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Relationship between Airline Ticket Price, Demand and Business Model: A Worldwide Analysis[1]

Havayolu Bilet Fiyatı, Talep ve İş Modeli İlişkisi: Dünya Geneli Analizi

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MAKALE BİLGİSİ

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Bilet Fiyatı,
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ÖZET

Bu çalışmanın amacı, havayollarının yolcu başına ortalama bilet fiyatı ile yolcu sayısı arasındaki ilişkiyi ortaya koymaktır. Çalışmada 2013-2022 dönemi için havayollarının yolcu başına ortalama bilet fiyatı ve yolcu sayısı verileri panel veri analizi ile incelenmiştir. Tüm havayolları örneğinde bir panel regresyon modeli uygulanmıştır. Bu nedenle, analiz tüm havayolları örnekleminde 4194 gözlem kullanarak gerçekleştirilmiştir. Ayrıca çalışmada havayolları iş modellerine göre farklı gruplara ayrılmıştır. Bu kapsamda havayolları Geleneksel taşıyıcılar, Düşük maliyetli taşıyıcılar, Charter taşıyıcılar ve Bölgesel taşıyıcılar olarak 4 farklı grupta sınıflandırılmıştır. Çalışmanın bulguları, yolcu başına ortalama fiyattaki değişime karşı yolcu sayısında bir tepki olduğunu göstermektedir. Analiz sonuçları, bilet fiyatı ile havayolu talebi arasında anlamlı ve negatif bir ilişki olduğunu ancak iş modeline göre esneklik farklılıkları olduğunu ortaya koymuştur. Araştırma sonuçlarının havacılık sektöründeki karar alıcılara, rakip havayolu şirketlerinin destinasyon bazlı iş modellerini analiz ederek, katsayıları dikkate alan politikalar geliştirebilmeleri açısından yol göstereceği düşünülmektedir.

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ABSTRACT

The purpose of this study is to investigate the relationship between the average price per passenger and the number of passengers. Using panel data analysis, it is examined the average price per passenger and number of passengers for airlines for the period 2013-2022. All airlines were analyzed with a panel regression model. 4194 observations were used from the sample of all airlines for the analysis. Additionally, the study divided airlines into groups based on their business model. According to this classification, airlines fall into four categories: network carriers, low-cost carriers, charter carriers, and regional carriers. It appears from the results of the study that there is a reaction in the number of passengers in response to changes in the average price per passenger. There is a significant negative relationship between ticket prices and airline demand, but the elasticity varies by the business model. It is expected that the results of the research will guide aviation decision makers to develop policies that take into account the coefficients by analysing the destination-based business models of competing airlines.

The airline industry is regarded as one of the most technologically advanced industries when it comes to adopting sophisticated pricing techniques (Abdella et al., 2018, p. 169). Today, ticket costs for the same flight can change dramatically and dynamically, even for neighboring seats (Narangajavana et al., 2014; Etzioni, 2003). The ticket price is

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seen as one of the most important components of the airline product for many market segments, especially in many price-sensitive entertainment or VFR (visiting friends and relatives) markets. Even here, significant price differentials between airlines can have an impact on demand, although price is seen as a less prominent product component in the business passenger market, where demand is less price elastic. Price appears as the most dynamic product component, at least in deregulated markets, as they can be changed almost daily (Doganis, 2005, s. 237).

Customers' easier access to information and the environment's growing dynamism has changed the structure of competition and redefined management and marketing techniques (Narangajavana et al., 2014). One of the most important skills for companies to have in order to deal with these new circumstances is the capacity to choose and implement price strategies, particularly for firms operating in "hyper-competitive" and highly dynamic industries (Jallat and Ancarani, 2008, p. 465). The capability to manage pricing strategies becomes critical when an airline wants to maintain or increase profitability (Monroe, 2003). The main purpose of pricing strategies is to boost the gains of sellers by capturing heterogeneous product evaluations by consumers and taking into account competition and cannibalization (Kim et al. 2009, p. 44). If markets are price inflexible, or if different carriers' fares are very similar due to regulations or competitive pressures, then product features other than price become relatively more important in determining different airlines' entry into the market (Doganis, 2005, p. 238).

The relationship between airline ticket price and demand is complex and dynamic. It depends on various factors such as competition, seasonality, customer behavior, fuel costs, and more. In general, airlines use sophisticated algorithms to adjust their prices according to the expected demand for each flight. They also use different booking classes to segment their customers and offer different prices for the same seat. Some of the main principles that affect airline ticket price and demand are supply and demand, price elasticity, dynamic pricing and fuel costs. The basic economic principle of supply and demand applies to airline tickets as well. When the demand for a flight is high and the supply of seats is low, the price goes up. Conversely, when the demand is low and the supply is high, the price goes down. Airlines try to predict the demand for each flight based on historical data, market trends, events, holidays, etc., and adjust their prices accordingly. Price elasticity refers to how sensitive customers are to changes in price (Brons et al., 2002). Some customers are more willing to pay higher prices for certain flights than others. For example, business travelers may have less flexibility in their travel plans and may value convenience and comfort more than leisure travelers. Therefore, they may be less sensitive to price changes and more likely to pay higher fares. Airlines use different booking classes to target different segments of customers and offer different levels of discounts or benefits. Dynamic pricing is a strategy that airlines use to change their prices frequently based on real-time data and market conditions. Airlines use algorithms that monitor the booking patterns, customer behavior, competitor actions, inventory levels, and other factors that affect the demand for each flight. They then adjust their prices accordingly to maximize their revenue and profit. Dynamic pricing can lead to significant fluctuations in ticket prices over time (Burger and Fuchs, 2005). Fuel is one of the major expenses for airlines and it affects their profitability. When fuel prices increase, airlines may pass on some or all of the cost to customers by raising their fares or adding surcharges. When fuel prices decrease, airlines may lower their fares or offer promotions to stimulate demand. Fuel prices can also affect the supply of seats by influencing airlines' decisions on which routes to operate or how many flights to offer (McConnachie et al., 2013).

In the literature, it is seen that there are many studies on ticket prices. Narangajavana et al. (2014) examined the pricing behavior of airline companies in the London-Alicante market and tried to reveal the prominent factors in determining the prices of airline companies. Ren et al. (2014) developed three models that help airline companies predict ticket prices. Abdella et al. (2018) conducted a review of passenger- and airline-side forecasting models, discovering that both sides rely on a small collection of parameters, such as historical ticket pricing information, booking date, and departure time. Wang et al. (2018) investigated the key determinants of ticket price and demand in the context of China and India and found that airport concentration affects prices positively in China and negatively in India. Yaşar (2019) evaluated the competitive factors that affect ticket prices in LCCs and found that the market share, number of flights, and the concentration value of the route have a positive impact on ticket prices, and the existence of another LCC on that route has a negative impact. Ma et al. (2019) used monthly data to investigate the factors influencing airline price wars in Australia and found that the expansion of major airlines' capacity is the primary driver of price reductions and price conflicts. Lewis (2021) examined the price differences between airlines and the effect of competition and stated that the heterogeneity in the offered product was effective in this difference. Jiang et al. (2022) focused on the causes of price asymmetry in the US airline industry. Yaşar (2022) focused on the price component of service provision and compared the ticket prices of airlines with different business models on the same routes. When the researches are examined, it is seen that the estimation models that focus on the determinants of ticket prices are emphasized. In this study, unlike the previous studies on average ticket prices, the relationship between ticket price and demand will be examined on a global scale.

The purpose of this study is to use panel data analysis based on 314 airlines to investigate the relationship between the average ticket price of airlines and the annual number of passengers indicating demand for the years 2012 through 2022. The remainder of the article is organized as follows: the next two sections will provide information on the literature review and the methods

and data used in the study. In the fourth part, the results of the analysis of the panel data will be presented. In the fifth and last part, a general evaluation of the findings obtained in the study and the conclusion part will take place.

1. LITERATURE REVIEW

A review of the literature on air transport shows that there have been many studies on ticket prices and the factors that have had an impact on ticket prices. Gao et al. (2022) conducted a study on a dynamic pricing algorithm that considers both airlines and passengers. The result of the research shows that if the ratio of low-value strategic passengers is higher, the price increase should be smooth and gradual when the price increase strategy is adopted. Thakare et al. (2022), in their study to reveal the underlying deviations in ticket prices in India, revealed that price trends are sensitive to route, month and day of departure, departure time on holidays, and airline operators. In addition, the results show that prices increase as the number of days from departure decreases on competitive routes flown for business purposes. Yaşar (2019) researched to determine the competitive factors that affect the ticket prices of low-cost airlines. The author came to the conclusion that while the presence of another low-cost airline on the relevant route harms ticket prices, the market share of the airline, the number of flights on the relevant route, and the concentration values of the route all significantly positively affect ticket prices. Additionally, the study concluded that monopolistic markets and those with just one low-cost airline operator have higher ticket prices. Marthur (2020) investigated how seasonality and advance booking affect airline ticket prices on the route New Delhi- Mumbai. The result of the research shows that the air ticket price increases as the forward booking time decreases. Additionally, it was concluded that the relative increase in airfares was greater for private airlines (Indigo, Jet Airways, and Spice Jet) compared to the state-run Air India. Martinez et al. (2017) examined ticket prices according to the characteristics of the destination. The results show that the price levels in less popular destinations are higher, while the price distribution is greater in popular tourist destinations. Munoz et al. (2018) conducted a study on the attractiveness of airline companies at a major airport in Spain. The research findings reveal that one of the eight factors affecting passengers is the ticket price. Shen and Yahya (2021), in their research, examined the relationship between service quality and ticket price among low-cost airline customers in the Southeast Asian market. The results of the research show that service quality and ticket price have a positive effect on passenger satisfaction. In addition, the authors noted that ticket price is vital in markets where competition for LCCs is intense. Szabo et al. (2018) examined the route Bratislava (BTS)- Larnaca (LCA) to explain how the load factor, which is widely used to measure the performance of airlines, affects ticket prices. As a result of the research, it was understood that ticket prices increased with the load factor. Chrisnawan et al. (2019) carried out a study to clarify the connection between pricing and buying intention for Lion Airline as well as the linkage between perceived quality and intention to purchase. The study's findings led the authors to the following conclusions: price positively affects perceived quality, perceived quality positively affects buy intention, and perceived quality regulates the interaction between price and purchase intention. Takebayashi and Ishikura (2013), in their study of East Asian international passenger transport markets, revealed that low-cost airlines exert significant pricing pressure on other carriers when they enter a market. Bal et al. (2017) aimed to measure the impact of airline passenger demand and cargo transportation on economic growth in the 1967-2015 period. According to the results of the Vector Error Correction Model (VECM) Granger causality test, it was concluded that the aviation sector has a unidirectional and positive effect on economic growth in the long run. Akar et al. (2019) evaluated the causality relationship between liberalization in air transport and economic growth in the context of Turkey. The results of the analysis show that there is a causality relationship from the Aviation Liberalization Index calculated for Turkey to economic growth in 2005, 2008 and 2012.

In our systematic literature review, it is also included studies on panel data analysis. Panel data analysis is a widely used method in the literature. This method is frequently preferred especially in economics and econometrics-based studies. Studies in the air transport industry using the panel data method have been compiled. Studies that empirically examine the relationship between ticket price and passenger demand using panel data analysis are rarely conducted. Therefore, this study is unique in that it analyzes the average price per passenger and the number of passenger data through panel data analysis and separates them according to the business model of the airlines. In this respect, it is expected that the study will contribute to the literature and fill the gap in the literature. In Table 1, the studies using panel data were given.

Table 1. Studies on Panel Data Analysis

Authors	Period	Country	Results
Rey vd. (2011)	2000-2009	EU-15 member states	Effect of low-cost airlines on tourism
Jin vd. (2022)	1995-2019	USA	The Effect of Outsourced Maintenance on the Profitability of Major US Passenger Airlines from 1995 to 2019
Li, Y., Yang, B., & Cui, Q. (2019)	2006-2015	China	High-speed train's effects on China's airline passenger transportation
Moschovou, T. P., & Giannopoulos, A. G. (2021)	2005-2019	four EU Mediterranean countries	To create mathematical relations between these freight transport and economic indicators
Beyzatlar vd. (2014)	1970–2008	EU-15 countries	Transportation and GDP causality
Chenet al. (2022)	2010-2018	30 provinces in China	The effects of digital innovation and its mechanism on transportation-related carbon emissions

Bilotkach (2015)	1993-2009	A major commercial passenger airport located in a US metro region	Effects of air traffic on economic growth
Bilotkach and Lakew (2014)	1993-2009	US airports	Airline company uses its high market power to its advantage at the airport
Tsui (2017)	2009 - 2015	New Zealand's five key regions and tourist destinations	Low-cost carrier (LCC) in New Zealand on domestic tourism demand and expansion
Whalen (2007)	1990-2000	The United States-Europe Region	The impact of antitrust immunity, open skies agreements, and code-sharing on costs, capacity, and output
Duran and Gungor (2017)	2002-2011	Nine U.S. major passenger airlines	The relationship between firms' values and aviation fuel hedging activities
Ventura et al. (2020)	2011-2016	Brazilian Amazon Region	The price-income elasticity of domestic passenger demand for flights to and from outlying Brazilian Amazon cities
Ventura et al. (2022)	2011-2019	Brazil	To research the income-price elasticity of passenger demand for connecting flights
Chen (2015)	2001-2014	China	High-speed rail's effects on domestic air travel
Kiracı (2021)	2009-2018	16 Airlines	Aviation dividend payout policies are influenced by financial variables
Li et al. (2022)	2015 - 2019	China	Nexus between the attributes of the network and the influence factors
Surovitskikh et al. (2012)	2000 - 2010	South Africa	The effects of South Africa's pro-Yamoussoukro Decision aviation policy on air traffic flow

2. METHODOLOGY

Panel data analysis was used to reveal the relationships between the variables determined in this study. Panel data analysis is a prediction model based on regression and is frequently preferred especially in econometric analysis. It is a statistical method for analysing data collected over time and on the same individuals or units, and is widely used in the social sciences, epidemiology and econometrics (Baltagi, 2021; Hsiao, 2022). For example, panel data can be used to study the effects of education on income by following the same individuals over several years and observing their education level and income in each year. Three types of data are used statistically. These are time series data, cross-section data, and panel data. Time series data includes the information on the values received by a unit (N) at different times, and the cross-section data includes the information on the values received by a unit in a certain period (T) (Gujarati, 2003: 25-27). There are N units and T observations corresponding to each unit in the panel data series (Greene, 2003: 283-84), which is defined as the time series of the sections or the section data of the time series (Hsiao, 2003:7).

The equation for a panel of data with I cross-section units (i=1,..., N), t change over time (t=1,..., N), and Y as the dependent variable, showing the independent variables with X. This can be defined as $Y_{it} = \alpha_{it} + \beta_{it}X_{it} + \varepsilon_{it}$. Here, Ɛ_it exhibits the error terms (Kiracı, 2021: 1564). Panel data usage; It offers advantages such as ensuring heterogeneity between units, reducing the problem of multicollinearity due to providing more data and variability, and better examining the dynamics of change (Baltagi, 2005).

Panel data analysis has several advantages over other types of data analysis, such as (Hsiao, 2007, p. 3-6):

- It can capture the dynamics and heterogeneity of individual behavior and outcomes over time.
- It can control for unobserved or omitted variables that are constant over time or across individuals, such as ability, motivation, preferences, etc.
- It can test for causal relationships and identify the direction of causality between variables.
- It can exploit the variation within and between individuals or units to estimate more efficient and consistent parameters.

Panel data analysis has also some challenges and limitations, such as (Hsiao, 1985; Hill et al., 2020):

- It requires a large and balanced sample of individuals or units that are observed over a sufficiently long period of time.
- It may suffer from missing data, measurement errors, attrition, or selection bias due to non-random sampling or dropout of individuals or units over time.
- It may face endogeneity problems due to reverse causality, simultaneity, or omitted variables that vary over time or across individuals.
- It may need to deal with complex error structures that account for serial correlation, heteroskedasticity, cross-sectional dependence, or spatial dependence.

The data used in the research were taken from the passport database. The relevant data are the ticket prices and passenger numbers of airline companies based on countries and cover the period of 2013-2022. After the data on airline companies were obtained, these companies were categorized based on the business model and classified as Network, LCC, Charter and Regional. Afterwards, panel data analyzes were performed based on each business model separately.

3. EMPIRICAL FINDINGS

In this study, the average ticket prices and the number of passengers data have been analyzed for commercial air transport carried out by airlines in different countries. Therefore, an empirical analysis was performed using a large data set. Airline data for the period 2013-2021 were used in the study. Within the scope of the study, the relationship between the average airline ticket price and the number of passengers by analyzing 4194 observations. In addition, in the study, the airlines were classified by taking into account the business model and a separate model was created for each of them. Panel regression analysis were performed for each business model by classifying them as Network carriers, Low-cost carriers, Charter carriers, and Regional carriers. In the continuation of the study, descriptive statistics and analysis for each business model will be included. In Table 2, it is given that descriptive statistics of the study.

Table 2. Descriptive Statistics

Statistics	**Number of passengers (000)**	**Average price per passenger (US Dollars)**
Mean	5769.938	293.1505
Median	579.9	181.05
Maximum	308611.8	11715.4
Minimum	0.10	9.00
Std. Dev.	17926.41	365.0788
Skewness	8.480835	10.45367
Kurtosis	109.8192	252.9452
Jarque-Bera	2044234	10993472
Probability	0.0000	0.0000
Sum	24199120	1229473

In Table 2, it can be seen that the descriptive statistics of the airlines' average ticket price and the number of passengers. Average ticket prices show the currency in USD. According to descriptive statistics, the average minimum ticket price is 9 USD. The maximum ticket price is 11715 USD. Following the descriptive statistics, the panel data results of network carriers were presented in Table 3.

Table 3. Network Carriers Panel Test Result

Fixed Effects (within) regression			**Observations / Groups**		**3160 / 316**	
R-square	within	0.0138	F (1,2843)		Prob > F = 0.0000	
	between	0.0591				
	overall	0.0547				
Network Price	**Coefficient**	**Std. Err.**	**t**	**P>|t|**	**[95% Conf. Interval]**	
Network Pax	-.0361	.0057	-6.31	0.000	-.0474	-.0249
C	2.5306	.0152	166.14	0.000	2.5008	2.5605

In Table 3, the empirical results of the relationship between ticket price and passenger demand for network carriers were given. For network carriers, there exists a significant and adverse connection between the price of tickets and passenger demand. Therefore, the increase in ticket prices of network carriers causes passenger demand to decrease. This result is an expected result, but when the coefficient is examined, it is seen that the effect is at the level of 0,0361. Therefore, it is understood that passenger demand decreased by 0.36% against the 1% increase in network carrier ticket prices. The analysis results are also critical in revealing the relationship between ticket price and passenger demand in airlines. As a consequence, it has been found that there is a large and adverse linkage between airline demand for network carriers and ticket prices. After the network carrier panel data results, the panel data results of low-cost carriers is presented in Table 4.

Table 4. Low-Cost Carriers Panel Test Result

Fixed-effects (within) regression		**Observations / Groups**			**1310/ 131**	
R-square	within	0.0075	F (1,1178) = 8.90		Prob > F = 0.0029	
	between	0.0940				
	overall	0.0720				
LCC Price	**Coefficient**	**Std. Err.**	**t**	**P>|t|**	**[95% Conf. Interval]**	
LCC Pax	-.036195	.0121356	-2.98	0.003	-.0600048	-0,123852
C	2.13120	.0401924	53.03	0.000	2.05244	2.2102

In Table 4, the empirical results of the relationship between ticket price and passenger demand for low-cost carriers were given. The results obtained for low-cost carriers are similar to network carriers. There is a significant and negative relationship between the price of airline tickets and passenger demand for low-cost carriers. Therefore, low-cost carriers increasing their ticket prices cause a decrease in passenger demand. Besides, it is seen that the coefficient is very close to network carriers. Therefore, passenger demand decreases by approximately 0.36% against the 1% increase in ticket prices in low-cost carriers as in network carriers. Therefore, the results of the analysis show that there is a significant and negative relationship between ticket prices and airline demand for low-cost carriers.

Table 5. Charter Carriers Panel Test Result

Fixed-effects (within) regression		**Observations / Groups**			**380 / 38**	
R-square	within	0.0501	F (1,341) = 17.98		Prob > F = 0.0000	
	between	0.0008				
	overall	0.0019				
Charter Price	Coefficient	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Charter Pax	-.0615	.01451	-4,24	0.000	-.0901	-0,033
C	2.40490	.03588	67.02	0.000	2.33430	2.4755

In Table 5, it is included the results of the analysis between the ticket price and passenger demand for charter carriers. There exists a significant and negative relationship between airline ticket prices and passenger demand for charter carriers. Therefore, the increase in ticket prices of charter carriers causes a decrease in passenger demand. This result is an expected result, but when the coefficient is examined, it is seen that the effect is at the level of 0.0615. Therefore, it is understood that passenger demand decreased by 0.615% against the 1% increase in charter carriers' ticket prices. The analysis results are also critical in revealing the relationship between ticket price and passenger demand in airlines. As a result, it has been determined that there is a large and adverse linkage between airline demand for charter carriers and prices for tickets.

Table 6. Regional Carriers Panel Test Result

Fixed-effects (within) regression		**Observations / Groups**			**240 / 24**	
R-square	within	0.0295	F (1,215) = 6.55		Prob > F = 0.0112	
	between	0.0508				
	overall	0.0481				
Regional Price	**Coefficient**	**Std. Err.**	**t**	**P>|t|**	**[95% Conf. Interval]**	
Regional Pax	-.0666	.0260	-2,56	0.011	-.1179	-0,0152
C	2.35270	.0732	32.11	0.000	2.20890	2.4972

In Table 6, the panel regression analysis between ticket price and passenger demand for regional carriers were presented. Results for regional carriers are very similar to charter carriers. There exists a significant and negative relationship between airline ticket prices and passenger demand for regional carriers. This is an expected result, but, interestingly, the coefficient is higher than in other business models. The panel regression results show that regional carriers increasing their ticket prices caused passenger demand to fall. Besides, it is seen that the coefficient is very close to that of charter carriers. Therefore, passenger demand decreases by approximately 0.666% against the 1% increase in ticket prices in regional carriers as in network carriers. Therefore, the results demonstrate a significant and adverse relation between airline demand for regional carriers and ticket prices.

Table 7. All Carriers Panel Test Result

Fixed-effects (within) regression		**Observations / Groups**			**5090 / 509**	
R-square	within	0.0112	F (1,4580) = 51.72		Prob > F = 0.0000	
	between	0.1298				
	overall	0.1174				
All Price	**Coefficient**	**Std. Err.**	**t**	**P>|t|**	**[95% Conf. Interval]**	
All Pax	-.0405	.0056	-7,19	0.000	-.0516	-0,0295
C	2,4426	.0157	155.20	0.000	2,4118	2,4735

In Table 7, panel regression results for all airlines included in the analysis were given. In the study, the average price per passenger is the dependent variable, and passenger demand is the explanatory variable. Findings show that there is a significant negative relationship between the average price per passenger and the number of passengers. Therefore, as the average price per passenger increases, the number of passengers decreases. In addition, the 1% increase in the average price per passenger reduces the number of passengers by 0.04%. The analysis results are also critical in revealing the relationship between ticket price and passenger demand in airlines. Therefore, it has been determined that there is a significant and negative relationship between ticket prices and airline demand in the airline industry. It is thought that these findings can be taken into account when airlines make decisions about ticket prices.

4. CONCLUSION

Using panel data analysis, the average price per passenger and the number of passengers of airlines during the period 2013-2021 were analyzed. Airlines have grouped based on their business models in our study: network carriers, low-cost carriers, charter carriers, and regional carriers. In addition, a panel regression model is applied to the entire sample of airlines. The sample includes 4194 observations from all airlines. The study obtained data on the average price per passenger of airlines operating in different countries. Additionally, airline passenger data for each country were examined. Therefore, the study contributes to the literature by using this unique dataset for the first time.

The average price per passenger was used as the dependent variable and the number of passengers was used as the explanatory variable in the study. Using the business models of carriers, they were constructed four categories: network carriers, low-cost carriers, charter carriers, and regional carriers. A model was then created for each category. Based on the empirical findings of the study, the average price per passenger is significantly negatively related to passenger numbers. As the average price per passenger increases, the number of passengers decreases. All models, however, differ in certain ways. Using the coefficient for network carriers, it can be seen that it is at level 0.0361, indicating a decrease in passenger demand of 0.36%, against a rise in network carrier ticket prices of 1%. Results obtained for low-cost carriers are similar to those obtained for network carriers. For low-cost carriers, 1% increase in ticket prices causes passenger demand to decrease by approximately 0.36%.

A coefficient of 0.0615 is observed for charter carriers. Passenger demand decreased by 0.615% against a 1% increase in charter carriers' ticket prices. Regional carriers also show similar results to charter carriers. The relationship between regional carrier ticket prices and passenger demand is substantial and adverse. Regional carriers' rising ticket prices led to a decline in passenger demand, according to panel regression results. In addition, the 1% increase in ticket prices of regional carriers reduces the airline passenger demand by approximately 0.666%. Therefore, ticket prices and airline demand for regional carriers have a significant and negative relationship.

Panel regressions were performed on all airlines included in the study. The dependent variable is the average price per passenger, and the explanatory variable is passenger demand. In comparison with a 1% increase in the average passenger price, the number of passengers decreased by 0.04%. This analysis is critical for the airline industry since it establishes a significant relationship between ticket prices and airline demand. Due to the size and scope of the data set used in this study, it is believed to reflect a significant amount of world traffic. The findings are thus important for the aviation industry in general. By distinguishing the business models, the coefficients were also examined in detail through panel regression analysis. By analyzing the destination-based business models of competing airlines, decision-makers in the aviation industry can develop policies that take into account coefficients. Moreover, it is recommended that future academic studies conduct detailed analyses of coefficients in addition to destination-based analyses of airlines.

AUTHOR DECLARATIONS

Declarations of Research and Publication Ethics: This study has been prepared in accordance with scientific research and publication ethics.

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