Turkey's total export figures and significant positive effects on the current account deficit and the ratio of imports to exports. The increase in the use of artificial intelligence in e-export accelerates efficiency and transactions. In the study, it is stated that the cooperation between the public and private sector and artificial intelligence applications in e-export have a high importance in Turkey.

**Keywords:** E-export, Artificial Intelligence, Easy Export Platform, Ministry of Commerce, Secondary Data Analysis
**JEL Codes:** A10, B22, F10

# E-İHRACATTA YAPAY ZEKA UYGULAMALARI: TÜRKİYE ANALİZİ

## ÖZET

**Amaç-** Bu Çalışmanın  amacı , e-ihracatta ya pay zeka  uygulamalarının  teknoloji bağlamında getireceği yeniliklerle Türkiye'nin ihracat Kapasitesini  ve verimliliğini  nasıl etkileyeceği ile ilgili analizlerin yapılacak olmasıdır. Kamu,özel sektör ve bireyler bağlamında e-ihracatın yapay zeka ile nasıl daha aktif rol oynayacağı  araştırılmaktadır.

**Yöntem -** **Ç**alışmanın metodolojisi, literatür taraması ve ikincil veriler aracılığıyla analiz edilecektir. Analize dayalı olarak gruplama (konu ve anahtar kelimeler) kümeleme üzerinde durulacak ve yorumlanacaktır. Çalışma farklı kaynaklardan derleme şeklinde yapılmıştır.

**Bulgular-** Analiz, yapay zeka ve büyük veriye dayalı ikincil veri analizi değerlendirildiğinde, Türkiye'nin e-ihracatta işbirliği yaptığı ülkelerin Avrupa, Asya ve Afrika ülkeleri olduğunu ortaya koymaktadır. Yapay zekaya dayalı olarak bu ülkelerle yapılan işlemlerin, çoğunlukla yeni teknolojiler olması nedeniyle üzerinde çalışılması gereken konular olarak değerlendirilebileceği görülmektedir. E-ihracat ve yapay zeka konusu ülkeler bazında incelendiğinde uluslararası ticaretteki yeri ve stratejik önemi görülebilmektedir. Bu durum özellikle Türkiye'nin e-ihracatı açısından önemli bir yer tutmaktadır.

**Sonuç**- Analiz bulgularına dayanarak, e-ihracatta yapay zeka uygulamalarında, özellikle Türkiye'deki uygulamalarda, akademi ve özel sektör işbirliğinin önemli olduğu görülmüştür. Türkiye'nin e-ihracat performansına, kamu politikaları ve özellikle Ticaret Bakanlığı'nın bu alana önem vererek ihracatçıların işlemlerini daha kolay ve verimli hale getirmek için geliştirdiği sistemler katkıda bulunmaktadır. Bu uygulamalar sonucunda, Türkiye'nin toplam ihracat rakamlarında artış sağlanması, cari açık ve ithalatın ihracata oranı üzerinde önemli olumlu etkiler sağlanması hedeflenmektedir. E-ihracatta yapay zeka kullanımının artması, verimliliği ve işlemleri hızlandırıyor. Çalışmada, Türkiye'de e-ihracatta kamu ve özel sektör iş birliği ve yapay zeka uygulamalarının büyük önem taşıdığı belirtiliyor.

**Anahtar Kelimeler**: E-ihracat, yapay zeka, kolay ihracat platformu, ticaret bakanlığı, ikincil veri analizi
**JEL Kodları:** A10, B22, F10

## 1. INTRODUCTION

The global economy has evolved into a more technologically intensive phase in the last 20 years. They are putting into effect various systems in order for countries to become even more competitive and to get a larger share from global trade. Increasing export revenues, which is the most important factor for countries to close their current account deficits, especially by making value-added production, is seen to the same extent as the level of development. Especially the Covid-19 pandemic, which has affected the whole world, has also changed the way countries do foreign trade, and has been effective in moving export models to more digital channels. Especially online shopping has brought with it a movement not only within the country but also between countries. The export figures of countries such as China and America, which have a larger share in global trade, have shown an increasing trend over the years. Along with the world, especially in Turkey, has developed in terms of e-commerce. and accordingly, the expectations in the e-export figures are that there will be an increase in the future. In this sense, it is thought that artificial intelligence-based transactions in e-export will contribute positively to the export figures and increase the transaction speed and increase the efficiency in the transactions. In this sense, the use of artificial intelligence in e-export will be an important indicator in terms of economic size and increase in welfare.

## 2. LITERATURE REVIEW

Artificial intelligence is the science of transferring the perception of the human brain to intelligent technologies and robotic machines by modeling the characteristics of the human brain, such as providing information, seeing, perceiving, and making decisions (Shabbir & Anwer, 2015:1-2). With the change in consumption habits and consumption preferences of consumers and consumption crossing borders, trade has become transnational. Therefore, global trade has also moved to online platforms and higher data have been obtained every year compared to the previous year. As of 2019, the total e-retail sales in the world We have seen that it has reached 14% of the trade (Gedik, 2021:185). The shift of our consumption habits to online channels has paved the way for the product purchasing experience to change and transform day by day. E-commerce has started to take more place in our lives. E-commerce, one of the fields where artificial intelligence is used,with artificial intelligence, it has created important transformations and started to take an important place in human life. For this reason, the behavior and marketing activities of consumers and businesses have changed completely. In order for businesses to integrate artificial intelligence into their marketing strategies, they need to keep up with the businesses they compete with or be ahead of them (Pradeep et al., 2019:30). Compared to other areas of e-commerce, it requires less capital.higher profits have made it one of the areas that many entrepreneurs are interested in and preferred. End In the e-commerce field, the important events that have occurred and are likely to emerge both in the world and in Turkey, due to the developments, the necessity of examining e-commerce has emerged. In e-commerce, many operations such as artificial intelligence applications, customer recognition and retargeting, making suggestions, personalization, smart search services, chatbots and virtual assistants, dynamic pricing and stock management can be done.In order to sell the right product or service at the right place and time in marketing, it is necessary to know and target it. Marketers develop strategies related to the most appropriate time for customers and promotion activities to attract the attention of users. In this sense, it solves which service channel will be solved with which visuals with artificial intelligence applications. The fact that a large proportion of shopping in the world is made over the internet in the recent period has enabled the development of e-commerce.Various insights are obtained from the behavior of customers in artificial intelligence supported recommendation systems, data analysis, content analysis, calculations made through applications such as probability, system modeling and machine learning, and e-commerce.Businesses enrich customers' shopping experiences by utilizing artificial intelligence-based recommendation systems that help create a sales plan by analyzing users' purchase history on e-commerce sites. Differentiation based on personalization is one of the most important issues in which intense competition is experienced.In areas where AI has the potential to be used, the AI e-commerce industry is becoming increasingly popular thanks to its ability to provide inexpensive, efficient and personalized services to its customers.This situation indicates an important situation for e-commerce sites to use personalization applications in order to maintain their existence and be successful.(Jackson, 2007:24-25).

## 3. DATA AND METHODOLOGY

The methodology of the study will be analyzed through literature review and secondary data. Based on the analysis, grouping (topic and keywords) clustering will be emphasized and interpreted. The study was made in the form of compilations from different sources. According to the studies conducted in Turkey, the e-export figures are approximately 11 times the normal export revenues (E-Ticaret Diary, 2015). According to the ETBIS data of the Ministry of Commerce, the e-commerce volume, which was 136 billion TL in 2019, is 2020. It reached 226 billion liras in 2017 and 381.5 billion liras in 2021. In 2022, the e-commerce volume in Turkey increased by 109% compared to the previous year and reached 800 billion TL. According to Euromonitor estimates, the e-commerce volume in Turkey will reach 2.3 times the current volume in 2025 with a 23.7 percent compound annual growth rate between 2020-2025. Likewise, the global compound annual growth rate will be 11.7 percent. With the increasing global shares of e-commerce and e-exports over the years, the changing habits of consumers have also increased the use of the internet for shopping. These changes have also increased Turkey's e-export capacity. While the retail value of e-commerce was 1.4 trillion dollars all over the world in 2017, it reached 3.5 trillion dollars in 2022. While the expenditures made from abroad in Turkey were 12.2 billion TL in 2019, this figure reached 33.8 billion TL in 2020. has risen to. Looking at the data, while the global cross-border e-commerce volume increased 2.5 times in the 5-year period covering the years 2017-2022, the volume of e-exports in Turkey increased 2.8 times, especially between the years 2019-2022. This situation shows us the potential of e-export in Turkey.

## 4. FINDINGS

With the phenomenon of globalization, the change in the perception of competition in the world, the spread of the internet and the increase in accessibility, artificial intelligence has become an important factor of technological revolutions and has started to be the basic input of the rapid development of the information sector and digital transformation in businesses (Özer-Çaylan and Çaylan, 2021: 222). ). Artificial intelligence applications are spreading at an increasing rate and is developing. However, considering the possibilities it offers to users, the

decrease in costs and its efficiency, its usage area has expanded considerably (Bayarçelik and Bumin-Doyduk, 2021: 87). Based on the years 2012-2016, it has been observed that the USA spent approximately 18.2 billion dollars and China 2.6 billion dollars on artificial intelligence (Thornhill, 2018) The impact of artificial intelligence in the economy is also increasing considerably. This effect is transforming the economy day by day. It is predicted that artificial intelligence will contribute 13 trillion dollars to the global economy in the process until 2030, and in this direction, countries will grow their economies by 16% (Bughin et al., 2018: 13). According to another study, it is estimated that the global artificial intelligence market, which was 1.8 billion dollars in 2016, will increase significantly to 190.11 billion US dollars by 2025 (Servoz, 2019).

## 5. CONCLUSION

In the coming years, companies that want to be more successful in e-export will gain more vital importance to use artificial intelligence applications. Artificial intelligence-based applications in businesses in the coming period will also bring employment to fewer employees. In the conditions of global competition and based on sustainability, businesses need to show a proactive approach, especially on the export side. Calling the age we live in as the age of digitalization may cause businesses that do not use artificial intelligence to lag behind their competitors. Therefore, it should be ensured that Turkey's export potential can be supported by artificial intelligence to show higher performance. Artificial intelligence will be an important factor in the competition on the export side in the future, as it is in all sectors. Countries will show faster and more effective export performances thanks to their artificial intelligence infrastructures and will contribute no less to their national economies in terms of current account surplus. Artificial intelligence technologies will positively affect the efficiency of exports, especially in terms of reducing costs and bureaucracy. Countries that have made a breakthrough in export figures in recent years, such as Turkey, should pay particular attention to artificial intelligence technologies and work to increase their export data and performance. Increasing the diversity of platforms that will facilitate export and Individuals who have not exported before should be informed with easy export modules and directed to the right markets. Thanks to the right product and the right market approach, the efficiency in exports and the opening of value-added products to foreign markets will be a driving force that will increase the awareness of our country. It will also provide an overall benefit by making positive contributions. The increase in our national incomes will have a positive effect thanks to technological infrastructure and artificial intelligence and will create an effect that will increase the welfare of the country. Increasing export figures with artificial intelligence will also be an important element for our integration with the world. The dynamism and speed it provides to our exports also contain positive elements on the increase in national incomes. The fact that e-commerce has been more effective and increasing in recent years in Turkey shows that the use of artificial intelligence will tend to increase further in the future.

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