

SOCIOECONOMIC EFFECTS OF NEWLY BUILT AIRPORTS IN TURKEY: A SWOT ANALYSIS FROM THE INDUCTIVE PERSPECTIVE**Lect. Armağan MACİT (Ph.D.)*** **Lect. Zafer DURAN (Ph.D.)**** **ABSTRACT**

Airports make significant contributions to the country's economy through the economic and social contributions they provide to the region in which they are located. In this context, many new airport infrastructure investments have been made in Turkey in recent years, such as the large-scale Istanbul Airport, Ordu-Giresun Airport, which was built on an embankment over the sea, and Çukurova Regional Airport. This study aims to evaluate the socioeconomic effects they have created by making a SWOT analysis of the airports that have been built and are under construction in Turkey in recent years, from an inductive perspective. In line with the findings obtained for all airports built in Turkey in recent years, the effects of new airports were discussed, and suggestions were made on how the policies for airport construction, which is one of the most important aviation infrastructure investments, should continue in the future.

Keywords: Airports, Socioeconomic Effect of Airports, SWOT Analysis.

Jel Codes: R40, R58, M10.

TÜRKİYE'DE YENİ İNŞA EDİLEN HAVALİMANLARININ SOSYO EKONOMİK ETKİLERİ: TÜMEVARIMSAL PERSPEKTİFTEN SWOT ANALİZİ**ÖZET**

Havalimanları buldukları bölgeye sağladıkları ekonomik ve sosyal katkılarla ülke ekonomisine önemli katkılar sağlamaktadır. Bu kapsamda Türkiye'de son yıllarda büyük ölçekli İstanbul Havalimanı, deniz üzerinde dolgu yapılarak inşa edilen Ordu-Giresun Havalimanı, Çukurova Bölge Havalimanı gibi pek çok yeni havalimanı altyapı yatırımı yapılmıştır. Bu çalışma, Türkiye'de son yıllarda inşa edilen ve inşaatı devam eden havalimanlarının SWOT analizini yaparak yarattıkları sosyoekonomik etkileri tümevarımsal bir bakış açısıyla değerlendirmeyi amaçlamaktadır. Türkiye'de son yıllarda inşa edilen tüm havalimanları için elde edilen bulgular doğrultusunda yeni havalimanlarının etkileri tartışılarak,

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en önemli havacılık altyapı yatırımlarından biri olan havalimanı inşaatına yönelik politikaların önümüzdeki yıllarda nasıl devam etmesi gerektiğine dair önerilerde bulunulmuştur.

Anahtar Kelimeler: *Havalimanları, Havalimanlarının Sosyoekonomik Etkisi, SWOT Analizi.*

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1. INTRODUCTION

Airports are often regarded by local governments as important infrastructure assets, as they foster regional economic development (Chen et al., 2021; Baker et al. 2015). Revenues from the services produced by the businesses within the airports and taxes from passengers and commercial products are the most prominent economic activities that shape this thought. The effects of airports on economic development are not limited to these. In addition to the employment created during the construction and operation of the airports, the increase in employment in other sectors in the region due to the attractiveness of the airports is seen as the indirect economic effects of the airports (Lu, 2011; Percoco, 2010). Because business centres are developing, and economic activities are increasing around the regions where airports are built (Macit, 2021). In addition, the economic activities carried out by the organizations that supply goods and services to the airports are among the indirect effects of the airports on the economy.

Another contribution of airports to the economy is facilitating trade and tourism. Airports enable international trade and tourism development by allowing passengers and goods to move around the world faster than other modes of transport. Since both trade and tourism are the main drivers of economic growth, airports have the potential to increase economic growth due to the space and time utility they create. This is an issue that concerns not only the city where the airport investment is made but also the adjacent cities. Cities bordering the city where the airport is located could carry out trade and tourism activities with many more regions through the established airport. In addition, an airport investment in a region not only affects service areas in adjacent cities but can also affect economic development in all other cities connected to the invested city through airport networks (Cohen et al. 2003). However, both the social and economic effects of airports are consequences that can be felt in the long run. Even when airports are fully operational, the expected socioeconomic gains may not be achieved for a long time.

To implement the most effective policies regarding airport investments and airline incentives, it is very important to accurately determine the impact of airport activities on regional economies (Blonigen and Cristea, 2015). However, it is quite difficult to do this. Although the economic benefits that an airport can bring to the region can be listed as employment opportunities, income generation, economic diversity, increased mobility, and taxes, these activities may cause commercial activities to shift regionally, thus limiting the growth in the national economy (Lu, 2011). Likewise, while the

increase in air traffic positively affects the employment of the service sector, it does not have a measurable effect on the employment of the manufacturing sector (Sheard, 2014).

Although the positive effects of aviation on the economy are accepted intuitively, the interdependence between aviation services and regional growth makes it very difficult to define such a causal relationship (Blonigen and Cristea, 2015; Florida et al., 2014; Sellner and Nagl, 2010). For this reason, airports should be examined by considering their unique characteristics.

In recent years, Turkey has been trying to implement policies and programs that will increase economic growth and social welfare by making transportation more economical, safe, comfortable, and uninterrupted. The desire to integrate the cities of Anatolia with international trade via airways, and Turkey's desire to become a transit air traffic centre due to its geopolitical position, are the most important sources of inspiration for these policies and programs. In this context, Turkey has been trying to implement these policies and programs in recent years, both by constructing new airports and making improvements in existing airports. However, since the dynamics of the regions where the airports are located differ, the returns obtained from the investments made also differ. For this reason, within the scope of the study, the socio-economic effects of the airports built in Turkey in recent years were handled separately, considering the dynamics of their respective regions, and then a general view was attempted to be formed by bringing together the findings. SWOT analysis was used in these analyses and recommendations were made to policymakers in line with the findings. In this context, within the scope of the study, international studies examining the regional effects of airports were first examined, then the SWOT analysis findings related to the airports that were the subject of the research were compared with the findings in the literature.

2. LITERATURE

The socioeconomic effects of airports are a very interesting area of research for many, especially policymakers and researchers. Therefore, the socioeconomic effects of airports are the focus of many studies in the literature. In this context, the studies that emerged from searches conducted in national and international databases are summarized below.

Robertson (1995) focused on the potential of airports to help regenerate regions experiencing economic depression in his work. In his research, he argued that airports could become the single largest employer in some regions, providing an important source of employment for low-skilled workers. He also suggested that airports could attract potential investors to regions experiencing economic difficulties and develop the tourism sector.

Hakfoort et al. (2001) attempted to measure the economic impact of Amsterdam Airport Schiphol on the Amsterdam region through the social accounting matrix for the region. In their study, they argued

that one employment at Schiphol Airport actually creates two employment effects with a multiplier effect, which may be greater in the economy of the country.

Yao and Yang (2008) examined the relations between airports operating in China with economic and geographical variables. In their research, they found that airport development was positively related to economic growth, industrial structure, and population density, and negatively related to land transportation.

Button et al. (2010) investigated the functional relationship between local air transportation and regional economic development, examining 66 small airports in Virginia. In their research, they argued that the causality between air traffic and economic development could not be determined clearly and that air traffic was both affected and was affected by economic development.

Lu (2011) concluded in his study examining the economic benefits and environmental costs of Taiwan Taoyuan International Airport operations that the airport has a direct impact on the economy with employment and income growth, and an indirect impact through supply chain mobility. Furthermore, he argued that the economic gains from airport activities outweighed the negative environmental effects caused by the airport.

Wang and Hong (2011) examined the competitive advantage of developing an airport city using a SWOT Analysis and a TOWS Matrix. As a result of their analysis of Taoyuan Airport, they identified its geographical location and transportation infrastructure as its most important advantages. On the other hand, they cited the lack of experience of the employees and the lack of modernity of the airport as its most obvious weaknesses. In addition, they identified the increasing demand due to the recent growth and globalization in Asian markets as the most important opportunity in their studies, and other organizations trying to enter the market as the most obvious threat, since the Chinese market is becoming increasingly attractive.

Florida et al. (2014) examined the role of airports in regional development in their study. In their research, they found that airports contribute significantly to regional development by increasing economic output per capita, but the level of contribution varies according to the size of the airport.

Matuskova et al. (2014) evaluated the economic position of Leos Janacek Airport in Ostrava, which is strategically located on the borders of the Czech Republic, Poland, and Slovakia, using a SWOT analysis. As a result of the evaluation, they determined that the biggest threat to the airport was competition with nearby airports. They identified increases in fuel prices, economic slowdown, and the bankruptcy of some airline carriers using the airport as other important threats. However, they claimed that new investments in the region would increase both passenger and cargo traffic, providing important opportunities for the airport.

Baker et al. (2015) examined the catalytic effects of regional air transport in Australia on regional economic growth, analyzing 88 regional airports in Australia over the period from 1985-1986 to 2010-2011. As a result of their research, they revealed the positive effects of airports on regional economic growth.

Bardai et al. (2017) also benefited from a SWOT analysis in their studies aiming to determine the strengths and weaknesses of Kuala Lumpur International Airport compared to its competitors in Southeast Asian countries. In their study, they compared Kuala Lumpur International Airport with Changi International Airport, Suvarnabhumi International Airport, and Soekarno-Hatta International Airport in terms of their strengths and weaknesses.

Sedláčková and Švecová (2018) tried to analyze the business environments of Slovakia's regional airports by using a SWOT analysis in their research based on Piešťany Airport. As a result of their research, they determined that there are long-term financing problems in Slovakia's regional airports, particularly Piešťany Airport and that an effective model is needed for the activities to be sustainable. They also argued that many airports have difficulty meeting operating costs due to low passenger traffic and should be subsidized.

Sheard (2019) revealed in his study on the relationship between airport size and urban growth that airports have a positive effect on service employment, particularly in settlements close to airports. He also argued that the expansion efforts to be carried out at the airports have the potential to create jobs for both new immigrants to the city and the residents of the region.

Fu et al. (2020), using generalized moments and dynamic panel data analysis approaches, found that airports directly contribute to the accommodation, food and manufacturing sectors in New Zealand, thereby benefiting economic growth.

Tan (2020) examined the role of the airport in the development strategy by utilizing SWOT analysis in his study of Dalian Airport. As a result of the analysis, he suggested that the economic development of Dalian airport should be based on the development of aviation products and logistics and the establishment of institutions and mechanisms for the coordinated development of the regional economy.

Deveci et al. (2020) benefited from a SWOT analysis in their studies investigating the impact of Istanbul Airport on Turkish Airlines (THY) and World Civil Aviation. As a result of their analysis, they determined the strengths of Istanbul Airport to be its brand value, geographical location, and high capacity. On the other hand, they identified THY's infrequent flights from Istanbul Airport to many destinations as a major weakness.

Chen et al. (2021) conducted studies on the central airports of China to investigate the spatial diffusion effects of airports on economic development. As a result of the studies, they found that air

passenger traffic, air cargo transportation, and flight frequency can cause more positive and greater spillover effects in all other neighbouring cities connected to the central cities through the airport network.

Şahin and Tektaş (2021) used a SWOT analysis in their research to evaluate the situation of civil aviation in Turkey. As a result of their research, they claimed that airports with increased connectivity have become popular locations for both domestic and foreign passengers, whereas airports that are not integrated with other transportation modes have lost customers. They emphasized that the airports built in Turkey in recent years have taken this issue into consideration.

When the reviewed literature was evaluated, Robertson (1995), Hakfoort et al. (2001) and Lu (2011) shared the conclusion that airports influence regional employment in their study for airports of different sizes in different regions. However, Button et al. (2010) did not find the effect of airports on economic growth significant in their study. Florida et al. (2014) and Baker et al. (2015), on the other hand, concluded that airports especially contribute to the regional economy. Studies with SWOT analysis in the literature seem to be an effective method in revealing the strengths and weaknesses of airports. Bardai et al. (2017), Sedláčková and Švecová (2018), Tan (2020), Deveci et al. (2020) and Şahin and Tektaş (2021) obtained many outputs about the strengths and weaknesses of airports in their study with SWOT analysis. These studies emphasize the locations, connectivity features, and tourism potential of airports.

As evident from studies in the literature, the socio-economic effects of airports vary depending on the region and country in which they are situated. This situation requires airports to be evaluated independently from each other. In this context, the general view of Turkey's new airports has been tried to be determined by evaluating each of the airports that have been put into operation and completed in recent years. The main motivation of this study is to examine whether the newly constructed airports in Turkey are influenced by regional characteristics, assess their potential contributions to both the regional and national economy, and explore the opportunities that these new airports' strengths may offer to Turkey.

3. METHODOLOGY

The study has intended to reveal the effects of the socioeconomic construction of new airports in Turkey over the last 10 years. Therefore, Istanbul Airport, Kütahya Zafer Airport, Ordu-Giresun Airport, Rize-Artvin Airport, Tokat Airport, and the ongoing construction of Çukurova Regional Airport and Gümüşhane-Bayburt Airport in Turkey have been addressed. The primary reason for selecting these airports for the study is that they were constructed through public-private cooperation methods as part of a government policy aimed at fostering regional development. This rationale for the government authorities to take the decision to build airports is highly questioned by the public, and some airports may receive criticism from the local people and the public in general. For this reason, examining these

airports and revealing the strengths, weaknesses, opportunities, and threats can be beneficial in many ways.

In the research, SWOT analysis was carried out by interpreting the findings obtained by considering the academic studies reached from various databases related to airports, the information obtained from the websites of the airports and the news about the airports.

The SWOT Analysis technique was used in this research. SWOT Analysis is an important situation analysis technique used in the strategic management process. It provides internal and external environmental analysis as a method used to evaluate the 'Strengths', 'Weaknesses', 'Opportunities', and 'Threats' of an organization, plan, project, person, or business activity (Gurl, 2019).

In the SWOT analysis, as an internal analysis, the internal capabilities of the enterprises are considered as strengths, and negative situations and restrictions that may hinder the activities of the enterprise are considered as weaknesses to achieve their goals. The situations that may create advantages in the relations of the enterprises with other enterprises and the advantages that the enterprise can obtain in the environment are considered opportunities, and the negative factors that may create risks in the current situation and future of the enterprises are evaluated as external environment analysis within the scope of threats (Eastwood et al., 2016).

SWOT analysis has been preferred by businesses and strategic management literature since the 1960s, as it is an analysis that can be done easily in terms of businesses and provides important strategic plans as a result of its evaluation. However, the SWOT analysis was evaluated as a subjective analysis with the brainstorming method and was exposed to some criticism. For this reason, data and resource-oriented SWOT analysis have been started to be carried out in a way that removes subjectivity. Thus, it has become one of the most important analyses used in the strategic planning of enterprises (Phadermrod et al., 2019).

SWOT analysis is also a technique used by businesses operating in the aviation industry. Sevkli et al. (2012) concluded in their study that the SWOT analysis is an applicable methodology that provides valuable information for the strategic management decisions of the Turkish civil aviation sector and is an analysis tool that can be used in other decision-making processes in the sector.

In this study, SWOT analysis were made for newly built airports in Turkey. With the SWOT analysis made, it was possible to make inferences about the socio-economic effects of the new airports. With this aspect, the study examined the effects of airports in a descriptive way and discussed the socio-economic effects of Turkey's new airports with an inductive perspective.

4. FINDINGS

In this part of the study, the findings of the SWOT analyses applied to the airports that are the subject of the research are included.

4.1. Istanbul Airport

The construction of Istanbul Airport began on May 7, 2014, by the İGA operation, which had been established on May 10, 2013, after a tender was made within the scope of the build-operate-transfer model on May 3, 2013. The airport is planned to be constructed in four phases, and the first phase, with a three-runway capacity of 90 million passengers, was put into service on October 29, 2018. The airport, which served many passengers in a short time, exceeded the passenger guarantee figures as of the beginning of 2020, resulting in an additional payment of 22.4 million Euros to the state by İGA for exceeding the international passenger income of 233.1 million Euros guaranteed by DHMI for the first year of operation. Istanbul Airport was awarded the title of the five-star airport according to Skytrax assessment in a short time, with both its physical and management approach. In addition, after operating for only one year, it was also evaluated as a five-star Covid-19 cautious airport by Skytrax, with the successful pandemic measures implemented in the global Covid-19 epidemic, which deeply affected the aviation industry. Therewithal, Istanbul Airport received the title of Europe's best airport and airport of the year in 2021. The airport's success continued in 2022 (İGA, 2022).

The province of Istanbul has the highest tourism potential in Turkey. Its historical and cultural artifacts, remnants of past civilizations, and its acceptance as the capital of different religions and cultures, ensure that Istanbul is open to many national and international visitors (İçelliöğlü, 2014). As transportation plays an important role in tourism activities, Istanbul Airport is very important for tourism activities. At the same time, tourism flight activities constitute a large portion of the number of flights and passengers at Istanbul Airport (Urfa et al., 2021).

Istanbul Airport, which will be one of the largest airports in the world when it is operating at full capacity, is the airport with the highest traffic and is open to international traffic in Turkey. In this case, due to Istanbul's geopolitical location, the suitability of Istanbul Airport as a transfer airport creates a significant advantage. The airport is trying to create diversity to appeal to all passenger groups and is seen as a significant potential for the Asian market. Istanbul Airport is also considered to be an airport that contributes to Turkey's international image. Istanbul Airport aims to provide perfect service to its customers, equipped with technological and innovative infrastructure. As an Intermodal Freight system, the airport is distinguished from other airports by a structure that aims to use land, air, sea, and rail transportation in a combined way (Hasańebi Özenen, 2019).

In the study conducted by Hasańebi Özenen (2019), Istanbul Airport managers were interviewed and asked to perform a SWOT analysis. According to the SWOT analysis made by the managers, the strengths of Istanbul Airport were stated as being the hub airport of a strong flag carrier airline, Istanbul's

geographical location advantage, Istanbul's high tourism potential, and having an airport terminal that does not have a capacity problem. Weaknesses were identified as the dependency on a single airline, slot restrictions due to the number of runways, the high cost of the airport for airlines, and the low number of long-haul flights. It was said that the future opportunities for Istanbul Airport are the development potential of air transportation, the high rate of young population in Turkey, and the capacity problems experienced by rival airports. It was said that the threats to Istanbul Airport in the future may be the competition with rival airports, the increase in direct flights from other airports in Turkey, economic crises, and security breaches such as terrorism.

Deveci et al. (2020) conducted a SWOT analysis and made strategic suggestions in their study investigating the impact of Istanbul Airport on Turkish Airlines (THY) and World Civil Aviation. According to the SWOT analysis made from the point of view of THY, the strengths of Istanbul Airport were stated as offering a large market, its geographical location, and its hourly movement capacity. Weaknesses were highlighted as fewer frequent targets and the distance from the airport to the city centre. Opportunities that Istanbul Airport can create were stated as connection with the Chinese market, the ability to serve new generation large aircraft, and increased capacity. Threats were listed as low-cost competitors, horizontal agreement with the European Union (EU), demand shocks, and the shift of passengers to different modes of transport.

Demirhan et al. (2021) discussed the advantages and disadvantages of Istanbul Airport in their study. In this context, they conducted a SWOT analysis, stating the strengths of Istanbul Airport as its location advantage, additional runway capacity, increased aircraft capacity, point joining system, a design that can accommodate large aircraft, and a large cargo apron. Weaknesses were identified as an inadequate transportation network, strong wind characteristics, long taxi times, and optimization needs. The opportunities for Istanbul Airport included its location at the centre of three continents, increased flight frequencies, new slots for new airlines, increased passenger capacities, increased employment and economic growth, logistics capacity, and reduced delays. The threats were competition with middle eastern countries, the difficulty for small airlines to adapt to the airport, increasing competition for the flag carrier, and the airport being on the transit route of migratory birds.

The findings of the SWOT analysis for Istanbul airport within the scope of the study are presented in Table 1.

Table 1. Istanbul Airport SWOT Analysis

<i>Strengths</i>	<i>Weaknesses</i>
- Built with Built-Operate-Transfer (BOT) model and privately operated	- Distance from the airport to the city centre
- Skytrax 5-star airport	- High cost
- Istanbul's tourism potential	- Less frequent flights to too many destinations
- Istanbul's geopolitical position	- Urban transportation problems
	- Long taxi times

- Being an intermodal transportation centre	- Strong winds
- Being a strong flag carrier hub airport	- The airport being on the transit route of migratory birds
<u>Opportunities</u>	<u>Threats</u>
- Potential for the development of air transport	- Competition with rival airports
- Capacity constraints of rival airports	- Low-cost structure of rival airports
- Young population ratio in Turkey	- Increase in direct flights from other airports
- Demand created by the Asian market	- Efforts of Middle East airports to become a
- Potential to service next generation large aircraft	hub
- Growing capacity with new phases	- Economic crises
- Slot Capacity	- Pandemics
- High employment potential	- Terror activities
- Potential to contribute to economic growth	- Increase in demand for different modes of transport
- Potential to become a cargo hub	- Small airline companies don't prefer the airport

Istanbul Airport is located at a point that combines Western and Eastern civilizations, giving it a geopolitical position and drawing attention to it. However, due to its location, Istanbul Airport is affected by many dynamics. Therefore, the SWOT analysis in Table 1, which deals with all aspects of the Airport, offers important clues to both managers and policymakers.

4.2. Zafer Airport

Zafer Airport is Turkey's first regional airport, built using the Build-Operate-Transfer model financing method to serve the transportation needs of the Kütahya-Afyon-Uşak provinces. With a contract period of 29 years and 11 months, IC İÇTAŞ has acquired the operating rights of the airport, and it was put into service on November 25th, 2012 (zafer.areo, 2022).

It has come to the fore that the Zafer Development Agency plans to establish a logistics and trade centre in Kütahya, integrating Bandırma Port, Zafer Airport, the Istanbul-Antalya highway, and 18-line railway transportation. With the establishment of a logistics center at the TCDD Alanyunt junction, it is thought that the region will become a commercial and logistics base (Bayraktutan and Özbilgin, 2014). Based on the purpose of opening Zafer Airport for the economic development of the region, which is one of its aims, it is expected that the airport will create positive effects in many sectors, especially the industrial real estate market, with the contributions it will make to the city's logistics infrastructure (Erdem et al., 2016).

Zafer Airport is considered to be an airport that provides easy access, as it is 45-50 minutes away from the city center, at the intersection of many cities, and the condition of the highways connected to the airport is good (Dinçer and Taşkıran, 2016). It was planned with the aim of reducing the passenger density in Kütahya and the big cities around it and developing thermal tourism activities in the region. Although the tourism potential and investments of Kütahya province are higher than the surrounding provinces, the efforts to create an international image have not been successful. The increase in foreign

tourism activities and the efforts to increase the demand from the Far East, Europe, and the Balkans will increase the flights to Zafer Airport (Kervankıran, 2014).

Zafer Airport has been one of the most affected airports by the Covid-19 pandemic in Turkey. When compared to 2019, it experienced the biggest loss after Alanya-Gazipaşa Airport with a 77.3% decrease in international flights, and the most loss in domestic flights (Bakırcı, 2020). These significant reductions in the number of passengers increased the burden on the administration. Zafer Airport could not meet the 1.317.733 passenger guarantee given for 2021, so the difference arising from the passenger guarantee had to be paid to the investor by the administration. The airport, which was built at a cost of 50 million Euros in 2012, could not achieve the guaranteed number of passengers between 2012 and 2022 (Tan, 2022). The SWOT analysis covering all aspects of Zafer Airport is presented in Table 2.

Table 2. Zafer Airport SWOT Analysis

<u>Strengths</u>	<u>Weaknesses</u>
<ul style="list-style-type: none">- Built with BOT model and privately operated- Being a regional airport- Easy access from 3 cities- Highway integration- Thermal tourism potential of the region	<ul style="list-style-type: none">- Failure of international efforts to build an image for tourism.- Effects of the Pandemic- Causing Uşak Airport in the region to remain inactive.- The absence of an airline company that adopts the regional transportation business model in Turkey
<u>Opportunities</u>	<u>Threats</u>
<ul style="list-style-type: none">- Turning the region into a trade and logistics base with other transportation investments- Potential to contribute to economic development- Potential to contribute to the development of the industrial real estate market- Possibility of increasing demand with investments in thermal tourism activities- Demand of the people from the region outside the province and outside the country	<ul style="list-style-type: none">- Demand for the airport does not increase as expected- Flights at Eskişehir Hasan Polatkan Airport- Railway and highway infrastructure investments

Zafer Airport is Turkey's first regional airport, and it was built on one of Turkey's transportation nodes. Therefore, it has advantages and disadvantages specific to its location. Table 2 is a guide that presents these advantages and disadvantages in detail.

4.3. Ordu-Giresun Airport

Ordu-Giresun Airport, which opened for use in 2015, is the first airport in Turkey to be built on an embankment over the sea. Although this airport was planned to be built in the 1970s, its construction was postponed for various reasons. In the construction of Ordu-Giresun airport, there was no expropriation cost since the coast and seas were under the control and disposal of the state (Başer, 2019).

Embankment airports on the sea are airports built on areas reclaimed from the sea, generally in areas with low surface area, high population, or in areas that are not suitable in terms of regional topography. Since Ordu-Giresun Airport is in a region with a high slope and height, this method was used in its construction. Ordu-Giresun Airport was built with the aim of reviving tourism and trade activities by improving the transportation infrastructure, because of the decreasing population due to the increase in external migration in the region. Before Ordu-Giresun Airport was built, Samsun Airport and Trabzon Airport met the passenger and cargo transportation needs of the region (Tulan and Ercoşkun, 2019).

The high tourism potential in the region is understood due to the flights to Trabzon Airport from foreign countries. In this context, it is observed that Ordu-Giresun Airport also contributes to tourism activities in the region. A large portion of the population of Ordu and Giresun has migrated to different provinces and countries. Therefore, the airport provides a very important transportation service to the region at various times (Başer, 2019).

The most important commercial activity of the region is the export of hazelnuts. The airport provides an advantage in terms of marketing hazelnuts. It is thought that the airport will contribute to the development of tourism and industrial activities in the region. It is expected that residences and workplaces will become more widespread in the areas around the airport and the city structure will intensify in a manner centered around the airport (Türk, 2015). In this context, all aspects of Ordu-Giresun Airport are presented with a SWOT analysis in Table 3.

Table 3. Ordu-Giresun Airport SWOT Analysis

<u>Strengths</u>	<u>Weaknesses</u>
<ul style="list-style-type: none">- The image of being the first airport built on the sea as an embankment in Turkey- Serving multiple cities- No expropriation cost in its construction- Restrictions on other modes of transport in terms of the topography of the region- Tourism potential of the region- The use of air transportation in the export process of products specific to the region- Potential to make an economic contribution to the region	<ul style="list-style-type: none">- The amount of population in the region- The height of out-migration in the region- High cost of airport construction due to sea filling
<u>Opportunities</u>	<u>Threats</u>
<ul style="list-style-type: none">- Increasing tourism popularity of the region- Development of commercial investment activities- Demand of the people from the region outside the province and outside the country	<ul style="list-style-type: none">- Flights from Samsun Çarşamba Airport- Flights from Trabzon Airport

Ordu-Giresun Airport is an airport built in one of the hilly regions of Turkey. Due to the topographic structure of the region, it was built by filling the sea. Due to the topographic structure of the region, it was built by filling the sea. With this feature, it is Turkey's first airport built by filling the sea. It is hoped that it will contribute to the economic development of the region as it increases tourism

activities and facilitates exports. However, the current structure of the region has some disadvantages. In this context, Table 3 is an important output that reveals all aspects of the Ordu-Giresun airport.

4.4. Rize-Artvin Airport

The construction of Rize-Artvin Airport started in 2017 and was completed in 2022. The airport, built to serve the provinces of Rize and Artvin within the borders of Rize, draws attention as Turkey's second airport built using the sea-filling method. (Aygm.uab, 2022).

It is thought that the Rize-Artvin Airport will have a significant effect on the development of the region and increase infrastructure and superstructure investments. In addition, with the completion of the airport, it is expected that seasonal tourism activities in the region will expand, and the tourism potential will be better utilized. It is also expected that communication between people who travel to countries such as Germany, France, and Azerbaijan as external migrants from the airport will increase in the region for visiting and business purposes (Küçük et al., 2022).

Küçük et al. (2022) concluded in their study that the people of the Rize-Artvin region expect investments, job opportunities, and tourism activities to increase with the completion of the airport, but they are worried about potential issues such as an increase in land prices, a change in the purpose of land use, and noise pollution.

The effective operation of the airport is of utmost importance due to the high infrastructure investment costs of the airports built with the filling method on the sea (Akgerman, 2022). In this context, the proximity of Trabzon Airport and the high flight density there create a disadvantage in terms of diversifying the flight lines and increasing the frequencies of Rize-Artvin Airport. This potential problem can be eliminated by coordinating the flight destinations of the two airports. The SWOT analysis covering all aspects of Rize-Artvin Airport, which has been operational since 2022, is given in Table 4.

Table 4. Rize-Artvin Airport SWOT Analysis

<u>Strengths</u>	<u>Weaknesses</u>
<ul style="list-style-type: none">- The image of being the second airport built on an embankment over the sea.- Serving multiple cities- No expropriation cost in its construction- Restrictions on other modes of transport in terms of the topography of the region- The use of air transportation in the export process of products specific to the region- Tourism potential of the region- The cargo transportation potential of the region	<ul style="list-style-type: none">- The population of the region- The height of out-migration in the region- High cost of airport construction due to sea filling
Potential to make an economic contribution to the region	

<i>Opportunities</i>	<i>Threats</i>
<ul style="list-style-type: none">- Easy access to Georgia and neighbouring countries- Region's high potential for a wide variety of tourism activities- Increasing investments in the region- Demand of the people from the region outside the province and outside the country	<ul style="list-style-type: none">- Risk of increase in land prices and change in usage purposes- Being close to Trabzon Airport

In Akgerman's (2022) evaluation, various suggestions were made regarding the flight planning, marketing, and activities of Rize-Artvin Airport. These suggestions included re-evaluating domestic flight cooperation with Batumi Airport, increasing the number of passengers through road connections from nearby cities, connecting the city centre with the rail system, organizing campaigns to promote the tourism potential of the flag carrier company, and utilizing the region's skiing-winter tourism and mountain trekking. Additionally, marketing tourism activities such as camping, paragliding, rafting, using the airport to meet the air cargo needs of the region, and using the airport for general aviation activities during times of low flight density were also suggested.

4.5. Tokat New Airport

Due to its location at the junction of important highways and its high investment potential, an airport with a low passenger and aircraft capacity was built in Tokat in 1995 and put into service. However, in addition to the capacity problems of this airport, it ceased operations in 2018 due to negative factors such as the obstacle areas around the airport, the short runway, and the fact that only narrow-body planes can land. Later, the Ministry of Transport and Infrastructure decided to build a new high-capacity airport in the province of Tokat, which was put into service in 2022, to the northeast of the old airport (Arslan, 2020).

It is estimated that the New Tokat Airport will primarily be used for regional tourism purposes. Since there are 600 thousand Tokat residents living outside the province of Tokat and registered with the population of Tokat, it is expected that airport transportation will remove the obstacles to visits and increase mobility. At the same time, the opportunity to carry out many tourism activities such as gastronomy, history, culture, and thermal activities in the province of Tokat has revealed the expectation that investments will increase with the construction of the airport (Arslan, 2020). The situation of increasing the flights from the airport to international lines is included in the 2018-2023 Infrastructure and Transportation Action Plan (Yakar, 2017). The advantages and disadvantages of the Tokat New Airport are detailed in the SWOT analysis in Table 5.

Table 5. Tokat New Airport SWOT Analysis

<u>Strengths</u>	<u>Weaknesses</u>
<ul style="list-style-type: none">- Located at the junction of important highways- Integrated transport potential- Tourism potential of the region- Potential to contribute to the economy	<ul style="list-style-type: none">- The population of the region- Insufficient levels of investment in tourism
<u>Opportunities</u>	<u>Threats</u>
<ul style="list-style-type: none">- Demand of the people from the region outside the province and outside the country- Promotion and image studies of the tourism values of the region.	<ul style="list-style-type: none">- The region's development in terms of highway infrastructure investment and new investments to be made

Tokat New Airport, the construction of which began in 2018 and became operational in 2022, offers important opportunities for the economic development of the region. However, the location of the province of Tokat and the structure of other modes of transportation in the region are issues that should not be ignored when considering the airport. In this context, Table 5 depicts a SWOT analysis of Tokat New Airport.

4.6. Çukurova Regional Airport

Çukurova Regional Airport is constructed using the build-operate-transfer model to serve the Mersin and Adana provinces. Construction started in the Tarsus district of Mersin in 2013 and is planned to be put into service in 2023 (Topaloğlu, 2022).

Since Şakirpaşa Airport in Adana is insufficient in terms of capacity, it is unable to serve the entire Çukurova Region. Therefore, domestic, and foreign tourists who wish to visit the region are expected to show interest in Çukurova Regional Airport. Given the relationship between airport demand and economic development in Turkey, it is thought that an airport with a high capacity that serves the region will have a positive impact on regional development (Boz, 2020).

The Cukurova Region is highly developed in terms of its tourism features and infrastructure. Adana and Mersin, with their gastronomy and historical beauty, draw attention with their historical and natural beauty and sea tourism. Therefore, the demand for tourism travel to both Adana and Mersin provinces will be met with the construction of the airport (Boz, 2020).

The Çukurova Region has the largest agricultural lands in Turkey. Products such as textiles, fresh vegetables and fruits, glass, cooking oil, and nuts are among the leading products exported. Therefore, the production in the region is very important for Turkey's agricultural product exports and domestic market. The Çukurova Regional Airport will have an important position in the national and international transportation of products produced in the fertile agricultural lands located within the provincial borders of Adana and Mersin (Görentaş and Sargın, 2021).

Table 6. Çukurova Regional Airport SWOT Analysis

<u>Strengths</u>	<u>Weaknesses</u>
<ul style="list-style-type: none">- Built with BOT model and privately operated- Being a regional airport- Serving two cities- High capacity- Tourism potential of the region- Export potential of the region- Potential to contribute to the economy	<ul style="list-style-type: none">- Causing the Şakirpaşa Airport in the region to remain idle- The absence of an airline company that adopts the regional transportation business model in Turkey
<u>Opportunities</u>	<u>Threats</u>
<ul style="list-style-type: none">- Being a logistics base for the airport, maritime and highway integration of the region- Popularity of the region in terms of gastronomic tourism	<ul style="list-style-type: none">- The development of infrastructure for other transportation modes due to the long construction period

In the Çukurova Region, there are the Mersin and Taşucu Ports, which are referred to as the Eastern Mediterranean ports (Fidan and Mete, 2020). At the same time, the road infrastructure in the region is being developed. With the construction of the Çukurova Regional Airport, the region will become an important logistics base. The SWOT analysis of Çukurova Regional Airport is presented in Table 6.

4.7. Gümüşhane-Bayburt Airport

Gümüşhane-Bayburt Airport was planned within the borders of Gümüşhane province, approximately equidistant from Gümüşhane and Bayburt provinces, and construction began in 2018. It is expected to be completed and opened to flights in 2023. The proximity of Gümüşhane and Bayburt provinces to the Black Sea provinces and their potential use as an alternative in cases of heavy fog and haze experienced at the airports on the coastline were factors in the planning of the airport investment. The use of the airport as a military airport is also on the agenda if necessary (CNN, 2022).

Gümüşhane and Bayburt provinces are separated by mountains on the Black Sea coast. The topographic structure of the region has also had a negative effect on the social and economic development of the provinces. Although there is potential to create a tourist attraction in the region, it has been understood that this potential could not be realized due to the inadequacies of transportation, promotion, and investment. For this reason, transportation investments were initiated. It is expected that the highway tunnels that provide the connection with the Black Sea coasts and the Gümüşhane-Bayburt Airport will remove the transportation restrictions and contribute to the development of the region (Zeybek et al., 2018).

There are currently ongoing tourism activities in Gümüşhane. Zigana, Süleymaniye, and Çakırgöl winter tourism centres are among the activities that attract tourists to the region. Tourists coming for winter tourism activities mainly travel 55-60 km to Trabzon Airport, which is far away. The new airport, which will facilitate access to the region, is considered an opportunity for the development of winter tourism in the region (Kızılcık, 2019). It is also known that the region has an important potential for

eco-tourism. Gümüşhane being the province with the highest number of plateaus in Turkey, its historical richness, wildlife, and the natural structure of the city make eco-tourism attractive in this region. Eco-tourism activities are expected to increase once the airport starts operating. All aspects of Gümüşhane-Bayburt Airport are presented in Table 7.

Table 7. Gümüşhane-Bayburt Airport SWOT Analysis

<u>Strengths</u>	<u>Weaknesses</u>
<ul style="list-style-type: none"> - Alternate Square feature - Tourism potential of the region - Potential to make an economic contribution to the region - Positioning in the province with the most plateaus in Turkey - It will play an important role in solving the transportation problems of the region 	<ul style="list-style-type: none"> - Insufficient promotional activities - Insufficient investments - Lack of infrastructure for other modes of transportation - Low population rate of the region
<u>Opportunities</u>	<u>Threats</u>
<ul style="list-style-type: none"> - Increasing demand for winter tourism activities in the region - Increasing demand for ecotourism activities - Elimination of barriers to investment in the region 	<ul style="list-style-type: none"> - Being close to Trabzon Airport - Being close to Erzincan Airport

Gümüşhane-Bayburt Airport, which is planned to start operations soon, will facilitate access to the region and serve as an alternative airport for airports in nearby cities. It is thought that this will increase tourism efficiency and contribute to economic development in the region.

4.8. SWOT Analysis of New Airports in Turkey

SWOT analysis was conducted by conducting a detailed literature search for seven airports that have been built and are under construction in Turkey in recent years. These SWOT analyses were evaluated, the common points mentioned were determined, and a joint SWOT analysis of the new airports in Turkey was made and presented in Table 8. Thus, an attempt was made to draw inferences about the issues considered when making new airport infrastructure investments and the investment policy of the country.

Table 8. SWOT Analysis of New Airports in Turkey

<u>Strengths</u>	<u>Weaknesses</u>
<ul style="list-style-type: none"> - Constructing with different models as public-private cooperation (PPC) - Serving passengers of more than one city - High tourism potential in the region where they are built - Contributing to the solution of the transportation problems of their regions - Integrated transport adaptation - Contributing to the regional economy - Developments around airports - Offer suitable capacity for cargo transportation 	<ul style="list-style-type: none"> - Idle low-capacity airports nearby - Insufficient promotional and image building activities in their regions - Insufficient investments - High investment costs in airport construction - Increasing urbanization around airports - Use of lands for different purposes in airport areas

<i>Opportunities</i>	<i>Threats</i>
<ul style="list-style-type: none">- The goal of being the base of commercial and logistics activities in their regions- Diversification in tourism activities and increasing investments- Airports gaining different functional features- Potential to play an important role in Turkey's developing aviation infrastructure	<ul style="list-style-type: none">- Nearby high-density airports- Developed road infrastructure in their regions- Pandemic, economic, and global crises

In recent years, Turkey has been attempting to implement policies and programs that will increase economic growth and social welfare by making transportation more economical, safe, comfortable, and uninterrupted. To this end, Turkey has implemented many airport projects. Most of these projects have been completed, but new projects are still being developed. The structure of the regions where the airports are built is an issue that should be considered in order for the airports to continue their activities without interruption in the future. In this context, the seven airports built and under construction in Turkey in recent years have been discussed separately above and then summarized in Table 8, examining their common aspects.

5. CONCLUSION

The fact that airports contribute both socially and economically to the region in which they are located has been widely discussed in the literature. The impact of airports, which are one of the most important aviation infrastructure investments, on the development of aviation has also caused aviation policies to be directed toward airports. While it is decided to build airports in accordance with the needs and potentials of the regions in which they are located, it provides the mobilization of some sectors in the region in a short time, the formation of an airport-oriented economy, and the establishment of a supply chain and logistics network. While this situation contributes to the regions in which airports are built, it can create changes in the population structure, natural characteristics, and activities of the region, and cause some negative effects to occur. In addition, not every airport investment yields effective results and may emerge as idle investments due to various reasons and high costs. For this reason, the results that emerged with the evaluation of airport investments from all aspects revealed what points should be considered in new investments.

As a result of the research, it has been concluded that airports are built with different models as PPCs, they are built regionally, they have high tourism potential in the regions where they are built, they contribute to solving the transportation problems of their regions, they have high integrated transportation adaptation, and they contribute to the regional economy. It has been concluded that they can be the base of commercial and logistics activities in their regions, increase investments by creating diversification in tourism activities, and gain different functional features, thus playing an important role in Turkey's developing aviation infrastructure.

The newly-built airports in Turkey can cause some negative developments. These can include low-capacity airports remaining idle due to insufficient promotion and image-building activities in their regions, insufficient investments, high construction costs, increased urbanization around airports, and the use of land for different purposes in airport areas. At the same time, the presence of other airports with high flight density in nearby regions, the developed road infrastructure of the regions where they are located, and various global crises may pose a threat to these airports.

New airport construction projects are underway in many countries around the world. Falcus (2018) listed the airports under construction in the world and mentioned their purpose. He stated that while Al Maktoum International Airport, one of these airports, was used as a cargo airport, it was aimed to become a very busy central airport with its reconstruction. It was mentioned that Singapore Changi Airport, with its 5 different terminal buildings and unique services, has a structure centered on the passenger experience. It has been stated that Carlisle Lake District Airport, as the newest regional airport in England, used to be only a general aviation airport, but started to see demand with new plans and flights. It is said that the Warsaw Central Poland Airport has started to be built to respond to the increasing demands of low-cost carriers in the country. When evaluated in this context, it can be said that the new airports built in many countries around the world are based on regional needs, country policies and passenger expectations.

In line with the inferences made from the SWOT analysis and global examples, it is necessary to develop various strategies and policies that will increase the demand for airports that are newly built or under construction in Turkey. The tourism potential of the regions where airports are located should be evaluated well, and industries that can benefit from airport-oriented logistics advantages should be supported. While planning incentives for the use of air transportation by the businesses operating in the region, the demands and wishes of the people of the region should be considered when planning the tariffs and routes for passenger transportation. In addition, enabling airports to be used for different purposes such as general aviation or training other than passenger and cargo transportation will increase airport efficiency. In this context, it is clear that if the newly built airports in Turkey are supported with various strategies and policies, they will make significant contributions to the socio-economic region, the country's economy and Turkey's international outlook.

A SWOT analysis was conducted in line with the information obtained from the relevant literature of the study. Due to the fact that there are airports that are newly built or under construction, an analysis on quantitative data was not carried out in this study. The validity of the results of the study may be tested if future studies determine the long-term economic effects with quantitative research methods from airport traffic and passenger data.

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Fikir veya Kavram / <i>Idea or Notion</i>	Araştırma hipotezini veya fikrini oluşturmak / <i>Form the research hypothesis or idea</i>	Lect. Armağan MACİT (Ph.D.) Lect. Zafer DURAN (Ph.D.)
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