

# Effects of Innovation Strategies in the Aviation Industry

## Havacılık Sektöründe İnovasyon Stratejilerinin Etkileri

**Sevgi SÜMERLİ SARIGÜL**

Doç. Dr., Kayseri Üniversitesi, Teknik Bilimler MYO,  
Dış Ticaret Bölümü, ssumerli@jkayser.edu.tr  
<https://orcid.org/0000-0002-3820-6288>

Makale Başvuru Tarihi: 01.05.2022

Makale Kabul Tarihi: 25.08.2022

Makale Türü: Araştırma Makalesi

**Selcan COŞKUN**

Y.L. Öğr., HAVAŞ Yolcu Hizmetleri Personeli,  
selcancoskunerciyes@gmail.com  
<https://orcid.org/0000-0003-4087-5226>

### ÖZET

Artan havacılık faaliyetleri sonucu işletmelerin pazar paylarını korumaları ve sürdürülebilirliğini sağlayabilmeleri için ürettikleri ürün ve hizmetlerde yenilikler oluşturmaları gerekmektedir. Bu yenilikler işletmeler açısından stratejik planlamalar haline getirildiğinde yüksek belirsizlik ortamı bulunan havacılık sektöründe işletmelerin değişen şartlara uyum sağlayabilmeleri için yol gösterici olmaktadır. Bu anlamda oluşturulan stratejilerin işletmedeki tüm departmanlara yansıtılması ve tüm personeller tarafından benimsenmesi işletmede oluşabilecek risklere karşı alınmış önlem olmaktadır. Çalışmada inovasyon stratejilerinin Türk Sivil Havacılık sektörüne etkileri incelenmiştir. Bu incelemede inovasyon stratejilerinin geçmişten günümüze gelişimi açıklanarak, inovasyon türleri, işletme yapılarına uygun olarak seçilebilecek inovasyon stratejileri ve inovasyon modellerinden bahsedilmektedir. İnovasyon stratejilerinin havacılık sektörüne katkıları incelenmiştir. Çalışmada havacılık endüstrisinden bahsedilerek havacılıkta hizmet süreci açıklanmıştır. Bu anlamda inovasyon stratejilerinin havacılık hizmet sürecinde hangi alanlarda kullanıldığı açıklanmış olup; işletmelerde performans artışında, çalışan motivasyonunda, müşteri memnuniyetindeki etkileri açıklanmıştır. Bu çalışma sonucunda, havacılık sektöründe uygulanan inovatif hareketlerin çalışan motivasyonuna, işletme performansına ve müşteri memnuniyetine etkilerinin pozitif yönde gerçekleştiği ve uzun vadede işletmelere kar maksimizasyonu avantajı sağladığı tespit edilmiştir.

### Anahtar Kelimeler:

İnovasyon,  
Strateji,  
Sivil Havacılık,

### ABSTRACT

As a result of increasing aviation activities, enterprises need to create innovations in the products and services they produce in order to maintain their market share and ensure the sustainability of the enterprises. When these innovations are turned into strategic plans for businesses, they guide businesses to adapt to changing conditions in the aviation sector, which has a high uncertainty environment. In this sense, the projection of the strategies created in the enterprise to all departments and the adoption by all personnel is a measure taken against the risks that may occur in the enterprise. In the study, the effects of innovation strategies on the Turkish Civil Aviation sector were examined. In this review, the development of innovation strategies from the past to the present is explained, and the types of innovations, innovation strategies and innovation models that can be selected in accordance with the business structures are mentioned. The contributions of innovation strategies to the aviation sector have been examined. In the study, the service process in aviation is explained by mentioning the aviation industry. In this sense, it is explained in which areas innovation strategies are used in the aviation service process; the effects of performance improvement, employee motivation and customer satisfaction in enterprises are explained. According to the results of this study, it is found out that the effects of innovative movements applied in the aviation sector on employee motivation, business performance and customer satisfaction are positive and provide profit maximization advantage to enterprises in the long term.

### Keywords:

Innovation,  
Strategy,  
Civil Aviation,

## 1. INTRODUCTION

Throughout the history of the world, people's desire to fly and their interest in birds have prepared the ground for the emergence of air vehicles. As a result of the experiments, the Wright brothers were the first to successfully perform the act of flying. Following this success, the trials were accelerated and air vehicles began to be used for sporting, mail and people transportation. First, on June 5, 1783, the Montgolfier Brothers made a successful landing from Annonay, France, to an altitude of 1500 meters with their balloons of 800 cubic meters, the main material of which was cloth covered with paper (Yalçın, 2010:563).

In the early 19th century, Long Hasan from the Black Sea managed to pass over the streams between the hills by making wings that resembled gull wings with the idea that came to mind when he was studying seagulls. However, he was stoned to death by the people with the idea that long hasan's mind had fallen into the hands of the devil (Yalçın, 2010:567). Again at the beginning of the 19th century, Veli Direko Hoxha, who was a madrasa employee in town of the Black Sea, completed a wing resembling his wings with the help of leather, wood and springs as a result of his knowledge of astronomy and the examination of his friend Ahmet Hoxha and the eagle who helped him; It is claimed that he went down 200 meters from a hill 400 meters high. Two teachers who tried to advance their work had to stop their studies due to government bans (Güleren and Sülümbaz, 2013:56).

Another important development in the history of aviation is the successful flight trial of the Wright Brothers on December 17, 1903. This flight attempt was conducted in the United States. In the flight trial, a twin-propeller aircraft with a wingspan of 12.54 meters and a length of 6.82 meters was flown. This aircraft has a weight of 335 kilograms, including the pilot. On this flight, the Wright Brothers managed to stay in the air for 59 seconds and successfully completed a distance of 260 meters (Heavy, 2021:67). In 1905, the FIA (International Aviation Federation) was founded. In the same year, the American Aviation Club started its activities (Bakkaloğlu, 2021:86).

The first step on behalf of aviation activities in the Ottoman Empire begins with the dispatch balloons ordered to France during the time of Abdulhamid II. Following this incident, the first demonstration flight takes place in Istanbul by plane and balloon during the time of Sultan Mehmet Reşat. Mahmoud Şevket Pasha, who was the Minister of War, assigned Mr. Fethi to Paris and Yzb. Enver Bey to Berlin as a military fireman (Kurt, 2021:218). In 1911, in the reports of Mr. Fethi and Enver Bey on aviation, the "*Tayyare Commission*", the first official institution of aviation in the Ottoman Empire, was established. Staff Lieutenant Colonel Süreyya (Ilmen) Bey was appointed as the chairman of this commission. In the proposal made by The Parliament-i Mebusuna Mahmud Şevket Pasha, negotiations were held to open a tayyare school and establish a tayyare center. However, due to the lack of money in the budget of the Ottoman Empire, it was negative (Uluslan, 2021:2342).

In January 1912, a land 250 meters wide and 1500 meters long was purchased between Istanbul Ayastefanos (Yeşilköy) and Safraköy (Sefaköy) in order to establish two tayyare hangars in two Tayyare Schools. Captain Fesa Bey and Lieutenant Yusuf Kenan Bey, who completed their education in France, were assigned to this school as teachers (Genç, 2018:6).

Aviation activities are a sector in which a small number of companies operate as an industry, but also where activities continue in a dynamic competitive environment. The fact that a small number of companies operate can be seen as both an advantage and a disadvantage (Yalçın, 2016:187) Increasing aviation activities have accelerated with industrialization and prepared the ground for the increasing competitive environment in the globalizing world. In this competitive environment, various challenges arise for enterprises to maintain their current status in the sector. Businesses aim to innovate in the services and products they offer to minimize these challenges. Technological developments, customer expectations and needs, management perception and employee expectations play an important role in these innovation strategies. In this sense, the development, types and models of innovation strategies are mentioned in our study. It examines the competitiveness of these strategies in enterprises and their benefits to their ability to act in line with the needs and desires of their customers.

The high uncertainty in the civil aviation sector, where innovation strategies are applied dynamically, guides strategies to adapt to changing conditions in enterprises. In this sense, the projection of the strategies created in the enterprise to all departments and the adoption by all personnel is a measure taken against the risks that may occur in the enterprise.

In our study, the effect of innovation strategies applications in the Turkish Civil Aviation sector on business performance, employee motivation and customer satisfaction was examined. In the first part of the study; Literature review was created by examining the studies in the literature on innovation activities in aviation. In the second part; the concept of innovation, processes, and types are explained. In the third part; the impact of innovation in the aviation sector is examined. According to the results of this review, innovation strategies have had a positive effect in every area where they are applied correctly, providing long-term profit maximization to businesses.

## 2. LITERATURE REVIEW

In the developing and globalizing world, the necessary innovation strategies for enterprises to adapt to developments have been examined in the literature. It has been noted that these studies have been carried out in the aviation sector and include up-to-date data. In this sense, there are a lot of studies in the literature. Our study was published between 2017 and 2021 and includes the effects of innovation strategies in the aviation sector on customer expectations, quality of service, employee motivation, market shares, etc.

Dursun (2017) examined the necessity of innovation strategies for companies operating under intense competitive conditions in order to develop themselves and maintain their presence in the market in a study called "*A Theoretical Investigation on Innovation*". According to the results of the analysis of the study, companies should implement appropriate innovation efforts in the marketing processes of their enterprises in order to realize their objectives, ensure continuity and increase market share.

Demir (2019), in his study titled "The Impacts of Service Innovations at Airports on Service Quality Perception and Passenger Satisfaction", examined the service quality and the extent to which innovations in this field affect innovation expectations by using the survey method. The survey method used in the study was completed with 341 passengers selected from Istanbul Airport. According to the results of the survey analyzed by Demir, it is concluded that increasing technological developments increase service expectations and oblige businesses to innovate.

Hancıoğlu and Atay (2019), "*Investigation of England, United States and Turkey's National Innovation Systems: Suggestions for Turkey*" examined the comparison of the innovation systems and policies implemented by the United States and the United Kingdom, which are considered innovation pioneers, with Turkey. In the study, it was seen that Turkey should adapt to its own country by studying the developments in the world in the field of science and technology.

Altın (2020), "A Study to Explore the Effect of Strategic Alliances on Innovation Performance in Enterprises Pursuing an Exploratory and Exploitative Innovation Strategy", examined the effects of strategic alliances on the innovation performance of organizations. According to the results of the research, it was concluded that at least one of the types of alliances with and without capital was used in six of the eight enterprises included in the analysis and contributed positively to the performance of the organizations.

Ezanoglu and Dağlı (2020), "*A Transition to Openness Paradigm in Innovation: Examples of Open Innovation From Turkey*" examines the transitions of companies working with the closed innovation model in Turkey to open innovation over time. Companies that implemented the open innovation model in their companies were more successful.

Pala and Pilatin (2020), "*Human Capital and Innovation Relationship: A Theoretical Perspective. Current Research on Financial Markets*" examines the relationship between human capital and innovation, which is necessary for companies to continue their development. According to the results obtained from the work of Pala and Pilatin, human capital development affects many areas of the company (health management, corporate infrastructure and information management), as well as the level of innovation by 95%, and it is explained that education is the basis of innovation for companies.

Konyalılar (2020), in the study titled "*Impact of Intellectual Capital and Innovation on Employee Performance: Aviation Sector Example*", demographic variable questions for A B C airlines located at Ataturk Airport in 2019 were analyzed by companies by survey method and the results obtained by companies were analyzed with SPSS package program. As a result of the research examined, there is a positive relationship between intellectual capital (*such as knowledge, experience, creativity, imagination and communication...*) and innovation and honesty.

Kızıl and Aslan (2020), in the study titled "*Innovation with Economical and Social Aspects*" examined the fields of Tourism, European Union, Education, Public, Economy and Marketing through innovation facts and perspectives. According to the results of the study of Kızıl and Aslan, the areas examined should carry out innovation studies to increase their market share, provide a competitive advantage and make a difference.

In the study titled "*Innovation Strategies and Employee Motivation, Effects on Business Performance: An Application in Civil Aviation Business*", Süzen (2020) examined the impact of innovation movements in the civil aviation sector on employee motivations and the impact of these motivations on company performance. While examining this effect, the survey technique was used and the results of the survey obtained were analyzed with the SPSS package program. When Süzen's research is examined, employee motivation will increase as a result of increasing the efforts to innovate, which will improve the performance of the company.

Ayas (2021), about the innovation strategies of Turkish enterprises in order to adapt to increased competition in a study called "*A Study on Open Innovation Practices*". It suggests that these strategies lead companies to further innovate in R&D units, as well as increases in market share. Based on Ayas' research, most companies in Turkey implement innovation strategies.

Konyalılar (2021), "*The Impact of Innovative Practices on the Competitiveness of Private Airlines Operating in Istanbul According to Employees*", the effects of innovation strategies of 415 personnel in enterprises operating in Istanbul were examined by using the survey method. It was concluded that innovation strategies in the product, process and marketing strategies obtained by examining the study positively affected global competition but did not have a positive effect on personnel performance.

Türkay and Artar (2021), in "*Digital Transformation of Airports in the Aviation Sector*", examined the contribution of innovation studies based on 6 airports (Istanbul Airport, Singapore Changi Airport, London Heathrow Airport, Los Angeles Airport, Hong Kong Airport and Shenzhen Airport) that have undergone digital transformation to socio-economic prosperity. Türkay and Artar's study shows that airports keep up with innovation in the digitalization process have a positive relationship with the socio-economic well-being level in their countries.

Yağız (2021), in the study "*International Marketing and Innovation in the Context of Digital Transformation of the Civil Aviation Sector*", investigated the impact of transformations in marketing activities as a result of the digitalization of the civil aviation sector on market shares. As a result of the study examined, it was concluded that as a result of the acceleration of civil aviation activities with the developing technology and the new airport opened in our country, enterprises have positively increased their market share by developing innovative marketing strategies in the aviation sector.

Turgut and Songur (2022), "*The Effect of Innovation on Employee Performance: A Study on Aviation Technicians*", the effect of innovation strategies on business performance was examined as a result of the survey applied to maintenance technicians who have to constantly follow innovations due to their working environment. According to the results of Turgut and Songur's study, 226 personnel were included in the survey and it was concluded that innovation strategies provided a positive and moderate impact on their task performance.

According to the results of the literature review, it is common for companies to respond to customer expectations and requests in order to maintain competitive advantages and ensure their sustainability in a developing technology and increasing competition environment, to increase employee motivations in order to keep their performance at a high level, to keep up with technological developments and to attach importance to innovation strategies in order to expand their market share.

Since aviation activities have an impact on many areas of countries and increase socio-economic prosperity, R&D units are expected to increase their service quality by focusing on innovation efforts. The results of the analysis obtained in the studies indicate that the personnel working in airlines and airports operating in Turkey should actively participate in innovation studies and in order to achieve this, the necessary training should be given to the personnel continuously and made into company policy.

### 3. CONCEPTUAL AND THEORETICAL INNOVATION

In the Webster dictionary, innovation is defined as a "new and different outcome". Although it is used as the equivalent of the words "innovation", "renewal", "renewal" in Turkish, it is seen that the conceptual meaning loaded on this term is deepening and developing day by day. It is derived from the Latin word "innovatus". It means "the use of different methods in social, administrative and cultural fields" (Günay and Çalık, 2019:6).

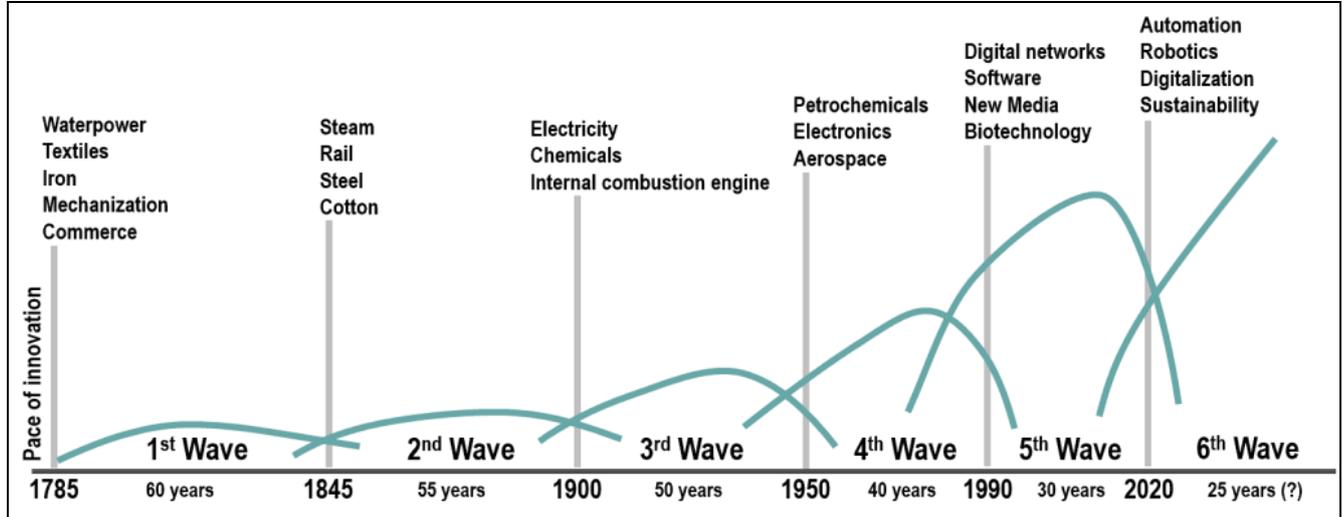
The concept of innovation is based on diversification on the axis of differentiation and newness. This is due to the need to introduce the outputs obtained from innovation activities, as well as creating a field of application for the work carried out in countries and organizations, and to be approved in terms of providing conveniences. In this context, countries' growths, developments, and developments on macro scales can make progress in human, artistic, technical, scientific and technological fields (Altıntaş, 2021:157).

In a developing and changing world, individuals and companies need to develop their ideas and behaviors in order to keep up with the period (Pala and Pilatin, 2020:212). This development is called innovation. When the literature is examined, it is seen that there are different definitions of the word "innovation" (Downs and Mohr, 1976:707; Dursun, 2017:13; Deniz and Erciş, 2012:464; Gümüş, 2014:8; Konyalılar, 2020:60). Some of these include;

- "It is unusual practices that occur in enterprises".
- "Innovation is not only for companies to do something new, but for these innovations to add economic value to the business."
- "Innovative movements in the enterprise provide added values such as long-term awareness and profit maximization rather than the value it provides to the enterprise in the short term."

The processes of change of innovation from the past to the present are defined as waves of innovation (Gürsu, 2014:17). The following are explanations about these waves of innovation and processes.

**Figure 1.** Long Wave Cycles of Innovation



Source: Hargroves and Smith, 2006.

As mentioned above, innovation has undergone changes over the years. These changes have become imperatives for their businesses to survive and maintain their assets with the increasing technology and consumer expectations, and the desire of enterprises to increase their market share by attaching importance to innovation. The types of innovation are listed below (Gümüş, 2014:14);

- Radical innovation
- Gradual (Incremental) innovation
- Product innovation
- Service innovation

- Process innovation
- Marketing innovation
- Organizational innovation
- Social innovation
- Ecological innovation
- It consists of technological and non-technological types of innovation.

Based on our literature review and past definitions, innovation consists of all strategies and policies that benefit from keeping up with changing technology, meeting customer expectations and needs, increasing company performance by increasing employee motivation, growing the market share of the business, maintaining competitive advantage and minimizing costs while maximizing company profits in the long run.

Innovation strategies have become the subject that companies resort to to stay in the market and increase their share while increasing the importance level from the past to the present day by day. In this sense, companies aim to increase their profitability by choosing their own innovation strategies. In making this choice, the company's objectives and market share are important.

In the literature review, it is seen that different distinctions are made regarding innovation strategies. We have included the following distinction in our study (Aslan and Zincirkıran, 2016:266; Coşkun et al., 2013:108; Konyalılar, 2020:81; Okay and Pınar, 2017:56);

- **Aggressive Innovation Strategy:** This strategy also aims to differentiate the business market and generate more profits from its competitors. The risk factor is as high as the maximum of the profit (Okay and Pınar, 2017:57).
- **Defensive Innovation Strategy:** In this strategy, the business, which does not want to face the risks encountered at the first entrance to the market, aims to keep its profits at the maximum level by trying to maintain its current situation in its own market share with innovative movements (Konyalılar, 2020:81; Kılıç, 2013:35).
- **Copycat Innovation Strategy:** In this strategy, it does not want to invest in the R&D department to keep operating costs to a minimum and aims to keep its profits high by reducing its spending on areas such as labor, education, materials, energy, and raw materials (Dursun, 2017:16).
- **Dependent Innovation Strategy:** Businesses with this strategy are based on following innovative policy in line with customer requests and needs (Konyalılar, 2020:82).
- **Traditional Innovation Strategy:** Businesses with this strategy have three main ways of gaining competitive advantage. These include productivity-related increase in costs and quality of the enterprise, innovative production, and competitiveness in market share (Aslan and Zincirkıran, 2016:34; Kılıç, 2013:36).
- **Innovation Strategy That Monitors Opportunities:** Businesses with this strategy try to find the weaknesses of their market competitors, thinking that they will not innovate equally with the innovations made by their competitors (Coşkun et al., 2013:108).

The above-mentioned innovation strategies consist of strategies that should be applied in order for the company to maintain its continuity and retain a competitive advantage by analyzing the performance, managerial attitudes, market shares and sector status of the enterprises.

### 3.1. Innovation Models

Innovation models consist of six parts in terms of their contents (Downs and Mohr, 1976:707; Kılıç, 2013:16; Konyalılar, 2020:88). These sections include;

- Linear models,
- Nonlinear models,
- Market models,

- Systematic and learning network models,
- Open models,
- Closed models.

It is the model that results in the introduction of new products or new services created by the R&D department in the enterprise (Konyalılar, 2020:88). In the linear innovation model, the new product or new service is defined as a natural process that occurs as a result of the effective operation of all units working within the enterprise (Coşkun et al., 2013:103; Tuncel, 2011:78). This innovation model covers the following sub-models.

- ***Innovation Driven by Demand:*** A customer-oriented innovation model. In line with the customer's wishes and needs, the business produces new products or services (Kılıç, 2013:44).
- ***Innovation Led by Science:*** Techno parks were established after the industrial revolution as a result of the rapid development of technology and the need to learn technology. The first generation of these techno parks is called innovation driven by science. Techno parks, called second generation, are established structures within universities. The distinctive feature of third generation techno parks is that they interact in a collective and interactive way (Kılıç, 2013:45).

It is the innovation movement that enterprises create by influencing the innovation movements in new products or new services (market situation, political developments, customer needs, etc.) by affecting the external environment. This innovation model covers the following sub-models (Konyalılar, 2020:89; Tuncel, 2011:81).

- ***A Positive and Inspiring Approach of Managers:*** In the positive and inspiring innovation strategy approach of managers, the attitudes and behaviors of managers towards innovation strategies are related to the extent to which they contribute to the budget model of the enterprise. The disadvantage of this model is that the management of the enterprise ignores intellectual capital by paying too much attention to objective items (equipment, machinery) (Tuncel, 2011:82; Kılıç, 2013:44).
- ***Interactive Learning Model Approach:*** The main purpose of the interactive learning model approach is to form the innovation strategy based on the learning processes of the people in the future planning and decisions made within the enterprise (Kılıç, 2013:46).
- ***Systematic and Learner Innovation Model Approach:*** Internal and external factors should be discussed together in the innovations to be made within the enterprise. In this model, the exchange of information within the triangle of government, society and business must be robust and reliable. This model is successful as a result of the support of governments and society.

Open innovation takes place in two ways in enterprises (Deniz and Erciş, 2012:22; Ayaz and Tan, 2015:6). These are;

- Goods and services innovation
- Process innovation

In the innovation of goods and services, the enterprise is the activity of introducing this new product to the market by going to differentiate in terms of techniques or shapes in the products it produces. Process innovation consists of the activity of enterprises marketing their products by improving their production, distribution and marketing channels (Kılıç, 2013:22).

Open innovation also provides information and technology data that businesses actively interact with the market. In this sense, open innovation gives the business values such as taking an active role in innovation activities, providing additional revenue to the enterprise by granting the right of use of ideas produced within the enterprise to other enterprises in the market, being aware of ideas and strategies formed outside the enterprise, low R&D cost, innovative thinking and providing a competitive advantage (Ayaz, 2021:66).

Closed innovation argues that ideas carried out in the enterprise should only be obtained from within the organization. According to this form of innovation, it is foreseen that the ideas of the employees in the enterprise cannot be repeated by other businesses in the market because they own them, and this idea in the enterprise will give the organization a competitive advantage (Ayaz, 2021:67). In this sense, closed innovation does not constitute an innovative process sufficiently due to the lack of knowledge and experience of other enterprises in the market and the lack of active interaction for the provision of information from the external

environment. (Ayas, 2021:68; Ezanoğlu and Dağlı, 2020:794). The above-mentioned information about open and closed innovation strategies is summarized in the table below.

**Table 1.** Differences between Open Innovation and Closed Innovation

Open Innovation	Closed Innovation
It works with experts in and out of the business.	In-house staffs are employed.
R&D costs are low.	R&D is being reduced.
No new entry conditions are required.	The business must enter the market with a new product to make a profit.
Innovation benefits in the long run.	Efforts are made to be a pioneer in the industry.
Internal and external interaction of the enterprise is active.	Non-business interaction is scarce.
Added value is provided with the external environment.	Intellectual property rights must belong to the personnel within the enterprise.

Source: Ayas, 2021:68.

When the above-mentioned open and closed innovation models are examined and the literature review is carried out, airports and airline carriers with closed innovation strategy in Turkey meet customer expectations with developing technology, improve service quality, gain a competitive advantage in the market, etc. It is seen that it has switched to an open innovation strategy for such reasons.

The following are the innovation models that have changed as a result of the changes in technology. These models are as follows (Coşkun et al., 2013:114; Çankaya, 2020:3);

- **Dynamic Innovation Model:** it is the innovation model that occurs as a result of businesses closely following the developments in the global field. In this model, managers and experts integrate innovations and differences that develop outside the enterprise into the enterprise, ensuring that the business does not lag behind the current developments.
- **Technology Lifecycle Model:** It is a model of establishing a strategy to gain market share in products integrated into the majority by analyzing whether new products and services formed with the development of technology are accepted by enterprises in society.

### 3.2. Strategic Innovation Management

The strategy consists of the steps that the company must take in order to achieve its objectives with limited resources available to the enterprise. In organizations, strategies are not just plans for ordinary situations. Strategies also consist of planned rules for the business to get through the process with minimal damage or damage in uncertain situations such as crisis and risk environments (Okay and Pınar, 2017:23).

Strategic planning is the process that enables the business to perceive opportunities and threats in the inner and outer environment. This process aims to enable the business to survive in the market and increase its profitability by detecting the opportunities that can and will occur (Satı and Işık, 2011:540).

Strategic management is all decisions and policies that enable the enterprise to realize its long-term performance and objectives in line with the strategic plans set out (Hancıoğlu and Atay, 2019:537). The innovation strategy means that the business manages the production stages, customer expectations, employee motivation in a way that is suitable for innovation, supported and improved as a result of its good analysis of the sector. (Satı and Işık, 2011:541).

The success of the innovation strategy depends on two key factors. These factors consist of technical resources and the perception of managing innovation strategies of management of the enterprise (Satı and Işık, 2011:542). It has the advantages of providing fast return to customer requests and needs, contributing to business performance by keeping employee motivation high and keeping up with the changing world by implementing innovation strategies in its enterprises in order to maintain market share, increase profitability in the sector and ensure customer satisfaction. In this sense, it helps to minimize the costs in the long term by choosing an

innovation strategy suitable for the market and business structure of the enterprises. Otherwise, innovation strategies that are not selected in accordance with the business structure appear to have failed.

#### 4. EFFECTS OF INNOVATION IN AVIATION

Throughout the history of the world, flight trials have begun as a result of people's interest in flying and birds, and after the success of the flight trial, which was first considered to have been carried out by the Wright brothers in the early 1900s, flying aircraft quickly began to take part in our lives.

After the first intercity flight in 1908, people's desire to travel in flying aircraft increased and work accelerated. The postal flight, which was built in France in 1908, was successfully carried out in 1911. While the developments continued all over the world, Turkish Civil Aviation activities developed in the same way, and in 1944, our first domestic production aircraft, NU was improved. The D 38 aircraft successfully flew from Istanbul to Ankara with a passenger capacity of six people.

The developments in the world and Turkey have followed each other and made aviation activities that can be applied in all areas. The development of these activities has contributed to the development of the regions where airports are built by increasing investments and initiatives in airports and aviation. Today, air transportation activities, which are at the forefront of increasing importance transportation activities, with both their contributions to the economies of countries and the added value and employment power created in the regions where airports are located make it more attractive to invest in aviation than other sectors.

##### 4.1. Aviation Industry

The Turkish Civil Aviation Sector has rapidly turned its momentum upwards with the Liberalization Movement launched in 2003 in line with the demand for air transportation activities in the globalized world. In line with the investments and innovations made the demand for aviation activities increases and contributes to both the socio-economic well-being of our country and the level of employment (Demir and Taşer, 2020:70).

The COVID-19 virus, which emerged in Wuhan, China in 2019, has affected the whole world. Epidemic periods have been experienced in the history of the world in the past. The sector most affected during the epidemic periods has been the service sector. Considering that aviation activities are also the product of the service sector, it will not be surprising that it is one of the sectors most affected by the Covid-19 pandemic (Yardımcı, 2021:107).

Serious reductions in aviation activities were experienced.as a result of the restrictions experienced in the epidemic, If we look at the data available in the pre-pandemic (2018) period; According to the ACI annual report, Turkey's place among aviation activities in the world was 32nd in 2008 and 7th in 2018 (Demir, 2019:85). According to the 2018 report, Istanbul Airport ranked 15th in the ranking of the top 20 airports carrying the most passengers in the world with 64,119,374 passengers ranked in the queue.

##### 4.2. Airline Service Process

In addition to the transportation activity, which is one of the main purposes of the passengers using air transportation, passengers are served in many areas starting from the moment the passenger decides to buy tickets for his/her trip. We can divide these services into three groups: pre-flight, during and after-flight services (Çankaya, 2020:466; Konyalılar, 2020:164; Okumuş and Asil, 2007:9; Türkay and Artar, 2021:90);

###### 1. Pre-Flight Process

- Request information about passenger booking procedures.
- Book or buy your ticket.
- Come to the airport.
- It receives the services offered by airlines at airports.
- Check-in is done.
- The ticket is delivered to the passenger.

- Passports and customs procedures are carried out by ensuring security.

## 2. Flight Order Process

- The passenger is taken on board.
- Services are provided for the cabin.
- The passenger leaves the plane.

## 3. Post-Flight Process

- The passenger picks up their luggage.
- It benefits from the airline's services at the arrival airport.
- Passenger leaves the airport.

In all of the above mentioned services, passenger satisfaction plays an important role in choosing the same airline again. For this reason, airlines aim to provide fast, reliable and understandable services to satisfy their customers.

Since the services provided are abstract concepts and show differences in perception from person to person, businesses use the SERVQUAL scale of 10 dimensions to measure the perception of service quality. This scale was created by Parasuraman, Zeithaml and Berry in 1985. The model includes the dimensions specified below (Akın, 2007:29; Ersöz et al., 2009:19);

- Reliability
- Credibility
- Civility
- Sufficiency
- Communication
- Access
- Enthusiasm
- Security
- Physical Elements (buildings and facilities, tools used to provide services, external view of personnel)
- Understanding the Customer

In the above-mentioned model, if the customer service expectation is above the realized level, i.e. if the perception of service quality realized is below expectations, it is thought that there are five gaps that prevent it from achieving the expected quality of service. These (Akın, 2007:30; Demir and Taşer, 2020:76; Ersöz et al., 2009:20);

**Gap 1:** This gap, known as the positioning gap, explains that management's thinking differs from consumer expectations.

**Gap 2:** This gap, known as the specification gap, explains that management's estimates differ from customer expectations.

**Gap 3:** This gap, known as the presentation gap, explains that the quality of service expected to occur and the quality of service performed are different.

**Gap 4:** This gap, known as the communication gap, explains that the performance of the service caused by the loss of communication with consumers is different.

**Gap 5:** This gap, known as perceived service quality, explains the difference between the service that the customer expects to occur and the service that occurs.

### 4.3. Innovation Movements at Airports

Innovative changes have been made at airports in order to meet the expected perceptions of service quality of consumers in the developing technology and increasing competition environment and to prefer air transportation, which is one of the means of transportation. Some of these innovations are listed below (Çankaya, 2020:466; Okumuş and Asil, 2007:13);

- **Kiosk:** These devices help customer's process tickets faster and safely without the need for anyone.
- **Biometric Integrated Border Crossing Unit:** It is the application implemented by the General Directorate of Security and Istanbul airport operators in order for individuals over the age of 18 to carry out passport procedures quickly.
- **X-Ray:** X-ray scanners prevent luggage and passengers from entering airports with foreign or hazardous substances in order to ensure the safety of passengers.
- **Hotel:** Accommodation centers where passengers can meet their hotel needs without having to leave the airport.
- **Micro Hotels:** It consists of single cabins, which passengers prefer to relax in a short time (30 minutes). This service is available in some parts of the world. It does not have a practice in Turkey.
- **Social Media Applications:** Includes all applications that enable airline carriers to actively exchange information with passengers using their own social media accounts and to share information about the business.
- **Information Monitors:** Consists of screens showing information such as which door the plane will take off from in certain areas of airports where passengers have access to instantaneous information, and whether the departure to the lounge is open.
- **Mobile Application:** It consists of applications where all flight-related services are designed for smart devices such as phones and tablets are informed and processes (check-in, online tickets,..) are completed without going to the airport through the application, which saves time.
- **Navigation Service:** It is the application that provides access from portable devices such as phones and computers, ensuring that the destination is reached as soon as possible.
- **Internet Services:** It covers the service that passengers can use from the moment they enter the airports and easily access data such as flight information and transportation services through this service.
- **Disabled Passenger Services:** Covers all services provided in accordance with the obstacle status from the moment they allow passengers requiring special service to enter the airports, which help the passenger to complete their flight safely and leave the airport.

### 4.4. Contribution of Innovation Movements in Airports to Employee Motivation

The concept of motivation is an important concept both in the field of psychology and in the field of management. Therefore, in addition to having different definitions of many resources, common values in all definitions consist of the basis of employee motivation, obtaining the desired performance from the employee, and positively affecting the employee performance in the operating performance (Gümüş, 2020:19; Konyalılar, 2020:164).

#### 4.4.1. Motivation Factors

The performance of employees in enterprises depends on two factors (Süzen, 2020:47). These are the ones that are going to;

- **Internal Motivation:** People with this motivation have internal motivation without being affected by external factors. For people with this motivation, the reward-punishment method has no effect and there is no need for external motivation. One's satisfaction for success supports his inner motivation.
- **External Motivation:** There are two basic dimensions for motivating people with this motivation. These dimensions consist of social motivation tools and organizational motivation tools. Social motivation

consists of factors related to the employee's environment (*friendship relations, connection with the manager, etc.*). Organizational motivation consists of concrete factors (*salary, position increase, etc.*).

#### 4.4.2. Motivational Tools

Businesses strive to create motivation in line with the behaviors they want their employees to exhibit. Since employees will turn to behaviors within the framework of their needs and expectations, managers should also focus on configurations by determining what motivates their teams and how they will motivate them, determining the scope of their needs. At this point, there are some motivational tools that managers have. Effective and accurate use of these tools by managers is important (Konyalılar, 2020:105). Although it differs by individuals, its universal characteristics prove the value of many generally accepted motivational means, as well as positive results from research (Sabuncuoğlu and Tüz, 2013:119; Süzen, 2020:50).

Different motivational patterns and different expectations of the people working in the enterprise require different methods to increase the motivation of the employees of the enterprises. These methods are listed below (Süzen, 2020:51);

- Economic tools
- Psycho-social tools
- Organizational and administrative tools

In addition to economic motivational tools, creating physical arrangements to reinforce the happiness of employees in the work environment is among the priority goals of managers. In this context, the working environment, which can appeal to the likes of one business seer, can have a negative effect on the other. Therefore, the manager should determine the motivational tools considering the psychosocial qualities of his team (Konyalılar, 2020:134). These are the tools of psychosocial motivation: appreciation and appreciation; some social amenities such as food, money, clothing and fuel allowance offered by the business; sports, excursions, entertainment-like activities organized in-house; it ensures that the work is carried out with pleasure and satisfaction in terms of the employee. By valuing those who work in a company, respecting private life is prioritized and the importance of providing them with a certain status is directly related to the image of the enterprise. It is also possible to use a number of administrative and organizational tools as incentives for motivation. In this context, training activities for the employee, promotion procedures, granting some powers and responsibilities, providing easy access to certain measures of information and documents; increasing dialogue with managers, other employees and customers; the adequacy of the equipment and equipment to be used for work, positive determinations regarding working hours, holidays and leave situations, management's approach to the problems that may be encountered during the work and the special problems of the employee constitutes what needs to be done (Barutçu and Sezgin, 2012:91).

#### 4.4.3. Motivational Factors

There are different factors in addition to different motivational tools to increase the motivation of employees in enterprises (Gümüş, 2014:42). These factors are listed below (Süzen, 2020:67; Ayaz and Tan, 2015:38);

- **Targeting:** In this factor, the target that the employee is trying to achieve should be determined as clear, understandable, and the set goal should be difficult but doable.
- **Business Design:** In this factor, it is tried to increase the motivation of the employees to carry out the current work by taking into account the wishes of the employees as well as the wishes of the enterprise.
- **Standard Flexible Working Schedules:** Instead of applying standard working hours, it refers to the reorganization of working hours in accordance with the wishes of the employee.
- **Teamwork:** Refers to the work of a particular group towards a common goal. Teamwork provides motivation because employees take responsibility and have a say in the solutions of problems.
- **Quality Circles:** are groups created to find solutions to problems as a team. In this factor, the employee is increasingly motivated because he chooses which problem he wants to solve of his own volition.

- **Performance Evaluation:** It is an activity of evaluating the duties and responsibilities fulfilled by the employees. In the enterprises where this activity is applied, the motivation of the employees increases and the rate of dismissal decreases.
- **Management Practices According to the Objectives:** It is to increase the motivation of the employee to fulfill the task given by establishing a connection between the objectives of the enterprise and the objectives of the employees.

#### 4.5. Contribution of Innovation Movements in Airports to Business Performance

Performance is a broad concept that is difficult to define. In this sense, the definition of performance in various studies can be defined as the success of enterprises in achieving their goals as a result of combining qualitative and quantitative criteria (Dursun, 2017:15). In the evaluation of this success, it plays an important role in making the competitive advantage of the enterprise sustainable. In this sense, performance strategies have changed due to the technology and market structure developing from the past to the present. As a result of these changes, the performance success levels of enterprises have become measurable but do not give an idea of the expectations of the enterprises. Therefore, businesses have found out that there may be negative consequences in the decision-making process based solely on performance evaluation criteria (Konyalılar, 2020:105).

Considering the above statements, the inclusion of objective data as well as subjective data in the evaluation when determining business performance reveals more accurate results (Aslan and Zincirkıran, 2016:275). In order to improve business performance, it is necessary to analyze the market well and develop strategies in accordance with the competition strategies and business expectations in the market. In this sense, performance measurements play an important role in enterprises. The dimensions included in these measurements are below. These are (Satı and Işık, 2011:554);

- Dimensions related to personnel,
- Dimensions related to customers,
- Social dimension,
- Organizational dimension,
- Economic dimension.

The above five dimensions consist of the dimensions that the enterprises include in the performance measurements. Based on these dimensions, it is found out that subjective values should be given importance in measurements in sectors with high uncertainty rates, such as the civil aviation sector. In this sense, classification of performance measurements according to operating sizes ensures that the analysis results are more reliable (Gürsu, 2014:156).

It is seen that the motivation of the employees in the civil aviation sector, where there is an intense competitive environment, has a positive effect on the business performance. However, in order to gain market share advantage, it is necessary to focus on new products or services and implement differentiation strategies.

## 5. CONCLUSION

In the globalized world, developing technology and increasing competitive conditions have created the need for businesses to follow technological developments closely. As a result of this need, enterprises have tried to keep up with the changing conditions by creating R&D departments in their own bodies by generating innovative ideas.

Businesses have created strategies to increase their market share and keep pace with changing conditions. These strategies consist of 6 different strategies (*Aggressive innovation strategy, defensive innovation strategy, copycat innovation strategy, dependent innovation strategy, traditional innovation strategy, innovation strategy that monitors opportunities*) in accordance with the performance and expectations of enterprises. When enterprises implemented these strategies, they avoided due to the cost they had to bear in the short term, but the market structure in which they operate obliges the enterprises to do so. Short-term cost maximization decreases with the long-term profit maximization of the enterprises implementing the right strategy. On the other hand, it is observed that the enterprises that prefer the closed innovation strategy, which is one of the types of

innovation, for cost minimization cannot meet their expectations due to the inability to keep up with the sector and developments in the long term. In the literature review section examined in the study, the effect of innovation strategies on the market shares and employee performances of organizations was analyzed by using subjective and objective analysis techniques and it was concluded that innovation strategies contributed significantly to employee performance and increase in market shares. In the examination, it was concluded that the aviation sector, which is a dynamic sector, should accept innovation strategies as a management perception and provide continuity to employees in order to increase the market share of organizations and achieve competitiveness. In the airlines examined and in the employee surveys included in the analysis, it was observed that innovative strategies contributed positively to the performance of the employees.

Innovation strategies vary depending on the organizational structure and management perception. These differences lead to the long-term profit maximization, growth in market share, and positive increase in employee performance by choosing the right innovation strategies and incorporating them into every aspect of the organization. However, as seen in the studies examined, some Turkish enterprises have identified innovation strategies that are not suitable for their organizational structures and it has been concluded that they cannot contribute positively to their enterprises. For this reason, most Turkish businesses that adopt the closed innovation strategy, as stated in the literature review, have gradually transitioned to an open innovation strategy.

In the study, the effects of innovation strategies applied by enterprises in the civil aviation sector in Turkey on employee motivation, business performance and customer satisfaction were examined. As a result of the development of technology, it was seen that businesses need to develop innovation strategies in order to keep up with the change in customer requests and needs. These innovation strategies need to be created and implemented in accordance with business management perception, expectations and performance. Due to the market structure of the aviation industry, it has been observed that businesses should pay attention to differentiation and new service understanding strategies. As a result of the implementation of strategies, it was observed that there was an increase in employee motivations. This increase has affected business performance and increased performance causes the business to maintain a presence in the market, retain a competitive advantage and customer loyalty. As a result, these positive effects have led to the profit maximization of enterprises.

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