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AIRLINE PERFORMANCE AND THE LEASING RATIO IN THE CONTEXT OF BUSINESS MODELS

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Abstract

The paper analyzes how aircraft acquisition structures - leased versus owned - affect airline performance. It considers the controlling role of business models, specifically low-cost carriers (LCCs) and full-service providers (FSPs). Using financial and operational data from 142 airlines globally, the study applies correlation and regression analysis to assess how leasing ratios influence indicators such as revenue, market capitalization, fleet value, load factor and profitability. While leasing offers flexibility and supports fast expansion, it does not guarantee operational efficiency. The study emphasizes the need to control for the business model when analyzing the financial effects of leasing. Model-specific strategies significantly influence an airline`s performance outcomes. LCCs typically exhibit higher leasing ratios due to their asset-light strategies and initial capital limitations. Future research should address whether airlines rely on leasing primarily as a tool for operational optimization or as a response to financial necessity.

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Introduction

The optimal fleet structure is a key determinant of an airline's success. Aircraft represent a substantial investment and their acquisition demands significant financial resources and sophisticated financing strategies. Over the past three decades, the air travel industry has grown considerably, with the number of passengers increasing from 1.99 billion in 2004 to 4.7 billion in 2020. Although the COVID-19 pandemic caused a temporary decline, the industry rebounded to 4.5 billion passengers in 2023 (Statista, 2024). According to IATA, global aviation performance, measured in Revenue Passenger Kilometers (RPKs), fell to 2.97 trillion in 2020 but recovered to 9.09 trillion in 2024. This exceeds the pre-pandemic level of 8.69 trillion in 2019, indicating a full recovery and further growth (IATA, 2024).

This remarkable expansion has been driven by long-term economic growth, increased globalization and liberalization of air traffic regulations. As a result, not only has the number of passengers grown, but the number of airlines has also doubled. This growth has been accompanied by the emergence of new business models. Traditional flag carriers, or full-service providers (FSPs), now operate alongside low-cost carriers (LCCs). LCCs are airlines whose business models focus on minimizing operational costs and offering low fares with limited complimentary services. In practice, aviation business models are often more complex than these broad categories suggest (L.E.K, 2014; Bilotkach 2015; Sengur, 2017; Marintseva, 2024).

The rising demand for air travel has led to a corresponding need for larger aircraft fleets, which in turn requires access to significant financial resources. This has fueled the growth of the aircraft leasing industry, with the share of leased aircraft increasing from 5% in 1980 to approximately 50% today (SMBC Investment Whitepaper).

A key strategic decision for airlines is whether to purchase or lease an aircraft. In reality, most airlines adopt a mixed approach, combining both methods to manage their finances effectively.

This paper aims to examine the relationship between the proportion of leased aircraft and various airline performance indicators. It evaluates how the leasing ratio influences various key operational metrics.

An important consideration when analyzing the role of leasing is the airline's business model. According to the Centre for Aviation (CAPA), in the past decade, most newly launched passenger airlines have been categorized as LCCs (CAPA, 2022). Global LCC capacity rose from 27.5% of total airline operations in the early 2010s to 32.9% by 2019. In recent years, at least 36 new airlines have been established, primarily as small-scale LCCs. These startups typically avoid capital-intensive aircraft purchases and instead, lease their fleets (CAPA, 2022).

Because newly established LCCs are usually smaller in size, their limited access to capital makes aircraft leasing particularly relevant. However, there is still an imperfect understanding between leasing practices and airline business models. This study addresses that gap by using the LCC model as a control variable to investigate how leasing relates to performance outcomes. The classification of LCCs is based on the International Civil Aviation Organization (ICAO) framework.

The paper is structured as follows: the first section reviews the relevant literature. The next section presents the characteristics of the airline sample. This is followed by a correlation analysis exploring the link between fleet acquisition methods and airline performance. Subsequently, an econometric model is developed to assess the causal relationship between leasing ratios and performance indicators. The paper concludes with a summary of findings and suggestions for future research.

Literature overview and frames of studies

Aspects of aircraft leasing have become of growing interest as a research area in recent decades, which is related to the significant expansion of the leasing industry. These studies highlight the advantages of leasing as a specific financing method and focus on different leasing aspects (Marintseva 2024, Bourjade 2023, Vasigh, 2022; Morell, 2021; Huges, 2020; Guzhva, 2019; Scheinberg, 2018; SMBS; Zachariah, 2018 and others). These texts highlight how leasing can enhance an airline's financial stability and operational flexibility, making it an attractive option for both established carriers and new entrants in the market.

These authors also emphasize the flexibility and financial efficiency that leasing provides to airlines, allowing for fleet modernization and capacity adjustments without the substantial capital expenditure associated with purchasing aircraft. Leasing also provides operational advantages, enabling airlines to lessen risks associated with aircraft depreciation and technological obsolescence. The findings emphasize the importance of leasing for maintaining modern, efficient operations and supporting smaller airlines with limited finance options.

However, the literature also addresses the potential downsides of aircraft leasing. The long-term financial implications include higher overall costs compared to direct purchases due to leasing fees and interest rates. Additionally, it is pointed out that dependency on lessors can limit an airline's operational autonomy and decision-making flexibility. It is recognized that while leasing offers immediate financial assistance and operational benefits, it can also lead to complex con-

tractual obligations and potential financial risks in unfavorable market conditions. Overall, these texts highlight the importance of strategic decision-making in aircraft leasing to balance its advantages and disadvantages effectively.

Gavazza (2010) analyzes how asset liquidity impacts financial contracts, focusing on aircraft leases to illustrate these dynamics in the financial sector. The study concludes that higher asset liquidity leads to more favorable leasing terms for lessees.

Aleixo (2014) highlights the significant roles of LCCs and aircraft leasing in the airline industry. The study emphasizes the impact of performance indicators on leasing decisions, finding that fleet size and average fleet age have statistically significant negative effects on the use of leasing by LCCs. Specifically, airlines with larger and newer fleets tend to lease less, indicating that these carriers might have the financial capacity to purchase aircraft directly. Although better on-time performance and higher profit margins were associated with lower leasing use, these findings lacked statistical significance, indicating that operational and financial strength might reduce reliance on leasing. While leasing is a strategic tool for fleet modernization and flexibility, leasing ratios are lower for airlines with substantial fleets.

The study by Bourjade et al. (2017) investigates the impact of leasing aircraft on the profitability of airlines. Analyzing data from 73 airlines over 1996-2011, the authors found that leasing has a non-monotonic and concave effect on profit margins, indicating diminishing marginal returns. They also discovered that the impact of leasing is more noticeable for low-cost carriers compared to full-service carriers, as leasing-profitability decreases in the long run. This specific understanding highlights the importance of strategic leasing decisions in the airline industry.

In another paper, Bourjade (2023) investigates the impact of leasing on operating cost efficiency for 134 airlines from 2007 to 2019. The study finds a quadratic effect of leasing on cost inefficiency, identifying an optimal leasing level of 46%. This confirms previous findings but suggests a slightly lower optimal leasing level due to improved airline performance and easier credit access. The study notes that the marginal benefits of leasing decrease for airlines with higher leasing proportions and highlights that longer lease durations have reduced flexibility.

In their paper, Wandelt et al. (2023) examine the critical role of aircraft leasing in the aviation industry and its business model. They highlight how leasing has become a dominant financing strategy, with the share of leased aircraft exceeding 50% during the COVID-19 pandemic. They emphasize that leasing provides airlines with flexibility and lower upfront costs compared to purchasing aircraft, making it an essential component of many carriers' business models, particularly during economic downturns.

Marintseva and Athousaki (2024) develop a model to evaluate aircraft leasing efficiency by combining financial considerations with operational modeling. They are combining various operational factors (e.g. aircraft fuel efficiency and leasing cost), but also sustainability requirements and different regulatory objectives. While leasing remains a key financing strategy, especially for low-cost carriers, its efficiency is formed not only by operational considerations but also increasingly by regulatory settings, like environmental requirements and tax policies. The authors conclude that leasing even more expensive but fuel-efficient or environmentally friendly aircraft can be economically justified.

To sum up the studies of leasing use, the choice between alternative financing strategies is influenced by a range of factors, including the firm's financial goals, access to capital, tax considerations, and the need for operational flexibility. Each financing method presents distinct advantages and limitations. Also, the business model plays a critical role in projecting financial decisions. Low-cost carriers tend to favor leasing over ownership, as it aligns with their low-asset strategies and limited access to capital.

Expectations and data

The research focuses on examining the relationship between the acquisition structure (leasing share) and various financial and efficiency characteristics of airlines. Based on the literature highlights, there are two working hypotheses:

H_1: Companies with a higher leasing ratio have better operational indicators.

H_2: The effect of the leasing ratio on airline performance indicators is influenced by the airline business model.

The author hypothesizes that a higher proportion of leased aircraft aligns with better performance and operational efficiency indicators. An increased share of leased aircraft supposedly correlates with higher airline revenue, market capitalization and revenue per passenger. The reliance on leased assets provides airlines with greater flexibility and enhances their financial capacity. Furthermore, it supports more efficient fleet design, which in turn contributes positively to financial performance and the overall scope of activities.

Another important aspect of aircraft leasing is its interaction with the specific characteristics of the airline business model. LCCs tend to rely more heavily on leasing than FSPs due to their asset-limited business model, which prioritizes fast capacity expansion and minimized upfront capital expenditure. The second

hypothesis reflects the expectation that even at similar levels of leasing ratio, the impact on performance may differ across business models. In other words, the effect of leasing is likely to vary depending on whether the airline operates as an LCC or an FSP. To test these hypotheses, we first conducted a correlation and then an econometric analysis.

The data used in this study were collected from the Aircraft Finance Journal's Airline Top 100 editions for the years 2022 and 2023 (Airfinance Journal). The analysis focuses on airlines whose most recent last-twelve-month (LTM) financial data covers the period from 31.03.2021 to 30.06.2023. The final dataset comprises 142 airlines out of the 186 listed in the reports, selected based on the availability of consistent and comparable financial indicators.

The dataset's composition reflects the global structure of the commercial airline industry in terms of company size, geographic distribution across major macroregions and business models. It includes all major carriers worldwide, accounting for the majority of the industry's annual revenue flows and operating most of the global commercial fleet. In the analyzed sample, 58% of the airlines were classified as full-service providers and 42% as low-cost carriers, a distribution that broadly mirrors the current structure of the global airline industry. This representative composition facilitates statistically valid and meaningful comparisons of operational and financial indicators.

The selected timeframe reflects a relatively stable and homogeneous period in the global aviation sector following the interruption caused by the COVID-19 pandemic. During this period, international travel restrictions had largely been removed, passenger demand reached pre-crisis level and the industry entered a phase of financial stabilization. This context provides a stable ground to analyse airline performance and strategic financial decisions.

In line with its extension, the dataset presents two minor limitations. First, although broadly representative, certain financial indicators are missing for some airlines. However, correlation and regression analyses were conducted on the available data, with sample sizes adequate to confirm statistical validity.

Second, slight discrepancies exist in the timing of accounting periods among airlines; for some, financial years begin in March rather than January. However, since each observation extends a full twelve-month period and the data covers a uniform two-year time period, these discrepancies are not expected to affect the outcomes. Overall, the dataset provides a comprehensive empirical foundation to study airline`s financial performance and leasing strategies.

Descriptives

Table 1 presents a range of indicators, representing the general scope of airline activities, both financial and operational. Data are provided separately for full-service providers and low-cost Carriers. 57.8% of the sample classified as FSPs and 42.2% as LCCs. The table does not differentiate between various leasing types (e.g., operational vs. financial leases). As hypothesized, the business model is an important factor that significantly influences an airline's decision to lease or own aircraft.

Table 1: Airline descriptives

Indicator	Business model	Mean	Min	Max	Valid
Total revenue, USD million	FSP	9,971.0	118.0	55,746.0	76.0
	LCC	3,524.0	44.0	25,135.0	54.0
Market capitalization, USD million	FSP	5,893.0	50.0	26,264.0	57.0
	LCC	3,283.0	10.0	23,008.0	53.0
Total fleet value, USD million	FSP	10,479.0	2,092.0	28,074.0	51.0
	LCC	6,443.0	2,775.0	18,771.0	31.0
Owned, number	FSP	245.0	28.0	854.0	51.0
	LCC	130.0	2.0	759.0	31.0
Leased, number	FSP	123.0	15.0	561.0	51.0
	LCC	114.0	29.0	289.0	31.0
Total fleet, number	FSP	362.0	54.0	1348.0	52.0
	LCC	244.0	98.0	841.0	31.0
Leasing ratio[1]	FSP	36.9%	10.0%	75.0%	51.0
	LCC	61.0%	5.0%	98.0%	31.0
EBITDAR margin	FSP	18.4%	1.0%	65.0%	66.0
	LCC	19.4%	1.0%	47.0%	44.0
Load factor	FSP	70.6%	30.1%	87.1%	72.0
	LCC	76.3%	20.0%	93.5%	50.0

Indicator	Business model	Mean	Min	Max	Valid
Passenger yield (US cents per RPK)	FSP	11.2	6.3	40.3	68.0
	LCC	7.9	2.0	28.7	43.0
Revenue per passenger, USD	FSP	199.5	29.0	572.0	71.0
	LCC	124.9	34.0	952.0	49.0
Net Debt/EBIDAR	FSP	2.4	-0.2	-1.9	33.0
	LCC	3.4	6.0	7.4	25.0

Code: FSP – full service provider, LCC- low-cost carrier
[1] Proportion of leased aircraft in total fleet

Source: Author's own work.

As shown, the scale of economic activity among airlines varies substantially. The mean total revenue for FSPs is $9.97 billion, ranging from $118 million to $55.7 billion. For LCCs, the mean is roughly three times lower at $3.52 billion. This difference reflects the structural characteristics of FSPs, which generally operate wider route networks and offer premium services, leading to higher average revenues.

In terms of market capitalization, FSPs again lead with a mean of $5,893 million, compared to $3,283 million for LCCs. This difference reflects different strategic focuses and investor perceptions of the two business models. However, some LCCs - such as Ryanair and Southwest - rank globally in the top ten list by market capitalization (Admiral Markets, 2024).

Also, the total fleet value highlights the differences: FSPs average $10,479 million in fleet value, while LCCs report a mean of $6,443 million. This reflects the capital-intensive nature of FSPs, which often operate a mix of wide- and narrow-body aircraft for both long-haul and short-haul routes.

Fleet composition also differs significantly. FSPs own an average of 245 aircraft and lease 123, with a total average fleet size of 362 (ranging from 54 to 1,348) and a leasing ratio of 36.9%. LCCs own 130 and lease 114 aircraft on average, with a smaller total fleet of 244 and a notably higher leasing ratio of 61.0%.

The EBITDAR margin, which indicates operating profitability before lease-related costs, is slightly higher for LCCs (19.4%) than FSPs (18.4%), reflecting the cost structures of the different types of airline.

Load factors, representing seat occupancy, are higher among LCCs (76.3%) than FSPs (70.6%), suggesting more efficient capacity utilization. This is typically achieved through lower fare pricing and simplified operations.

Passenger yield, measured in US cents per RPK, is higher for FSPs (11.2) than for LCCs (7.9), reflecting premium pricing and additional services. Similarly, revenue per passenger is significantly higher for FSPs ($199.5) than for LCCs ($124.9). Despite lower yields, LCCs maintain profitability through higher load factors and cost efficiency.

Net debt to EBITDAR ratios show differences in financial structuring: FSPs average 2.4, while LCCs average 3.4. The higher leverage among LCCs reflects their reliance on leasing to support growth, though this is often balanced by stronger liquidity positions.

The overview highlights distinct financial and operational differences across airline business models. These differences reflect the essential characteristics of each business model rather than a clear performance order. Although no model generally outperforms the other, full-service providers (FSPs) generally demonstrate stronger efficiency and financial position compared to low-cost carriers (LCCs). This suggests that, although LCCs benefit from cost-minimization, FSPs may achieve better performance through economies of scale and market strength.

Analyses

The purpose of the following quantitative analysis is to explain the relationship between airline fleet structure (leasing ratio) and various economic performance indicators. To separate the impact of the business model, the correlation is controlled for the LCC group of airlines. This control variable serves to emphasize the importance of effects arising from essential differences between these two distinct categories of airlines. Using the low-cost carrier status as a control variable ensures that any observed correlations between the leasing ratio and other indicators are not solely driven by the differences between LCCs and FSPs. This control allows us to focus specifically on the impact of leasing ratios within each category of airlines, thereby providing a more accurate understanding of the relationships between leasing practices and other economic and operational indicators.

Table 2 presents a summary of paired correlations, with one of the variables being the leasing ratio and the other being a variable listed. Statistical significance levels are given on the standard scale, offering an indication of the robustness of the observed correlations.

Table 2: Correlations

Variable[1]	Pearson's r	Sig.	p-value
Total revenue, USD million	-0.227		0.063
Market capitalization, USD million	-0.457	***	< 0.001
Total fleet value, USD million	-0.222	*	0.046
Owned, number	-0.576	***	< 0.001
Leased, number	0.371	***	< 0.001
Total fleet, number	-0.330	**	0.003
EBITDAR Margin	0.020		0.899
Passenger yield (US cents per RPK)	-0.449	***	< 0.001
Revenue per passenger, USD	-0.075		0.595
Load factor, %	-0.008		0.951
Net debt/EBIDAR	0.692	***	< 0.001

Note 1: The share of leased aircraft (in percent) is correlated with the paired variables. Conditioned on variables: LLC = 1.0 * p < 0.05, ** p < 0.01, *** p < 0.001

Source: Author's own work.

The negative correlation (-0.227) indicates that a higher leasing ratio is associated with lower total revenue. This suggests that larger airlines with high revenue flow prefer to lease less and own more of their aircraft. The result is somewhat non-intuitive, which suggests that high-revenue companies expand their activities via leased aircraft. However, the correlation with total revenue is not statistically significant.

The correlation between market capitalization and leasing structure in the airline industry demonstrates that airlines with a higher proportion of leased assets generally display lower market capitalization. Market capitalization, determined by multiplying the current stock price by the total number of outstanding shares, serves as a proxy for the economic capacity of a company. When airlines own a larger portion of their fleet, it typically results in a more substantial asset base recorded on their balance sheets, which can enhance investor confidence. Leases, especially short-term ones, are often excluded from balance sheets. This accounting practice can lead to lower market capitalization, as investors may perceive the company as having a weaker economic position due to its smaller asset base. However, IFRS 16 (International Financial Reporting Standard) requires lessees to recognize most leases on the balance sheet as right-of-use assets and corresponding lease liabilities. This aims to increase transparency and comparability by ensuring that lease obligations are not kept off-balance sheet (IFRS 16).

Total fleet value and number of owned aircraft both show significant negative correlations with leasing ratios (-0.222 and -0.576, respectively), indicating that airlines with higher leasing ratios tend to have a lower overall fleet value and they own fewer aircraft. This is expected, as leasing reduces the need to invest in the capital-intensive purchase of aircraft.

The number of leased aircraft shows a moderate positive correlation (0.371) with the leasing ratio, confirming that a higher leasing ratio directly translates to a higher number of leased aircraft within the fleet.

The negative correlation (-0.33) between total fleet number and leasing ratio implies that airlines with higher leasing ratios might operate smaller fleets.

The EBITDAR margin shows virtually no correlation (0.02) with the leasing ratio, indicating that profitability fluctuations are not associated with whether an airline leases or owns its aircraft.

Passenger yield shows a strong negative correlation (-0.449) with the leasing ratio, suggesting that airlines with higher leasing ratios may earn less per passenger kilometer, which could reflect competitive pricing strategies by LCCs.

Average revenue per passenger is not statistically related to fleet acquisition structure. Possible reasons for this lack of correlation could involve various factors influencing average revenue per passenger that might not be directly impacted by the mix of leased and owned aircraft. Factors such as pricing strategies or additional revenues could have a more important influence on the average revenue per passenger than the specific structure of leased versus owned aircraft in the fleet.

The load factor is not statistically correlated to the leasing ratio. This lack of correlation might come from various factors. For instance, an airline's load factor might be more affected by its operational decisions or seasonality rather than the specific breakdown of leased versus owned aircraft in its fleet.

The variable net debt/EBITDAR shows a very strong and positive correlation (0.692) with the leasing ratio, indicating that higher leasing ratios are linked to higher relative debt levels. This could reflect higher financial

leverage and reduced asset holdings typical of airlines focusing on leasing rather than purchasing. Such an outcome is rather predictable, as an extensive leased fleet by definition means a higher debt level.

Overall, the results highlight the complex relationship between the airline leasing ratio and operational efficiency. Most performance indicators exhibit a negative or no statistically significant correlation with the leasing ratio. Only the net debt/EBIDAR ratio is positively correlated with the leasing ratio. Therefore, the correlation analysis does not support the first hypothesis, which expected that a higher reliance on leasing would be associated with improved airline performance indicators.

A high leasing ratio may reflect an airline's financial necessity, such as limited internal capital capacity- rather than a planned performance-enhancing decision. Consequently, a higher reliance on leasing does not automatically translate into improved operational or financial outcomes.

The model

The following study evaluates how the leasing ratio impacts various performance indicators of airlines in the context of their business model. To highlight these relationships, a set of multiple regression models is developed. The outcome variables are presented in the first column in Table 3. There are two independent variables as predictors - leasing ratio and business model as a binary variable. The econometric model includes a dummy variable β_2 (0 for FSPs, 1 for LCCs) to bring out performance differences due to the type of business model. The general form of these regressions is expressed as:

$$Y = \beta_0 + \beta_1(Leasing\ ratio) + \beta_2(Business\ model) + \varepsilon \quad (1)$$

Where:

Y - represents the dependent variable, which could be any performance indicator or characteristic of the airline (Table 3),

β_1 (Leasing ratio) - the independent variable indicating the share of leased aircraft in the total fleet,

β_2 (Business model) - a binary variable where LCC (low-cost carrier) is coded as 1 and FSP (full-service provider) is coded as 0,

β_0, β_1, β_2 - coefficients to be estimated,

ϵ - error term capturing unexplained variability.

For compactness, the regression models are reported in tabular form (Table 3). Here the main parameters are presented, including measures of model fit and statistical significance levels. The final column highlights the effect of the business model on each dependent variable, indicating whether the type of airline (LCC or FSP) has a statistically significant influence on the outcome.

Table 3: Regression models outcome[1]

Variable	Coefficients	se	t	P	F	P	R^2	LCC statistically significant[2]
Total revenue, USD million	-10,449.100	5,524.700	-1.891	0.063	7.225	<0.001	0.155	yes
Market Cap USD million	-10,704.300	2,831.200	-3.781	<0.001	8.072	<0.001	0.230	no
Total fleet value, USD mil.	-5,133.700	2,537.200	-2.023	0.046	7.094	<0.001	0.152	yes
Total fleet, number	-354.400	114.100	-3.105	0.003	7.170	<0.001	0.154	no
EBITDAR Margin	0.008	0.061	0.127	0.899	0.465	0.623	0.023	no
Load factor	-0.003	0.054	-0.062	0.951	5.490	0.007	0.162	yes
Revenue per passenger ($)	-24.900	46.600	-0.530	0.595	9.511	<0.001	0.039	yes
Passenger yield (US cents per RPK)	-4.040	1.110	-3.620	<0.001	31.880	<0.001	0.551	yes
Net Debt/ EBIDAR	5.540	1.260	4.395	<0.001	12.516	<0.001	0.544	no

Note: 1: Independent variables are leasing ratio and business model (LCC = 1; FSP = 0), 2: LCC impact on the dependent variable

Source: Author's own work.

The regression results demonstrate that most models are statistically significant (F-statistics), indicating that the leasing ratio and business model significantly influence airline performance indicators. The only exception is the EBITDAR margin, where the model does not show statistical significance, suggesting these predictors do not have a meaningful impact on this metric.

For the total revenue, the coefficient suggests that an increase in the leasing ratio is associated with a decrease in total revenue. This result is nearly significant at the 10% level, with a p-value of 0.063, indicating a strong trend but not conventional statistical significance. The R^2 value means that the model explains 15.5% of the variance in total revenue. The LCC variable is significant, suggesting that low-cost carrier status has a notable impact on total revenue.

The market capitalization variable shows a significant negative relationship between the leasing ratio and market capitalization. The result is highly significant and the R^2 value indicates that 23% of the variance in market capitalization is explained by the model. However, the LCC variable is not significant in this context.

For total fleet value, the coefficient indicates that an increase in the leasing ratio is associated with a decrease in total fleet value. This result is significant, with a p-value of 0.046, and the model explains 15.2% of the variance (R^2 = 0.152). The LCC variable is significant here, implying that low-cost carrier status does affect the total fleet value.

The total fleet number shows a negative coefficient of -354.4, indicating that a higher leasing ratio corresponds to a decrease in the number of aircraft in the fleet. This result is significant, and the model explains 15.4% of the variance. The LCC variable is not significant in this case.

The load factor has a coefficient of -0.003 with a p-value of 0.951, indicating no significant relationship. The model explains 16.2% of the variance (R^2 = 0.162), and the LCC variable is significant, suggesting that the low-cost carrier business model has a substantial effect on the load factor.

Revenue per passenger indicates no significant relationship with the leasing ratio. However, the LCC variable is significant, indicating that low-cost carrier status does have an impact on revenue per passenger.

Passenger yield has a coefficient of -4.04 with a highly significant p-value, indicating a strong negative relationship with the leasing ratio. That is, as the leasing ratio increases, passenger yield decreases. Additionally, the LCC variable is statistically significant, highlighting the substantial impact of the low-cost carrier business model on (negative) passenger yield.

Net debt/EBITDAR shows a positive coefficient of 5.54, indicating a significant positive relationship with the leasing ratio. The LCC variable is not significant in this context, which is somehow an unexpected outcome in the context of previous analyses.

Overall, the regression results suggest that the leasing ratio has a statistically significant influence on several performance indicators, with the direction of the relationship generally being negative. These findings are consistent with the results of the correlation analyses, supporting the conclusion that a higher reliance on leasing does not necessarily enhance airline performance. The impact of the business model (LCC) also varies across indicators. In several cases, the low-cost carrier model shows a significant effect. This highlights the distinct operational efficiencies and cost structures that differentiate LCCs from full-service providers.

Discussion and summary

The study highlights the critical decisions airlines must make regarding fleet acquisition. The solution depends on the airline's financial resources, operational objectives, and market conditions. The first hypothesis which was tested examines whether a higher proportion of leased aircraft would lead to improved performance and financial position. However, the results do not support this expectation. On the contrary, most of the selected performance variables are negatively correlated with the leasing ratio. These findings are further specified by the regression analysis, which also confirms the lack of a positive relationship between leasing ratio and performance outcomes.

The regression results also indicate that both the leasing ratio and the business model significantly influence various performance indicators, although their effects differ. That is in line with the second hypothesis, which proposed that the leasing ratio on airline performance indicators would be influenced by the airline business model. This highlights the importance of accounting for structural differences between low-cost carriers (LCCs) and full-service providers (FSPs).

The findings suggest that leasing - whether it is used because of financial necessity or as a planned strategy - does not surely lead to improved operational efficiency and financial strength. Although it may offer flexibility and serve as a fast tool for expanding fleet capacity, leasing may also involve trade-offs, particularly in terms of lower total revenue and reduced market capitalization.

In conclusion, the study reveals that the relationship between leasing and performance is complex and highly dependent on the airline's business model. Future research could further explore how the interaction between leasing strategies and business models progresses over time, particularly under changing economic conditions and regulatory environments.

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