

Analysis of The Effect of The COVID-19 Pandemic on Customer Satisfaction and The Airline Passenger Transportation Sector

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Article Info

Received: 09 February 2025

Revised: 07 May 2025

Accepted: 18 June 2025

Published Online: 22 June 2025

Keywords:

Aviation

Airline industry

Customer relations

Customer satisfaction

The new normal after COVID-19

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RESEARCH ARTICLE

<https://doi.org/10.30518/jav.1636153>

Abstract

The COVID-19 pandemic has significantly impacted the airline industry, altering customer expectations and satisfaction. The restrictions imposed during the early stages of the pandemic, such as travel bans and flight cancellations, have reshaped the dynamics of air travel. As businesses adapt to the "New Normal", understanding and addressing evolving customer needs have become critical for sustaining trust and satisfaction. This study examines the effects of the COVID-19 pandemic on customer satisfaction within the airline industry. A survey-based research methodology was employed to assess passenger experiences and perceptions. The findings provide insights into the key factors influencing customer satisfaction in the post-pandemic era and offer strategic recommendations for airline companies to enhance service quality and customer loyalty.

1. Introduction

Customer satisfaction is one of the most critical elements of passenger loyalty beyond this situation (repurchasing or being willing to buy again). Therefore, airline companies that provide customer satisfaction come to the fore more. This situation brings to the fore the marketing strategies that provide the customers' loyalty, ensuring that the airline companies prefer the same operator in every region. The loyal customer group influences the enterprise's market position. From this perspective, the marketing activities carried out by airline companies to create loyalty in their target segments are essential (Sayım and Salepçioğlu, 2020).

However, airline suppliers (such as aircraft manufacturers, cargo services companies, ground handling companies, catering suppliers, ticket sales suppliers, etc.) directly affect the quality of the service provided and customer satisfaction (Macit and Göçer, 2017). The competition is increasing as business volume and investments increase daily in the aviation sector. Airline companies must be financially strong to survive. Financial power is directly proportional to the product sold. In other words, to increase financial power, customer satisfaction must increase. Achieving customer satisfaction depends on fully understanding and knowing the customer's expectations. The obligation of companies to understand and

listen to their customers has revealed the concept of Customer Relationship Management (CRM) (Değirmenci, 2011). CRM provides an excellent opportunity for companies to stand out from similar sectors and be successful. It is seen that companies that determine their strategy correctly make profit despite the increasingly competitive market. The increase in customer retention and customer potential creates opportunities for the growth of the company and cross-selling (Ertuğrul, 2018).

The COVID-19 pandemic, which emerged in late 2019, has severely disrupted global air travel, reshaping the structure and dynamics of the airline industry (Serrano & Kazda, 2020; Gössling, 2020). As international mobility was restricted through border closures and flight suspensions, customer expectations and travel behaviors began to shift significantly. In the face of these unprecedented disruptions, airlines were compelled to reconsider their service strategies and operational models to maintain customer loyalty and satisfaction (Amankwah-Amoah, 2020a; Monmousseau et al., 2020).

While existing studies have focused on the economic, operational, and environmental impacts of the pandemic on air transportation, there remains a gap in understanding the interplay between pandemic-related safety measures and customer satisfaction from the perspective of customer

relationship management (CRM) (Dube et al., 2021; Susilo et al., 2022). This study aims to address this gap by evaluating the factors affecting airline customer satisfaction during the COVID-19 period, with a specific focus on the perceived effectiveness of health and safety precautions implemented by airlines.

In contrast to previous studies that evaluated passenger satisfaction using generic service quality models, this research uniquely integrates CRM principles with pandemic-era safety protocols to assess how these new variables influence customer loyalty and trust. In doing so, it contributes to the limited body of literature that explores CRM performance in crisis scenarios within the airline sector (Ibn-Mohammed et al., 2021).

With the coronavirus, which showed its effect worldwide at the beginning of 2019 and turned into a pandemic, many new elements have entered our lives, the most important of which are masks, social distancing, and hand hygiene. Companies that strictly adhere to health and safety guidelines, such as mask mandates and social distancing measures, are perceived more positively by passengers, as such actions enhance a sense of safety and responsibility. Research suggests that visible health precautions significantly influence passengers' willingness to fly during pandemics (Khatib et al., 2020; Lamb et al., 2020).

This study investigates the effect of the COVID-19 pandemic on customer satisfaction and the air passenger transportation sector by using a statistical method according to survey studies. The data obtained from the survey studies were processed into the SPSS program, and the results were obtained. The outputs of these results were analyzed and interpreted, and a recommendation report was prepared.

2. Literature Review

The COVID-19 pandemic has hit industries worldwide, causing several businesses to stand at a standstill, leading to movement constraints and a travel prohibition. Because of these constraints, the transportation industry, especially air travel, was adversely affected. According to the analysis of the economic effects on civil aviation by the International Civil Aviation Organization (ICAO), the aviation industry is likely to recover more slowly. Because the aviation capacity decreased by 70-80% in April 2020 compared to April 2019, many major air carriers (air companies) halted activities momentarily (Serrano and Kazda, 2020). COVID-19 has also caused an international financial slump. A decrease in worldwide trade has considerably impacted the airport sector because one hundred and ten states have greatly restricted air traffic, accounting for approximately 98% of the world air travel market (Tikhonov et al., 2022). The leading cause why the aviation sector is suffering economically is the cancelation of domestic and global flights worldwide to stop the coronavirus's diffusion. These effects have caused an economic downturn in the aviation industry. Another primary reason is the lack of parking for many planes due to the pandemic, which has become a different airline problem. To solve this problem, some airports offer parking for aircraft, but this practice is too costly for airlines. The pandemic most severely impacted the aviation industry, and the catering and service provider segment was also adversely affected. Additionally, the pandemic affected aircraft manufacturing companies due to the cancelation of aircraft orders (Roy, 2022; Munawar et al., 2021).

Based on 20 years of pre-pandemic data from 2000 to 2020, it has been revealed that aviation's contribution to the nation's GDP and economic growth has been steadily

increasing. Up to 2020, also aviation traffic flow has steadily increased over time. However, since 2020, the aviation industry's capacity has decreased due to COVID-19 (Udoka, 2020). However, according to ICAO, the effects of the current coronavirus outbreak will be greater than those recorded during the previous SARS outbreak in 2003 due to two main issues. The first issue is the fivefold increase in Chinese domestic traffic since 2003. The second issue is the massive reduction in air capacity to and from China as 70 airlines suspend their international flights, and 50 other airlines cut their flights (Mhalla, 2020).

The coronavirus can disrupt international airline capacity and growth, and growth is very probably much lower. The virus outbreak would also have a negative effect on airlines' profitability and cash flows, with cancellations costing airlines enormous amounts of money in lost revenue and extra costs and depriving other sections of the travel industry, including retailers and hotels, at high costs (Mhalla, 2020). As a result, air travel is an essential factor in the international dispersion of COVID-19 cases. Simultaneously, other means of transport, including trains and buses, have been active in the domestic diffuse of COVID-19 (Lau et al., 2020). When the worldwide airport network was observed in this direction, it was seen that the Northern hemisphere was less affected than the Southern one due to the COVID-19 outbreak. Additionally, the effects of COVID-19 on international flights have been much more powerful than on national flights. While this may seem like a natural move, the role of aviation in the diffusion of the virus across local networks is probably underrated (Sun et al., 2020).

The existing COVID-19 has had an incomparable impact on the air transportation industry, including airports. As a result, business processes at airports have also changed drastically. In context, a greater and further holistic concept of "airport user experience" needs to be addressed to make airport structures extra agile, flexible, and future-proof. Therefore, it should use user experience as a base for strategic design to manage day-to-day operations more effectively and prepare airports with the know-how to recover from and after significant events such as COVID-19. For customer satisfaction in the air transportation sector, the experience during the flight, the time spent at the airports, and the experience in ground handling is essential. For this reason, companies that provide customer satisfaction at airports and ground handling services also have duties during the pandemic (Tuchen et al., 2020).

It is possible to classify the epidemic's effects on the aviation sector from a socioeconomic perspective, directly and indirectly. The direct effect parallels general economic activities and is directly related to job (serving passengers) creation in airports, airlines, and air navigation services suppliers. These involve baggage handling, check-in, cargo, on-site retail, and catering services. The indirect effect relates to business and commercial activities generated by suppliers in the aviation sector, aviation fuel suppliers, etc., and jobs linked to the manufacturing industry, like firms producing engines, airplanes, and other crucial technologies (Iacus et al., 2020).

Due to the epidemic's effects, it is essential to ensure passenger safety for customer satisfaction. For this reason, during the pandemic, businesses in the aviation sector need to put more effort into passenger safety, and therefore, more responsibilities fall on businesses in this direction. The first of these responsibilities is to follow the latest social, economic, and technical health developments in the world regarding COVID-19 and examine the scope of their effects on air transport provisions to amend global standards on air transportation in line with these signs of progress. Additionally, due to the renewed changes that economic

situations and health may bring about, all regulations and laws linked to air navigation and flight provisions are trying to provide some legal integration between them (Naboush and Alnimer, 2020). However, during the pandemic, communication-oriented business processes in the aviation industry, especially social media, have gained significant importance. This is because informing passengers during crisis periods, such as pandemics, directly affects customer satisfaction. In particular circumstances, such as the pandemic, Twitter is an essential channel for direct communication between airlines and passengers on air transport. This direct communication has a meaningful effect on customer satisfaction (Monmousseau, 2020).

As pandemic precautions, International Air Transport Association (IATA) and ICAO made the following recommendations to optimize cabin airflow and decrease occupant pollutant absorptions during ground operations with the engines off (i) recirculation systems and fresh air must be operated to replace the whole cabin air volume before boarding; (ii) air conditioning must be operated for more than 10 min before boarding, during boarding, and during disembarkation; and (iii) for airplanes without air conditioning system, airplane doors should be retained open to enable cabin air exchange. Additionally, high-frequency contact points should be sterilized between flights and in-flight, and tray tables, headrest, and armrests should be disinfected before passenger use. As a result, the aviation sector has adopted a covered approach to improve customer safety through efficient in-flight aeration, such as expanded aeration at the door, boarding, and disembarkation tactics (especially social distancing and mandatory mask-wearing policies), advanced aircraft disinfection and temperature controls, and pre-flight scanning such as COVID-19 testing (Khatib et al., 2020; Dube et al., 2021). The implementation of COVID-linked policies and social distancing measures has affected price strategies. Many leading air carriers have already implemented some in-flight social distancing practices. For example, major air carriers like United Airlines and American Airlines have implemented social distancing by not seating passengers in the middle seats.

Furthermore, other air carriers, for instance, Delta Air Lines, have decreased in-flight drinks, eat, etc., to reduce contact between staff and customers. This situation has made it difficult to obtain low prices, especially for low-cost airlines. Therefore, in-flight social distancing can improve customer satisfaction and make it difficult to get affordable prices (Amankwah-Amoah, 2020a).

However, in terms of environmental sustainability, the epidemic has positively influenced the entire earth. In other words, aviation environmental sustainability performance has come to the fore as an opportunity with the pandemic. An investigated case study discovered that the decline in air transportation mobility for the chosen airports was more than 96%, resulting in a reduction of CO₂ emissions to a factor of 1.81 for the Zagreb commercial airport and a factor of 3.49 for the Split seasonal airport. Both environmental and social sustainability, and the necessity of reorganizing the global air transport system, which includes the possibility of shrinking to increase the welfare of society. Moreover, it has thus been realized with the pandemic because COVID-19 has pushed several air carriers to downsize their fleets and retire older airplanes. As a result, the air carrying capacity was reduced, thereby decreasing the negative impact of aviation on the ecosystem with the COVID-19 pandemic (Nižetić, 2020; Gössling, 2020). In other words, COVID-19; had terrible consequences for the business characteristics of flight (and jobs), but from carbon/GHG emissions and circular economy perspective, these are encouraging positive results and have

forced the air transportation sector to consider more environmentally sustainable models. Nevertheless, the aviation industry should also be responsible for R&D on circular economy-friendly solutions, for example, fuel effectiveness, better usage of food waste, aircraft end-of-service recycling, or reintegration of plane components into new supply chains (Ibn-Mohammed et al., 2021).

In the COVID-19 atmosphere, worldwide air carriers can no longer trust only their environmental obligations to race. However, they must provide additional safety to protect the passengers' health by averting potential viral infections in their buildings through in-flight services. Therefore, the "healthiness" of the ambiance has emerged as an essential resource of competitive superiority for air carriers. With as to the effects of COVID-19, airline managers should innovate to ensure customers are assured of healthy service. In this direction, the COVID-19 pandemic offers some companies opportunities to speed up the adoption of modern technologies and airplanes to innovate to meet challenges (Amankwah-Amoah, 2020b). In other words, the pandemic has offered aviation a new start based on operational productivity and technological developments. Innovative fuel-efficient vehicle-to-thin body aircraft remains the best option for reaching productivity and environmental sustainability for every route. Therefore, the sector should continue removing older and fuel-ineffective planes, both environmentally and financially expensive. This has caused the aviation industry to adopt sustainability in-line with the Sustainable Development Goals, particularly climate action (SDG 13) and sustainable energy (SDG 7) (Dube et al., 2021).

With the ambiguity brought by COVID-19 to the aviation sector, businesses must re-evaluate the situations that may arise from and provide sustainable and safe airport operations that can be preserved. In other words, the influence of the COVID-19 epidemic on the airline industry, as in all other industries, is primarily to think of the sustainability approach (Serrano and Kazda, 2020). In this context, within the framework of the sustainability approach (based on three dimensions), the actions are taken or to be undertaken during the pandemic period, as well as the revitalization strategies and business opportunities for the aviation industry in the new normal period after the pandemic are summarized in Table 1.

Table 1. Revitalization Strategies and Business Opportunities for the Aviation Industry

Economic Sustainability
Marketing budgets should be reviewed and rearranged; non-essential expenses should be postponed, such as postponing some promotional and marketing campaigns; non-critical recruitment should be stopped; contracts that are unimportant should be reduced or stopped (Serrano and Kazda, 2020; Mhalla, 2020; Suau-Sanchez et al., 2020).
Non-operational areas should be closed or downsized; activities other than essential services should be outsourced; review of all investments, including all information technology and real estate investments (Serrano and Kazda, 2020; Mhalla, 2020).
Developing business models using new modern technologies such as blockchains at the international stage (Tikhonov et al., 2022).
Implementing contactless capabilities and self-service processes to reduce people's interactions with each other (Serrano and Kazda, 2020; Dube, 2021).
More effective revenue management with a different pricing logic; the promotion of aviation based on two updated new price scenarios such as economic/standard and business (Bouwer et al., 2021; Su et al., 2022; Fathurahman et al., 2020).

Table 1. Continue

Minimizing operating expenses of all departments and seeking outside investors to finance operations such as ground handling operations (Mhalla, 2020; Dube, 2021).
Liquidity management; stabilization of balance sheets; efficiency in the cost of scheduled domestic and international flights; re-risk assessment of airlines' strategies and finances, including cash flow, capital expenditures, operational expenditures, and revenue growth; rethinking cash flow for the aviation sector to decrease reliance on taxpayer funds (Dube et al., 2021; Fathurahman et al., 2020).
Optimizing new demand features (tours, short distances, and long distances) applicable to market segments; redefining the value chain in the aviation market (Tuchen et al., 2020; Fathurahman et al., 2020).
Use operations research methodologies for cost and time optimization, such as minimizing cost, increasing profits, and increasing the efficiency of the airline industry (Khanna et al., 2021).
The creation of new processes based on operational efficiency and technological progress; redefining market supply and demand changes, operations, and business functions (Dube et al., 2021; Fathurahman et al., 2020; Kiraci et al., 2023).
Accelerating biometric technologies and taking biosecurity precautions in airport design and operations (Serrano and Kazda, 2020; Dube et al., 2021).
Making flight plans so that economically bigger airplanes (such as Boeing 777s or Airbus A350s) fly less frequently as business demand declines; abandonment of low-profit destinations; regulation of flight frequency by considering passenger circulation (Bouwer et al., 2021; Kiraci et al., 2023).
Restructuring or downsizing and fleet rationalization of the airline organizational structure and network; optimization of domestic and international scheduled/non-scheduled flights for passenger/cargo transportation (marketing optimization); identification of new routes with good prospects for passenger/cargo transport for domestic and international flights (Fathurahman et al., 2020).
The implementation of change management will detect changes, seize opportunities and transform and prepare organizations accordingly (Linden, 2021).
Permanent policies on procedures to ensure the safety of operations, wearing masks or disinfecting; cabin baggage restrictions to relieve congestion in the cabin and restrict cabin movement; providing increased confidence, safety, and flight comfort, i.e., providing hand sanitizer indoor areas, providing maintenance kits for passengers such as masks, disinfectant wipes, and disinfectant liquid, and providing protective equipment for cabin crew (Mhalla, 2020; Khatib et al., 2020; Dube et al., 2021; Fathurahman et al., 2020; Lamb et al., 2020).
Better management of future crisis and disaster environments with the lessons to be learned from the pandemic, that is, building a better institutional crisis and disaster management process (Munawar et al., 2021; Dube et al., 2021; Kurnaz and Rodrigues, 2022; Suk and Kim, 2021).
A collective strategic language should be advanced to prepare for future shocks/pandemics, uncertainty should be considered a standard issue for long-term planning, ambiguity should be managed proactively, and long-term plans should be made accordingly that is, updated strategic management, comprehensive strategic transformation (Tuchen et al., 2020; Fathurahman et al., 2020; Linden, 2021).
Restructuring of the cabin layout, such as the extension of premium economy cabins or the advancement of business class seats more appropriate for traveling in groups or couples, increased of private business jets to cover 10–20 customers (Tikhonov et al., 2022; Bouwer et al., 2021).

Table 1. Continue

Offering a wider variety of goods and services (international, domestic passenger transport and cargo transport together or accelerating the process of moving more towards air cargo (optimization of cargo business), increasing air cargo exports, promoting air cargo transport), i.e., service diversification (Serrano and Kazda, 2020; Suau-Sanchez et al., 2020; Fathurahman et al., 2020; Kurnaz and Rodrigues, 2022; Florido-Benítez, 2021; Tisdall et al., 2021).
The application of different strategies, the use of hybrid strategies, which refers to the simultaneous combination of different categories and apparently contradictory generic strategies and defines the parallel pursuit of strategies; for example, an airline simultaneously seeks government support and converts planes from passenger to cargo carriers, or simultaneously downsizes (downsizing policy and layoffs of aircraft pilots/crews, ground attendants, and contract workers) and permanently exiting an airbase (Fathurahman et al., 2020; Albers and Rundshagen, 2020; Susilo et al., 2022).
Environmental Sustainability
Retiring old aircraft with high greenhouse gas emissions and moving toward an environmentally friendly aircraft, i.e., replacing older and obsolete airplanes with newer and more fuel and energy-effective fleets (Dube et al., 2021; Amankwah-Amoah, 2020a; Gössling, 2020).
Identifying, adopting, and implementing green business practices and environmentally friendly policies (Amankwah-Amoah, 2020a).
Balancing emissions (air and noise emissions) footprints (Amankwah-Amoah, 2020b).
Implementing circular economy-based eco-friendly solutions related to the six “re-verb” typologies of Research, Repurpose, Reframe, Redesign, Reimagine, Resole/Be resilient (Ibn-Mohammed et al., 2021; Kim et al., 2022).
Eliminating waste and thus conserving natural resources (Amankwah-Amoah, 2020b).
Social Sustainability
Ensuring that passengers comply with all instructions set in line with ICAO regulations to avoid contamination by COVID-19 (Naboush and Alnimer, 2020).
Continuing practices such as remote working and digitalization were implemented during the pandemic period (Munawar et al., 2021; Kurnaz and Rodrigues, 2022).
Providing all kinds of assistance to companies in the aviation sector to continue their operations by governments (governments ensure monetary support or guarantee current debt or allow airlines to file for bankruptcy); rapid, broad, detailed formulation of public policies such as related to airline unions and acquisitions, tax politics and government subventions (Serrano and Kazda, 2020; Fathurahman et al., 2020; Florido-Benítez, 2021; Tisdall et al., 2021; Maneenop and Kotcharin, 2020).
Negotiating tax incentives with the Ministry of Finance; negotiating with national and international creditors on loan debts, including installments, interest, and lease of aircraft or engines; negotiating incentives to reduce airport service tariffs with the General Directorate of Civil Aviation (Fathurahman et al., 2020).
With the increasing use of technology, the integration of operators in the aviation sector and civil aviation authorities, and the cooperation of enterprises with all other stakeholders (the aviation sector cooperates with the tourism sector in particular), teaming up with different stakeholders at different levels during the pandemic period (Linden, 2021; Kurnaz and Rodrigues, 2022; Florido-Benítez, 2021).
Proposing to voluntarily provide unpaid leaves to employees (Karim et al., 2020).

Table 1. Continue

The enhanced organization with aviation and non-aviation (for instance, tourism) participants, particularly industry knowledge and vision sharing (e.g., an organization with suppliers to realize cost-saving solutions); formal and informal meetings and continuous dialog with various stakeholders and participants (Serrano and Kazda, 2020; Linden, 2021).
Accurately specifying the responsibilities of air transport companies on their websites, i.e., ensuring transparent management (Naboush and Alnimer, 2020; Dube et al., 2021).
Messages to customers should be clearly defined to educate them on measures taken to ensure a safe environment; effective use of communication-oriented business processes, mainly social media channels for information sharing (Monmousseau et al., 2020; Kiraci et al., 2023; Lamb et al., 2020).
National and international regulations/legislations and compliance/compliance with them, i.e., to follow all the latest health developments in the world regarding COVID-19 and to examine the scope of their effect on air transport provisions to amend global agreements on air transportation in-line with this progress, also due to renewed changes in all regulations and rules about air navigation and air transportation provisions seek to achieve some legal integration between them (Naboush and Alnimer, 2020).
The establishment of sector plans and broad socioeconomic development plans that include an ecosystem that encourages entrepreneurship (Nicola et al., 2020).
In countries with aviation industries where foreign aircraft dominate largely international flight routes, governments should encourage the presence and functionality of national carriers to minimize this situation (Udoka, 2020).
Government efforts to increase government spending in the domestic and international aviation sector; foreign currency hedging of loans, given that most airline ticket sales are denominated in the country currency (Fathurahman et al., 2020).
To design and apply CSR activities in a way that will positively influence worker results, that is, to enable employees to have a higher level of corporate trust through corporate social responsibility initiatives, and to help workers exhibit organizational citizenship behavior, thus increasing employees' commitment to the work and institution (Athanasiadou and Theriou, 2021).
Careful consideration of passenger and personnel health and safety, i.e., taking precautions that will not endanger the health of passengers and employees and adopting various health and safety protocols (Dube et al., 2021).
Creating a learning organization structure and customizing organizational learning processes with a consistent communication approach (Aşçı et al., 2022).
Reliable and robust handling of risk management procedures, equipment, supply chains, working place health and safety guidelines, and personnel relationships (Tisdall et al., 2021).
Collaborative efforts between the government and the public, especially in restoring the demand curve of the aviation industry, i.e., the recovery of national income affect the disposable income to increase the marginal propensity to consume in the aviation sector (Fathurahman et al., 2020).

Several factors affect passenger perceptions in return to the new normal of resuming air transportation. These factors are social distancing and environment related to overseas travel; destination-related factors; circumstances at the destination; grade of protective procedures employed in the aviation industry; obligations for self-isolation, and the occurrence of

COVID-19 (the number of cases). As long as these factors are considered and the quantity of new verified cases remains stable, the probability of sustainable air travel will increase. Additionally, easing quarantine measures among states where COVID-19 has decreased will effectively improve air travel demand in terms of sustainability (Song and Choi, 2020).

Considering that pandemic variants are still active, and the virus still can spawn a new variant, it is expected to take a few more years for airlines to recover. This is why aviation companies are slow in regaining the potential flight capacity. World passenger demand will take 2 to 4 years to return to pre-COVID-19 levels (recuperation by the end of 2022). The most optimistic forecast is two years (recuperation until mid-2022), and the most pessimistic forecast is six years (recuperation by 2026). However, domestic flights will take the lead in this recovery process; domestic flights are reaching their potential capacity because when the country's officials believe that they have taken possible precautions against the virus within the country, they quickly lift travel bans on domestic lines. Due to the efficient prevention and control of the epidemic in countries with very effective COVID-19 control, such as China, the domestic traveler transportation sector (the local civil aviation industry) has quickly rebounded. However, recuperation times have also appeared to differ between geographic regions, precisely the pandemic amounts, the timing of transmission, and different restrictive procedures implemented by governments. As a result, on average, both freight traffic and travelers (passengers) are projected to return to past volumes by 2023. In the most pessimistic situations, the recuperation time for customer demand goes beyond 2024 (Su et al., 2022; Kurnaz and Rodrigues, 2022; Gudmundsson et al., 2021).

However, it is thought that the effect of COVID-19 will be less concentrated for vacation passengers and a faster recuperation (or recovery) in demand compared to business passengers. In this context, regression models were generated for both business and leisure tours in the study conducted to determine the factors that will make people willing to fly during and after COVID-19. The following predictors (i.e., estimators) were found to be necessary for both travel/tours: perceived threat from COVID-19, agreeableness, affect, and fear. These predictive factors explain 66%-67% of the variation in people's desire to fly. However, when flights resume for both leisure and business journey/tour, there are concerns about a lack of passenger trust due to health risks. Along with confidence and health concerns, lower disposable revenue levels in families and austerity precautions in surviving businesses will also reduce the demand for air travel in the days ahead. Decreased disposable revenue linked with the slow financial salvage will mean passengers will travel less, although it is thought that vacation traveler demand may recover sooner than business demand (Suau-Sanchez et al., 2020; Lamb et al., 2020).

In the first period/phase of the pandemic, companies maintained the status quo due to the small greatness of damage in the short term. The second phase; is the stage where businesses evaluate several strategic options to optimize (that is, minimize or neutralize) an incident in the short term. During this phase, businesses implement internally created activities (such as cost declines) to ensure short-term survival. The third phase, where the greatness of damage is low, but the incident takes a long time. Businesses determine an action plan and manage the incidents with normal operations. Finally, the fourth phase is when an incident causes tremendous damage eventually. Businesses suffer the most during this phase, and firms cannot overcome unfavorable situations and frequently choose an exit strategy or quit their enterprise. However, companies that provide long-term survival seek to modernize

their services or products to help them solve crises and prepare them for post-crisis processes (Suk and Kim, 2021).

During the pandemic, governments also had significant responsibilities. Most states (administrations) prioritize preserving and sustaining air transportation connectivity with the aviation sector and linked industries such as tourism. The balance between providing air transport connectivity and retaining competition after COVID-19 is a challenge of various economic and governmental dimensions. Ultimately, the role and support of public authorities and government at all stages (especially the type and period of precautions impacting transportation functions) will be essential to the future improvement of the aviation sector (Abate et al., 2020).

Ultra-Long Haul (ULH) aerospace projects retain crucial characteristics for survival in COVID-19. They are becoming progressively attractive as the sector tries to return to a new form of normalcy. Because ULH operations, a new phenomenon, already retain the required features to create competitive superiority that will be successful and do better than other business methods in the post-COVID-19 era. In this context, the COVID-19 pandemic has supplied a basis for air carriers to test their logistical and operational capacity to ensure ULH operations. This may prompt airlines to take a greater interest in post-pandemic ULH operations, recognizing both the value and capabilities of delivering such services in a more commercial and scale context.

However, a further inference of the increasing usage and popularity of ULH projects is the potential emergence of ULH-specific gateways and hubs at secondary airports. So post-COVID-19, non-stop services will likely gain more popularity as passengers (maybe more) become cautious about transiting/transferring. For example, Perth Airport will remain just one of the various potential new ULH hubs to emerge in the post-COVID-19 era. As a result, airports will become progressively open to innovative and modern methods that can help attract extra passenger demand and airline supply. With the existing technological capacity, an industry poised for redesign, and an industry structure committed to being more profitable and environmentally friendly simultaneously, the ULH project naturally synergizes with the future visions and aspirations of aviation. ULH passengers can also eliminate the risk of contracting a pandemic by bypassing busy international centers where physical/social distancing may become an issue when heavy traffic re-establishes in the new standard period (Bauer et al., 2020).

As a result, governments-enforced restrictions (restrictions on travel and/or work, quarantines, and social distancing programs) constrained corporations' strategic investing and route network choices, thus altering the competitive situation of several air carriers. One notable innovation that businesses have made in response to the pandemic is the incorporation of social distancing into the air carrier business pattern, high-density seating, with long-term inferences for in-flight arrangements and services. With such practices (operations), airlines have long sought to protect their advanced route networks, market facilities, and previously established trust relationships with passengers from being damaged as they respond to a crisis. However, in the new standard period, new in-flight social distancing programs, high-density seating, and quality flight arrangements should not be into expensive procedures (Amankwah-Amoah, 2020a). According to IATA calculation, such a measure is estimated to reduce overall seat capacity by 62% if social distancing is applied to the entire global fleet of aircraft. Under these condition, most companies will operate on negative profitability under the current pricing policy. Under these conditions, IATA has calculated that only 4 of 122 airlines worldwide will operate profitably. The imposition of leaving 33% of the seats empty, leaving one of

the three seats (middle seat) empty, will cause passengers to buy tickets at higher prices. The health of passengers is paramount. However, the seat capacity measure will make most companies unprofitable or lead to customer dissatisfaction due to dramatically increasing airfare prices (Gole et al., 2021). Conversely, in another study, it was seen that tangibility and reliability, expressed as the service quality dimension, significantly and positively influence customer satisfaction. Reliability in the form of a comfortable cabin, the aircraft's layout, cleanliness, the layout of the aircraft crew, and physical appearance significantly affect customer satisfaction. Indeed, a variable sought is the passenger's comfort in the aircraft's cabin. However, the tangibility dimension, which includes the use of modern devices, digital manual check-in, the appearance of the services, the ease of the service process, and the discipline of the staff and crew, also significantly affects customer satisfaction. Therefore, the tangibility dimension to provide excellent customer service has received special attention from the company (Susilo et al., 2022).

3. Research and Method

Importance of Research

A significant percentage of the world's population is concentrated in urban areas. The large number of people living in urban areas has brought with it various problems such as inadequate water supply and sanitation, air pollution, traffic problems and increasing amounts of solid waste. Most of the population growth occurs in economically developing countries. Although many industrialized countries in Europe, North America and Asia have developed policies to reduce the amount of waste produced, there are still many countries that do not properly manage their solid waste and rely on open dumps for disposal (Diaz, 2017).

In today's world, as in all sectors, businesses in the service sector aim to provide quality services in line with customer expectations and to ensure customer satisfaction exists in intense competition environments and increase their market shares. With the development of customer relationship management, businesses have started to give importance to the issue of how the most effective service can be and how it can be maintained.

Air transportation is a sector where customer relationship management comes to the fore. Today, air transportation, one of the most popular industries both in all states of the world and in Turkey, is one of the area where customer relations management should be done effectively and accurately with the increasing customer volume recently.

The coronavirus, which turned into a pandemic in 2019, deeply affected the aviation industry, and the suspension and ban of flights caused the industry's economic decline. Then, with the transition to the new normal, flights reopened with precautions, and new factors emerged to meet the expectations and satisfaction of customers. Our study is targeted to determine the factors that affect the satisfaction or dissatisfaction of airline (air carrier) customers and determining the current CRM approach of companies in the airline sector from the customer perspective.

Scope and Limitations of the Study

This research, which describes the factors affecting the satisfaction or dissatisfaction of airline customers during the COVID-19 process, and the approach of companies in the airline industry to the current CRM from the customer's perspective, includes individuals who benefit from air transportation after April 2020.

The research was carried out (between April 2020 and May 2021) only by conducting a survey on the internet due to the size of the population and the limited time allocated for the research.

Research Method

In this section, a field study defines the factors that cause customer dissatisfaction in customer relations management in airline transportation. In the literature part of the study, the scanning method was used, and books, articles, journals, domestic and foreign publications, and sources obtained on the internet were used. The application was made by surveying the internet, and the obtained data were processed into the Excel program.

Universe and Sample

This research, which defines the factors affecting the satisfaction or dissatisfaction of airline customers during the COVID-19 process, and the current CRM approach of companies in the airline industry from the customer's perspective, includes individuals who benefit from airline transportation after April 2020 (until end of May 2021). Ultimately, Turkish customers, airline companies operating in Turkey, and airports in Turkey were targeted in this study.

Data Collection Tools

The survey consisted of 27 questions. A questionnaire (survey) consisting of two parts was used in the study. The first section of the questionnaire contains demographic questions (age, gender, educational status). Also, this section asked questions about the monthly average income, travel purposes, reasons for choosing the airline company from which city they took off, and where they landed. In the second part of the questionnaire, there were questions about general satisfaction and satisfaction with compliance with precautions.

4. Results

Reliability Analysis of Questions Measuring Satisfaction

The result of the factor analysis for the reliability and validity of the scales of the questions (measuring satisfaction) used in the survey part of the research is shown in Table 2. Firstly, in a pilot study, we set 50 persons (samples) to fill 18 items we maintained as range as a dependent variable. According to this result (Cronbach's Alpha = 0.81), the results obtained from the questionnaire are valid. The results obtained at the end of the study were within the 95% confidence interval and were evaluated at the 0.05 significance level.

Table 2. Reliability Analysis

Cronbach's Alpha	N of Items	N of Respondents (Samples)
0.81	18	50

After the reliability analysis, a further 60 surveys were conducted following this pilot study.

Evaluation of Research Results

The data obtained from the participants of the applied survey were processed into the Excel program. The IBM SPSS.26 program was used to obtain the results from the statistical data. To measure the data, descriptive analyses (frequency, percentage), t-test, ANOVA test, and correlation analyzes were performed.

Research Hypotheses

HA1: There was a significant and positive relationship between general satisfaction and satisfaction with compliance with precautions.

HA2: There is a significant relationship between general customer satisfaction and the demographic characteristics of the participants.

Descriptive Statistics on Demographic Variables

Frequency data regarding the demographic characteristics of the participants in the study are given in Table 3.

Table 3. Frequencies of Demographic Characteristics

Demographic Features	Options	f	%
Gender	Woman	31	51.7
	Man	29	48.3
Age	18–24	16	26.7
	25–34	26	43.3
	35–44	13	21.7
	45–64	5	8.3
Educational Status	High School	2	3.3
	University (Graduate)	27	45
	Master's degree	23	38.3
Income level	Doctorate	8	13.3
	0–1000	11	18.3
	1000–3000	4	6.7
	3000–5000	14	23.3
	5000–10000	31	51.7
Travel Purpose	Vacation	33	55
	Business	25	41.7
	Other	2	3.3
Preferred Airline Companies	Turkish Airlines	35	58.3
	Pegasus	16	26.7
	Sun Express	4	6.7
	Anadolu Jet	2	3.3
	Other	3	5
Reason for Choosing an Airline Company	Flight Reliability	16	26.7
	Affordable Prices	21	35
	Flight Comfort	7	11.7
	Proper Timing	16	26.7
City of Departure	Istanbul	39	65
	Ankara	9	15
	Izmir	7	11.7
	Domestic Flights	4	6.7
	International Flights	1	1.7
Landed City	Istanbul	8	13.3
	Ankara	9	15
	Izmir	8	13.3
	Domestic Flights	18	30
	International Flights	17	28.3

According to the statistical data obtained regarding the demographic characteristics at above Table 3, when the age group of the participants is examined, the highest number of participants is the 25–34 age group, 43.3%, followed by the 18–24 age group. The 35–44 age group participated at a rate of 21.7%. A striking point is the absence of any participants 65 and over. Most of the participants have graduate and master's degrees; Additionally, 13.3% of doctoral graduates participated in the survey. There is not much difference in the number of men and women in the sample, with 51.7% female participants versus 48.3% male participants. When the monthly average incomes of the participants were examined, it was determined that 51.7% rate was in the group with a salary of 5000 TL and 10000 TL, and the low rate was 6.7% in the 1000–3000 TL group. The survey questions were not based on a specific company, and the question of which

company preferred was asked. It is striking that most participants prefer Turkish Airlines at a rate of 58.3%. These companies are Pegasus at 26.7%, Sun Express at 6.7%, Anadolu Jet at 3.3%, and other companies at 5%. The most determining reason for choosing the company were the affordable prices of 35%, flight reliability of 26.7%, and proper timing with the same ratio. Generally, the cities where the planes take off are mostly 65% Istanbul, 15% Ankara, 11% İzmir, other domestic flights 6.7%, and international flights 1.7%. However, the cities where the planes landed were seen as foreign cities with 30%, other domestic flights with 28.3%, and landed in Istanbul with 13.3%.

Descriptive Statistics on General Customer Satisfaction

Five judgments were directed to the participants in the general satisfaction evaluation. That is, the questions in the survey were applied with a five-point Likert scale as “1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Agree and 5=Strongly Agree.” According to the results obtained, the noticeable results in terms of descriptive analysis (frequency value, percentage value) are given in the following sections.

Cross-Tables in General Customer Satisfaction

Since the questions directed to the participants are not a determining factor on their own, Cross-Tables were examined in this study, and the necessary findings are discussed below.

Choosing a Company Based on Income Level

As seen in Table 4, most participants with an income of 5000–10000 preferred Turkish Airlines.

As seen in Figure 1, the chi-square test was applied to investigate whether there was a significant relationship between general customer satisfaction and age.

Table 4. Cross Table-Income Level with a Preferred Company

Cross-Table		Income level				Total
		0–1000	1000–3000	3000–5000	5000–10000	
Preferred company	Turkish Airlines	7	4	7	17	35
	Pegasus	2	0	3	11	16
	Sun Express	1	0	1	2	4
	Anadolu Jet	1	0	1	0	2
	Other	0	0	2	1	3

Reasons for Choosing a Company According to Age Group

As seen in Table 5, the 25–34 age group preferred the most because of the affordable prices, while the 18–24 age group preferred since the flight reliability.

Table 5: Cross Table-The Reason for Choosing Airline with Age

Cross-Table		Question: Why did you choose the airline company?				Total
		Flight Reliability	Affordable Prices	Flight Comfort	Proper Timing	
Age	18–24	6	5	1	4	16
	25–34	3	12	3	8	26
	35–44	5	3	2	3	13
	45–64	2	1	1	1	5
	Total	16	21	7	16	60

		1.57	2.14	2.43	2.86	3.00	3.14	3.29	3.43	3.57	3.71	3.86	4.00	4.14	4.29	4.43	4.57	4.71	4.86	5.00	Total
18-24	Count	0	0	1	0	2	1	0	2	1	2	1	1	1	0	1	1	0	0	2	16
	Expected Count	.3	.3	.5	1.1	1.1	1.1	.8	1.1	1.3	1.3	.8	.8	.8	.8	1.3	.8	.3	.5	1.1	16.0
25-34	Count	0	1	1	2	2	0	3	2	1	1	1	1	2	2	2	2	1	1	1	26
	Expected Count	.4	.4	.9	1.7	1.7	1.7	1.3	1.7	2.2	2.2	1.3	1.3	1.3	1.3	2.2	1.3	.4	.9	1.7	26.0
35-44	Count	0	0	0	2	0	2	0	0	1	2	0	1	0	1	2	0	0	1	1	13
	Expected Count	.2	.2	.4	.9	.9	.9	.7	.9	1.1	1.1	.7	.7	.7	.7	1.1	.7	.2	.4	.9	13.0
45-64	Count	1	0	0	0	0	1	0	0	2	0	1	0	0	0	0	0	0	0	0	5
	Expected Count	.1	.1	.2	.3	.3	.3	.3	.3	.4	.4	.3	.3	.3	.3	.4	.3	.1	.2	.3	5.0
Total	Count	1	1	2	4	4	4	3	4	5	5	3	3	3	3	5	3	1	2	4	60
	Expected Count	1.0	1.0	2.0	4.0	4.0	4.0	3.0	4.0	5.0	5.0	3.0	3.0	3.0	3.0	5.0	3.0	1.0	2.0	4.0	60.0

Figure 1. Cross Table - Score of General Satisfaction with Age

As can be seen from the above results (as seen in Figure 2), the Pearson chi-Square significance level was 0.586; that is, $p > 0.05$, so it was determined that there was no significant difference between general customer satisfaction and the age of the participants. Therefore, the HA2 hypothesis was not accepted.

Frequency data regarding the general customer satisfaction of the participants in the study are given in Table 6.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	51.124 ^a	54	.586
Likelihood Ratio	52.517	54	.532
Linear-by-Linear Association	.925	1	.336
N of Valid Cases	60		

a. 76 cells (100.0%) have expected count less than 5. The minimum expected count is .08.

Figure 2. Chi-square Test Results

Table 6. General Customer Satisfaction Frequencies

<i>Satisfaction Measurement Questions</i>	<i>Options/Judgments</i>	<i>f</i>	<i>%</i>
<i>Your plane landed/take off at the scheduled times.</i>	Strongly Disagree	2	3.3
	Disagree	5	8.3
	Undecided	6	10.0
	Agree	14	23.3
<i>In case of delay/tardiness, notification was made immediately.</i>	Strongly Agree	33	55.0
	Strongly Disagree	1	1.7
	Disagree	4	6.7
	Undecided	9	15.0
<i>The ticket price was affordable for the service offered.</i>	Agree	15	25.0
	Strongly Agree	31	51.7
	Strongly Disagree	2	3.3
	Disagree	10	16.7
<i>It was easy to check-in online.</i>	Undecided	12	20.0
	Agree	19	31.7
	Strongly Agree	17	28.3
	Strongly Disagree	2	3.3
<i>I had the right to choose the seat I wanted free of charge.</i>	Disagree	3	5.0
	Undecided	3	5.0
	Agree	16	26.7
	Strongly Agree	36	60.0
<i>I am satisfied with the importance given to customers and the value shown.</i>	Strongly Disagree	28	46.7
	Disagree	7	11.7
	Undecided	10	16.7
	Agree	5	8.3
<i>I am generally satisfied with the airline company I have chosen, and I will fly with the same company on my next travel.</i>	Strongly Agree	10	16.7
	Strongly Disagree	3	5.0
	Disagree	8	13.3
	Undecided	18	30.0
<i>I am satisfied with the importance given to customers and the value shown.</i>	Agree	15	25.0
	Strongly Agree	16	26.7
	Strongly Disagree	5	8.3
	Disagree	3	5.0
<i>I am generally satisfied with the airline company I have chosen, and I will fly with the same company on my next travel.</i>	Undecided	12	20.0
	Agree	18	30.0
	Strongly Agree	22	36.7

Frequency data regarding the Satisfaction with compliance with precautions of the participants in the study are given in Table 7.

Table 7. Satisfaction with Compliance with Precautions

<i>Compliance with Precautions and</i>	<i>Options/Judgments</i>	<i>f</i>	<i>%</i>
<i>Social distancing was observed during check-in at the airport.</i>	Strongly Disagree	13	21.7
	Disagree	7	11.7
	Undecided	12	20.0
	Agree	16	26.7
<i>Social distancing was observed in the bus carrying passengers toward the plane.</i>	Strongly Agree	12	20.0
	Strongly Disagree	29	48.3
	Disagree	9	15.0
	Undecided	8	13.3
<i>A pre-flight hygiene package was distributed.</i>	Agree	6	10.0
	Strongly Agree	8	13.3
	Strongly Disagree	11	18.3
	Disagree	3	5.0
<i>Precautions and rules were explained clearly with audio and video transfer from the screens on the plane.</i>	Undecided	3	5.0
	Agree	12	20.0
	Strongly Agree	31	51.7
	Strongly Disagree	2	3.3
<i>Precautions and rules were explained clearly with audio and video transfer from the screens on the plane.</i>	Disagree	4	6.7
	Undecided	6	10.0
	Agree	14	23.3
	Strongly Agree	34	56.7

Table 7. Continue

<i>Cabin crew used personal protective equipment.</i>	Strongly Disagree	0	0.0
	Disagree	1	1.7
	Undecided	3	5.0
	Agree	18	30.0
<i>The use of masks on the plane make it very difficult to breathe.</i>	Strongly Agree	38	63.3
	Strongly Disagree	6	10.0
	Disagree	7	11.7
	Undecided	8	13.3
<i>As a precaution, I am considering the abolition of sandwich and beverage services on domestic flights.</i>	Agree	16	26.7
	Strongly Agree	23	38.3
	Strongly Disagree	21	35.0
	Disagree	4	6.7
<i>Meals were served on international flights (only passenger who made international flights).</i>	Undecided	4	6.7
	Agree	8	13.3
	Strongly Agree	23	38.3
	Strongly Disagree	8	13.3
<i>Those who removed their masks inside the plane were warned by the cabin crew.</i>	Disagree	4	6.7
	Undecided	4	6.7
	Agree	7	11.7
	Strongly Agree	11	18.3
<i>I believe that it is safer to travel by plane during the COVID-19 pandemic period.</i>	Strongly Disagree	2	3.3
	Disagree	3	5.0
	Undecided	13	21.7
	Agree	20	33.3
<i>The precautions taken make you feel safe during your flight.</i>	Strongly Agree	22	36.7
	Strongly Disagree	9	15.0
	Disagree	3	5.0
	Undecided	14	23.3
<i>The precautions taken make you feel safe during your flight.</i>	Agree	20	33.3
	Strongly Agree	14	23.3
	Strongly Disagree	4	6.7
	Disagree	8	13.3
<i>The precautions taken make you feel safe during your flight.</i>	Undecided	22	36.7
	Agree	16	26.7
	Strongly Agree	10	16.7

Cross-Tables on Satisfaction of Compliance with Precautions

Since the questions directed to the participants are not a determining factor on their own, Cross-Tables were examined in this study, and the necessary findings are discussed below.

Examining the Social Distancing Rules at the Airport of the Departure City:

Compliance with Social Distance during the Check-in Process

When Table 8 is examined, it has been observed that the participants generally comply with the social distance rules at the departure city airport where they take off.

Table 8. Cross Table - Compliance with Social Distance during Check-in at the Airport with the Departure City

<i>Cross-Table</i>		<i>Question: Was the social distance followed during the check-in process at the airport?</i>					<i>Total</i>
		<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Undecided</i>	<i>Agree</i>	<i>Strongly Agree</i>	
<i>Departure city</i>	<i>Istanbul</i>	9	5	6	12	7	39
	<i>Ankara</i>	0	2	4	1	2	9
	<i>Izmir</i>	3	0	2	1	1	7
	<i>Domestic Flights</i>	1	0	0	1	2	4
	<i>International Flights</i>	0	0	0	1	0	1
	<i>Total</i>	13	7	12	16	12	60

Compliance with Social Distance in the Bus that Carries Passengers to the Plane

When Table 9 is examined, it has been determined that, generally, no attention is paid to the social distance in the bus carrying the passengers at the city's airport where the participants take off.

Table 9. Cross Table - Compliance with Social Distancing on the Bus that Carries Passengers to the Plane

Cross-Table	Question: Was social distancing followed in the bus that carries passengers to the plane?						Total
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree		
Departure city	Istanbul	20	7	4	2	6	39
	Ankara	3	1	2	2	1	9
	Izmir	5	0	1	0	1	7
	Domestic Flights	1	0	1	2	0	4
	International Flights	0	1	0	0	0	1
	Total	29	9	8	6	8	60

ANOVA Findings on General Customer Satisfaction

According to the ANOVA analysis, when the general customer satisfaction evaluation judgments are analyzed according to the demographic characteristics of the participants in Table 10, since $p < 0.05$, there has been being a significant and positive relationship between the general customer satisfaction judgments and the preferred company ($p = 0.031$).

Table 10. General Satisfaction - ANOVA

ANOVA-General Satisfaction						
Options		Sum of squares	df	Avg. of Squares	F-ANOVA	Significance (p)
Gender	Between Groups	0.069	1	0.069	0.116	0.735
	In Groups	34.368	58	0.593		
	Total	34.437	59			
Age	Between Groups	1.947	3	0.649	1.119	0.349
	In Groups	32.489	56	0.580		
	Total	34.437	59			
Educational Status	Between Groups	0.823	3	0.274	0.457	0.713
	In Groups	33.613	56	0.600		
	Total	34.437	59			
Income level	Between Groups	0.421	3	0.140	0.231	0.874
	In Groups	34.016	56	0.607		
	Total	34.437	59			
Travel Purpose	Between Groups	0.400	2	0.200	0.335	0.717
	In Groups	34.037	57	0.597		
	Total	34.437	59			
Preferred Airline Company	Between Groups	5.349	4	1.337	2.528	0.031
	In Groups	29.088	55	0.529		
	Total	34.437	59			
Reason for Choosing an Airline Company	Between Groups	4.204	3	1.401	2.596	0.061
	In Groups	30.233	56	0.540		
	Total	34.437	59			

Findings on Satisfaction in Compliance with Precautions

According to the ANOVA analysis, when the satisfaction of compliance with precautions evaluation judgments is analyzed according to the demographic characteristics of the participants in Table 11, no significant relationship was found since $p > 0.05$.

Table 11. ANOVA - Satisfaction of Compliance with Precautions

ANOVA- Satisfaction of Compliance with Precautions						
Options		Sum of squares	df	Avg. of Squares	F-ANOVA	Significance (p)
Gender	Between Groups	0.004	1	0.004	0.012	0.912
	In Groups	21.315	58	0.367		
	Total	21.319	59			
Age	Between Groups	0.553	3	0.184	0.497	0.686
	In Groups	20.767	56	0.371		
	Total	21.319	59			
Educational Status	Between Groups	1.387	3	0.462	1.299	0.284
	In Groups	19.933	56	0.356		
	Total	21.319	59			
Income level	Between Groups	1.255	3	0.418	1.168	0.330
	In Groups	20.064	56	0.358		
	Total	21.319	59			
Travel Purpose	Between Groups	0.322	2	0.161	0.437	0.648
	In Groups	20.998	57	0.368		
	Total	21.319	59			
Preferred Airline Company	Between Groups	1.723	4	0.431	1.209	0.318
	In Groups	19.597	55	0.356		
	Total	21.319	59			
Reason for Choosing an Airline Company	Between Groups	0.961	3	0.320	0.881	0.456
	In Groups	20.358	56	0.364		
	Total	21.319	59			

T-Test Findings Between General Customer Satisfaction and Satisfaction in Compliance with Precautions

In the $p < 0.05$ significant range, the relationship between the general customer satisfaction of the participants and the satisfaction of complying with the precautions was questioned in the t-test. According to the t-test performed, there is a significant and positive relationship between them at the $p < 0.05$ significance level, as seen in Table 12 ($p = 0.033$). Therefore, the HA1 hypothesis is accepted.

Table 12. General Customer Satisfaction - Satisfaction of Compliance with Precautions T-Test

<i>Pair Sample - T-test</i>					
<i>General Customer Satisfaction *</i>	<i>Average</i>	<i>Std. Deviation</i>	<i>t</i>	<i>df</i>	<i>Significance (p)</i>
<i>Satisfaction of Compliance with Precautions</i>	0.27	0.7	2.32	33	0.033

Correlation Findings between General Customer Satisfaction and Satisfaction in Compliance with Precautions

Correlation findings between general customer satisfaction and satisfaction in compliance with precautions are shown below Table 13.

Table 13. Correlation between General Customer Satisfaction and Satisfaction with Compliance with Precautions

CORRELATION			
		General customer satisfaction	Satisfaction of Compliance with Precautions
General customer satisfaction	Pearson	1	.586**
	Correlation Sig.(2-tailed)		0.000
	N	60	60
Satisfaction of Compliance with Precautions	Pearson	.586**	1
	Correlation Sig.(2-tailed)	0.000	
	N	60	60

The correlation was significant at the 0.01 level (2-tailed).

According to these findings, between the research dates (April 2020 and May 2021), it was observed that customers were satisfied with the COVID-19 process and that the issue of complying with the precautions affected general satisfaction. In both satisfaction (general customer satisfaction and satisfaction of compliance with precautions) evaluations, demographic characteristics were not very determinative. However, general customer satisfaction was more effective in choosing an airline company.

5. Conclusion and Suggestions

The COVID-19 pandemic has significantly reshaped the airline industry, positioning customer satisfaction as a key factor in maintaining operational resilience and long-term recovery (Dube et al., 2021; Gössling, 2020). As global air traffic was interrupted by border closures and public health measures, passengers became increasingly sensitive to hygiene, safety, and service quality factors. Consequently, airlines were compelled to reassess their customer relationship management (CRM) strategies to align with evolving consumer expectations (Amankwah-Amoah, 2020a; Susilo et al., 2022).

Findings from this study indicate that the demographic profile of satisfied passengers during the pandemic primarily includes individuals aged 25–34, many of whom hold university or postgraduate degrees. These passengers predominantly traveled for leisure purposes and selected airlines based on perceived service attributes such as flight reliability, comfort, and punctuality. This is consistent with earlier research emphasizing that these service dimensions are primary drivers of passenger satisfaction (Korkmaz et al., 2015; Topal et al., 2019).

Affordability of ticket prices relative to service quality was also confirmed by participants, who further reported ease of

digital check-in procedures. These insights are aligned with literature highlighting the role of digitalization and cost-benefit perceptions in improving user experiences in air transport (Monmousseau et al., 2020; Lamb et al., 2020).

A significant portion of participants reported a high-income level and a clear preference for Turkish Airlines, often attributed to the carrier's reputation for reliability and scheduling accuracy. This supports previous findings that suggest economic status influences airline selection, with premium customers favoring full-service carriers (Kiraci et al., 2023).

Regarding compliance with health precautions, passengers expressed moderate satisfaction, particularly during airport check-in processes. However, noncompliance with social distancing rules in buses transporting passengers to aircraft emerged as a prominent dissatisfaction factor. Similar concerns were reported in studies that underline the importance of seamless precaution implementation across all contact points in the travel experience (Khatib et al., 2020).

While no statistically significant correlation was found between demographic characteristics and general satisfaction (rejecting HA2), a strong positive relationship emerged between general satisfaction and adherence to COVID-19 measures (supporting HA1). This confirms that effective health safety protocols directly contribute to customer satisfaction, as previously suggested in the literature (Dube et al., 2021; Tisdall et al., 2021).

This result suggests that passengers with higher income levels prioritize reliability and punctuality over cost, aligning with prior studies that highlight service dependability as a key determinant of airline preference among frequent flyers (Susilo et al., 2022). Turkish Airlines' established reputation and comprehensive COVID-19 compliance may have contributed to its high preference rate among these participants.

Recommendations for Airline Operators

Based on the empirical findings, several managerial recommendations are proposed:

- **To mitigate issues in ground transport to aircraft:**
 - Increase the number of shuttle buses;
 - Use high-capacity vehicles to reduce passenger density;
 - Where feasible, implement terminal-to-aircraft tunnels to eliminate bus use.
- **To address passenger discomfort due to prolonged mask usage:**
 - Activate cabin ventilation systems prior to boarding;
 - Integrate air distribution systems into new aircraft designs;
 - Improve HVAC systems to allow for multiple fresh air entry points.

In addition, practices such as contactless boarding, hygiene kits, and real-time health communication are vital for maintaining trust. Airlines must also periodically audit safety protocol compliance to ensure consistent service standards.

Looking ahead, the transition to more sustainable aviation practices—such as waste reduction, circular economy adoption, and greener fleets—will further enhance industry resilience. Prior research advocates for stronger integration of sustainability frameworks within post-COVID recovery plans (Ibn-Mohammed et al., 2021; Gössling, 2020).

Finally, future studies should explore the longitudinal effectiveness of CRM and safety strategies in post-pandemic scenarios, assessing how these adaptations influence long-

term loyalty, perceived value, and brand trust in the aviation sector.

The theoretical and managerial implications of this study are discussed below.

Theoretical Implications

This study proposes a conceptual framework to assess customer satisfaction and expectations in the context of the “new normal” brought by the COVID-19 pandemic, particularly within the airline industry. By focusing on Customer Relationship Management (CRM) in post-pandemic air passenger transportation, the study addresses a relatively underexplored research area. It contributes to the existing body of literature by highlighting the interplay between service quality, health precautions, and passenger loyalty during a global health crisis. This focus offers a novel perspective that complements prior work on service quality models under stable conditions (Amankwah-Amoah, 2020b; Khatib et al., 2020).

Managerial Implications

The findings provide actionable insights for airline managers aiming to improve CRM performance, particularly in health and safety domains. By benchmarking operational practices across multiple contact points—such as boarding, airport shuttles, check-in counters, and kiosks—managers can identify areas requiring improvement in customer-facing processes. Additionally, adopting a holistic approach that considers both internal procedures and external stakeholder expectations (e.g., regulatory bodies, environmental standards) can enhance organizational responsiveness in future crises (Tisdall et al., 2021; Linden, 2021).

The results also emphasize the value of continuous process evaluation and the implementation of feedback loops, which can inform more resilient and customer-oriented strategies. While this study serves as a preliminary investigation, its implications highlight the need for follow-up case studies or large-scale quantitative analyses to validate and extend the findings. Regulatory authorities may also benefit from this research by leveraging the data-driven insights to guide policy design in customer satisfaction and crisis management planning.

Limitations and Future Studies

This research is subject to several limitations that present opportunities for future investigation. The study was constrained by time and geographical scope, as it was conducted through online surveys with a sample of passengers traveling between April 2020 and May 2021. Consequently, the generalizability of the results may be limited.

Furthermore, statistical tests related to compliance with social distancing protocols at airport check-ins could not be fully executed due to small sample sizes and non-normal distribution of responses. Future studies may adopt stratified sampling or longitudinal designs to ensure more robust data representation across cities and airline segments.

In addition, upcoming research could benefit from focusing on individual airline companies, enabling a more in-depth analysis of specific CRM strategies and organizational practices. Such targeted studies would allow for benchmarking across carriers and the identification of best practices in post-crisis customer experience management. By addressing these gaps, future work can better inform evidence-based interventions and support the development of a more sustainable and customer-centric airline industry (Gudmundsson et al., 2021; Dube et al., 2021).

Ethical approval

Ethical approval was not formally required as the study did not involve clinical procedures or vulnerable populations.

Participation was entirely voluntary, anonymized, and complied with the ethical principles of the Declaration of Helsinki. Participants were informed of the study's purpose, and informed consent was obtained prior to survey participation.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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Cite this article: Cakar, T., Akif, B., Kebbe, M.B. (2025). Analysis of The Effect of The COVID-19 Pandemic on Customer Satisfaction And The Airline Passenger Transportation Sector. *Journal of Aviation*, 9(2), 348-361.



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