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# Interaction of Organizational Innovation Management and Consumer Value Perception in the Aviation Sector

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**ABSTRACT**

This study examines the impact of organizational innovation management on consumer value perception in the aviation sector by focusing on product, strategy, process, and market innovation dimensions. A quantitative research design was employed, and data were collected through a survey conducted with working-age individuals (18-65 years old) in Turkey during January and February 2025. A total of 492 valid responses were obtained. The questionnaire included demographic items, the organizational innovation scale, and the perceived value scale. The study received ethical approval from Istanbul Medipol University (Decision No. 186, 2025). Findings reveal that product innovation positively affects emotional, functional, and economic value perceptions, while strategic innovation significantly impacts all value dimensions. Market innovation strongly influences economic value, and process innovation contributes only to functional value. These results highlight that organizational innovation management in aviation significantly shapes consumer perceptions and suggest that innovation efforts should be more consumer-centered to enhance satisfaction and loyalty. The study contributes to understanding how different innovation types influence consumer behavior and offers insights for aviation businesses aiming to improve their innovation orientation in a competitive market.

**Keywords:** Organizational Innovation, Perceived Value, Consumer Behavior, Customer Satisfaction
**JEL Classifications:** M31, M30, M10

## 1. INTRODUCTION

The civil aviation sector is a global transportation system that aims to carry out passenger and cargo transportation quickly, safely, and economically. The International Civil Aviation Organization (ICAO) introduces international standards and regulations to ensure this sector's economic, safe, and sustainable development. With technological developments, the civil aviation sector plays an important role in tourism, international communication, sports, and strategic areas. Especially with the impact of globalization, the aviation sector has interacted with other sectors and has felt the need for constant renewal to meet consumer expectations. The legal regulations made in Turkey in 2003 have increased competition in the sector and the quality of service by allowing private airline companies to operate. However, factors affecting the development of the sector include elements of terrorism, geopolitical location, economic indicators, and lack of qualified labor. This study aims to examine the effects of technological innovations and consumer value perception in the civil aviation sector on the sector. In addition, the effects of crises such as global pandemics on the sector and the measures taken in this process will also be evaluated.

Existing studies in the literature reveal that technological advancements have been the subject of research in numerous areas of the civil aviation sector, ranging from enhanced safety perceptions and increased operational efficiency to improved employee performance and cost management success. However, it

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is noteworthy that studies comprehensively addressing the effects of technological transformation on consumer perceptions of value, expectations, and services are limited. Given the growing market share of airlines in developing countries, empirically examining the impact of technological transformations on consumer perception constitutes a significant gap in the literature. This study aims to fill this gap by analyzing the effects of technological innovations on consumer value perception specifically within the civil aviation sector and presenting inferences for both academia and industry based on statistical findings.

## 2. LITERATURE REVIEW

The civil aviation sector is a transportation system that aims to carry out not only passenger transportation but also cargo transportation between specified points in a fast, safe, and economical manner. The most prominent of the objectives of the International Civil Aviation Organization (ICAO) is to ensure the development and sustainability of civil aviation activities by establishing them economically, safely, and with zero error. Therefore, this organization, which is seen as the highest inspection organization worldwide (ICAO, 2009), benefits from all the effects of both technology and technique by applying the same laws and standards to all member countries. According to Erdem (2018), all the rules set by the relevant organization are detailed in the documents it has prepared. Technology and the civil aviation sector develop together in direct proportion. Therefore, the civil aviation sector has a very important place in tourism, international communication, sports, and strategic areas. It should be considered quite natural that technology, innovations, and, as a result, consumer interaction exist in civil aviation, which also interacts with other sectors globally. This sector, which provides connections between individuals as a social dimension, brings distant places closer, and makes life easier, has become indispensable in daily life. According to Çebi (2014), the aviation sector, which provides both comfort and time savings, increases interaction and communication by bringing countries and cities closer together in the global environment and provides strategic, political, and economic contributions to countries.

In 2003, a turning point was experienced in the history of civil aviation in Turkey as a result of the legal regulations made for private airline companies to be able to fly. According to Saribaş and Tekiner (2015: 22), after 2003, the market structure in air transportation took on a competitive form, and the quality levels of the services provided increased while prices decreased. As in all developed countries, the aviation sector in Turkey determines the preferences as a pioneer in the field of transportation. Because the fastest, most reliable, and highest quality transportation type is air transportation. World air transportation and Turkish air transportation are developing in a similar and equal way. When the relevant reports are examined, the changes in the share in the transportation sector in Turkey, especially before and after 2003, can be seen (DHMI, 2020: 12). In the study conducted for the criteria affecting the civil aviation sector in Turkey, Bakir et al. (2017) stated that primarily terrorist elements, having potential in terms of tourism, geopolitical location, economic indicators and developments in the political structure are effective. Therefore, these criteria must be taken into consideration in the policies and strategies to be implemented in this sector. In addition, the lack of a qualified labor force is shown as another important factor. The lack of the necessary qualified labor force may cause disruptions in operation and, as a result, negative thoughts in consumer perception. In particular, the disruption of needed educational activities and the failure to create employee perception may cause a decrease in external dependency and rates of benefiting from technological innovations. Despite all these situations, according to Yazgan and Yiğit (2013), Turkey is considered to be open to development in the civil aviation sector due to its many strategic advantages with its geographical location and climate conditions.

Especially thanks to the scientific and technological developments in recent years, civil air transportation continues to increase its growth momentum as it offers fast, safe, and comfortable transportation to consumers at an affordable cost, as always. The desire of businesses in every field to integrate and the increase in human mobility in connection with this, as a result of globalization, affects the regions to come closer to each other and the distance to become closer. The idea of saving time, as a result of the increase in the opportunity cost of time, increasingly directs consumers who want to travel by air to this area. When we look at the history of civil aviation, according to Goetz and Vowles (2009), the idea of airline companies opening up to new markets is shown as the first attempt of airline companies in the USA to enter international markets in addition to domestic flights in 1978, and the liberalization process in civil aviation sectors was initiated. With this development period, the progress in the aviation sector reached a higher momentum, and due to the general interaction of globalization and the aviation sector, it started to be implemented in other parts of the world.

With the effect of scientific and technological developments, today's civil aviation sector has increased its share in the transportation sector by increasing the demand for commercial air transportation, especially with the change in the dimension of globalization. While the worldwide scheduled commercial passenger transportation figures increased by 7.3% in 2018, it is seen that this figure was 4.2% in 2019. According to Çoban and İpek (2020: 90), in addition to this statistic, it is stated that the number of seats offered in 2019 was 3.4% compared to the previous year, and the occupancy rates in the aircraft were a record 82.6%. However, with the effect of the global COVID-19 pandemic that occurred later, the aviation sector, like other sectors, entered a period of forced slowdown. The idea of benefiting from air transportation has become relatively more accessible for individuals, as it has become both more economical, faster, and of higher quality. According to Barron (2002), this growth in the sector causes air traffic to increase, airports to become more crowded and services to become more important. It is thought that the aviation sector, where speed and security are mandatory by nature, will continue to grow continuously in the future, and therefore, the national and international rules needed for the good management of this process must continue to be implemented. The relevant rules completely set out general standards for the global compatibility of airspaces, airports, and aircraft and the provision of safety. According to Siregar (2019: 20), since unlawful behavior

and interventions must first be prevented to ensure safe and secure flights, aviation safety and security are the basic building blocks that create problem-free, high-quality, comfortable, regular, and secure flight activities. The safety and security rules mentioned here, in addition to directing the civil aviation sector, also make positive contributions to regulating and managing the congestion and functioning in the sector. In fact, in some cases, consumers who use air transportation regularly think that intensive operation is normal and of high quality, while Barron (2002) mentions that consumers who see infrequent operation or those who use air transportation for the first time can be seen to experience disappointment or dissatisfaction. Furthermore, according to James (2014: 24), many of the relevant behaviors are because passengers think that they are deprived of their rights regarding air transportation, and the conditions experienced by passengers in crowded environments cause them to exhibit unruly, negative, inappropriate, and angry behaviors.

All the vital processes we witness in today's world show the transformation of the technological level reached by the techniques developed by people. Digital technologies, which have become an indispensable part of our lives in recent years, have significantly changed our life experiences after transportation technologies that allow us to change our place over long distances. Since the concepts of space and culture are also intertwined thanks to the fluidity and flexibility found in the virtual world, taste and interest behaviors also exhibit a mixed character. The digital environment, under the influence of technology, removes the boundaries of people's private lives, turns them into a public area, and can put online experiences in front of everyone. The most important thing forgotten in this environment is that the broadcasts people show through social media are the filtered version of real situations. However, no matter what, the most important part for people is to be constantly visible. Innovation in the field of technology is thought of as the processes related to changes in technology and the psychological, economic, cultural, and social effects of these changes on society. Every innovation experienced in technology creates a business process and principles. According to Betz (2010: 24), the principles of innovation benefit from the structure of technology as a general pattern. However, to be advantageous in a competitive environment, it is necessary to be in a context. All principles that seem simple have a complex structure in terms of context. Therefore, the areas covered by these contexts include technology strategy, scientific infrastructures, engineering, finance, marketing, research, and information functions. As a result of these processes, the most important part is the destruction of stereotyped habits and the creation of new ways of thinking and behaving.

Adams et al. (2006: 22) state that there cannot be a single explanation for the concept of innovation, and Bessant (2003: 761) explains that this concept, which is used to mean doing something new, is not only about an invention but also about the development and application of the relevant goods or services. Uzunbacak (2015: 815) states that the word innovation, which entered our language in the 1990s, is used in the senses of innovation and renewal. Organizations aim to achieve certain goals when planning the innovation systems they will implement. Although the rates vary from business to business, the main goal is always to get better results. Another of the biggest goals of the innovation phenomenon for organizations is to gain competitive power. Businesses that gain competitive power can survive by gaining strategic advantage in the market conditions they are in, become leaders, and reach their ultimate goals (Ottenbacher et al. 2008: 115). Some obstacles reduce effectiveness in innovation management and lead organizations to failure. Economic factors, characteristics specific to businesses, and legal factors are factors that cause innovation applications to slow down and turn negatively (Oslo Manual, 2005: 23). According to Drucker (2002: 5), the concept of innovation is defined as the targeted change effort in the economic and social power of an organization. The successful application of creative ideas in an organization is also defined as innovation, according to Amabile and Fisher (2014: 482). The successful application of innovations by organizations increases their income and results in the needs of consumers being met. Therefore, innovation and its management provide economic and social benefits to all stakeholders. The concept of innovation, which provides organizations with the opportunity to survive, progress, and grow, also offers businesses the opportunity to influence the markets in which they operate. The fact that the most visible Apple brand surprised the sector when it introduced its products, such as the iPod and iTunes to the market, according to Davila et al. (2006: 1), is actually because it shows innovations that no one has thought of before in the PC sector. In this sense, the concept of innovation facilitates the adaptation of organizations to the changing conditions of the age while at the same time providing benefits to them to get ahead of their competitors and to be pioneers if they can succeed, with a kind of competitive tool effect. It is known that there are many innovation classifications in the literature. According to the Oslo guide explained at the beginning, innovation types are classified as process innovation, product innovation, marketing innovation, and organizational innovation (2005: 47). In defining other innovation types, Vila and Kuster (2007: 20) state the relevant concept as strategy innovation, process innovation, market innovation, and product innovation. Kahn (2018: 454) classified innovation as product innovation, process innovation, business model innovation, marketing innovation, organizational innovation, and supply chain innovation.

According to Trott (2005: 5), it is known that innovation activities have significant economic contributions to both economies and businesses that innovate. Innovation as a system is defined as a process in which people combine their experiences and knowledge, transform their skills and abilities into activities or projects aimed at a specific goal, and ultimately result in commercial success (Kettunen et al., 2007: 46). Therefore, innovation is a path that needs to be managed. However, if organizations have R&D processes to manage R&D activities, if they have order-delivery processes to manage production activities, it would be natural for them to have innovation processes to manage innovation activities. The study states that the innovation process is one of the vital processes of businesses, that it cannot be expected to emerge spontaneously, that it will occur in businesses that support creativity and experimental working methods, and that the organizations that will implement this process should be flexible and effective. It is possible to talk about many factors that affect the success of

implementing innovation activities to be implemented within the organization. Organizational culture can affect innovation and creativity practices positively or negatively. The most important positively influential feature is having high error tolerance. McLean (2005: 232) states that employees are supported to share their ideas and make experimental attempts in such organizations and mentions the importance of creating an organizational culture that supports free and new initiatives thanks to these behaviors carried out without fear of punishment. In addition, he explains that businesses with this type of organizational culture, compared to other organizations, have an integrated structure that values differences and respects them, believes in personal talents and skills, and values teamwork and cooperation. Another feature of organizations that use innovation management effectively is the effective use of communication channels. The attitudes of upper management are also of great importance in the formation of this type of culture. The establishment of an organizational structure that supports the development and sharing of new ideas is one of the top management's duties. It is likely that innovation skills of organizations where strict controls are applied, there are high levels in the hierarchy, and specialization and standardization are common and underdeveloped. On the contrary, organic organizational structures can be considered to have a high level of innovation capacity. Another factor is the harmony between the organization's mission, vision and goals and the innovation activities it will implement.

In innovation management, a sustainable structure according to changing conditions, to survive in a constantly increasing competitive environment, Benchmarking, which is called continuous research, comparison and decision making and implementation of the best and innovation, is the most effective method according to Özgen and Ölçer (1998: 61). In addition, innovation management generally includes the management of conditions with high uncertainties and risks. The existence of significant uncertainties in the innovation process for organizations also makes the process more difficult to operate and control. Uncertainties in the current market, organizational uncertainties, and technological and financial uncertainties are the most important ones. Each of the uncertainties mentioned presents very serious risks for organizations and can also prevent businesses from making significant innovation developments. According to Uzkurt (2008: 41), organizations need to create a business structure and culture that will further reduce these uncertainties that may be experienced. In addition, in cases where organizations cannot overcome, support from both the state and other institutions will accelerate the process of overcoming them. Dodgson et al. (2008: 3) mention that it is of great importance for businesses to benefit from innovation management to survive in economic societies where information is used intensively due to the high level of competition. According to Ülgen and Mirze (2006: 25), innovation management in the strategic management approach has an increasing importance for organizations, and they state that it is the process of utilizing production resources such as human resources, capital, raw materials, natural resources, etc. most efficiently and powerfully for the organization to achieve its goals. Strategic innovation management, explained in this way, also differs from the strategic planning process, especially in terms of thinking style. Porter (1985: 1) related the concepts of innovation and competition and mentioned that innovation has positive effects on business performance and that organizations will gain sustainable competitive advantage in the market conditions they are in by preparing a differentiation strategy through innovation management. All of these studies show that the ability to innovate in businesses is an important tool of strategic management as a concept related to competition. Koçel (2015) states that the ability of organizations to innovate is the only main skill they have.

Consumers' perceptions of any marketing activities are seen as very important in terms of organizations. According to Kazanci and Başgöze (2015: 436), the main reason for this situation is that people's attitudes, behaviors, and purchasing behaviors are affected by consumer perceptions. First of all, consumers get to know the activities that occur with the promotional efforts applied by businesses, and then they have an idea about the relevant goods or services. According to Yurdakul Coşkunkurt (2013: 206), as a result of this idea, consumers' attitudes and behaviors are shaped, and their purchasing decisions can change. Oliver (2015) defines consumer value perception as the result of comparing the gains after using the good or service with the costs of obtaining the good or service. In this sense, consumer value perception is often stated as the result of the change between the things the consumer gives up in return for the good or service he/she receives. In this explanation, the concept of value is defined as the comparison between the costs incurred by the consumer in return for the service he/she purchases and the benefits he/she gains from the services he/she receives. The concept of price is used to show what can be given up in return for the desired goods or services. According to Yildiz and Çiğdem (2018: 239), both time and non-material costs, such as physical work, should also be considered as costs that constitute the service received. Çetintürk (2016) first detailed the consumer value as the total value perceived by the consumer while specifying the characteristics of consumer value perception. As another feature, he stated consumer value as the consumer's proportional comparison of the total benefit provided to the consumer by the purchased good or service with the total costs. Another feature is that it is important to minimize the costs that the consumer will bear until the consumer value is increased and the total benefits offered to the consumer are increased. In addition, it is shown as another feature that consumers' value perceptions may differ from individual to individual, that is, they are subjective. Finally, it is stated as a separate feature that in addition to the qualities of the good or service, the presentation styles of the good or service and consumer relations are also very important factors in the creation of consumer value. Creating value for the consumer is an approach related to the consumer demands in the purchasing process and the experience of purchasing and using the product. In another explanation, Cop and Yüzüak (2016: 54) explain value creation as a situation where the consumer is provided with higher benefits as a result of the costs that the consumer will bear remaining constant. Because according to this idea, if the value created is not for the consumer, it will not be meaningful.

The value perceived by the consumer is the general evaluation of the benefits that the consumer gains from the product or service. According to Akin and Seçgin (2014: 30), the consumer's

perception of value towards a product or service includes all the concepts of benefit, price, expenditure, and quality. In addition, consumer value perception has four main features: the features of the product offered to the consumer by the organization, the process of obtaining it, the experience, and costs. According to Ural (2008: 5), the perceived value of the product offered to the consumer is affected by the features of the product, the experience of the product, the process of obtaining it, and the production costs of the product. The factors specified as product features are explained as the evaluation of the functional, dimensions, performance, and technological innovations of the product by the consumer. Since the development of the goods or services that organizations have is entirely their responsibility, it is seen that they give importance to areas such as R&D, design, and engineering. According to Ural (2008: 6), since it is seen that employees in these departments mostly focus on meeting consumer expectations and plan to include technically superior features rather than features that consumers find valuable, the superior features that are planned to be included are mostly not used and are not considered necessary by consumers. Another factor is the accessibility, reliability, supplier, and distribution method of the goods or services requested by the consumer in the process of obtaining the product. It is seen that if the consumer wants to buy the goods or services at the place and time he/she wants, he/she prefers the organization that fulfills this demand to others. According to Ural (2008: 5), the business should stock the most appropriate number of products to ensure sustainability in the supply of its products. Because the supplier's faster and more reliable behavior compared to its competitors in delivering the product to the consumer will positively affect the consumer's perception of the service he/she receives. As a result, the business will be able to market goods or services at higher prices compared to its competitors. Product experience is also one of the factors that affect. The experience gained by the consumer regarding the product, the brand of the product, the behavior of the sales personnel, the solution of possible problems, and the evaluation of after-sales services are included in the experience section. As a result of taking the necessary precautions for the positive experiences of the consumers, businesses can ensure consumer loyalty and commitment. The last influential factor is the costs, and it is one of the most difficult parts of reaching an agreement. Because both the business and the consumer focus on the cost of the relevant product or service. The consumer is not interested in how much the product or service he/she will receive costs and focuses on the purchase cost. According to Ural (2008: 6), these costs include transportation costs, administrative/legal costs in the sales contract, waste costs after use, personal costs related to product use, and costs of differences between the product sold and other products.

Lai (1995) created a typology model of product evaluation and benefits for consumers based on the analysis of consumption behavior to answer the question of what reasons people may have for purchasing a certain product. In this model, it is emphasized that it is necessary to integrate personal, cultural, and consumption values with product benefits to determine the consumer's value perceptions. Cultural values are divided into two parts, material and spiritual, emphasizing that family and social environment affect the formation and development of personal beliefs. As a result, the culture in the society in which people live affects people's lifestyles and ultimately creates differences in consumption habits. According to Peter and Olson (2008), there are common meanings, emotional behaviors, characteristic knowledge, and belief styles that individuals in the same social and cultural group pass on to the next generations. Therefore, the material and spiritual cultural elements in society can affect the consumption behaviors of individuals very closely. In the personal values in the second part, the beliefs and needs of individuals about what they want for themselves are shown. These values are facts derived and changed in different ways and are abstract facts as beliefs that guide different behaviors and decisions in certain situations. According to Wiedmann et al. (2007), social values, as a complement to personal values, direct the prestige value perceived as a sign or a symbol of exclusivity to the groups of influence in the goods or services preferred by the consumer. In the relationship between consumer value and benefit, a broad understanding of the possible benefits desired by consumers in the goods or services they use is a solid basis for formulating strong strategies, product differentiation, and positioning applied by marketers. According to Sheth et al. (1991: 163), the benefits of the products should be combined with consumption values because the benefit that the consumer obtains from the goods or services they use is directly proportional to the value. Finally, the relationship between price and value is stated, and in the studies conducted on the subject, it is revealed that consumers buy a product not in terms of value but to satisfy their own needs or individual values. According to Gale and Swire (2006), they mention three main ways that will affect consumers' value-price analysis for products that compete in market conditions. These methods are called importance-performance analysis, attribution analysis, and engineering economy, and they state that when pricing, not only the producer's but also the consumer's costs need to be evaluated.

In the aviation sector, technological innovation management has undergone a strategic transformation in recent years, driven by digitalization, automation, and data-driven decision-making processes. According to Yildiz and Masioğlu (2025: 466), the literature widely emphasizes that digital transformation is not limited to operational efficiency but also directly impacts passenger perceived value, satisfaction, and loyalty levels. Effective management of digital technologies enables airlines to gain a competitive advantage, while creating value for consumers through time savings, ease of use, and personalized services. According to Awe et al. (2025: 80), the integration of Industry 4.0 applications into the aviation sector is reshaping the passenger experience, particularly through e-services, self-service technologies, and smart airport applications. Furthermore, it reveals that performance expectations and perceived benefits have a significant impact on digital service acceptance, and this impact increases consumer perceived value. Similarly, according to Kim et al. (2020: 5), the use of biometric security systems and contactless technologies in airports enhances passengers' perception of security and thus positively influences their service quality evaluations.

The impact of technological innovations on consumer value perception is closely related to the concepts of technology

acceptance and trust. In particular, AI-powered customer service, chatbots, and personalized digital assistants increase the functional and emotional value perceived by passengers. Belanche et al. (2020: 14) state that the use of smart technologies in the airline industry has positive effects on consumer perceived benefits and satisfaction. These findings demonstrate that innovation management should not only involve the application of technology but also be managed in line with consumer expectations.

Sustainable and environmentally friendly innovations in aviation are among the new determinants of consumer value perception. Recent studies show that passengers are showing a higher willingness to pay for low-carbon emission technologies and green practices. This situation, according to Gössling and Humpe (2020: 10), shows that environmental awareness has become an important element that increases the value perceived by the consumer, and that innovation management should be addressed with a sustainability dimension. The relationship between innovation management and customer experience has been further strengthened with the increase in digital touchpoints. Service processes improved using machine learning and big data analytics, according to Mirthipati (2024: 18), enable more accurate prediction of passenger expectations and the provision of personalized value propositions. Furthermore, this shows that digital service improvements significantly increase customer satisfaction in online check-in and boarding pass processes. These findings reveal that data-driven innovation management plays a critical role in strengthening consumer value perception.

In the aviation sector, technological innovations, digitalization processes, and service quality have significant impacts on the perceived value and satisfaction levels of passengers. Especially since the COVID-19 pandemic, the adoption of digital technologies has become a critical element for airlines, not only in terms of operational efficiency but also in terms of passenger experience and service quality. Studies in the literature have systematically examined how passengers perceive the investments made by airlines in digital technologies during the Covid-19 period. In another study conducted by Wang and Lee (2025) on Chinese airline passengers, it was found that airline selection criteria had significant effects on perceived value and recommendation intention, and that booking services, pre-flight and online services, in particular, strengthened recommendation intention by increasing perceived value. Research conducted by Shiwakoti et al. (2022) measured the satisfaction of Chinese passengers with the new digital technologies adopted by airlines; it showed that technologies such as AI-powered customer service, electronic baggage tags, self-service kiosks, and contactless digital applications were generally viewed positively by passengers. This study indicates that technological innovations have a direct impact on passenger satisfaction and perceived service quality.

Studies on the relationship between customer satisfaction and service quality report that service quality directly and positively impacts passenger satisfaction and consequently behavioral outcomes (e.g., recommendation intention, repeat purchase). According to Avgan and Özdemir (2025), passengers with a high perception of service quality achieve higher levels of satisfaction, which strengthens brand loyalty. In their study on how current technological innovations are applied in transportation infrastructure, Wu et al. (2025) emphasized that digital twin technology improves both operational efficiency and user experience by optimizing the planning, operation, and maintenance processes of systems through data integration. In Okan's (2024) research on airline systems, it was stated that technological innovations have a direct impact on the perceived quality of service by passengers, and this impact is further strengthened through customer relationship management (CRM) applications, with CRM acting as a mediating variable in this effect. Another study by Alanazi et al. (2024) analyzed the effects of airport service quality on passenger satisfaction and recommendation intention using Skytrax passenger reviews. This data-driven approach focuses on service quality aspects such as terminal cleaning, seating areas, Wi-Fi connectivity, and staff behavior.

## 3. METHODOLOGY

The main purpose of this study is to determine the value consumers perceive through the management of technological innovations in the aviation sector. The study aims to reveal the effects of technological innovations implemented by airline companies on consumer perceptions and evaluate how these innovations lead to changes in behavior. In addition, it aims to present suggestions for the effectiveness of dynamic innovation strategies in the sector in line with the effect of these innovations on consumer behavior.

In this study, the numerical method was adopted, and the survey was preferred as the data collection tool. The first part of the three-part survey included questions about the demographic information of the participants. The second part used the organizational innovation scale, adapted from Yildirim and Karabey (2016), which consists of four sub-dimensions—product, process, strategy, and market innovation—and includes 20 statements. The third part used the perceived value scale, adapted from Yeşilyurt (2018), including the sub-dimensions of emotional, functional, and economic value, with 19 statements. These scales were selected due to their prior validation in similar contexts and their suitability for measuring innovation and perceived value within the aviation sector. The specific number of items was chosen to balance comprehensiveness with respondent fatigue.

**Table 1: Goodness of fit values of scales**

| Fit Statistics | Organizational innovation | Perceived value | Good Fit | Acceptable Fit |
|---|---|---|---|---|
| $X^2/df$ | 2.703 | 2.514 | ≤2 | 2<X2/df≤3 |
| GFI | 0.926 | 0.918 | ≤1.00 | 0.90≤GFI<0.95 |
| AGFI | 0.882 | 0.866 | ≤1.00 | 0.85≤AGFI<0.90 |
| CFI | 0.909 | 0.921 | ≤1.00 | ≥0.90 |
| RMSEA | 0.052 | 0.061 | ≤0.05 | ≤0.08 |

P=0.000<0.05, $X^2/df$: Chi-square/Degrees of Freedom, GFI: Goodness of fit ındex, AGFI: Adjusted goodness of fit ındex, CFI: Comparative fit ındex, RMSEA: Root mean square error of approximation

The research universe was selected as 58,309,333 working-age individuals in Turkey as of 2023 (TSI, 2024). The survey was conducted online between January and February 2025 across Turkey, chosen to capture recent consumer perceptions during a period of dynamic change in the aviation industry. A total of 492 valid responses were obtained for analysis within the scope of the research. Participants were informed about the purpose of the study, and their informed consent was obtained before participation. The anonymity and confidentiality of respondents were ensured, and the data were handled impartially.

The study received ethical approval from Istanbul Medipol University Ethics Committee (Decision No. 186, 2025). The data used in this study are original and have not been used in previous publications. The data were analyzed using SPSS and AMOS statistical programs. To determine the accuracy of the scales planned to be used in the research, confirmatory factor analysis was performed first. According to the goodness-of-fit values obtained (Table 1), both the organizational innovation and perceived value scales were within acceptable fit ranges, indicating the scales' usability in the research.

**Figure 1:** Path diagram (Authors' Own)

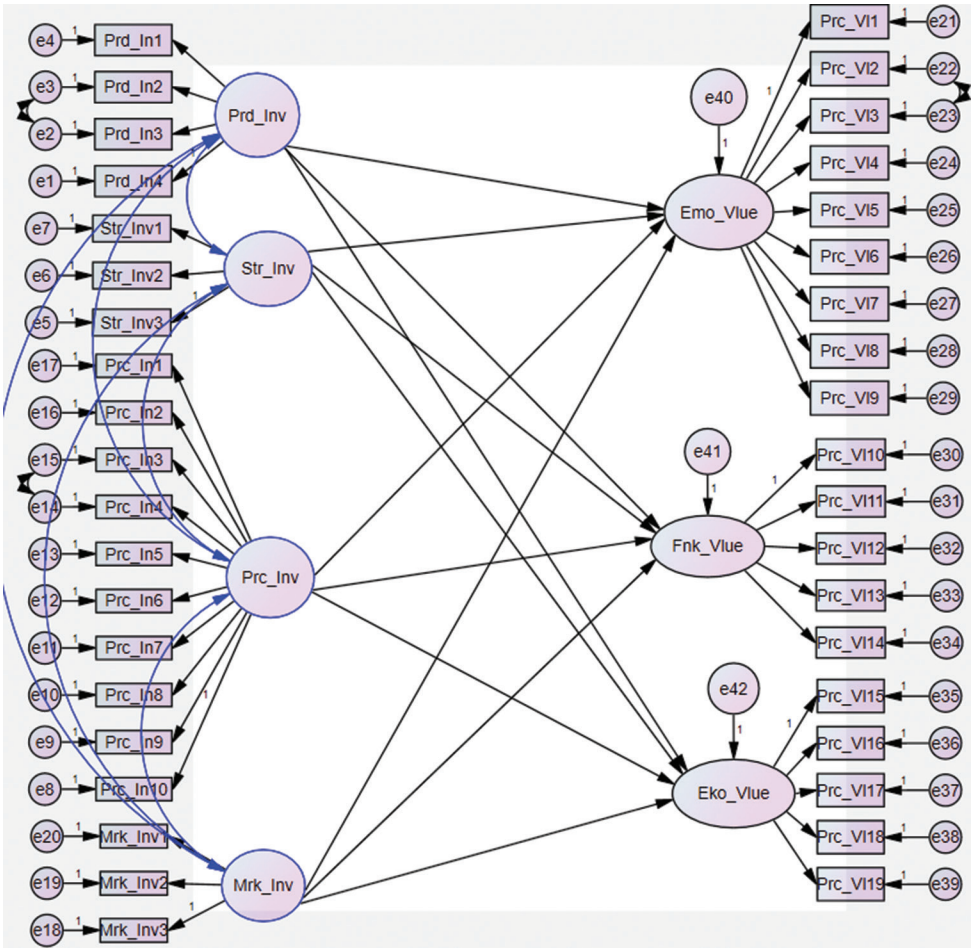


Figure shows hypothesized paths between organizational innovation sub-dimensions and perceived value dimensions

**Table 2: Demographic distributions of participants**

| Variable | Frequency | Percent | Valid percent | Variable | Frequency | Percent | Valid percent |
|---|---|---|---|---|---|---|---|
| Gender | | | | Marital status | | | |
| Male | 230 | 46.7 | 46.7 | Married | 251 | 51.0 | 51.0 |
| Female | 262 | 53.3 | 53.3 | Single | 241 | 49.0 | 49.0 |
| Age | | | | Education | | | |
| 18-23 | 56 | 11.4 | 11.4 | High School | 162 | 32.9 | 32.9 |
| 24-29 | 161 | 32.7 | 32.7 | Associate's Degree | 263 | 53.5 | 53.5 |
| 30-35 | 206 | 41.9 | 41.9 | Bachelor | 19 | 3.9 | 3.9 |
| 36-41 | 46 | 9.3 | 9.3 | Postgraduate | 48 | 9.8 | 9.8 |
| 42 and above | 23 | 4.7 | 4.7 | | | | |
| Monthly income | | | | | | | |
| 17.002 TL and below | 52 | 10.6 | 10.6 | | | | |
| 17.002-22.000 TL | 105 | 21.3 | 21.3 | | | | |
| 22.001-27.000 TL | 88 | 17.9 | 17.9 | | | | |
| 27.001-32.000 TL | 72 | 14.6 | 14.6 | | | | |
| 32.001 TL and above | 175 | 35.6 | 35.6 | | | | |

**Table 3: Regression weights**

| Effect (Path) | | | Estimate | S.E. | C.R. | P |
|---|---|---|---|---|---|---|
| Emotional Value (Perceived Value) | <--- | Product Innovation (Organizational Innovation) | 6.737 | 2.960 | 2.276 | **0.023** |
| Functional Value (Perceived Value) | <--- | Product Innovation (Organizational Innovation) | 2.927 | 1.049 | 2.791 | **0.005** |
| Economic Value (Perceived Value) | <--- | Product Innovation (Organizational Innovation) | 1.257 | 0.335 | 3.750 | *** |
| Emotional Value (Perceived Value) | <--- | Strategic Innovation (Organizational Innovation) | 8.239 | 3.697 | 2.228 | **0.026** |
| Functional Value (Perceived Value) | <--- | Strategic Innovation (Organizational Innovation) | 1.587 | 0.710 | 2.235 | **0.025** |
| Economic Value (Perceived Value) | <--- | Strategic Innovation (Organizational Innovation) | 1.663 | 0.326 | 5.108 | *** |
| Emotional Value (Perceived Value) | <--- | Process Innovation (Organizational Innovation) | 2.068 | 5.128 | 0.403 | 0.687 |
| Functional Value (Perceived Value) | <--- | Process Innovation (Organizational Innovation) | 11.705 | 5.280 | 2.217 | **0.027** |
| Economic Value (Perceived Value) | <--- | Process Innovation (Organizational Innovation) | 1.794 | 1.299 | 1.381 | 0.167 |
| Emotional Value (Perceived Value) | <--- | Market Innovation (Organizational Innovation) | 0.793 | 0.266 | 2.987 | **0.003** |
| Functional Value (Perceived Value) | <--- | Market Innovation (Organizational Innovation) | 0.672 | 0.153 | 4.399 | *** |
| Economic Value (Perceived Value) | <--- | Market Innovation (Organizational Innovation) | 0.470 | 0.071 | 6.641 | *** |

S.E: Standard error, C.R: Critical ratio, P-values indicate significance levels. Note. Bold values indicate significant effects. *p < 0.05, **p < 0.01, ***p < 0.001

After confirming no inconsistencies, reliability analysis was applied, with Cronbach's Alpha values indicating high reliability for both organizational innovation ($\alpha$ = 0.914/N = 20) and perceived value ($\alpha$ = 0.907/N = 19) scales.

## 4. RESULTS AND DISCUSSION

Among the 492 participants, 53.3% were female. The largest age group was 30–35 years old (41.9%). More than half of the participants (53.5%) held an undergraduate degree, and 35.6% reported a monthly income of 32.001 TL or higher. Marital status was nearly evenly split, with 51.0% married and 49.0% single. Detailed demographic characteristics are summarized in Table 2.

The path analysis of the research variables was conducted using Structural Equation Modeling (SEM). The model examined the effects of organizational innovation sub-dimensions—product, strategic, process, and market innovation—on the emotional, functional, and economic value perceptions of consumers. The model fit indices indicated an acceptable fit: Chi-square/degrees of freedom ratio ($X^2$/df) = 3.812, Goodness of Fit Index (GFI) = 0.919, Adjusted Goodness of Fit Index (AGFI) = 0.902, Comparative Fit Index (CFI) = 0.917, and Root Mean Square Error of Approximation (RMSEA) = 0.073 ($P < 0.05$). These results demonstrate that the model adequately represents the data.

The findings in Table 3 indicate that product innovation has a significant positive effect on all three perceived value dimensions: emotional, functional, and economic ($P < 0.05$). Similarly, strategic innovation significantly affects all dimensions of perceived value ($P < 0.05$). Process innovation shows a significant positive impact only on functional value ($P = 0.027$), while no significant effects were found on emotional or economic value. Market innovation significantly influences all perceived value dimensions, with the strongest effect observed on economic value (C.R. = 6.641, $P < 0.001$). These results highlight the differentiated impact of various innovation types on consumer value perception.

## 5. CONCLUSION

This research aims to investigate the effects of technological innovation management on the value perceived by consumers in the aviation sector, focusing on the product, strategy, process, and market dimensions of organizational innovation. The findings revealed that the perception of product innovation in organizations has a significant and positive effect on the emotional, functional, and economic value perceptions of consumers, highlighting that consumers perceive innovative product features as more valuable. This result is consistent with studies in the literature that particularly emphasize the effects of product innovation on customer satisfaction and loyalty (Rogers et al., 2014; Hoe and Mansori, 2018).

Another important finding obtained from the research is that strategic innovation positively and significantly affects all perceived value dimensions. Based on this finding, it can be said that strategic innovation serves as a powerful tool in shaping customer perception, with strategic planning and innovative processes aligning with the results of studies emphasizing customer loyalty and brand value in the long term (Prahalad and Ramaswamy, 2004; Khuong and Giang, 2014). The fact that the effect of strategic innovation on economic value is less pronounced than on other value elements in the research indicates the need for further research in this area across different periods and sectors. This situation is consistent with other studies in the literature that report cost management and pricing strategies in the aviation sector directly affect consumer perception (Anuwichanont, 2011; Narci and Karaman, 2022). According to yet another finding obtained from the research, market innovation exerts strong effects on perceived value. It can be said that marketing strategies play an important role in consumer perception, especially in the context of economic value. Therefore, this finding is similar to other studies in the literature that show that innovative marketing strategies affect customer acquisition and loyalty in the aviation sector (Tümer et al., 2019; Narci, 2023). It can be said that the fact that process innovation, another sub-dimension of organizational innovation, significantly affects only functional value indicates that innovations are difficult to perceive by consumers due to the limited visibility and awareness related to process innovations. Based on this result, it contributes to other studies in the literature that emphasize the need for process innovations to be more consumer-oriented (Christensen and Raynor, 2003; Ventura and Soyuer, 2016). The research results reveal that process innovations in the aviation sector should focus especially on operational innovations and consumer value.

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