Price determinants of airline tickets: flying with KLM and Transavia

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Management Summary

When people want to buy an airline ticket, one factor is the price of the service. Airline ticket prices can vary quite a lot. The question is: Which factors influence the price of a given airline ticket? The aim of our research is to answer this question. Furthermore, we made a comparison between a traditional carrier, KLM, and a low-cost airline, Transavia, to see whether the factors differ between the different kind of airlines.

We provide valuable insights into the airline market, by providing confirmation as well as some new findings. For companies, our research gives a further insight in the pricing strategies. Furthermore, it provides customers with a better understanding of the reasoning behind the changing prices, as well as factors to consider when trying to find cheap flights. This study proves that the myth that states to buy on a particular day of the week is false. When you find a good deal, you should immediately buy the ticket.

We perform quantitative research in the form of a regression analysis, with 4058 data entries over a period of 100 days. We have checked several flights on a daily basis from 31 January 2023 to 10 May 2023. We consider the following factors: flight duration in hours, number of days until flight, level of competition, departure day and time, and booking day and time.

In general, we found that the longer the flight or the closer the departure date, the higher the price. Surprisingly, a higher level of competition also leads to a higher flight price, which is contradicting with existing theories about competition. Furthermore, both the departure day and time influence the flight price. We found that flights departing on Monday or Thursday and flights departing in the afternoon are more expensive. While the booking day and time do not have an influence, with insignificant results for both aspects.

We made a comparison between a traditional carrier and a low-cost airline. KLM flights are on average longer as well as more expensive compared to Transavia. Both companies face around the same intensity of competition. We found that flight duration, days until flight, and competition have an influence on the price for both types of airlines. The influence of flight duration and days until flight is more prominent for a low-cost airline compared to a traditional carrier. While the influence of the level of competition is more prominent for a traditional carrier compared to a low-cost airline. We found that the influence of the departure day is more prominent for traditional carriers. The departure time, on the other hand, only has an influence on a low-cost airline.

We recommend studying this topic further. For such research, we advise to create a new dataset, collected over a longer period, and include more flights and more airlines. Furthermore, we could explore more possible determinants, such as destination or size of the airplane. Some more variables to express competition could also be included, such as the flight prices of the competition, to go deeper into this topic. Lastly, it would also be advised to investigate an explanation for the results found.

1. Introduction

Air transport has been of importance to the development of many sectors, including global tourism (Martín-Consuegra et al., 2006) since transport is a key component of tourism (Narangajavana et al., 2014). If you were to book a flight from Amsterdam to Bordeaux on 31 January 2023, the price would have been €161. If you wanted to book the exact same flight 100 days later, on 10 May 2023, the price would have been €740. As you can see, there is an extreme price difference for the same product. We find it interesting to see what influences these differences. We aim to build on existing research by combining different price determinants. Thus, the main research question is: Which factors influence the price of a given airline ticket?

One of the peculiarities of the airline sector is that, once a flight is contracted, airlines face a high level of fixed costs and thus need high load factors (Narangajavana et al., 2014). Airlines must deal with these high fixed costs, as well as some other characteristics present in the airline sector. The service is intangible, it cannot be touched, and the production and consumption of a flight happen simultaneous (Bull, 2006). Furthermore, the service cannot be made in advance and airlines must deal with a fixed capacity and different elasticities of demand (Bull, 2006). The airline ticket market is highly competitive since they have to offer the service that is wanted at a convenient moment for the customer. However, we should note that once the passengers are on the plane, the airline becomes a monopolistic supplier of drinks, food, and products, enabling them to achieve revenue (Bull, 2006). Therefore, dynamic pricing becomes a critical aspect, since few variations in the price can influence the attractiveness of the airline ticket and therefore the choice of the customer (Homburg et al., 2005). This enables the airline to achieve higher load factors, which allows them to provide additional products under monopolistic conditions, affecting the revenue and profitability of the airline (Narangajavana et al., 2014). There are two factors that strongly influence the customers' choice to use air transport, the price of the airline ticket and the convenience of making online purchases (Bigné et al., 2010). This opportunity to buy tickets online also enables the airline to use dynamic pricing since they can change their prices at any moment.

After deregulation in the US and later the EU air transport markets, low-cost airlines have started to emerge (Pels & Rietveld, 2004). They have become major players, offering air transport in the domestic and international field (Dobruszkes, 2013; Pijet-Migoń, 2012), which has led to an increase in the number of passengers travelling by air (Lian & Denstadli, 2010; Pijet-Migoń, 2012). Price factors are of great value when purchasing an airline ticket. However, customers who look at multiple offers place a relatively greater value, compared to price, on other factors such as the brand. For instance, the airline brand has a significant positive influence on the purchase intention (Graham & Bansal, 2007; Wang, 2014).

Our aim is to make a comparison between traditional and low-cost airlines. Therefore, the second question we want to answer in this study is: Do price determinants differ between traditional and low-cost airlines for a given airline ticket?

We focus on KLM and Transavia, two Dutch airlines. KLM Royal Dutch Airlines is a traditional airline, established in 1919 and operated its first flight in 1920. It is the world's oldest airline still operating under its original name (KLM, n.d.a). Transavia is a low-cost airline, established in 1965 and operated its first flight in 1966. They originally started as a charter company (Transavia, n.d.a). In 2004, KLM merged with Air France to the Air France-KLM Group. In 2006, Transavia became a part of this group. Currently, the Air France-KLM Group is a major global player, providing services to 300 destinations in 117 countries (Air France-KLM Group, n.d.).

These airlines have been chosen since they are both part of the Air France-KLM Group. By choosing two airlines that are closely related, we reduce the possibility of differences being due to fundamental cultural differences or the nature of the airline. This allows us to make a conclusion on the difference between traditional and low-cost airlines. We collect data of different flights and analyse this using OLS regression, after which we compare the results of both airlines.

Understanding the price determinants of airline tickets will provide valuable insights into the airline market. Furthermore, it provides customers with a better understanding of the reasoning behind the changing prices, as well as factors to consider when trying to find the cheapest flights.

The structure of this paper is as follows. First, we give the theoretical background, after which we define the methodology. Afterwards, we explain the dataset, and we present the results. In the end, we present a discussion and conclusion, as well as looking into an overview of the limitations of our research.

2. Theory

Nowadays, prices are constantly changing to deal with the environment and competition, making them more complex (Narangajavana et al., 2014). However, the key objective remains the same: "maximizing sellers' profits by capturing consumers' heterogeneous product valuations and accounting for competition and cannibalization" (Kim et al., 2009, p. 44). Facing a changing environment, the airline industry was one of the first to implement new tools for revenue and yield management (Boyd, 2006; Lindenmeier & Tscheulin, 2008) as well as marketing (Yu, 2008).

Yield management consists of techniques to allocate limited resources among different customer segments, such as business or leisure customers (Ingold et al., 2001), to optimize its total yield on its capacity investment (Vinod, 2004). It emerged when airlines started to see the importance of inventory control (Boyd, 2006). Yield management is based on two main strategies, capacity management and demand-based pricing, and is applicable to any business with a perishable inventory, fixed capacity, managed demand, high fixed costs, and different price sensitivity among customers (Kimes & Chase, 1998).

The term yield management is used interchangeably in science with the term revenue management (Mauri, 2007), which is the dynamic adjustment of either product availability, called quantity-based revenue management, prices, called price-based revenue management, or both (Elmaghraby and Keskinocak, 2003; Talluri & van Ryzin, 2004). For airline companies, both factors are constantly adjusted, and their revenue management systems are designed in such a way that at any given point in time, there are several fares available for a determined number of customers (Williams, 2020). Setting a high price will lead to unused capacity, while a low price will decrease the revenue per seat sold. Thus, the goal of revenue management is to find the optimal price, which balances out the effects of supply and demand (Williams, 2020).

However, fairness is a factor to consider. Customers can see yield and revenue management as opportunistic behaviour, which can result in deteriorated brand trust and loyalty (Choi & Mattila, 2004; Seiders & Berry, 1998). The perception of fairness by the customer is related to the company's profitability (Kahneman et al., 1986). We must manage these perceptions. Otherwise, the short-term gains related to yield and revenue management can be overruled by long-term losses on the firm's profitability (Mauri, 2007).

Airlines use long-term strategic prices, short-term transactional prices based on supply or production, and short-term transactional prices based on demand or marketing (Narangajavana et al., 2014). Long-term strategic prices are often unchanged. When using short-term transactional prices based on supply or production, the pricing strategy focuses on yield management, capacity and production management, and changes in the production costs (Jallat & Ancarani, 2008), as well as the difference between the demand estimations compared to the real demand (Berman, 2005). On the other hand, for short-term transactional prices based on demand or marketing, the pricing depends on customers' different value perceptions or willingness to pay. This is associated with dynamic pricing, which refers to a fluid pricing scheme between buyer and seller, and is seen as a sophisticated form of price discrimination (Jallat & Ancarani, 2008).

An aspect that contributes to the complex pricing strategies in the airline industry, is the market power of the airline. This allows the airline to distinguish between customers, by categorizing them according to price elasticity (Szopinski & Nowacki, 2015). Price elasticity is the relative response of sales to a 1 percent increase or decrease in the price of a given product (Jones, 2003). As a result, the price of a given flight rises over time, as the departure date comes closer (Bilotkach et al., 2010; Pels & Rietveld, 2004), this growth being exponential (Williams, 2020). When a customer wishes to buy a last-minute ticket, there will be a lack of substitutes for the flight, resulting a monopolization of the market and thus market power, resulting in a higher price compared to a customer who bought their ticket earlier (Gaggero & Piga, 2011). Likewise, on long-distance routes, there is again a lack of substitute flights and thus the price is higher for longer journeys (Brons et al., 2002).

Considering the aspects of market power and price elasticity, the first two hypotheses can be formulated.

Hypothesis 1 (H1): The price of a given airline ticket increases as the flight gets longer.
Hypothesis 2 (H2): The price of a given airline ticket increases as the day of departure comes closer.

When looking at the competition, an aspect to consider is the nature of demand. Typically, when a competitor raises its prices, a company reacts by a similar move, reflecting a deterministic nature of demand. In such a case, the airline would be certain about its ability to sell a sufficient number of seats. However, when the nature of demand is stochastic, which is the case for airlines, an increase in prices by the competitor can be perceived by the airline as a signal that the competitor fulfilled its capacity, resulting in the airline lowering its prices to increase total demand and fill their aircraft (Pels & Rietveld, 2004). Given this stochastic nature of demand, it is expected that prices rise when high demand is experienced and fall when low demand is experienced (Williams, 2020).

The nature of demand explains the reaction of an airline to a price change of the competition. Another aspect to consider is the amount of competition faced. In general, greater competition leads to lower prices (Li & Ji, 2010; Melnick et al., 1992). When multiple flights are offered on the same day to the same destination, it results in the customer having alternatives. As a result, the airline must use more varied pricing policies, and react to the prices of its competitors, especially for the flights leaving at unattractive times (Narangajavana et al., 2014).

Following the information about competition, the third hypothesis is formulated. We will define level of competition precisely in the methodology section.

Hypothesis 3 (H3): The price of a given airline ticket decreases as the level of competition increases.

Since demand is constantly changing, airlines must implement different policies to deal with these changes (Baum & Hagen, 1999), some of them related to prices. The fact that airlines offer a perishable product, combined with high fixed costs, difficulty of changing flights, and abrupt changes of demand, which is mainly caused by seasonality, leads to dynamic and flexible pricing strategies (Goh et al., 2008; Shen et al., 2008). These pricing policies depend on the current season (Narangajavana et al., 2014).

However, also the purpose of the flight needs to be considered. Most customers travel for either business or leisure purposes. As a result, these customers have a different valuation and different price sensitivities (Brons et al., 2002). Customers have a different willingness to pay with regards to the level of quality and the importance of travel moment varies for these customers (Frank et al., 2006).

As a result, we should consider seasonality since it influences the relationship between supply and demand, as well as passengers' objectives, resulting in different pricing models in different seasons (Narangajavana et al., 2014). Monthly seasonality can influence prices, since August knows a high tourist demand, while January knows a high business demand (Narangajavana et al., 2014). However, hourly seasonality, and thus departure times, should not be forgotten, as they are particularly important for the pricing policies of low-cost firms (Dennis, 2007).

Seasonality is not only related to the departure date, but it might also be related to the booking date. Airlines may change their prices depending on the booking date (Mantin & Koo, 2010), allowing them to categorize the customers on price elasticity (Szopinski & Nowacki, 2015). Previous findings on this phenomenon differ. According to Ren (n.d.) prices are lower during the week, especially on Wednesday, and higher during the weekends, especially on Sundays. However, Mantin & Koo (2010) found that the prices are lower on the weekends, since internet traffic is lower on the weekends due to a lower activity from business passengers, resulting in leisure passengers searching for tickets, who often being more price sensitive.

Based on the concept of seasonality, four other hypotheses can be formulated.

Hypothesis 4 (H4): The day of the week at which a flight takes place influences the price of a given airline ticket.
Hypothesis 5 (H5): The time at which a flight departs influences the price of a given airline ticket.
Hypothesis 6 (H6): The day of the week at which a flight is booked influences the price of a given airline ticket.
Hypothesis 7 (H7): The time at which a flight is booked influences the price of a given airline ticket.

Lastly, we consider the characteristics of the airline since the difference between a differentiation or cost strategy also influences the pricing policy of the airline. It can be said that airlines can be distinguished in three groups, traditional carriers, low-cost airlines, and charter companies.

Traditional carriers are usually the big, well-known companies, with a high quality and reliability. Most of these companies have been created a long time ago and were national or flag carriers (Fageda & Fernández-Villadangos, 2009). They often have the convenient departure times, operate in the bigger airports (Malighetti et al., 2008), offer long-haul routes (Fageda & Fernández-Villadangos, 2009), and operate via international alliances (Tiernan et al., 2008). These companies often have a differentiation strategy, and focus on relationship management, usually using long-term strategic prices (Narangajavana et al., 2014).

Low-cost airlines, on the other hand, are the younger and smaller companies, with high growth rates. They often operate at less ideal times, in regional or secondary airports, and focus more on short-haul flights (Bell, 2009). These companies often have a cost strategy, focussing on high load factors and cost minimization (Harison & Boonstra, 2008), by using yield or revenue management techniques (Hofer et al., 2008). As a result, these companies rely on short-term prices which continuously change according to different characteristics (Narangajavana et al., 2014).

Charter companies do not have scheduled flights but fly on demand, predominantly for leisure routes. They often belong to tour operators, operate with low costs and high load factors, and fly to regional airports. They focus on short-term and continuously changing pricing policies (Buck & Lei, 2004; Doganis, 2002; Papatheodorou, 2002; Williams, 2001).

When making a comparison between the three groups, the prices of traditional carriers are significantly higher compared to low-cost airlines and charter companies, mainly due to the difference in quality and destination airports. However, we should take into account here that low-cost airlines often have fewer services and less luggage added into their tickets. They ask a separate fee for these amenities. If you do not include such aspects in the tickets, the base ticket will have a lower price (Narangajavana et al., 2014).

3. Methodology

We perform a case study on airline tickets, on the companies KLM and Transavia, to examine which factors influence the price of a given ticket. Since we are looking for price determinants and all variables are measurable, quantitative research is preferred. The data are collected directly from the websites of KLM and Transavia over a period of 100 days, from 31 January 2023 to 10 May 2023. A total of 4058 data entries is achieved.

The sample consists of several flights, of which the prices are tracked on a daily basis. The data is collected completely by hand. The flights have been selected using the stratified sampling method (Blumberg et al., 2014; Thomas, 2022). First, we classify the flights based on the airline and month they depart in. Afterwards, for each airline and month, we choose two random flights, to reduce the possibility of a bias in the dataset. Once a flight has taken off, the same flight (or most similar) flight one year later is chosen. We have to note here that Transavia offers their flights for summer or winter season at once, thus tickets for November 2023 up to March 2024 only became available on 17 April. An overview of the flights is shown in Appendix A.1.

The daily tracked prices are given in euros and are based on the simplest ticket offered by the airlines. In the case of KLM, this means the light package, which includes one piece of hand luggage and one personal item with a total maximum of 12 kg (KLM, n.d.b). In the case of Transavia, this means the basic package, which includes one piece of hand luggage and one personal item with a total maximum of 10 kg (Transavia, n.d.b). These simplest tickets are chosen to make the comparison as fair as possible.

The departure and booking day make a distinction between the seven days of the week. For the departure and booking time, we distinguish between morning, afternoon, and evening, with the morning being the period from 00:00 until 11:59, the afternoon being the period from 12:00 until 17:59, and the evening being the period from 18:00 until 23:59. The flight duration is the time the flight takes in hours, while the days until flight represent the number of days between the booking day and the departure day.

The level of competition is measured by taking the number of flights from and to the same airport and on the same day, as the flight from the sample, on Google Flights. From there onwards, we are looking for which percentage of these flights are offered by another airline than the airline offering the flight of our sample. The percentage of these flights that are not offered by our airline represents the level of competition.

A full overview of the variables can be found in Table 1.

Table 1: Definition of variables

Variable	Definition
Price	Price at which a flight is offered on the website of the airline, in EUR.
Airline	Airline which offers the flight. Distinguished between KLM or Transavia.
Departure day	The day on which the flight leaves. Distinguished between Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday.
Departure time	The time of the day when the flight leaves. Distinguished between morning, afternoon, and evening.
Flight duration	The time the flight takes, in hours.
Booking day	The day on which the flight is booked. Distinguished between Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday.
Booking time	The time of the day when the flight is booked. Distinguished between morning, afternoon, and evening.
Days until flight	The number of days until the flight takes off (i.e., departure day – booking day).
Competition	The percentage of flights from and to the same airport on the same day that is not offered by the airline offering the flight in the sample.

Our hypotheses are transformed into a null and alternative hypothesis, which can be found in Table 2. Using the data collected, multiple regression analysis using SPSS is performed to test the hypotheses. To perform this regression analysis, we included dummy variables for the variable's departure day, departure time, booking day, and booking time. Adding multiple dummies to the regression model, can be detrimental. Thus, the analysis consists of different models, one base model and four additional models which each include one dummy. Furthermore, the same tests are done separately with only KLM and Transavia, to make a comparison between the two airlines, helping us to answer the sub-research question.

Table 2: Overview hypotheses

Hypothesis 1	H0:	The price of a given airline ticket does not change as the flight gets longer.
	H1:	The price of a given airline ticket increases as the flight gets longer.
Hypothesis 2	H0:	The price of a given airline ticket does not change as the day of departure comes closer.
	H1:	The price of a given airline ticket increases as the day of departure comes closer.
Hypothesis 3	H0:	The price of a given airline ticket does not change as the level of competition increases.
	H1:	The price of a given airline ticket decreases as the level of competition increases.
Hypothesis 4	H0:	The day of the week at which a flight takes place does not influence the price of a given airline ticket.
	H1:	The day of the week at which a flight takes place influences the price of a given airline ticket.
Hypothesis 5	H0:	The time at which a flight departs does not influence the price of a given airline ticket.
	H1:	The time at which a flight departs influences the price of a given airline ticket.
Hypothesis 6	H0:	The day of the week at which a flight is booked does not influence the price of a given airline ticket.
	H1:	The day of the week at which a flight is booked influences the price of a given airline ticket.
Hypothesis 7	H0:	The time at which a flight is booked does not influence the price of a given airline ticket.
	H1:	The time at which a flight is booked influences the price of a given airline ticket.

4. Results

We have presented descriptive statistics for each variable in Table 3. Some of these results are worth highlighting. Firstly, there is a high variation in the price per flight, indicated by the high standard deviation (409.967). Looking into KLM and Transavia, we can see that this variation is mainly large for KLM flights. Furthermore, the KLM average flight prices are high compared to Transavia. The KLM flights are longer on average as well, compared to the Transavia flights. These aspects are in line with the nature of the airline since KLM is a traditional carrier and Transavia a low-cost airline. With regards to competition, both airlines face around the same amount of competition. On average 30% to 35% of the flights on the same route and day are offered by other airlines. Lastly, we would like to point out that most flights leave in the afternoon, followed by the morning.

Furthermore, a graph with an overview of the flight prices in our sample is provided in Appendix A.2.

Table 3: Descriptive statistics

Continuous variables

	Total flights (n = 4058)				**KLM (n = 2348)**				**Transavia (n = 1710)**			
	Mean	**SD**	**Min**	**Max**	**Mean**	**SD**	**Min**	**Max**	**Mean**	**SD**	**Min**	**Max**
Price	339.70	409.967	64	2817	475.32	491.978	78	2817	153.48	81.3542	64	426
Flight duration	4.1305	3.53032	1.25	13.58	4.8711	4.35204	1.25	13.58	3.1137	1.33693	1.33	7.00
Days until flight	157.71	98.4513	0	359	175.50	104.468	0	359	133.28	83.6058	0	349
Competition	32.302	30.0765	0	87.5	30.216	28.8435	0	83.3	35.168	31.4754	0	87.5

Numerical variables

		Total flights (n = 4058)		**KLM (n = 2348)**		**Transavia (n = 1710)**	
	Category	**Frequency**	**%**	**Frequency**	**%**	**Frequency**	**%**
Departure day	*Monday*	698	17.2%	429	18.3%	269	15.7%
	Tuesday	568	14.0%	368	15.7%	200	11.7%
	Wednesday	542	13.4%	352	15.0%	190	11.1%
	Thursday	557	13.7%	237	10.1%	320	18.7%
	Friday	589	14.5%	322	13.7%	267	15.6%
	Saturday	672	16.6%	448	19.1%	224	13.1%
	Sunday	432	10.6%	192	8.2%	240	14.0%
Departure time	*Morning*	1207	29.7%	607	25.9%	600	35.1%
	Afternoon	2044	50.4%	1216	51.8%	828	48.4%
	Evening	807	19.9%	525	22.4%	282	16.5%
Booking day	*Monday*	575	14.2%	331	14.1%	244	14.3%
	Tuesday	615	15.2%	354	15.1%	261	15.3%
	Wednesday	612	15.1%	352	15.0%	260	15.2%
	Thursday	564	13.9%	327	13.9%	237	13.9%
	Friday	563	13.9%	326	13.9%	237	13.9%
	Saturday	564	13.9%	328	14.0%	236	13.8%
	Sunday	565	13.9%	330	14.1%	235	13.7%
Booking time	*Morning*	738	18.2%	447	19.0%	291	17.0%
	Afternoon	1314	32.4%	739	31.5%	575	33.6%
	Evening	2006	49.4%	1162	49.5%	844	49.4%

4.1 Regression results flight prices

The results of the regression analysis can be observed in Table 4. The adjusted R2 values indicate that the models explain between 61.8% and 65.9% of the variance in flight prices.

Table 4: Regression results on flight prices

	Model 1	Model 2	Model 3	Model 4	Model 5
Flight duration (in hours)	94.487***	96.034***	94.633***	94.487***	94.494***
	(1.263)	(1.293)	(1.297)	(1.264)	(1.263)
Days until flight	-0.321***	-0.233***	-0.314***	-0.321***	-0.321***
	(0.042)	(0.041)	(0.042)	(0.042)	(0.042)
Competition (%)	0.503***	0.559***	0.538***	0.503***	0.505***
	(0.145)	(0.151)	(0.155)	(0.145)	(0.145)
Departure day (ref. Friday)					
Monday		123.536***			
		(13.820)			
Tuesday		-22.984			
		(14.878)			
Wednesday		-106.146***			
		(15.796)			
Thursday		114.398***			
		(14.401)			
Saturday		-15.511			
		(14.172)			
Sunday		-92.777***			
		(15.293)			
Departure time (ref. morning)					
Afternoon			43.470***		
			(9.175)		
Evening			31.068		
			(12.222)		
Booking day (ref. Friday)					
Monday				3.248	
				(15.019)	
Tuesday				0.617	
				(14.776)	
Wednesday				1.896	
				(14.793)	
Thursday				0.342	
				(15.092)	
Saturday				1.193	
				(15.092)	
Sunday				2.206	
				(15.085)	
Booking time (ref. morning)					
Afternoon					-5.941
					(10.899)
Evening					-13.205
					(11.647)
Constant	-16.250	-45.434***	-47.090***	-17.610	-9.009
	(10.018)	(12.254)	(12.840)	(14.088)	(13.141)
Observations	4058	4058	4058	4058	4058
F-statistic	2195.903***	870.819***	1328.721***	730.905***	1317.619***
Adjusted R-2	0.619	0.659	0.621	0.618	0.619

Standard errors in parenthesis reported under the regression coefficients *** p<0.01, ** p<0.05, * p<0.1.

First, we will look at our base model (Model 1). Our model states that an increase of 1 hour in the flight duration, leads to an increase of €94 in the flight price. This result is significant on a 1% level. Thus, looking at the first hypothesis, we can reject the null hypothesis.

The number of days until the flight has a negative result, stating that for each additional day it takes until the flight, the flight price will decrease by €0.32. We can approach this result from the other side, thus for each day that the flight comes closer, the flight price will increase by €0.32. This result is again significant on a 1% level, which leads us to rejecting our second null hypothesis.

The results on competition are also significant on a 1% level, our model stating that a 1% increase in competition leads to an increase of €0.50 in the flight price. Thus, we can reject the third null hypothesis. If we then compare the base model (Model 1) to the dummy models (Model 2 to 5), we see a slight change in values, however the direction and significance levels do not change. Therefore, we can hold our results on our first three hypotheses.

When looking at the results on departure day (Model 2), we can see that the results are partially significant at a 1% level. When we look at the fourth hypothesis, we can reject our null hypothesis. Our model suggests that the Monday is the most expensive day to fly, followed by the Thursday, Friday, Sunday, and then Wednesday. Thursday and Saturday do not have a significant result. The influence that the departure day has on the price is relatively high. We have an average price of €340, while the prices on Monday are €124 higher. This is a big increase relative to the average price.

With regards to departure time (Model 3), the model states that it is more expensive to fly in the afternoon compared to the morning. According to the model, the difference between these is €43 which is significant on a 1% level. For the evening, the results are insignificant. However, there is still enough evidence to reject the fifth null hypothesis.

Lastly, we will look at the booking day (Model 4) and booking time (Model 5). As can be seen in Table 5, results on both variables are insignificant. Therefore, we have cannot reject the sixth and seventh null hypothesis.

Our first research question is: Which factors influence the price of a given airline ticket? Based on our regression analysis, we can answer this question. A longer flight time, less days until the flight, and a higher level of competition all lead to higher flight prices. Furthermore, the departure day and time influence the flight price.

We notice that the values of our base model (Model 1), slightly change over the other models (Models 2 to 5). This would suggest that there is a small interaction effect between the dummy variables and the base variables. Thus, departure day and time, as well as booking day and time, interact with the flight duration, days until flight and competition. Further research into this phenomenon is advised to fully understand this.

4.2 Regression results KLM and Transavia

A separate regression analysis is done both for KLM and Transavia. The results are shown in Table 5 (KLM) and 6 (Transavia).

First, we investigate the results of KLM. Our base model (Model 1) suggests that an increase of 1 hour in the flight duration, leads to an increase of €98 in the flight price. For each day that the flight comes closer, the flight price increases by €0.76. A 1% increase in competition leads to an increase of €1.72 in the flight price. Comparing this base model (Model 1) to the dummy models (Model 2 to 5), we see a slight change in values. However, the direction and significance levels remain the same.

If we then look at our dummies, we see that the results for departure time, booking day, and booking time are all insignificant. Thus, we have no prove that they influence the flight prices. For the departure day, the results are significant at a 1% level. It is most expensive to fly on Thursday, followed by Monday, Friday, Sunday, Tuesday, Saturday, and then the cheapest being Wednesday. Again, the influence of the departure day on the price is relatively high. We have an average price of €475, while the prices on Thursday are €293 higher. This is a big increase relative to the average price.

Table 5: Regression results on flight prices KLM

	Model 1	Model 2	Model 3	Model 4	Model 5
Flight duration (in hours)	97.960***	104.001***	97.636***	97.959***	97.969***
	(1.836)	(1.798)	(2.008)	(1.838)	(1.836)
Days until flight	-0.755***	-0.843***	-0.759***	-0.755***	-0.756***
	(0.066)	(0.059)	(0.067)	(0.066)	(0.066)
Competition (%)	1.723***	2.917***	1.647***	1.723***	1.724***
	(0.276)	(0.274)	(0.321)	(0.277)	(0.276)
Departure day (ref. Friday)					
Monday		156.343***			
		(20.382)			
Tuesday		-108.396***			
		(21.537)			
Wednesday		-171.753***			
		(24.243)			
Thursday		293.097***			
		(22.778)			
Saturday		-124.016***			
		(20.835)			
Sunday		-293.688***			
		(23.790)			
Departure time (ref. morning)					
Afternoon			-13.984		
			(15.061)		
Evening			-18.475		
			(20.044)		
Booking day (ref. Friday)					
Monday				6.097	
				(23.481)	
Tuesday				3.129	
				(23.099)	
Wednesday				5.152	
				(23.131)	
Thursday				0.778	
				(23.552)	
Saturday				1.741	
				(23.534)	
Sunday				2.844	
				(23.449)	
Booking time (ref. morning)					
Afternoon					-8.939
					(18.016)
Evening					-2.335
					(16.734)
Constant	78.651***	60.803***	94.491***	75.797***	82.630***
	(16.084)	(16.575)	(22.317)	(22.328)	(20.580)
Observations	2348	2348	2348	2348	2348
F-statistic	1315.021***	744.521***	788.955***	437.251***	788.508***
Adjusted R-2	0.627	0.740	0.627	0.626	0.627

Standard errors in parenthesis reported under the regression coefficients *** p<0.01, ** p<0.05, * p<0.1.

Second, we investigate the results of Transavia. Our base model (Model 1) suggests that an increase of 1 hour in the flight duration, leads to an increase of €42 in the flight price. For each day that the flight comes closer, the flight price increases by €0.19. A 1% increase in competition leads to an increase of €0.38 in the flight price. Comparing this base model (Model 1) to the dummy models (Model 2 to 5), we see a slight change in values. However, the direction and significance levels remain the same.

If we then look at our dummies, we see that the results for booking day and booking time are all insignificant. Thus, we have no proof that they influence flight prices. For the departure day, the results are partially significant. The model suggests that it is most expensive to fly on Saturday, followed by Monday, Thursday, and Friday. Tuesday, Wednesday, and Sunday do not have a significant result. For departure time, the results are significant at a 1% level. It is most expensive to fly in the afternoon, while it is the cheapest to fly in the evening.

Table 6: Regression results on flight prices Transavia

	Model 1	Model 2	Model 3	Model 4	Model 5
Flight duration (in hours)	41.604***	39.609***	40.243***	41.599***	41.600***
	(1.009)	(1.097)	(1.027)	(1.011)	(1.009)
Days until flight	-0.187***	-0.201***	-0.204***	-0.187***	-0.187***
	(0.016)	(0.017)	(0.015)	(0.016)	(0.016)
Competition (%)	0.379***	0.347***	0.294***	0.379***	0.380***
	(0.043)	(0.045)	(0.041)	(0.043)	(0.043)
Departure day (ref. Friday)					
Monday		29.655***			
		(4.736)			
Tuesday		6.884			
		(5.194)			
Wednesday		3.002			
		(5.170)			
Thursday		12.642**			
		(4.511)			
Saturday		43.156***			
		(5.110)			
Sunday		12.565			
		(5.048)			
Departure time (ref. morning)					
Afternoon			22.233***		
			(2.921)		
Evening			-28.556***		
			(4.148)		
Booking day (ref. Friday)					
Monday				-1.394	
				(5.091)	
Tuesday				-2.619	
				(5.008)	
Wednesday				-2.269	
				(5.013)	
Thursday				-0.607	
				(5.127)	
Saturday				0.314	
				(5.132)	
Sunday				-0.268	
				(5.138)	
Booking time (ref. morning)					
Afternoon					-1.217
					(4.011)
Evening					1.638
					(3.790)
Constant	35.515***	29.180***	38.921***	36.506***	35.075***
	(4.313)	(5.574)	(5.159)	(5.467)	(5.248)
Observations	1710	1710	1710	1710	1710
F-statistic	645.561***	240.539***	472.155***	214.578***	387.273***
Adjusted R-2	0.531	0.558	0.580	0.529	0.531

Standard errors in parenthesis reported under the regression coefficients *** p<0.01, ** p<0.05, * p<0.1.

Our second research question is: Do price determinants differ between traditional and low-cost airlines for a given airline ticket? We will answer this question based on the results of KLM and Transavia. When looking at the flight duration, days until flight, and competition, the model suggests that for both traditional carriers and low-cost airlines these factors have an influence on the price. However, an increase of one unit for these variables leads to a higher price increase for KLM compared to Transavia.

With our dummies, differences between KLM and Transavia can be found. For KLM the departure day has an influence on the flight prices. The results are significant for all days, and we can conclude which day is most expensive and cheapest. For Transavia, the departure day has partially an influence on the flight prices, with some of the results being significant. If we compare the significant results with each other, we can see that on both Monday and Thursday the effect on the price is bigger for KLM compared to Transavia. These differences are big, with price increases of €156 (Monday) and €293 (Thursday) for KLM compared to price increases of €30 (Monday) and €13 (Thursday) for Transavia. Even more interesting is the difference on Saturday. On this day the prices decrease with €124 for KLM and increase with €43 for Transavia. From these results, we can conclude that the departure day is a bigger determinant for KLM, and thus a traditional carrier, compared to Transavia, and thus a low-cost airline.

For departure time, the results are insignificant for KLM, while they are significant for Transavia. This suggests that the departure time influences the prices of low-cost airlines, while it does not influence the prices of traditional carriers. Booking day and time do not influence the prices for both traditional carriers and low-cost airlines.

In Table 7, we give an overview of the hypotheses extended with the results.

Table 7: Overview hypotheses extended with results

		Result H0
Hypothesis 1	H0: The price of a given airline ticket does not change as the flight gets longer.	Rejected
	H1: The price of a given airline ticket increases as the flight gets longer.	
Hypothesis 2	H0: The price of a given airline ticket does not change as the day of departure comes closer.	Rejected
	H1: The price of a given airline ticket increases as the day of departure comes closer.	
Hypothesis 3	H0: The price of a given airline ticket does not change as the level of competition increases.	Rejected
	H1: The price of a given airline ticket decreases as the level of competition increases.	
Hypothesis 4	H0: The day of the week at which a flight takes place does not influence the price of a given airline ticket.	Rejected
	H1: The day of the week at which a flight takes place influences the price of a given airline ticket.	
Hypothesis 5	H0: The time at which a flight departs does not influence the price of a given airline ticket.	Rejected (all/Transavia)
	H1: The time at which a flight departs influences the price of a given airline ticket.	Not rejected (KLM)
Hypothesis 6	H0: The day of the week at which a flight is booked does not influence the price of a given airline ticket.	Not rejected
	H1: The day of the week at which a flight is booked influences the price of a given airline ticket.	
Hypothesis 7	H0: The time at which a flight is booked does not influence the price of a given airline ticket.	Not rejected
	H1: The time at which a flight is booked influences the price of a given airline ticket.	

5. Conclusion and discussion

We present some findings with regards to flight prices. First, the longer the flight, the higher the flight price. Second, the closer the departure date, the higher the flight price. Third, the higher the level of competition, the higher the flight price. These three determinants are found to be prominent for both traditional carriers as well as low-cost airlines. Both departure day and time have an influence on the flight prices, with the influence of the day found to be more prominent for traditional carriers, while the influence of the departure time is more prominent for low-cost airlines. The booking day and time do not seem to have an influence on the flight prices, since those results are insignificant.

5.1 Discussion

We found that a longer flight leads to an increase in the price, which is in line with earlier findings by Brons et al. (2002). According to them, on long distance routes, there is a lack of substitute flights, which results in a higher price for longer journeys. Looking at our dataset, this could be a logical explanation. Our dataset consists of six flights which are over nine hours. For all these six flights, the level of competition is 0%. This indicates that there is indeed a lack of substitutes on long distance routes. As a result, the airline has market power and can ask a higher price (Gaggero & Piga, 2011). Furthermore, the costs of running a longer flight are also higher, which need to be covered by the tickets. For example, the planes need more fuel, flight attendants and pilots need to be paid more hours, and possible overnight stays of the crew need to be covered.

We found that flight prices increase as the departure day comes closer, which is in line with earlier findings by Bilotkach et al. (2010) and Pels & Rietveld (2004). The logic behind this is similar as for the flight duration. As a flight comes closer, there will be a lack of substitutes for the flights, as similar flights are already full. As a result, the airline again has the market power, which results in a higher price compared to a ticket sold earlier (Gaggero & Piga, 2011).

Our findings contradict findings from the literature with respect to competition. According to Li & Ji (2010) and Melnick et al., (1992), higher competition leads to lower prices. Contrastingly, we found that higher competition leads to higher prices.

Williams (2020) states that prices increase if there is high demand and decrease if there is low demand. If we think about a route with high demand, we could expect that multiple flights are offered on this route. When a certain route or destination is popular and therefore has a high demand, it is attractive to the airline. As a result, it could be that a more popular route faces a higher level of competition since more airlines want to operate on this route. If we connect this with the conclusions by Williams (2020), it is possible that this price increase is due to the higher demand that is present on competitive routes. This could explain why our findings differ compared to findings on the general phenomenon of competition.

Earlier research by Narangajavana et al., 2014 states that when a customer has alternatives, an airline must use varied pricing policies. Furthermore, according to Pels & Rietveld (2004), given the stochastic nature of demand, a price increase by the competitor leads to a price decrease for the airline. In our research, the price of the competition is not considered. As a result, we cannot make conclusions based on this theory.

We found that the price influences of flight duration, days until flight and competition are larger on KLM compared to Transavia. This would suggest that the influence of these factors is more prominent for a traditional carrier than a low-cost airline.

However, KLM also has a higher average price, so it is expected for these differences to be larger. Thus, we calculated the relative increase or decrease compared to the average price of both airlines. Here, we took the variable average of the five models. The average regression outcome of the five models on flight duration relative to the average price is 20.8% for KLM and 26.8% for Transavia. The average regression outcome on days until flight relative to the average price is 0.16% for KLM and 0.12% for Transavia. The average regression outcome on flight duration relative to the average price is 0.41% for KLM and 0.24% for Transavia. This would suggest that the influence of flight duration and days until flight is more prominent for a low-cost airline compared to a traditional carrier. While the influence of the level of competition is more prominent for a traditional carrier compared to a low-cost airline.

We found that departure day and time influence the flight prices, which is in line with earlier findings by Narangajavana et al. (2014) and Dennis (2007). More particularly, we found that for traditional carriers the departure day has more of an influence, while for low-cost airlines the departure time has more of an influence. This was also found by Dennis (2007), who stated that departure times are particularly important for the pricing policies of low-cost firms.

We will present some possible reasons why there is a difference between traditional carriers and low-cost airlines with regards to departure day and time. These possibilities are not proven yet.

One possibility is that a traditional airline often offers longer flights. This could make the departure time of less importance, since the flight is going to take long anyway and is often made for a longer trip, thus a couple of hours would not make that big of a difference.

A low-cost airline on the other hand, is often used by people with a smaller budget. As a result, they often mind less about the day, but more about the time. If a flight is very early for example, that would pose a problem with getting to the airport. Often it is cheaper to take the train instead of parking at the airport for multiple days, thus it could be that they do not want very early flights. Similarly, with a very late flight, they only arrive late at the destination, having to pay for the accommodation, while not using the day as a vacation day could be seen as inconvenient and costly.

Furthermore, we also found that for KLM the prices decrease with €124 on Saturday, while for Transavia the prices increase with €43. This could be because a traditional carrier is also often used for business trips. These travellers do mind about the day of the week since they often travel for work on the weekdays and are at home on the weekend. This explains why Thursday, Monday, and Friday are the three most expensive days to fly with KLM. Furthermore, it explains why prices fall for KLM on Saturdays, while they rise for Transavia on Saturdays. The customers using a low-cost airline are often flying for leisure purposes, thus leaving right after the workweek would be most convenient for them.

Our findings contradict findings from the literature by Ren (n.d.) and Mantin & Koo (2010) with respect to the booking moment. We did not find evidence that the booking moment would influence the price. Ren (n.d.) and Mantin & Koo (2010) were contradicting in which booking day would be the cheapest, however did agree that the booking moment influenced the flight prices.

This difference between their findings and ours could have to do with changing technology. Nowadays, with the internet, an open information source is available constantly (Bull, 2006). If there were to be differences between booking moments, these differences could be found and analysed by an artificial intelligence tool. As a result, information on which moment to book would be available all around the world, resulting in customers simply waiting until the best moment to buy the flight. If everyone where to do that, there would be no benefit from trying to categorize customers on price elasticity (Szopinski & Nowacki, 2015). As a result, it is beneficial for airlines not to change prices based on this phenomenon, since it gives the customer the freedom to buy a ticket whenever is most convenient for them.

5.2 Limitations and future research

Overall, it can be said that the model has delivered some interesting results. However, it is also important to mention some limitations of this research. First, the dataset only contains input of a period of 100 days, which is due to time constraints of this research. However, especially in view of seasonality, it is better to have data of at least one year, possibly even multiple years. Similarly, since the data is collected by hand, only a small set of flights is included. With more data, we can still perform our research, however the results will become more accurate.

Second, there are of course more determinants which influence the prices, and those are not included in this research. For example, the destination also has an influence. A flight to the Maldives will probably be more popular, and therefore sold for a higher price, compared to a flight to Montenegro for example.

Thirdly, this research and the conclusions are restricted to two airlines. This does not guarantee that these findings can be generalized to other airlines. It would be advised to perform the same research with data from other airlines, to see where results are similar or different.

Lastly, we choose to present the level of competition in a percentage. This gives us an insight; however, it does not give a full overview. For example, if there are two flights on the same day, of which one is offered by another airline, the level of competition will score the same compared to twenty flights offered on the same day, of which ten are offered by other airlines. Furthermore, we did not include how big the planes are, since this information is not given, thus it could be that we compare flights with 50 seats with flights with 200 seats. We also did not include the flight prices of the competition since this was not feasible for our data collection.

Therefore, it is important to study this topic further. For such research, we advise to create a new dataset, collected over a longer period, and include more flights and more airlines. Furthermore, we could explore more possible determinants, as well as more variables to express competition, to go deeper into this topic. Lastly, it would also be advised to investigate an explanation for the results found.

5.3 Practical implications

We provide some new insights, especially on the difference between traditional carriers and low-cost airlines. It leads to a further understanding of the airline ticket market. For companies, this research gives a further insight in the pricing strategies, for both the airlines researched as well as the competition. For KLM and Transavia, it shows what can be found about their strategy. If they have a competitive advantage in their pricing strategy, they should make sure that they use this advantage in such a way that it cannot be detected by others. While for competition, we show that it is possible to get insight into the pricing strategies of your competitors, as well as a guideline to perform similar research on their direct competitors. Customers can use this research to better understand the pricing strategies behind the products they are buying. This can help them in choosing their flight. For example, they can make a choice of departure day or time based on their values. Furthermore, it proves that the myth that states to buy on a particular day of the week is false. When you find a good deal, you should directly buy the ticket.

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Appendix A

Appendix A.1: Overview flights

Flight number	Destination	Airline	Date	Flight time	Flight duration
HV 5951 (a)	Lisbon (LIS)	Transavia	Thu 16 Feb 2023	16:30 – 18:30	03:00h
KL 1503 (a)	Valencia (VLC)	KLM	Sun 19 Feb 2023	13:45 – 16:10	02:25h
HV 6887	Reykjavik (KEF)	Transavia	Wed 22 Feb 2023	16:45 – 19:05	03:20h
KL 1613 (a)	Istanbul (IST)	KLM	Fri 24 Feb 2023	11:30 – 16:55	03:25h
KL 0641 (a)	New York (JFK)	KLM	Mon 13 Mar 2023	13:35 – 16:50	08:15h
HV 6411 (a)	Napels (NAP)	Transavia	Wed 15 Mar 2023	07:20 – 09:45	02:25h
KL 1001 (a)	London (LHR)	KLM	Tue 28 Mar 2023	07:20 – 07:40	01:20h
			* On 7 Feb the flight time changed	07:15 – 07:40	01:25h
HV 5585 (a)	Nice (NCE)	Transavia	Thu 30 Mar 2023	19:50 – 21:45	01:55h
HV 5163	Riga (RIX)	Transavia	Sun 09 Apr 2023	11:50 – 15:05	02:15h
HV 6901	Dubai (DXB)	Transavia	Mon 10 Apr 2023	06:30 – 15:30	07:00h
HV 6903	Dubai (DWC)			05:35 – 14:35	
	* On 16 Feb, Transavia announced that they temporary fly to another airport in Dubai				
KL 0705 (a)	Rio de Janeiro (GIG)	KLM	Sun 16 Apr 2023	12:50 – 19:45	11:55h
			* On 7 Feb the flight time changed	13:05 – 20:00	
KL 1829	Berlin (BER)	KLM	Sat 22 Apr 2023	15:20 – 16:40	01:20h
HV 5873	Split (SPU)	Transavia	Fri 05 May 2023	17:45 – 19:55	02:10h
KL 1319	Bordeaux (BOD)	KLM	Fri 12 May 2023	21:10 – 22:50	01:40h
HV 5133	Barcelona (BCN)	Transavia	Mon 15 May 2023	13:10 – 15:20	02:10h
KL 1953	Zurich (ZRH)	KLM	Mon 22 May 2023	07:05 – 08:35	01:30h
HV 5753	Marrakesh (RAK)	Transavia	Fri 16 Jun 2023	15:35 – 18:25	03:50h
KL 1357	Prague (PRG)	KLM	Sat 17 Jun 2023	16:20 – 17:45	01:25h
KL 1221	Oslo (TRF)	KLM	Fri 23 Jun 2023	21:25 – 23:00	01:35h
HV 5193	Paris (ORY)	Transavia	Sun 25 Jun 2023	19:45 – 21:05	01:20h
KL 1497	Ibiza (IBZ)	KLM	Sat 01 Jul 2023	13:25 – 16:00	02:35h
HV 6521	Gran Canaria (LPA)	Transavia	Tue 04 Jul 2023	06:10 – 09:50	04:40h
KL 0681	Vancouver (YVR)	KLM	Thu 13 Jul 2023	15:20 – 15:50	09:30h
HV 6593	Salzburg (SZG)	Transavia	Thu 27 Jul 2023	13:50 – 15:25	01:35h
KL 1573	Athens (ATH)	KLM	Tue 01 Aug 2023	08:25 – 12:40	03:15h
KL 1575	* Flight KL 1573 was removed on 22 Feb			12:20 – 16:35	
KL 1581	* Flight KL 1575 was removed on 13 Apr			21:15 – 01:30	
KL 0425	Riyadh (RUH)	KLM	Thu 10 Aug 2023	16:00 – 23:10	06:10h
HV 6629	Madeira (FNC)	Transavia	Thu 17 Aug 2023	06:20 – 09:30	04:10h
HV 5401	Kos (KGS)	Transavia	Sat 19 Aug 2023	19:55 – 00:25	03:30h
KL 1981	Budapest (BUD)	KLM	Sun 03 Sep 2023	20:55 – 22:55	02:00h
HV 5311	Corfu (CFU)	Transavia	Mon 04 Sep 2023	05:30 – 09:15	02:45h
KL 1125	Copenhagen (CPH)	KLM	Tue 19 Sep 2023	07:20 – 08:40	01:20h
HV 5423	Pisa (PSA)	Transavia	Tue 19 Sep 2023	12:20 – 14:15	01:55h
HV 5803	Tel Aviv (TLV)	Transavia	Sat 07 Oct 2023	14:05 – 19:40	04:35h
KL 1367	Warsaw (WAW)	KLM	Mon 09 Oct 2023	17:00 – 18:55	01:55h
KL 0701	Buenos Aires (EZE)	KLM	Tue 10 Oct 2023	20:55 – 05:30	13:35h
HV 5517	Paphos (PFO)	Transavia	Wed 11 Oct 2023	14:10 – 19:15	04:05h
HV 6307	Beiroet (BEY)	Transavia	Fri 10 Nov 2023	14:20 – 19:45	04:25h
KL 0935	Dublin (DUB)	KLM	Wed 22 Nov 2023	12:00 – 12:40	01:40h
HV 5215	Catania (CTA)	Transavia	Sun 26 Nov 2023	07:40 – 10:30	02:50h
KL 0861	Tokyo (NRT)	KLM	Wed 29 Nov 2023	12:30 – 09:45	13:15h
HV 6819	Ljubljana (LJU)	Transavia	Sun 10 Dec 2023	08:00 – 09:45	01:45h
KL 0601	Los Angeles (LAX)	KLM	Mon 11 Dec 2023	09:50 – 11:50	11:00h
HV 6505	Amman (AMM)	Transavia	Thu 14 Dec 2023	13:45 – 20:25	04:40h
KL 1083	Manchester (MAN)	KLM	Fri 15 Dec 2023	21:45 – 22:00	01:15h
KL 1039	Malaga (AGP)	KLM	Sat 13 Jan 2024	12:40 – 15:35	02:55h
KL 0597	Cape Town (CPT)	KLM	Wed 17 Jan 2024	10:05 – 22:25	11:20h
HV 6001	Porto (OPO)	Transavia	Wed 24 Jan 2024	10:10 – 11:55	02:45h
HV 5465	Verona (VRN)	Transavia	Sat 27 Jan 2024	12:45 – 14:25	01:40h
HV 5951 (b)	Lisbon (LIS)	Transavia	Fri 16 Feb 2024	16:55 – 18:55	03:00h
KL 1503 (b)	Valencia (VLC)	KLM	Mon 19 Feb 2024	13:45 – 16:10	02:25h
HV 6885	Reykjavik (KEF)	Transavia	Thu 22 Feb 2024	08:00 – 10:20	03:20h
KL 1613 (b)	Istanbul (IST)	KLM	Sat 24 Feb 2024	11:30 – 16:66	03:25h
KL 0641 (b)	New York (JFK)	KLM	Wed 13 Mar 2024	13:35 – 16:50	08:15h
HV 6411 (b)	Napels (NAP)	Transavia	Fri 15 Mar 2024	07:20 – 09:45	02:25h
KL 1001 (b)	London (LHR)	KLM	Thu 28 Mar 2024	07:20 – 07:40	01:20h
HV 5585 (b)	Nice (NCE)	Transavia	Sun 31 Mar 2024	19:10 – 21:05	01:55h
KL 0705 (b)	Rio de Janeiro (GIG)	KLM	Tue 16 Apr 2024	12:50 – 19:45	11:55h
KL 1779	Berlin (BER)	KLM	Mon 22 Apr 2024	15:20 – 16:40	01:20h

Appendix A.2: Overview flight prices