ERASMUS UNIVERSITY ROTTERDAM

Erasmus School of Economics

Bachelor Thesis Economics and Business Economics

The influence of the distance of a hotel to the city centre on their hotel room pricing

Name student: Juliette Hazeu

Student number: 603496

Supervisor: Josse Delfgaauw

Second assessor: Sacha Kapoor

Date final version: 29-06-2024

Abstract

In this paper, the effect of the distance of a hotel to the city centre on their hotel room price is researched. Theory predicts that prices of hotel rooms do not only depend on their location, but also on the location of their competitors. Furthermore, theory predicts that prices of firms further from the city centre will be considerably lower during high-demand season than firms closer to the city centre. Additionally, prices in general are predicted to be higher during high-demand season than during low-demand season.

In this paper, a dataset is created with hotel prices and distances. The data are collected for four different dates, in high- and low-demand season. Most 3 and 4 star hotels from four hotel chains in 17 European cities were researched. This creates a total of around 800 observations for four different dates.

Both linear and non-linear regressions were performed. The linear regressions indicated a negative relation between the distance of a hotel from the city centre and the hotel room price. The results of the non-linear regressions lead to a conclusion that during the high-demand season the effect of location matters less. This suggests that during the high-demand season, hotels are more competitive and thus location has a smaller impact on their hotel room price. The results also lead to the conclusion that the distance of a hotel matters more in more competitive cities.

Table of Contents

Introduction

"Tips on Choosing the Right Location for Your Business" (Caramela, 2023), "How Location Can Influence Your Business' Success" (WDG Consulting, 2024) and "The Importance of Your Business Location: Why It Matters for Success" (Houston, 2023) are just some of the headlines regarding business lately. It seems clear that location has a bigger influence than ever on the success of your firm. However, not only location plays an important role, success is often determined by a firm's competition, pricing strategies and different attributes. I am interested in researching all of the above for the hotel world. The hotel market is highly relevant, since more and more people go on holiday each year (NBTC, 2024). Not only is tourism increasing, business trips have also been growing to levels higher than before COVID (Arena, 2024).

Many different factors influence the price of hotels. I'm interested in researching the influence of a hotel location within a city on their room pricing. I wonder if hotels closer to the city centre might have higher prices, because of higher expenses and more demand. However, there is usually more supply in the city centre as well, so this increases competition and might drive the hotel prices down. This might even differ between high-demand and low-demand season. This brings me to the following research question:

In what way does the distance of a hotel to the city centre influence their room price, specifically considering the difference between high- and low-demand season?

I will research the influence of the distance of a hotel on their hotel room price by creating my own dataset with prices from booking.com and the location of a hotel, measured in distance to the city centre with the help of nl.distance.to. I will research this by performing both linear and non-linear regressions. These regressions will be expanded with multiple control variables and a specific focus on competition and the interaction between competition and distance.

This research question focuses specifically on the hotel market. However, this is not the only market my research is applicable to. For example, the location of a dentist, hairdresser and cinema are just as important as that of a hotel. For these businesses competition and different attributes also play a huge role in setting the price. Even though my research applies different theories on hotels, many more businesses could be used to gauge a relation between location and price.

In this research paper, I will start with a theoretic framework containing relevant theories and previous findings regarding my research. Next, I will show the data and clarify how the dataset is built up. After this, I will explain the methodology and try to estimate some first relations between

the distance and price. Subsequently, I will start with the analyses and show the results of both linear and non-linear regressions. Thereafter, I will share my conclusions as well as discuss the results and possibilities for further research.

Theoretical framework

In this research paper I will try to answer the research question: In what way does the distance of a hotel to the city centre influence their room price, specifically considering the difference between high- and low-demand season? Some earlier research has been done to study the effect of different factors on hotel room prices (Soler et al., 2019; Zhang, Ye & Law, 2011).

For my research, I draw from multiple theories. Firstly, I use insights from the Hotelling model (Hotelling, 1929). Hotelling developed a model wherein location is a major factor for customers. According to him, raising a price by a fraction does not drive all customers away, since they value their travel costs and time as well. This model has been studied for many different sectors and organisations (Calem & Rizzo, 1995; Ozawa & Kishimoto, 2014). According to Hotelling, the location itself is just as important as the location in relation to one's competitors. For my research, this could mean that the relation between location and price might be weaker in more competitive cities. I want to research this direct effect of competition on the effect of location on the price. The Hotelling model makes some assumptions, the most important ones are: uniform distribution of consumers, travel cost proportional to distance, inelastic demand of one unit by each consumer and a duopoly market (Osborne & Pitchik, 1987). In this model, the focus lies on the choice of location. However, some research has been done concerning high and low supply. Brenner (2005) looks at the difference between two suppliers and more suppliers. He finds that more suppliers causes the firms on the outside (further away from the city centre) to be able to charge lower prices. The firms closer to the city centre seem to be softer competitors and do not lower their price as much. In low-demand season, we expect the number of suppliers to be constant, however the demand decreases. This means that the relative supply increases, which will lead to lower prices for firms further from the city centre. From this, we can conclude that prices will be higher during high-demand season, with an especially big difference for the firms further away from the city centre.

The Hotelling model has been proven to have its limitations, for my research these are the most important faults: Firstly, it has been proven that this model has no price solution in equilibrium when sellers are near each other (Aydinonat & Köksal, 2019). This means that businesses would likely end up in a price war if we follow the assumptions of this model. Secondly, the model is very sensitive to changes in the assumptions. For example, the results do not show when there are three sellers instead of only two. For my research, this means that the results would not be the same with how many sellers I consider. Despite these flaws, Aydinonat and Köksal (2019) argue

that this model can still be very useful in our current research when placed in its historical context.

The second theory I will use for my research is hedonic pricing. The hedonic pricing model allows us to look at different sets of goods or services with their own unique attributes (Rosen, 1974). This helps us look at the effect of one specific attribute while holding the others constant and gives us the opportunity to determine the value of one specific attribute. Preferences of people will lead to differences in price through the market. Hedonic pricing models are often used as predictive models to determine the total price of an asset (Monson, 2009). They can be used in many different scenarios. Chin and Chau (2003) have researched the use of the hedonic pricing model in the housing market. Furthermore, the model is also used in determining restaurant meal prices (Yim, Lee & Kim, 2014), ski-lift ticket prices (Falk, 2008) and hotel room prices (Soler et al., 2019). Through the hedonic pricing model, one can find out which attribute is valued the most. For businesses and managers this can be very valuable since adding or improving this one attribute can make a great difference in the number of customers your business gets. In this model a customer's willingness to pay plays a main role. This willingness to pay also depends on a customer's income and preferences. The most important assumptions of this model that concern my research are: homogeneity of the product, perfect competition and perfect information (Chin & Chau, 2003). Even though I will not be looking at the attribute that is most important for people, I will use many different attributes that cause different valuations of hotels. To make sure that I am making a fair comparison, I will add multiple attributes to my analyses and look at similar hotels. I will also look at the effects of high-demand season and competition on hotel room prices. Unfortunately, I was unable to find differences between high- and low-demand season in Hedonic Pricing theories. However, some research concerning location has been done. Locational attributes seem to have quite a big impact on the price. For example, considering the housing market, people are often willing to pay considerably for a nice view of the ocean or mountains (Chin & Chau, 2003). This is also applicable for my research since many hotels have rooms with specific views for which they charge higher prices.

One of the limitations of the hedonic pricing model is misspecification of variables. Often too many or too little variables are taken into account when using the hedinic pricing model, causing biases (Chin & Chau, 2003). Furthermore, using proxy variables can highly influence the outcome of this model. Since I will be using one variable that also includes a proxy, this might influence my research.

A third theory that is relevant to this research is the consumer search model. One of the assumptions of this theory is that a customer's choice set depends on their specific preferences and marginal willingness to pay (Jolivet & Turon, 2019). This model assumes that consumers have the choice of many different options. However, in order to find their perfect match, they have to search through the many options. This searching brings costs. Some consumers have higher search costs than others and thus search for a smaller amount of time. This means that it is more likely that they will choose one of the options they find first (Armstrong, Vickers, Zhou, 2009). This also means that some companies choose to maintain high prices, since consumers with high search costs will not look any further. In this way the companies might not attract many consumers, but the prices they charge will still cause them to have sufficient profits. Thus, homogeneous goods are priced differently in equilibrium. However, Choi, Dai and Kim (2018) find that as the value of search decreases, prices decrease as well. Customers are now less likely to leave the current seller for a competitor, which makes it even more important for businesses to attract new customers. This brings down prices. Being the first option people see is often paid for by companies. For example, products in the supermarket at eye level, adverts coming in at the top in search engines and of course hotels that are the first on the list on booking.com. Janssen and Moraga-González (2004) also consider this model in a setting with more suppliers. They find that, depending on how intensively a consumer searches, the price can be much lower or higher. When consumers search with high intensity and there are not a lot of competitors in the market, the prices decrease. However, when the consumers search with less intensity and there are already a lot of competitors in the market, the prices increase. Thus, since I consider many competitors in my research, in high-demand season, consumers will likely search with more intensity, meaning that this theory predicts prices to be higher during high-demand season. Unfortunately, I was unable to find any research concerning the consumer search model in combination with location.

Quite some research has been done regarding hotel room prices. With a specific focus on location, Sánchez-Pérez et al. (2019) discuss differences between countries in hotel pricing. They argue that different management practices in countries might influence the price of hotel rooms. To minimize these differences between countries, I will only look at hotel chains. Sánchez-Pérez et al. (2019) do not discuss differences of location within a city, which is what I am interested in.

Lee and Jang (2012) research the influence of location within Chicago on the price of hotel rooms. They find that during high-demand season, the price of hotel rooms is significantly higher for hotels closer to the city centre. However, during low-demand season, the competition between hotels drives the room price down. They conclude the benefits of a central position in a city might

be overestimated, since the competition is largely ignored in previous research. This leads me to my first hypothesis:

Hypothesis 1: the influence of the location of a hotel on their room price differs between low- and high-demand season.

To research this, I will be comparing the prices of two low-demand and two high-demand dates. The research of Lee and Jang (2012) does have some limitations, they only look at 81 hotels in Chicago, which might not be very representative for other cities. More research is thus needed to ensure reliable results. This is why I will be looking at 17 different cities, instead of only one.

Furthermore, leading from the Hotelling model, we expect the relation between the price and distance of a hotel to be less strong in more competitive cities, since competition will overrule any high price setting for hotels closer to the city centre. This leads me to my second hypothesis:

Hypothesis 2: the influence of the location of a hotel on their room price is smaller in more competitive cities.

Data

To research the influence of location on hotel room prices, I have created my own dataset. I looked at the hotel room prices and location of hotels in 17 European cities. I chose to research only Europe, since I wanted to have many observations, but also had to be realistic in the scope of this research. The cities that I use in this study are in alphabetical order[1]: Amsterdam, Barcelona, Berlin, Brussels, Budapest, Frankfurt, Istanbul, London, Lyon, Madrid, Manchester, Milan, München, Paris, Rome, Vienna and Warsaw. All the hotels that will be included can be found in Appendix A.

I looked at almost[2] all 3 and 4 star hotels of four hotel chains in these cities. By comparing chain hotels, the difference in management practices between countries will be minimal. I chose to use the hotel chains: Hilton, Accor, NH hotel group and Marriott. I chose these hotel chains, since they seem to have the most hotels in the different cities that I want to research. In this dataset I included the room price of a standard two-person bedroom with breakfast and with cancellation possibility. This gives me the most observations. I collected these prices for four different dates from booking.com. I collected all prices for one specific date on the same day to avoid any bias, since hotel prices often change depending on what day of the week you book them. I used two dates that fall during the high-demand season and two dates that fall in low-demand season, all Thursdays. The dates I used are 18th of July, 26th of December, 19th of September and 14th of November. With these dates I tried to avoid any major events in any of my cities, for example the Olympic games in Paris. However, there is no guarantee that the cities don't have any events that I am unaware of. Though, I expect the results for the other cities to minimalize any bias.

Additionally, I included the distance from the city centre for each hotel as my location measure in my dataset. These distances were collected with the help of nl.distance.to, where I measured the distance in a straight line from each different hotel to a chosen point of city centre. The city centre is determined by using booking.com's chosen city centre. The website nl.distance.to can be used to calculate the distance between two points in a straight line. This website is used by inserting coordinates of two points, I used the coordinates of booking.com's chosen city centre and every individual hotel. When looking at the location of a hotel on booking.com, you can see what point they considered the city centre. This is how I was able to determine the city centre for

[1] I wanted to add more cities, such as Stockholm, Oslo, Copenhagen and Rotterdam, but these cities unfortunately didn't have enough observations.

[2] I only left out 3 and 4 star hotels that did not have availability for three or more dates I researched.

my research. Unfortunately, the distances themselves from booking.com could not be used, since the distance of hotels close to a small village were only indicated to that village instead of my city of interest. So, for example, for a hotel close to Schiphol in Amsterdam, booking.com will only show the distance to the city centre of Hoofddorp and not of Amsterdam.

To further prepare for the analyses, I also added the following control variables. Firstly, the number of stars, which is a binary variable with 0 for 3 stars and 1 for 4 stars. Next, the hotel chain, a categorical variable with four categories, one for each hotel chain. To make the analyses process easier, I also created four variables, one for each chain hotel. In this way the variable "Accor" is 1 when the hotel is from the Accor hotel chain and 0 otherwise. This goes for all four variables. As reference category I will use Accor, since it is not very important which category is used as reference and I have most observations for the hotel chain Accor. Thirdly, I added the variable pool, which is binary with 0 if the hotel does not have a pool and 1 if the hotel has a pool. Fourthly, the variable airport is added. This is a binary variable with 0 if the hotel is not near an airport and 1 if the hotel is near an airport. For this study, I defined "an airport hotel" as a hotel that has the word airport or name of the airport in the hotel name.

Lastly, I added a competition measure, which measures the number of hotel rooms per square kilometre in a city. This shows us how competitive the city is and thus if this influences the relation between hotel room prices and distance to the city centre. This is a measure consisting of the number of hotel rooms in a city and square kilometre area of the city. The number of hotel rooms per city have been collected from statistics on Statista.com. Unfortunately, two cities were not available on Statista.com and so these number of hotel rooms have been extrapolated by using the number of hotel rooms in 2011 from Eurostat. These numbers have been increased to 2018, which is where the data from Statista is from, with the growth of another city in this period from the same country. Thus, for Milan the percentual growth between 2011-2018 from Rome is used to estimate the number of hotel rooms in Milan in 2018. The same goes for the number of hotel rooms in Manchester in 2018, using London as measure. Acknowledging that this might not be very reliable, it was the only possible way to add the competition measure for every city. The square kilometre area of the city is taken from Wikipedia. With these numbers I will create the competition measure number of hotel rooms per square kilometre. This will make the tests more reliable and really zooms in on the effect of the location of the hotel within a city. I have also added an interaction term between the distance and competition. This will help research hypothesis 2 to look at the effect of distance on the price in more and less competitive cities.

In table 1 the descriptive statistics can be found. Since not all hotels have availability for every date I used, the total number of observations differs from the number of observations for each price. As seen in the table, for the 18th of July there were 28 hotels unavailable. The table shows that the difference between high- and low-demand season is not very clear in their minimum and maximum prices in the price variables. The two low-demand season dates have a higher mean price than the high-demand season dates. However, as we can see there is quite a difference between the standard deviations. It seems as though low-demand dates have a higher standard deviation than high-demand dates. This means that the prices are more spread out in low-demand dates. As for the distance, it is clear that a wide variety of hotels is picked, with a minimum of 0.1 and a maximum of 32.4 kilometres and a mean of 6 kilometres from the city centre. Shown in the table is that there are more four star hotels than three star hotels in the data. Both for pool and airport, there are not a lot of hotels in this data. It is clear that Accor is the biggest hotel chain and we can see that more than half of the hotels in this dataset are from that hotel chain. Competition has a wide range, so we expect quite some differences between more competitive and less competitive cities.

Table 1: Descriptive statistics

Variable	Observations	Mean	Std. deviation	Min	Max
Price187	786	231.83	95.25	71	722
Price2612	782	208.15	86.13	65	651
Price199	779	268.14	111.59	86	959
Price1411	792	238.32	94.45	81	664
Distance (km)	814	6.00	6.03	0.1	32.4
4Stars	814	0.68	0.47	0	1
Pool	814	0.12	0.32	0	1
Airport	814	0.10	0.30	0	1
Competition	814	337.97	296.69	13.46	795.09
Accor	814	0.52	0.50	0	1
Hilton	814	0.17	0.38	0	1
NHgroup	814	0.11	0.31	0	1
Marriott	814	0.20	0.40	0	1

I also added a correlation table in appendix B to look at the correlation between Distance (km), 4Stars, Pool and Airport. If the variables have a high correlation, I would have to re-evaluate adding both variables, since this could be a cause for the multicollinearity problem. As shown in table 2 in the appendix, correlation between the variables is not very high. The highest correlation

is between Airport and Distance (km). However, this correlation is only 0.559, which is not high enough for concern.

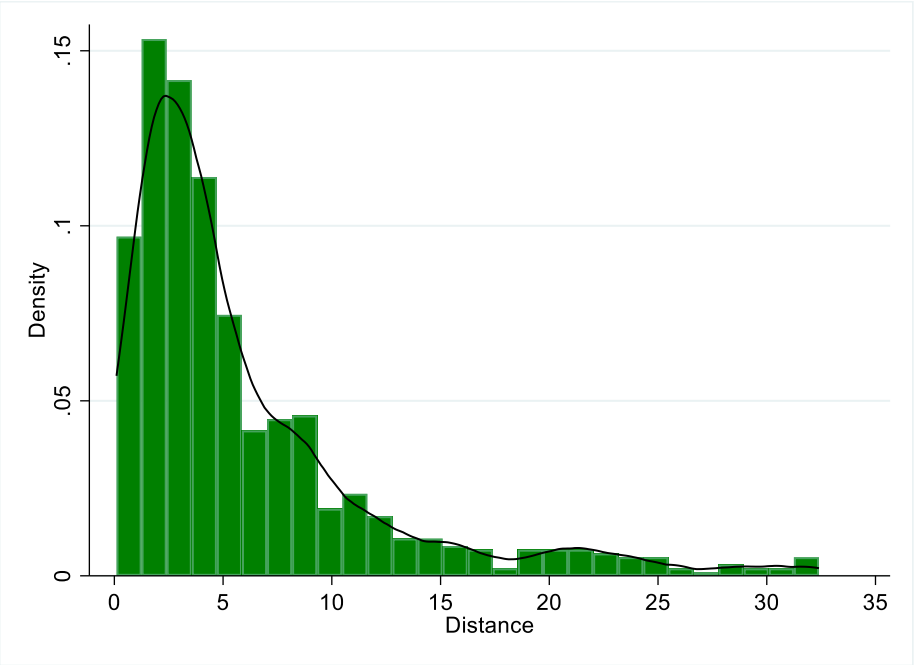
Methodology

To research the influence of location on hotel room prices, I created my own dataset. With this data I performed an OLS regression. I used the following regression equation:

$$Y_i = \beta_0 + \beta_1 * X_i + \varepsilon_i \, , i = hotel$$

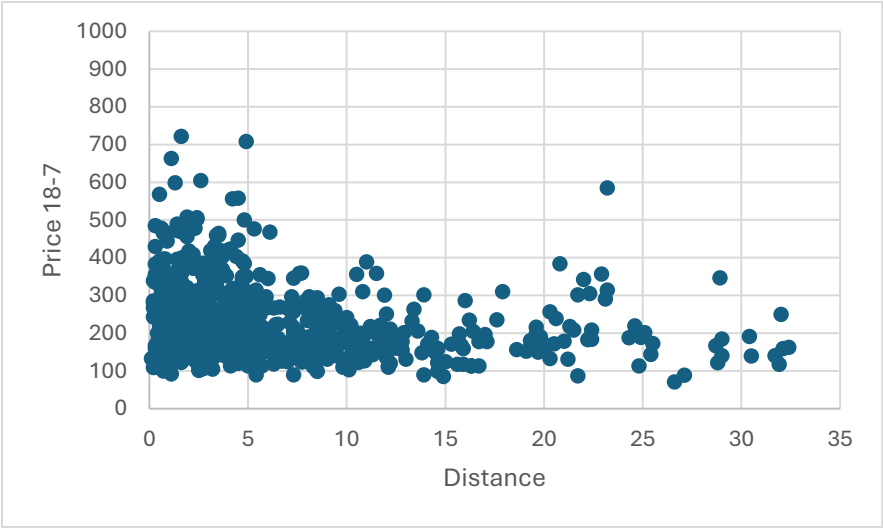
As dependent variable I used the hotel room prices, measured in euros for two people and one night. As independent variable I used distance to the city centre, measured in kilometres. I also added the following control variables: the number of stars, the hotel chain, pool, airport and a competition measure.

For my analysis, I started with an OLS regression with three regressions for every date from my research. One regression without any control variables, one with some control variables and one with all control variables. The OLS regression only measures a linear relationship, but the relation between hotel room prices and location might be non-linear. This is why I decided to add a modified regression as well. In this modified regression I will change the distance to the city centre from a continuous variable to a categorical variable. Splitting the distance to the city centre in four categories will allow for a non-linear relationship between the price and distance of hotel rooms. Which categories exactly the distance to the city centre should be split up in is quite difficult to say. In graph 1 a kernel density of the distance is shown. We can see here what the distribution is of the distance of the hotels. As seen in graph 1, most observations are at a smaller distance. This means that closer to the city centre the categories need to be smaller, since a hotel two or five kilometres away from the city centre can be quite a difference. However, a hotel seven or ten kilometres from the city centre is likely a smaller difference, since you will always need to use a car or public transport to get to the city centre. With the confirmation of the graph, we can see that around 50% of my hotels are less than 5 kilometres from the city centre. This leads me to have chosen the following categories: 0-2 kilometres, 2-5 kilometres, 5-10 kilometres and 10+ kilometres. I will add an interaction term between the distance categories and competition in the non-linear regressions. This will help determine the effect of distance on the price in more and less competitive cities.

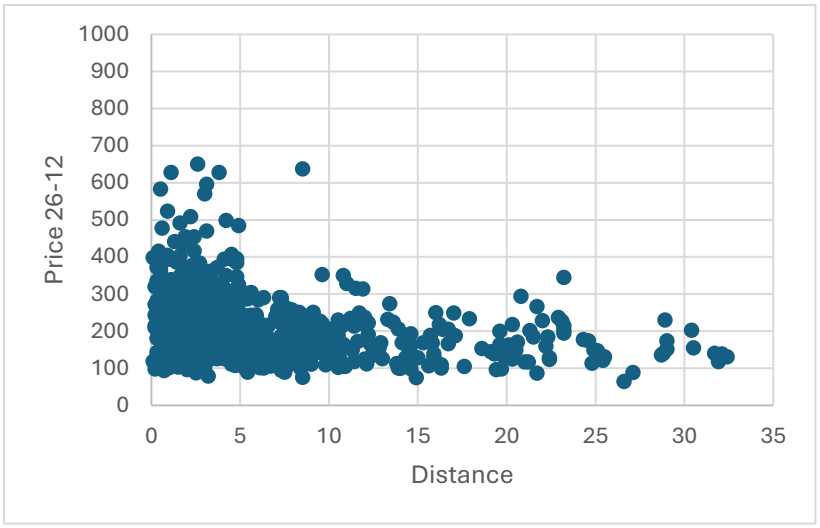


Graph 1: Kernel-density of Distance

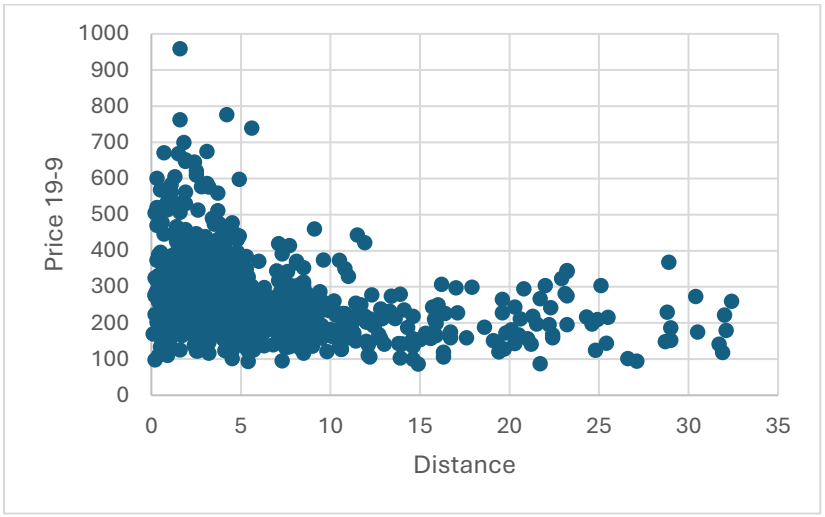
To gauge a first relation between the distance from the city centre and the price of a hotel room, I made four scatterplots. When looking at the scatterplots of the four different dates, we can see that there seems to be a relation between the price and distance. However, this relation does not look linear. This confirms that it is relevant to also add a non-linear test. From these scatterplots no large difference between the different dates seems to exist. However, we will be researching this more in depth with the regressions.



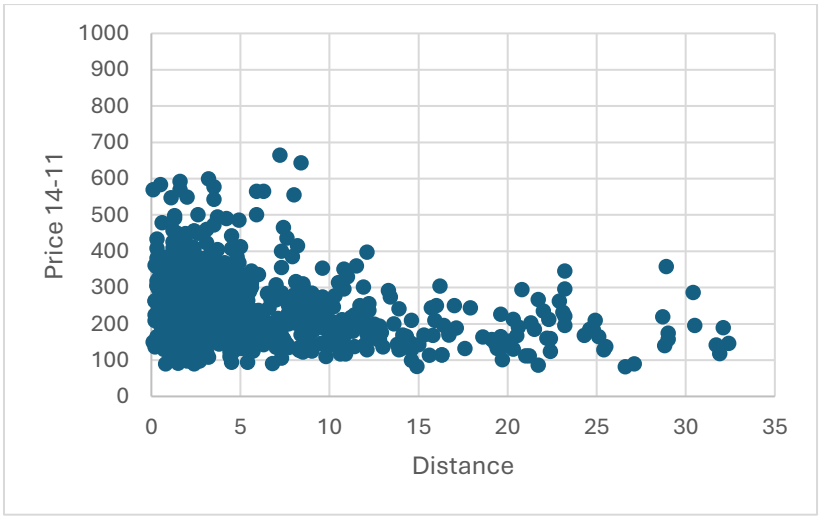
Graph 2: Relation between Price of 18-7 and the Distance to the city centre



Graph 3: Relation between Price of 26-12 and the Distance to the city centre



Graph 4: Relation between Price of 19-9 and the Distance to the city centre



Graph 5: Relation between Price of 14-11 and the Distance to the city centre

Results

To investigate the relation between a hotel's distance to the city centre and their price, I started with performing an OLS regression for every date I researched. In table 3 panel 1, the results are shown of a simple regression without any control variables for the 19th of September. According to this regression, a hotel 1 kilometre further away from the city centre is associated with a decrease in price by €5,55. This result is highly significant. We can interpret the constant, as the average price of a hotel room on 19-9 when all other variables are 0.

In panel 2 the control variables 4Stars and the hotel chains were added. These control variables are all positive and significant. This means that a hotel with 4 stars instead of 3 stars has a price that is on average €82.59 higher. This is quite logical since we expect hotels with 4 stars to be more expensive than hotels with 3 stars. The hotel chains are also all positive, meaning that the Accor hotels are the cheapest on average. The independent variable Distance seems to have a slightly larger effect in the regression with control variables added. It is still highly significant and has a negative effect on the price.

In the third panel all other control variables are added. As shown in the table, the effect of Distance has increased by a little bit again compared to panel 2. However, in the complete table, the coefficient barely changes. The control variables Pool and Airport have a positive effect on the price. This means that these variables increase the price. This is quite logical, since we expect a hotel with a pool to be more expensive than a hotel without a pool. However, there might be a difference between high- and low-demand season. The pool is often more popular in the summer and airport hotels are more often visited during holiday season. The coefficients of the hotel chains are still all positive and significant, but a bit larger than in panel 2. The competition variable measures the increase of a price when there is one more hotel room per square kilometre. This means in this case that when a city has one more hotel room per square kilometre, the hotel is on average €0.13 more expensive. This seems like a small number. However, cities do not grow with only one hotel room at a time, but with a whole hotel that might have 200 rooms. Furthermore, the standard deviation is very small, which indicates that the coefficient is very precise.

Table 3: Linear regression analyses of relation between distance and price on 19-9

	(1)	(2)	(3)
Distance (km)	-5.545***	-5.758***	-6.095***
	(0.624)	(0.577)	(0.648)
Pool			4.077
			(10.405)
Airport			6.288
			(13.127)
Competition			0.128***
			(0.012)
4Stars		82.586***	87.426***
		(8.200)	(7.806)
Hilton		21.006**	47.385***
		(9.990)	(9.666)
NH group		32.027***	64.238***
		(12.017)	(11.678)
Marriott		22.480**	44.692***
		(9.885)	(9.575)
Constant	301.989	235.27	177.346
	(5.387)	(7.110)	(8.650)
Observations	779	779	779

Dependent variable is price on 19-9; Standard errors are in between brackets (); *p<0.1 **p<0.05 ***p<0.01.

In table 4, the same panel regression can be found for the 14th of November. We can see very similar results to the 19th of September. However, there are some differences. In general, the coefficients seem to be smaller. For example, in panel 1 we see that 1 kilometre further from the city centre is associated with a decrease in price of €3.91, earlier we saw an association of €5,55. However, the distance coefficient is still quite similar to the coefficient in table 3.

We can see a difference in the hotel chains. In table 4 we can see that NH group is the lowest coefficient. The coefficients for both Pool and Airport are suddenly negative. This means that a hotel with a pool or close to an airport now decreases the price of a hotel room. However, a pool often makes a hotel more expensive, which makes a negative coefficient illogical. The competition coefficient is smaller as well. Lastly, the constant is lower in table 4 than in table 3. This might mean that the 14th of November is on average cheaper than the 19th of September.

Table 4: Linear regression analyses of relation between distance and price on 14-11

	(1)	(2)	(3)
Distance (km)	-3.910***	-4.410***	-4.337***
	(0.542)	(0.491)	(0.576)
Pool			-1.585
			(8.974)
Airport			-5.663
			(11.548)
Competition			0.078***
			(0.010)
4Stars		70.850***	73.948***
		(6.828)	(6.717)
Hilton		31.881***	48.622***
		(8.431)	(8.439)
NH group		11.914	32.988***
		(10.064)	(10.144)
Marriott		38.112***	53.513***
		(8.165)	(8.200)
Constant	261.762	202.144	165.907
	(4.598)	(5.925)	(7.479)
Observations	792	792	792

Dependent variable is price on 14-11; Standard errors are in between brackets (); *p<0.1 **p<0.05 ***p<0.01.

In table 5, the results for the 18th of July are shown. We can see in panel 1 that a hotel 1 kilometre further from the city centre is associated with a decrease in price of €3.69. This is a highly significant effect.

In panel 2 the control variables 4Stars and the hotel chains were added. The 4Stars variable is positive and highly significant. The hotel chains are all positive and significant except for NH group. This means that on average a NH hotel is associated with a price €4.23 lower than an Accor hotel.

In panel 3 all control variables were added. We can see that a hotel one kilometre further from the city centre is now associated with a decrease in price of €4.43. This is still in a similar range as the coefficient in the other tables. Pool still has a negative, non-significant effect on the price. Here we expected Pool to increase the price quite a bit, since this date falls during summer holidays. However, this is not the case. Airport now does have a positive effect again, but it is still not significant. A hotel with four stars instead of three stars is on average €74.87 more expensive. The Hilton, NH group and Marriott hotels are significantly more expensive than hotels from the Accor hotel chain. Looking at table 5 compared to table 3 and 4, we don't see very large differences yet between the low-demand and high-demand season.

Table 5: Linear regression analyses of relation between distance and price on 18-7

	(1)	(2)	(3)
Distance (km)	-3.688***	-4.268***	-4.428***
	(0.548)	(0.501)	(0.575)
Pool			-3.614
			(9.142)
Airport			7.284
			(11.666)
Competition			0.088***
			(0.011)
4Stars		71.611***	74.873***
		(6.984)	(6.816)
Hilton		31.866***	50.000***
		(8.580)	(8.522)
NH group		-4.228	18.303*
		(10.174)	(10.188)
Marriott		35.860***	52.284***
		(8.475)	(8.472)
Constant	253.922	196.689	157.060
	(4.661)	(6.066)	(7.630)
Observations	786	786	786

Dependent variable is price on 18-7; Standard errors are in between brackets (); *p<0.1 **p<0.05 ***p<0.01.

In table 6, the last linear panel regression is shown. These results show the relation between distance from the city centre and the price of a hotel room on the 26th of December. As can be seen in the table, the results are very similar to the results shown in table 5. However, the constant is quite a bit lower than in table 5. The coefficient for airport is positive again. The coefficient for pool is still negative, which is more logical during the winter season. Both are still not significant. The coefficients of 4stars seems to be a bit lower in table 6 compared to table 5. The competition measure is still pretty similar to the other tables.

Table 6: Linear regression analyses of relation between distance and price on 26-12

	(1)	(2)	(3)
Distance (km)	-3.698***	-4.131***	-4.437***
	(0.494)	(0.441)	(0.511)
Pool			-5.901
			(7.990)
Airport			8.710
			(10.351)
Competition			0.083***
			(0.009)
4Stars		67.912***	71.598***
		(6.126)	(5.927)
Hilton		24.140***	42.050***
		(7.583)	(7.492)
NH group		14.381	38.526***
		(9.205)	(9.207)
Marriott		39.210***	54.832***
		(7.319)	(7.272)
Constant	230.380	173.234	135.238
	(4.205)	(5.336)	(6.705)
Observations	782	782	782

Dependent variable is price on 26-12; Standard errors are in between brackets (); *p<0.1 **p<0.05 ***p<0.01.

From tables 3 to 6, we can estimate a negative association between the distance of a hotel from the city centre and the hotel room price. There does not seem to be huge differences between the high- and low-demand season. However, I have now estimated this relation in a linear way. The relation may be non-linear and this is why I decided to also add regressions with the distance split up in four categories.

In table 7, the results of non-linear regressions are shown for all dates. We can see that the relation between distance and price seems a lot stronger in these non-linear regressions than in the linear regressions. For example, on the 19th of September, if a hotel is 2-5 kilometres from the city centre it is on average €31.54 less expensive than a hotel 0-2 kilometres from the city centre. We can also see that the further a hotel is, the stronger the relationship. A hotel 10+ kilometres from the city centre on the 19th of September is on average €119.33 less expensive than a hotel 0-2 kilometres from the city centre. This means that the relation indeed seems non-linear.

Furthermore, the competition measure is a bit larger in these regressions than in was in the linear regressions. Now, if there is one more hotel per square kilometre on the 19th of July, a hotel is on average €0.10 more expensive. The competition effect will be studied further in table 10. The other control variables do not show surprising results.

We do not see a big difference between the high-demand and low-demand season. However, the coefficients of the high-demand dates seem a bit closer together than those of the low-demand dates. This relationship will be further investigated in tables 8 and 9.

Table 7: Non-linear regression analyses of relation between distance and price

	19-9	14-11	18-7	26-12
2-5 kilometres	-31.540***	-20.879***	-31.188***	-21.031***
	(8.562)	(7.540)	(7.488)	(6.596)
5-10 kilometres	-82.335***	-36.506***	-73.516***	-61.614***
	(9.726)	(8.644)	(8.511)	(7.510)
10+ kilometres	-119.334***	-82.748***	-91.946***	-78.833***
	(11.648)	(10.419)	(10.291)	(9.231)
Pool	10.013	2.321	0.627	-1.444
	(10.206)	(8.987)	(8.924)	(7.902)
Airport	3.852	-9.981	7.142	1.750
	(12.458)	(11.131)	(11.075)	(9.900)
Competition	0.138***	0.082***	0.100***	0.091***
	(0.012)	(0.011)	(0.011)	(0.009)
4Stars	84.695***	72.549***	72.639***	70.114***
	(7.636)	(6.708)	(6.641)	(5.845)
Hilton	47.397***	49.948***	50.499***	41.614***
	(9.452)	(8.432)	(8.299)	(7.385)
NH group	57.766***	30.977***	12.740	33.771***
	(11.441)	(10.134)	(9.931)	(9.092)
Marriott	45.713***	54.808***	52.592***	55.242***
	(9.352)	(8.181)	(8.242)	(7.161)
Constant	188.359	168.216	170.295	141.629
	(9.332)	(8.183)	(8.130)	(7.259)
Observations	779	792	786	782

Dependent variable is price on all four dates; Standard errors are in between brackets (); *p<0.1 **p<0.05 ***p<0.01.

We saw in table 7 that the effect of the distance of a hotel from the city centre on their hotel room price does not seem linear. The effect seems to increase the further away a hotel is from the city centre. We do not see a clear difference between the high-demand and low-demand dates. However, the coefficients of the distance categories seem to be a bit closer together in the regressions of the high-demand dates. This could imply that a different distribution of distance categories could show more information. In appendix C the results of non-linear regressions with two different category distributions are shown. In table 8, it also appears that the coefficients of the distance categories are a bit closer together in the high-demand season. This difference

seems very big between the 19th of September and the 26th of December, but is barely visible for the other two dates.

In table 9, we see this effect even stronger. Now the coefficients of the distance categories are closer together for both dates in the high-demand season than in the low-demand season. This could mean that during low-demand season the distance of a hotel matters a lot more to the hotel room price than during high-demand season.

To research the effect of competition on this relationship, I added interaction terms between the distance categories and the competition variable. In table 10, we can see the non-linear relation between the distance from the city centre and hotel room price on all four dates with interaction terms. For the 19th of September, all distance coefficients are negative and highly significant. A hotel that is 5-10 kilometres from the city centre is associated with on average a lower price of €82.34 when the competition is zero compared to a hotel 0-2 kilometres from the city centre. The competition measure is positive and significant, meaning that one extra hotel room per square kilometre in the city increases the price of a hotel room on average with €0.19. The added interaction terms give the effect of distance on price in more and less competitive cities. Even though these coefficients are not significant. Here, we can interpret the coefficient 2-5 kilometres*competition as the effect of a hotel 2-5 kilometres from the city centre when there is one hotel per square kilometre in the city. This means that the price is on average €0.04 lower for hotels 2-5 kilometres from the city centre in a city with one hotel per square kilometre than a hotel 0-2 kilometres from the city centre with one hotel per square kilometre. When there are 10 hotels per square kilometre, this effect is €0.36. This means that a higher competition level increases the effect of the distance on the price. More competition thus causes the price to be even lower for hotels that are further from the city centre. However, these coefficients are not significant.

For the 14th of November, the coefficients of the distance categories are lower. Now, a hotel 5-10 kilometres from the city centre with no competition in the city is associated with a price €27.16 lower than a hotel 0-2 kilometres from the city centre. The competition coefficient is also a bit lower. The interaction terms are still quite similar. A hotel 10+ kilometres from the city centre in a city with one hotel per square kilometre is on average associated with a price €0.04 lower than a hotel 0-2 kilometres from the city centre in a city with one hotel per square kilometre. However, they are still not significant.

The results for the 18th of July are quite similar. We do not see huge differences yet between the high-demand and low-demand season in the coefficients of the distance categories. However, the interaction effects are a bit smaller in the high-demand season. This means that the effect of

distance differs less between more and less competitive cities. The competition thus seems to matter less for the price in high-demand season. However, the coefficients of the interaction terms are still not significant.

On the 26th of December, the coefficients of the distance categories seem a bit closer together. However, the interaction terms are larger than on the 18th of July. This means that in this case, competition does not seem to matter less for the price in high-demand season. The coefficients of the 19th of September are still bigger, but the difference is quite small. This is the only date for which the interaction terms are significant.

Table 10: Non-linear regression analyses of relation between distance and price with interaction term

	19-9	14-11	18-7	26-12
2-5 kilometres	-37.173***	-23.480**	-34.901***	-24.940**
	(12.444)	(11.200)	(11.004)	(9.673)
5-10 kilometres	-84.972***	-27.161**	-79.928***	-54.120***
	(14.529)	(13.181)	(12.863)	(11.374)
10+ kilometres	-112.603***	-77.614***	-106.432***	-71.205***
	(16.104)	(14.634)	(14.369)	(12.823)
Pool	10.104	2.333	2.381	-1.641
	(10.119)	(9.001)	(8.913)	(7.838)
Airport	6.380	-10.711	10.273	1.537
	(12.496)	(11.291)	(6.121)	(5.776)
Competition	0.190***	0.118***	0.111***	0.138***
	(0.037)	(0.035)	(0.032)	(0.028)
4Stars	86.411***	73.417***	72.908***	71.289***
	(7.542)	(6.704)	(6.612)	(5.776)
Hilton	46.232***	49.290***	50.543***	41.011***
	(9.331)	(8.414)	(8.252)	(7.298)
NH group	58.661***	32.039***	13.529	35.317***
	(11.289)	(10.106)	(9.859)	(8.984)
Marriott	44.982***	54.539***	50.820***	55.308***
	(9.285)	(8.221)	(8.232)	(7.126)
2-5 kilometres * competition	-0.036	-0.021	-0.011	-0.028
	(0.0399)	(0.038)	(0.035)	(0.031)
5-10 kilometres * competition	-0.047	-0.052	-0.006	-0.059*
	(0.042)	(0.040)	(0.037)	(0.037)
10+ kilometres * competition	-0.078	-0.042	0.025	-0.062*
	(0.047)	(0.044)	(0.043)	(0.037)
Constant	186.938	165.016	174.096	137.979
	(11.120)	(10.061)	(9.849)	(8.700)
R^2	0.402	0.323	0.356	0.395
Observations	779	792	786	782

Dependent variable is price on all four dates; Standard errors are in between brackets (); *p<0.1 **p<0.05 ***p<0.01.

Discussion

For my research, I tried to estimate the effect of the location of a hotel on their hotel room price. I did so by performing both linear and non-linear regressions for four different dates and around 800 hotels. Even though I did my best to limit any biases, it was not always possible to eliminate the biases. Firstly, it was not possible to estimate a causal effect through this research. Even with my control variables, there is still a chance of omitted variable bias and thus not a causal relation. For example, the hotel price could also be affected by reviews, whether the hotel is suited for business or family-friendly and whether the hotel is new or newly renovated or a bit outdated. Secondly, I chose to only use cities in Europe for this research. Even though I have many observations, it is not guaranteed that results for Europe can be used all around the world. Thirdly, I tried to eliminate any booking day bias, by collecting prices for the one date on the same day. However, since my chosen dates are in different periods of time, there might still be a bias. For example, the 18th of July is a lot closer to this day than the 26th of December. Fourthly, with creating the competition measure, not all data was available, so for two cities this competition measure had to be extrapolated using old data. This was the best solution, but might not be the most reliable. Fifthly, my interaction terms were not significant, which means that the reliability of those results has not been proven. Sixthly, there are many more ways of creating distance categories. The three ways I chose are by no means the only possibilities and different categories might show different results. Seventhly, in order to have reliable prices, I chose all Thursdays for my dates. These dates were in my opinion right choices for high- and low-demand season. However, others might have different opinions about this. I also tried to avoid any major events in my 17 chosen cities on my dates, but this is not guaranteed and there might still be some events that I was unaware of.

Even though my research has only considered hotels, these results can be relevant to all businesses. I concluded that the distance from a hotel to the city centre affects the price negatively. Meaning, the larger the distance of a hotel from the city centre, the lower their hotel room price. This phenomenon could also count for restaurants, retail stores or cinemas. Competition having a positive effect on the price is also applicable for many more businesses. Looking at the effect of distance on more or less competitive cities can be very useful for other firms. This might help them determine their optimal location.

Even though I found quite some exciting results, there is a lot more research to be done. Firstly, Lee and Jang (2012) found quite an opposite result, which implies more research is necessary to give any reliable conclusions. I would recommend looking at different cities than Europe as well.

It might also be a good idea to try and estimate a causal effect in future research. This can be done by using other statistical methods that are suited for a causal estimation. For example, spatial econometric methods can be used, as Lee and Jang (2012) showed in their Chicago research. Furthermore, even more dates would make it possible to see a clearer difference between high- and low-demand season. I also only looked at four different hotel chains. It might be useful to include even more hotels or hotel chains to be able to estimate a more precise result.

Conclusion

In this paper, I researched in what way the distance of a hotel to the city centre influences their hotel room price. Multiple regressions were performed. Firstly, in tables 3 through 6, we saw the results of a linear regression for all four dates. From this regression we could estimate a negative relation between the distance of a hotel from the city centre and the price of their hotel rooms. We saw that a hotel one kilometre further from the city centre decreased the price of a hotel room between €4.34 and €6.10 in the regressions with control variables.

In table 7, the results of non-linear regressions for all dates are shown. To estimate a non-linear relation, I used four different distance categories. In this table, we can see that the further away a hotel is, the more the price decreases. We mostly see a big jump between the first and second category. In this table we do not see a huge difference between the low-demand and high-demand dates. However, the coefficients of the high-demand dates seem to be a little bit closer together. To test if there is indeed some difference in relation, I also performed non-linear regressions with two different versions of the distance categories. In appendix C, the results of these regressions are shown. First, in table 8 this phenomenon was very strong as well for two dates. However, for the other two dates there was not a lot of difference in the relation. In table 9, the difference between the high-demand and low-demand season was shown more clearly. The coefficients of the distance for the high-demand dates are a lot closer together. This means that the distance matters less in high-demand season. This could also mean that hotels in high-demand season are either expensive anyway or relatively cheap anyway. It matters less where the hotel is located. For the low-demand season, this means that location matters more. This confirms hypothesis 2, the influence of the distance of a hotel on their hotel room price differs between the high-demand and low-demand season. However, in the research of Lee and Jang (2012) we saw earlier, quite an opposite result was found. They found that hotels in the city centre were significantly more expensive during the high-demand season and during the low-demand season the competition drove prices down. This means they found that the location matters more during the high-demand season while I found that location matters more during the low-demand season.

To research hypothesis 1, we take a look at the competition distance interaction terms. The coefficients are steadily negative. However, these coefficients were not significant, which means we are not sure that this affects the price negatively and we are also not sure that it does not affect the price negatively. However, we might conclude that more competitive cities have a larger effect of distance on the price. This is in line with the Hotelling model (Hotelling, 1929). It seems

that the hotel room price does not only depend on location, but also on the location of one's competitors. According to the Hedonic Pricing model, locational attributes can have a huge impact on the price. This model predicts that people are willing to pay a lot more for nice views, which seems to be in line with my results. In general, the hotels near the city centre are more expensive, but these are often also the hotels that have a great view on tourist attractions. The Consumer Search model predicts that homogeneous goods are priced differently in equilibrium. Since I have tried to look at all hotel rooms with the same attributes, this is in line with my research. Hotel rooms are all priced differently, even though they can be considered homogeneous goods. Furthermore, the Consumer Search Model predicts that prices are higher in high-demand season. I investigated the relation between distance and hotel room price instead of only the difference in price during high- and low-demand season. Even though I did look at the difference between high- and low-demand season, my focus was on the effect of location and thus I can not confirm that prices are always higher in high-demand season.

We do not see a huge difference between the high- and low-demand dates. However, it seems as though the coefficients are a little bit smaller for the high-demand dates. This could imply that competition matters less in the high-demand season. Just as we saw earlier with the distance, the prices in high-demand season seem to stay more constant and be less affected by competition.

References

Arena, L. (2024). Business travel volumes in 2024 to outpace pre-pandemic levels, says Advantage. *Business Travel News Europe*.

Armstrong, M., Vickers, J. & Zhou, J. (2009). Prominence and Consumer Search. *RAND Journal of Economics*, Vol. 40(2), 209-233.

Aydinonat, N. & Köksal, E. (2019). Explanatory value in context: the curious case of Hotelling's location model. *The European Journal of the History of Economic Thought,* Vol. 26(5), 879-910.

Brenner, S. (2005). Hotelling Games with three, four and more Players. *Journal of Regional Science,* Vol. 45(4), 851-864.

Calem, P. & Rizzo, J. (1995). Competition and specialization in the hospital industry: an application of Hotelling's location model. *Southern Economic Journal,* Vol. 61(4), 1182-1198.

Caramela, S. (2023). Tips on Choosing the Right Location for Your Business. *Business News Daily*.

Chin, T. & Chau, K. (2003). A Critical Review of Literature on the Hedonic Price Model. *International Journal for Housing and Its Applications,* Vol. 27(2), 145-165.

Choi, M., Dai, A. & Kim, K. (2018). Consumer Search and Price Competition. *Econometrica,* Vol. 86(4), 1257-1281.

Eurostat (2015). Establishments, bedrooms and bed-places in tourist accommodation by NUTS 3 regions - annual data (1990-2011). DOI: https://doi.org/10.2908/TOUR_CAP_NUTS3

Falk, M. (2008). A Hedonic Price Model for Ski Lift Tickets. *Tourism Management,* Vol. 29(6), 1172-1184.

Hotelling, H. (1929). Stability in competition. *The Economic Journal,* Vol. 39(153), 41-57.

Houston, M. (2023). The Importance Of Your Business Location: Why It Matters For Success. *Forbes*.

Janssen, M. & Moraga-González, J. (2004). Strategic Pricing, Consumer Search and the Number of Firms, *The Review of Economic Studies,* Vol. 71(4), 1089-1118.

Jolivet, G. & Turon, H. (2019). Consumer Search Costs and Preferences on the Internet. *Review of Economic Studies,* Vol. 86(3), 1258-1300.

Lee, S. & Jang, S. (2012). Premium or discount in hotel room rates? The dual effects of a central downtown location. *Cornell Hospitality Quarterly,* Vol. 53(2), 165-173.

Monson, M. (2009). Valuation Using Hedonic Pricing Models. *Cornell Real Estate Review,* 62-72.

NBTC (2024). Summary holiday Sentiment Monitor. *Netherlands Board of Tourism & Conventions*.

Osborne, M. & Pitchik, C. (1987). Equilibrium in Hotelling's Model of Spatial Competition. *Econometrica,* Vol. 55(4), 911-922.

Ozawa, M. & Kishimoto, T. (2014). Equilibrium and optimal location of retail stores competing with mail order business. *Urban and Regional Planning Review,* Vol. 1.

Rosen, S. (1974). Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition. *Journal of Political Economy,* Vol. 82(1), 34-55.

Sánchez-Pérez, M., Illescas-Manzano, M. & Martínez-Puertas, S. (2019). Modeling hotel room pricing: A multi-country analysis. *International Journal of Hospitality Management*, Vol. 79, 89-99.

Soler, I., Gemar, G., Correia, M. & Serra, F. (2019). Algarve hotel price determinants: A hedonic pricing model. *Tourism Management,* Vol. 70, 311-321.

WDG Consulting. (2024). How Location can Influence your Business's Success, *WDG Consulting*.

Yim, E., Lee, S. & Kim, W. (2014). Determinants of a restaurant average meal price: An application of the hedonic pricing model. *International Journal of Hospitality Management,* Vol. 39, 11-20.

Zhang, Z., Ye, Q. & Law, R. (2011). Determinants of hotel room price: An exploration of travelers' hierarchy of accommodation needs. *International Journal of Hospitality Management,* 23(7), 972-981.

Appendix A

City	Hotels	Distance from city centre
Amsterdam (50 hotels)	3*: Hampton by Hilton Amsterdam / Arena Boulevard	7.7
	4*: DoubleTree by Hilton Amsterdam Centraal Station	0.9
	Hampton by Hilton Amsterdam Centre East	2.9
	DoubleTree by Hilton Amsterdam – NDSM Warf	0.2
	Hilton Amsterdam Airport Schiphol	11.9
	Hampton by Hilton Amsterdam Airport Schiphol	15.6
	3*: Ibis Amsterdam Centre Stopera	1.1
	Ibis Styles Amsterdam City	1.8
	Ibis Styles Amsterdam Amstel	1.8
	Ibis Styles Amsterdam Centraal Station	0.6
	Ibis Amsterdam Centre	0.8
	Ibis Schiphol Amsterdam Airport	8.6
	Ibis Amsterdam City West	3.7
	Ibis Styles Amsterdam Airport	9.5
	4*: Mercure Amsterdam North Station	4.2
	Aparthotel Adagio Amsterdam City South	6.3
	Mövenpick Hotel Amsterdam City Centre	1.5
	Mercure Hotel Amsterdam West	6.4
	TRIBE Amsterdam City	4.3
	Swissôtel Amsterdam	0.2
	Ink Hotel Amsterdam – MGallery	0.3
	Mercure Amsterdam City Hotel	4.5
	Novotel Amsterdam City	4.4
	Mercure Hotel Amsterdam Sloterdijk Station	4.1
	Novotel Amsterdam Schiphol Airport	15.8
	4*: nhow Amsterdam RAI	3.8
	NH Amsterdam Schiphol Airport	14.6
	NH City Centre Amsterdam	0.4
	NH Amsterdam Schiller	0.9
	NH Collection Amsterdam Flower Market	0.7
	NH Amsterdam Museum Quarter	1.9
	NH Amsterdam Zuid	5.2
	NH Amsterdam Noord	2.4
	NH Amsterdam Caransa	0.8
	NH Amsterdam Leidseplein	1.4
	4*: Sir Albert, Amsterdam, a Member of Design Hotels	2.1
	The College Hotel Amsterdam, Autograph Collection	2.3
	Moxy Amsterdam Houthavens	3.4

	Residence Inn Amsterdam Houthavens	3.4
	Corendon Amsterdam New-West, a Tribute Portfolio Hotel	5.2
	Corendon Amsterdam Schiphol Airport, a Tribute Portfolio Hotel	8.8
	Sheraton Amsterdam Airport Hotel and Conference Center	11.5
	Moxy Amsterdam Schiphol Airport	14.5
	Courtyard Amsterdam Airport	16.4
	Sir Adam Hotel Amsterdam, A Member of Design Hotels	1.4
	Apollo Hotel Amsterdam, A Tribute Portfolio Hotel	2.8
	Element Amsterdam	4.7
	Courtyard Amsterdam Arena Atlas	8
	Renaissance Amsterdam Schiphol Airport Hotel	9.5
Barcelona (28 hotels)	3*: Hampton by Hilton Barcelona Fira Gran Via	5
	4*: Alexandra Barcelona Hotel, Curio Collection by Hilton	1.1
	Via Sants Hotel Barcelona, Tapestry Collection by Hilton	2.3
	Hilton Barcelona	3.2
	Hilton Diagonal Mar Barcelona	4.7
	4*: Novotel Barcelona Sant Joan Despi	8.2
	Mercure Barcelona Condor	2.5
	Novotel Barcelona City	2.6
	Novotel Barcelona Cornella	7.7
	3*: NH Barcelona Les Corts	2.8
	NH Barcelona Eixample	1.3
	NH Barcelona Entenza	2.4
	NH Barcelona Diagonal Center	2.3
	4*: NH Sants Barcelona	2.7
	NH Collection Barcelona Constanza	2.8
	NH Collection Barcelona Pódium	0.9
	NH Barcelona Stadium	3.6
	3*: AC Hotel Irla	2.4
	4*: Labtwentytwo Barcelona, a Tribute Portfolio Hotel	3.3
	AC Hotel Sants	2.8
	AC Hotel Diagonal L'Illa	2.8
	Four Points by Sheraton Barcelona Diagonal	3
	AC Hotel Victoria Suites	4.1
	AC Hotel Som	4.3
	AC Hotel Barcelona Forum	4.9

	AC Hotel Sant Cugat	14.1
	Renaissance Barcelona Fira Hotel	5.1
	AC Hotel Gava Mar	17.9
Berlin (32 hotels)	3*: Hampton by Hilton Berlin City Centre Alexanderplatz	2.9
	Hampton by Hilton Berlin City East Side Gallery	4.5
	Hampton by Hilton Berlin City West	3.8
	3*: Novotel Suites Berlin City Potsdamer Platz	1.3
	Ibis Berlin Hauptbahnhof	1.3
	Mercure Hotel Berlin Zentrum	2.8
	Ibis Berlin Kurfuerstendamm	2.7
	Ibis Berlin City Süd	7.6
	4*: Novotel Berlin Mitte	1.9
	Mercure Hotel & Residenz Berlin Checkpoint Charlie	1.3
	Mercure Hotel Berlin City	1.6
	Mercure Hotel Berlin City West	7.4
	Mercure Hotel Potsdam City	25.5
	Mercure Hotel Berlin Wittenbergplatz	2.9
	Mercure Hotel Berlin Tempelhof	5.3
	Mövenpick Hotel Berlin	1.4
	Mercure Hotel MOA Berlin	2.9
	Novotel Berlin am Tiergarten	2.9
	NH Collection Berlin Mitte Friedrichstrasse	0.9
	nhow Berlin	5.2
	NH Collection Berlin Mitte am Checkpoint Charlie	0.9
	NH Berlin Alexanderplatz	4.2
	NH Berlin Kurfürstendamm	3.9
	NH Berlin Potsdamer Platz	1.7
	NH Berlin City Ost	7
	NH Potsdam	25.1
	Courtyard Berlin City Center	1.7
	Moxy Berlin Ostbahnhof	3.6
	AC Hotel Berlin Humboldthain Park	3.7
	Sir Savigny Hotel, Berlin, a Member of Design Hotels	4.1
	Provocateur, Berlin, a Member of Design Hotels	5.3
	MOXY Berlin Humboldthain Park	3.8
Brussels (36 hotels)	Hilton Brussels Grand Place	0.3
	DoubleTree by Hilton Brussels City	1.1
	Hilton Garden Inn Brussels City Centre	1.6
	3*: Ibis Brussels off Grand Place	0.2
	Ibis Brussels City Centre	0.5
	Ibis Brussels Centre Gare Midi	1.5

	Ibis Styles Brussels Centre Stephanie	1.9
	Ibis Brussels Centre Châtelain	3
	Aparthotel Adagio Access Brussels Delta	4.7
	Ibis Brussels Expo Atomium	6.3
	Ibis Brussels Airport	7.1
	Novotel Brussels Airport	9.3
	4*: Novotel Brussels off Grand Place	0.2
	Novotel Brussels City Centre	0.5
	Novotel Brussels Centre Midi Station	1.4
	Pullman Brussels Centre Midi	1.6
	Hotel Mercure Brussels Centre Midi	1.3
	nhow Brussels Bloom	1.4
	NH Collection Brussels Grand Sablon	0.7
	NH Collection Brussels Centre	0.6
	NH Brussels Airport	8.1
	NH Brussels EU Berlaymont	2.1
	NH Brussels Carrefour de l'Europe	0.2
	NH Brussels Grand Place Arenberg	0.4
	NH Brussels Stéphanie	1.5
	3*: Uptown Brussels Hotel	1.1
	Aloft Brussels Schuman	2.1
	4*: The Dominican, Brussels, a Member of Design Hotels	0.3
	Brussels Marriott Hotel Grand Place	0.3
	Courtyard Brussels EU	1.4
	Renaissance Brussels Hotel	1.7
	Marriott Executive Apartments Brussels, European Quarter	1.6
	Moxy Brussels City Center	1.6
	Courtyard Brussels	4.6
	Residence Inn Brussels Airport	7.3
	Sheraton Brussels Airport Hotel	10.8
Budapest (24 hotels)	3*: Hampton by Hilton Budapest City Centre	0.5
	4*: Hilton Garden Inn Budapest City Centre	0.3
	3*: Ibis Budapest Castle Hill	2
	Novotel Budapest City and Budapest Congress centre	2.6
	Ibis Budapest Centre	1.5
	Ibis Budapest City	1.3
	Ibis Styles Budapest Centre	1.5
	Ibis Styles Budapest City	2.7
	Ibis Budapest Heroes Square	2.4
	Ibis Styles Budapest Citywest	4.5

	Ibis Budapest Stadium	4.4
	Ibis Budapest Citysouth	6.8
	Ibis Styles Budapest Airport	17.6
	4*: Mercure Budapest Castle Hill	2
	Novotel Budapest Danube	1.4
	Mercure Budapest Korona Hotel	1.3
	Hotel Nemzeti Budapest – MGallery	1.4
	Novotel Budapest Centre	1..5
	Mercure Budapest City Center Hotel	0.7
	TRIBE Budapest Stadium	4.4
	NH Budapest City	1.4
	Millennium Court, Budapest – Marriott Executive Apartments	0.8
	Courtyard Budapest City Center	1.4
	Four Points by Sheraton Budapest Danube	2.4
Frankfurt (36 hotels)	3*: Hampton by Hilton Frankfurt City Centre East	1.8
	Hampton by Hilton Frankfurt City Centre Messe	2.5
	Hampton by Hilton Frankfurt Airport	9
	4*: Hilton Garden Inn Frankfurt City Centre	1
	DoubleTree by Hilton Frankfurt Niederrad	5.1
	Hilton Frankfurt Airport	9
	Hilton Garden Inn Frankfurt Airport	10.2
	3*: Ibis Frankfurt Centre	1.6
	Ibis Styles Frankfurt City	1.1
	4*: Mercure Hotel Kaiserhof Frankfurt City Center	1.1
	Mövenpick Hotel Frankfurt City	2.2
	Aparthotel Adagio Frankfurt City Messe	2.3
	Novotel Frankfurt City	2.9
	Mercure Hotel & Residenz Frankfurt Messe	3.2
	Mercure Neu-Isenburg	7
	Mercure Hotel Frankfurt Eschborn Helfmann Park	7.7
	Mercure hotel Frankfurt Airport Langen	12
	nhow Frankfurt	2
	NH Collection Frankfurt Spin Tower	1.9
	Avani Frankfurt City Hotel	0.9
	NH Frankfurt Airport	11.9
	NH Frankfurt Airport West	19.1
	NH Frankfurt Messe	1.7
	NH Frankfurt Niederrad	4.7
	3*: Moxy Frankfurt City Center	0.7
	Moxy Frankfurt East	2.6
	4*: Residence Inn Frankfurt City Center	0.7

	LUME Boutique Hotel, Autograph Collection	0.8
	The Pure, a Member of Design Hotels	1.6
	Gekko House, Frankfurt, a Tribute Portfolio Hotel	2.1
	Delta Hotels by Marriott Frankfurt Offenbach	3.5
	Sheraton Offenbach Hotel	5.6
	Moxy Frankfurt Eschborn	8.5
	Moxy Frankfurt Airport	8.8
	Sheraton Frankfurt Airport Hotel and Conference Centre	10.3
	Moxy Frankfurt Airport Kelsterbach	13
Istanbul (28 hotels)	3*: Hampton by Hilton Istanbul Sirkeci	0.8
	Hampton by Hilton Istanbul Old City	2.6
	Hampton by Hilton Istanbul Atakoy	10.5
	Hampton by Hilton Istanbul Kayasehir	21.7
	4*: DoubleTree by Hilton Istanbul – Sirkeci	0.6
	DoubleTree by Hilton Istanbul – Piyalepasa	3.7
	DoubleTree by Hilton Istanbul Topkapi	5.4
	Hampton by Hilton Istanbul Zeytinburnu	5.4
	Hilton Istanbul Bakirkoy	8.5
	Hilton Istanbul Maslak	11.7
	Hilton Garden Inn Istanbul Ataturk Airport	13.9
	Hilton Mall of Istanbul	16
	Hilton Garden Inn Istanbul Beylikduzu	28.8
	Hampton by Hilton Istanbul Arnavutkoy	31.7
	Hampton by Hilton Istanbul Kurtkoy	29
	Doubletree by Hilton Istanbul - Tuzla	32
	3*: Ibis Istanbul Zeytinburnu	7.3
	Ibis Istanbul West	14.9
	Ibis Istanbul Esenyurt	26.6
	Ibis Istanbul Tuzla Hotel	31.9
	4*: Mercure Istanbul Altunizade	5.5
	Ibis Styles Istanbul Bomonti	5.9
	Ibis Istanbul Sisli	6
	Novotel Istanbul Zeytinburnu	7.4
	AC Hotel Istanbul Macka	4.1
	Delta Hotels Istanbul Levent	8.3
	Four Points by Sheraton Istanbul Kagithane	8.9
	Residence Inn Istanbul Atasehir	14.6
London (103 hotels)	3*: Hampton by Hilton London Waterloo	1.6
	Hampton by Hilton London Old Street	3.6
	Hampton by Hilton London Park Royal	11.2

	Hampton by Hilton London Docklands	6
	4*: DoubleTree by Hilton London – West End	1.4
	The Westminster London, Curio Collection by Hilton	1.6
	Hilton London Bankside	1.9
	DoubleTree by Hilton London -Victoria	1.9
	Lost Property St Paul's London – Curio Collection by Hilton	2
	Hilton London Euston	2.1
	DoubleTree by Hilton London – Marble Arch	2.2
	DoubleTree by Hilton London Angel Kings Cross	3
	Hilton London Tower Bridge	3.2
	Hilton Londen Metropole	3.1
	DoubleTree by Hilton London – Tower of London	3.5
	Hilton London Paddington	3.4
	Hilton London Angel Islington	3.5
	Canopy by Hilton London City	3.7
	Hart Shoreditch Hotel London, Curio Collection by Hilton	3.7
	Hampton by Hilton London City	4.2
	DoubleTree by Hilton London Kensington	4.1
	Hilton London Hyde Park	4.1
	DoubleTree by Hilton London – Hyde Park	4.3
	DoubleTree by Hilton London – Chelsea	5.4
	Hilton London Olympia	5.6
	Hilton London Kensington	6
	DoubleTree by Hilton London – Docklands Riverside	6.5
	Hilton London Canary Wharf	7.6
	DoubleTree by Hilton London Greenwich	8.4
	DoubleTree by Hilton London – Ealing	11.2
	DoubleTree by Hilton London ExCel	6.1
	Hilton London Wembley	12
	Hilton London Syon Park	13.3
	Hampton by Hilton London Croydon	14.6
	DoubleTree by Hilton London Kingston Upon Thames	16.2
	Hilton London Croydon	16.7
	DoubleTree by Hilton London Elstree	18.6
	DoubleTree by Hilton London Heathrow Airport	19.8
	Hilton Garden Inn London Heathrow Airport	20.6
	Hilton London Heathrow Airport	22.3
	Hilton Garden Inn London Heathrow Terminals 2 and 3	22.9
	3*: Ibis Styles London Southwark	2.3
	Ibis London City – Shoreditch	3.9

	Ibis Styles London Gloucester Road	4.1
	Ibis London Earls Court	5.5
	Ibis London Docklands Canary Wharf	8.4
	Ibis London Greenwich	8.8
	Ibis London Canning Town	8.2
	Ibis London Stratford	9.3
	Ibis London Excel Docklands	7.2
	Ibis London Wembley	12.1
	Ibis Styles London Ealing	12.7
	Ibis London Elstree Borehamwood	19.4
	Ibis budget London Heathrow Central	19.7
	Ibis London Heathrow Airport	21.2
	Ibis Styles London Heathrow Airport	22.4
	Ibis London Blackfriars	1.6
	Ibis London Shepherds Bush – Hammersmith	6.4
	4*: Mercure London Bloomsbury	1.5
	Novotel London Blackfriars	1.6
	Mercure London Hyde Park Hotel	3.3
	Mercure London Paddington	3.4
	Mercure London Bridge	2
	Novotel London Bridge	2.3
	Novotel London Paddington	4
	Pullman London St Pancras	2.4
	Novotel London Tower Bridge	3.5
	Mama Shelter London Shoreditch	5.3
	Novotel London West	6.6
	Novotel London Canary Wharf	7.3
	TRIBE London Canary Wharf	7.9
	Novotel London Greenwich	8.6
	Aparthotel Adagio London Stratford	9.4
	Novotel London Excel	7.2
	Novotel London Wembely	12
	Novotel London Brentford	12.2
	Aparthotel Adagio London Brentford	12.2
	Mercure London Heathrow	21
	nhow London	3.2
	St Ermin's Hotel, Autograph Collection	1.1
	London Marriott Hotel Marble Arch	2.6
	Inhabit Southwick Street, a Member of Design Hotels	3.1
	Residence Inn London Bridge	3.2
	Residence Inn London Tower Bridge	3.4
	The Dixon, Tower Bridge, Autograph Collection	3.5

	London Marriott Hotel Kensington	4.5
	Hotel Xenia, Autograph Collection	4.5
	London Marriott Hotel Regents Park	4.8
	London Marriott Hotel Maida Vale	5.3
	Residence Inn London Kensington	5.4
	Moxy London Stratford	9.6
	Aloft London Excel	6.3
	Moxy London Excel	5.9
	Courtyard London City Airport	5.9
	Moxy London Heathrow Airport	20.1
	Delta Hotels Bexleyheath	6.1
	Courtyard London Heathrow Airport	21.3
	Sheraton Skyline Hotel London Heathrow	21.5
	London Heathrow Marriott Hotel	21.7
	Delta Hotels Waltham Abbey	20.5
	Renaissance London Heathrow Hotel	22.2
	Sheraton Heathrow Hotel	24.6
	Delta Hotels Heathrow Windsor	29
Lyon (46 hotels)	DoubleTree by Hilton Lyon Eurexpo	8.8
	3*: Ibis Lyon Part Dieu Les Halles	1.6
	Adagio Access Lyon Centre Université	1.1
	Ibis Lyon Centre	1.3
	Greet hotel Lyon Confluence	1.1
	Ibis Lyon Centre Perrache	1.1
	Ibis Styles Lyon Croix Rousse	2.5
	Mama Shelter Lyon.	1.5
	Ibis Styles Lyon Centre – Gare Part Dieu	2.2
	Ibis Styles Lyon Confluence	1.6
	Ibis Lyon Caluire Cité Internationale	4.1
	Ibis Styles Lyon Villeurbanne le Parc de la Tête d'Or	4.1
	Ibis Lyon Gerland Musée des Confluences	2.8
	Ibis Lyon Est Bron	5.7
	Ibis Styles Lyon Bron Eurexpo	8.4
	Ibis Lyon Nord	8.8
	Ibis Styles Lyon Meyzieu Arena Stadium	12.1
	Ibis Lyon Est Beynost A42	14.6
	Hotel Massieux Lyon Nord	16.3
	Ibis Lyon Est Meyzieu	15.9
	Ibis Lyon Sud Chasse sur Rhone	19.3
	Ibis Styles Lyon Sud Vienne	20.3
	Ibis Lyon Villefranche-sur-Saône	25.4
	Ibis Lyon Gerland Rue Mérieux	3.2

	Ibis Lyon Carré de Soie	7.3
	Ibis Lyon Est Chaponnay	14
	4*: Hotel Mercure Lyon Centre Beaux Arts	0.4
	Hotel Mercure Lyon Centre Saxe Lafayette	1.2
	Pullman Lyon	2.1
	Mercure Lyon Centre Château Perrache hotel	1.1
	Hotel Mercure Lyon Centre Brotteaux	2.3
	Hôtel Mercure Lyon Centre – Gare Part Dieu	2.2
	Aparthotel Adagio Lyon Patio Confluence	1.6
	Novotel Lyon Confluence	2.2
	Hotel Mercure Lyon Centre Lumière	3
	Novotel Lyon Gerland Musée des Confluences	2.8
	Hotel Mercure Lyon Charbonnières	7
	Novotel Lyon Bron Eurexpo	8.4
	Hotel Mercure Lyon Genas Eurexpo	12.5
	Hotel Mercure Lyon Est Chapponay	13.8
	Hotel Carlton Lyon – MGallery	0.5
	Hotel Mercure Lyon Centre Plaza République	0.4
	Mercure Lyon Centre Charpennes Parc de la Tête d'Or	2.9
	NH Lyon Airport	19.6
	3*: Moxy Lyon Airport	19.6
	4*: Lyon Marriott Hotel Cité Internationale	3.4
Madrid (42 hotels)	3*: Hampton by Hilton Alcobendas Madrid	15
	4*:DoubleTree by Hilton Madrid-Prado	0.7
	Atocha Hotel Madrid, Tapestry Collection by Hilton	1
	Canopy by Hilton Madrid Castellana	4
	Hilton Madrid Airport	10.7
	3*: Ibis Styles Madrid Prado	0.5
	Ibis Madrid Alcala de Henares La Garena	27.1
	4*: Mercure Madrid Centro	0.9
	Novotel Madrid Center	2.7
	Novotel Madrid City Las Ventas	4.8
	Ibis Styles Madrid Las Ventas	4.8
	Pullman Madrid Airport & Feria	9.1
	Novotel Madrid Campo de las Naciones	9.1
	3*: NH Madrid Atocha	1.6
	NH Madrid Chamberí	2.6
	NH Madrid Barajas Airport	10
	4*: NH Collection Madrid Gran Via	0.4
	NH Madrid Zurbano	2.7
	Avani Alonso Martínez Madrid Hotel	1.5
	NH Collection Madrid Eurobuilding	4.9

	NH Collection Madrid Colón	1.7
	NH Madrid Nacional	1.2
	NH Collection Madrid Abascal	2.5
	NH Madrid Lagasca	2
	NH Madrid Ribera del Manzanares	2
	NH Madrid Principe de Vergara	3.1
	NH Madrid Balboa	2.8
	NH Madrid Paseo de la Habana	4.7
	NH Madrid Las Tablas	9.7
	NH Madrid Ventas	3.9
	3*: AC Hotel Avenida de America	3.6
	AC Hotel Los Vascos	3.6
	4*: Círculo Gran Vía, Autograph Collection	0.5
	Aloft Madrid Gran Via	0.5
	AC Hotel Recoletos	1.4
	AC Hotel Carlton Madrid	1.6
	AC Hotel Atocha	1.9
	AC Hotel Aitana	4.6
	AC Hotel Cuzco	4.8
	AC Hotel Madrid Feria	8.8
	Madrid Marriott Auditorium Hotel & Conference Center	12.8
	AC Hotel Coslada Aeropuerto	14.3
Manchester (20 hotels)	3*: Hampton by Hilton Rochdale	16.3
	4*: Hilton Manchester Deansgate	1
	Hilton Garden Inn Manchester Emirates Old Trafford	4.1
	DoubleTree by Hilton Manchester Airport	12.9
	DoubleTree by Hilton Manchester – Piccadilly	0.3
	Hampton by Hilton Manchester Northern Quarter	0.9
	3*: Ibis Manchester Centre 96 Portland Street	0.4
	Ibis Styles Manchester Portland Hotel	0.2
	Ibis Manchester Centre Princess Street	0.7
	4*: Mercure Manchester Piccadilly Hotel	0.1
	Novotel Manchester Centre	0.4
	4*: Moxy Manchester City	0.8
	Manchester Marriott Victoria & Albert Hotel	1.3
	Manchester Marriott Hotel Piccadilly	0.8
	AC Hotel Manchester City Center	0.7
	Residence Inn Manchester Piccadilly	0.6
	AC Hotel Manchester Salford Quays	3.3
	Hotel Football, Old Trafford, a Tribute Portfolio Hotel	3.8
	Delta Hotels Worsley Park Country Club	10.5

	Delta Hotels Manchester Airport	13.6
Milan (33 hotels)	Hilton Milan	2.5
	DoubleTree by Hilton Milan	5.8
	Hilton Garden Inn Milan North	6.4
	Grand Hotel Villa Torretta Milan Sesto, Curio Collection by Hilton	7.7
	DoubleTree by Hilton Milan Malpensa Solbiate Olona	32.4
	3*: Ibis Milano Centro	1.8
	Ibis Styles Milano Centro	2.2
	Ibis Milano Ca Granda	4.7
	4*: Mercure Milano Centro	1.6
	Novotel Milano Nord Ca Granda	4.7
	Novotel Milano Linate Aeroporto	5.4
	Ibis Styles Milano Est Settala	15.3
	Ibis Milano Fiera	16.7
	Mercure Milano Solari	2
	nhow Milano	2.8
	Avani Palazzo Moscova Milan Hotel	1.9
	NH Collection Milano Touring	1.5
	NH Collection Milano CityLife	3.7
	NH Milano Corso Buenos Aires	2.5
	NH Collection Milano Porta Nuova	1.9
	NH Milano Machiavelli	1.7
	NH Milano Congress Centre	7.8
	NH Milano 2	7.3
	NH Milano 2 Residence	7
	NH Milano Fiera	10.8
	NH Linate	6.5
	3*: Moxy Milan Linate Airport	7
	4*:STRAF, Milan, a Member of Design Hotels	0.1
	Sheraton Diana Majestic, Milan	1.6
	AC Hotel Milano	2.5
	Milan Marriott Hotel	3
	Sheraton Milan San Siro	7.1
	AC Hotel Milan Sesto	7.3
München (41 hotels)	3*: Hampton by Hilton Munich City West	3
	Hampton by Hilton Munich City Center East	4.1
	Hampton by Hilton Munich City North	5.9
	Hampton by Hilton Munich Airport South	24.8
	4*: Hilton Munich City	1.5
	Hilton Munich Park	2.4
	Hilton Garden Inn Munich City West	3.1

	Hilton Garden Inn Munich Messe	12.1
	Hilton Munich Airport	28.9
	3*: Mercure Hotel München Altstadt	0.3
	Mercure Hotel München Olympiapark	3.3
	Mercure Hotel München Schwabing	3.4
	Ibis Styles München Perlach	6.7
	Ibis München Messe	12.2
	4*: Mercure Hotel München City Center	1.3
	Novotel München City	1.3
	Novotel Muenchen City Arnulfpark	2.9
	Mercure Hotel München Neuperlach Süd	7.2
	Mercure Hotel Muenchen Sued Messe	7.4
	Novotel München Messe	8.7
	Mövenpick München Airport	24.9
	4*: NH Collection München Bavaria	1.2
	NH München Ost Conference Center	8.4
	NH München Unterhaching	8.4
	NH München Airport	30.4
	NH München Messe	5
	3*: Moxy Munich Ostbahnhof	3
	4*: Courtyard Munich City Center	1.2
	Aloft Munich	1.2
	Courtyard Munich City East	2.6
	Residence Inn Munich City East	2.5
	Residence Inn Munich Ostbahnhof	3
	Residence Inn Munich Central	2.2
	Four Points by Sheraton Munich Arabellapark	3.5
	Munich Marriott Hotel City West	3.7
	Munich Marriott Hotel	4.3
	Moxy Munich Messe	8
	Courtyard Munich Garching	15.9
	Courtyard Oberpfaffenhofen Munich South	22.4
	Moxy Munich Airport	30.5
	Munich Airport Marriott Hotel	32.1
Paris (219 hotels)	Hotel Camille Paris Garde de Lyon, Tapestry Collection by Hilton	1.8
	Hilton Paris Opera	3.1
	Maison Astor Paris, Curio Collection by Hilton	3.1
	Niepce Paris Hotel, Curio Collection by Hilton	3.1
	Le Belgrand Hotel Paris Champs Elysees, Tapestry Collection by Hilton	4.7
	Canopy by Hilton Paris Trocadero	4.9

	Hilton Garden Inn Paris La Villette	5.4
	Hampton by Hilton Paris Clichy	5.7
	Hilton Paris La Defense	9.1
	Hilton Garden Inn Paris Orly Airport	11.6
	Hilton Garden Inn Massy	15.7
	Hilton Paris Charles De Gaulle Airport	23.2
	3*: Ibis Paris Bastille Opera 11ème	1.7
	Ibis Styles Paris République le Marais	2.1
	Ibis Paris Gare de Lyon Ledru Rollin 12ème	1.6
	Ibis Styles Paris Gare de Lyon Bastille	1.7
	Ibis Paris Bastille Faubourg Saint Antoine 11ème	2.1
	Ibis Styles Paris Gare de Lyon TGV	2.1
	Ibis Paris Gare de Lyon Diderot 12ème	2.1
	Ibis Paris Gare de l'Est 10ème	2.6
	Ibis Styles Paris Gare de l'Est TGV	2.6
	Ibis Paris Gare du Nord La Fayette 10ème	2.8
	Ibis Styles Paris Cadet Lafayette	2.8
	Ibis Paris Père Lachaise	3.2
	Ibis Paris Gare du Nord TGV	3
	Ibis Paris Gare de Lyon Reuilly	2.7
	Ibis Styles Paris Garde de L'Est Château Landon	3.1
	Adagio Access Paris Reuilly Aparthotel	2.7
	Ibis Paris Place d'Italie 13ème	2.4
	Ibis Paris Tour Montparnasse 15ème	2.4
	Ibis Paris Canal Saint-Martin	3.3
	Ibis Paris Gare du Nord Chateau Landon 10ème	3.3
	Ibis Styles Paris Bercy	2.8
	Ibis Styles Paris Pigalle Montmartre	3.3
	Ibis Paris Avenue d'Italie 13ème	2.7
	Ibis Styles Paris Place d'Italie Butte aux Cailles	2.7
	Ibis Paris Gare Montparnasse 15ème	2.9
	Ibis Paris Maine Montparnasse 14ème	2.9
	Ibis Paris Gare Montparnasse Catalogne	2.8
	Ibis Paris Italie Tolbiac 13ème	3
	Ibis Styles Paris Gare Saint Lazare	3.7
	Ibis Styles Paris Tolbiac Bibliotheque	3.1
	Aparthotel Adagio Paris Buttes Chaumont	3.9
	Ibis Styles Paris Maine Montparnasse	3.1
	Ibis Paris Montmartre Sacré-Coeur	3.9
	Ibis Styles Paris Montmartre Batignolles	3.9
	Ibis Styles Paris Alésia Montparnasse	3.2
	Ibis Styles Paris Buttes Chaumont	4.1

	Ibis Paris Bercy Village 12ème	3.5
	Ibis Paris Eiffeltower Cambronne 15ème	3.6
	Ibis Styles Paris Eiffel Cambronne	3.6
	Paris Massena Olympiades	3.6
	Ibis Paris Alésia Montparnasse 14ème	3.5
	Ibis Styles Paris Nation Porte de Montreuil	4.4
	Ibis Paris Nation Davout	4.3
	Ibis Styles Paris Nation Cours de Vincennes	4.3
	Ibis Styles Paris Crimee La Villette	4.8
	Ibis Paris Porte d'Italie	4
	Ibis Styles Paris Montmartre Nord	4.8
	Ibis Styles Paris Meteor Avenue d'Italie	4
	Ibis Paris Ornano Montmartre Nord 18ème	4.9
	Ibis Paris La Villette Cité des Sciences 19ème	5.1
	Ibis Daumesnil Porte Dorée	4.5
	Ibis Paris Porte de Montreuil	4.8
	Ibis Styles paris Porte d'Orleans	4.2
	Ibis Paris Porte de Bercy	4.4
	Ibis Paris Porte d'Orléans	4.2
	Ibis Paris Brancion Parc des Expositions 15ème	4.3
	Ibis Paris 17 Clichy-Batignolles	5.1
	Ibis Paris Vaugirard Porte de Versailles	4.4
	Ibis Styles Paris 15 Lecourbe	4.7
	Adagio Access Paris La Villette Aparthotel	5.5
	Mama Shelter Paris West	5
	Ibis Paris Porte de Clichy Centre	5.8
	Adagio Access Paris Quai d'Ivry Aparthotel	5.5
	Ibis Paris Porte de Vanves Parc des Expositions	5.3
	Aparthotel Adagio Paris XV	5.5
	Adagio Access Paris Clichy Aparthotel	6.1
	Ibis Paris Levallois Perret	6.1
	Ibis Paris Pantin Eglise	6.6
	Ibis Styles Paris Mairie de Clichy	6.5
	Ibis Clichy Centre Mairie	6.6
	Adagio Access Paris Vanves Porte de Chatillon	6.1
	Ibis Styles Paris Saint Denis Plaine	6.8
	Ibis Styles Paris Mairie de Montreuil	7
	Adagio Access Paris Saint-Denis Pleyel Aparthotel	7.3
	Ibis Paris Saint-Denis Stade Sud	7.7
	Ibis Styles Asnieres Centre	7.5
	Ibis Styles Clamart Gare Grand Paris	7
	Ibis Styles Paris 16 Boulogne	7.3

	Ibis Paris la Défense Courbevoie	8
	Ibis Paris Issy Les Moulineaux Val de Seine	7.6
	Adagio Access Paris Asnières Aparthotel	8.3
	Ibis Paris La Défense Esplanade	8.1
	Mama Shelter Paris La Défense	8.1
	Ibis Styles Paris Boulogne Marcel Sembat	8
	Greet Hotel Boulogne Billancourt Paris	8.1
	Aparthotel Adagio Access La Défense Puteaux	8.5
	Aparthotel Adagio Access La Défense Place Charras	8.8
	Ibis Paris Boulogne Billancourt	8.6
	Ibis Styles Paris La Defense Courbevoie	9
	Ibis Paris Pont de Suresnes	9.1
	Ibis Styles Bobigny Centre Préfecture	9.8
	Ibis Styles Puteaux Paris La Defense	9.5
	Ibis Styles Paris Val de Fontenay	10.1
	Ibis Nogent sur Marne	10.6
	Ibis Nanterre la Défense	10.8
	Aparthotel Adagio Access Colombes La Defense	11.3
	Ibis Paris Rueil Malmaison	12.4
	Ibis Paris Avenue de la Repulique	2
	Ibis Paris Grands Boulevards Opera 9ème	2.5
	Ibis Styles Paris Gare de l'Est Magenta	2.6
	Ibis Paris Opéra La Fayette 9ème	2.6
	Ibis Styles Paris Batignolles	4.6
	Ibis Styles Paris Porte de Versailles, Issy Mairie	6.4
	4*: Novotel Paris Les Halles	0.9
	Hôtel Mercure Paris Notre Dame Saint Germain des	0.5
	Prés	0.6
	Hotel Mercure Paris La Sorbonne Saint Germain des	1.7
	Prés	2.2
	Mercure Paris Gare de Lyon Opéra Bastille	2
	Hotel Mercure Paris Opéra Louvre	
	Mercure Paris Gare de Lyon TGV Hotel	2.2
	Hotel Stendhal Place Vendôme Paris-MGallery	
	Novotel Paris Gare de Lyon	2.1
	Hotel Mercure Paris Bastille-Saint-Antoine	2.1
	Hotel Mercure Paris Gare de l'Est Magenta	2.7
	Novotel Paris 20 Belleville	2.9
	Aparthotel Adagio Paris Opéra	2.7
	25hours Hotel Paris Terminus Nord	3
	Novotel Paris Centre Bercy	2.7
	Hotel Mercure Paris Place d'Italie	2.5

	Aparthotel Adagio Paris Montmartre	3.5
	Pullman Paris Montparnasse	2.7
	Mercure Paris Pigalle Sacre Coeur	3.4
	Hotel Mercure Paris Gare Montparnasse TGV	2.8
	Aparthotel Adagio Paris Haussmann Champs-Elysées	3.6
	Hotel Mercure Paris Montmartre Sacré-Coeur	3.9
	Aparthotel Adagio Paris Bercy Village	3.6
	Pullman Paris Centre – Bercy	3.5
	Aparthotel Adagio Paris Nation	3.8
	Mercure Paris Montparnasse Pasteur	3.6
	Novotel Paris Vaugirard Montparnasse	3.7
	Mercure Paris Alésia	3.8
	Too Hotel Paris – MGallery	3.9
	Pullman Paris Eiffeltower	4.2
	Hotel Mercure Paris Centre Eiffeltower	4.3
	Hotel Mercure Paris Eiffeltower Grenelle	4.2
	Novotel Paris 14 Porte d'Orléans	4.1
	TRIBE Paris Batignolles	4.8
	Novotel Suites Paris Montreuil Vincennes	4.7
	Novotel Paris 13 Porte d'Italie	4.2
	Aparthotel Adagio Paris 19ième Cité de la Musique	5.1
	Hotel Mercure Paris Porte d'Orléans	4.2
	Novotel Paris East	5
	Hotel Mercure Paris Arc de Triomphe Wagram	4.8
	Novotel Suites Paris Expo Porte de Versailles	4.3
	Hotel Mercure Paris 19 Philharmonie La Villette	5
	Hotel Mercure Paris 17 Batignolles	5
	Hotel Mercure Paris Arc de Triomphe Étoile	4.9
	Aparthotel Adagio Paris Centre Eiffeltower	4.7
	Hotel Mercure Paris 15 Porte de Versailles	4.8
	Aparthotel Adagio Paris Montrouge	4.6
	Hotel Mercure Paris Porte de Pantin	5.5
	Aparthotel Adagio Paris Malakoff Châtillon	4.7
	Novotel Paris Centre Eiffeltower	4.9
	Novotel Paris Charenton-le-Pont	5
	Novotel Paris Porte de Versailles	5
	Hotel Mercure Paris Saint-Ouen	5.7
	Novotel Paris 17	5.6
	Hotel Mercure Paris Vaugirard Porte de Versailles	5
	Hotel Mercure Paris Porte de Versailles Expo	5.2
	Hôtel Mercure Paris Tour Eiffel Pont Mirabeau	5.2
	Hotel Mercure Paris Ivry Quai de Seine	5.3

	Hôtel Mercure Paris Malakoff Parc des Expositions	5.1
	Aparthotel Adagio Porte de Versailles	5.6
	Novotel Suites Paris Issy les Moulineaux	7
	Mercure Paris Boulogne Hotel	7.1
	Novotel Suites Paris Stade de France hotel	7.9
	Novotel Paris La Défense Esplanade	8.1
	TRIBE Paris La Défense Esplanade	8.2
	Aparthotel Adagio la Défense Courbevoie	8.4
	Hotel Mercure Paris La Defense	8.5
	Aparthotel Adagio Suresnes Longchamp	8.8
	Novotel Paris Suresnes Longchamp	9
	Hotel Mercure Paris Suresnes Longchamp	9.4
	Novotel Paris Val de Fontenay	10
	Hotel Mercure Paris Val de Fontenay	10
	Novotel Paris Point de Sevres	9.9
	Hotel Hôtel & Résidence Mercure Paris La Defense	10.5
	Parc	12.3
	Mercure Paris Nanterre	13.9
	Novotel Paris Rueil Malmaison	2.3
	Hôtel Mercure Paris Opera Grands Boulevards	2
	Hotel Mercure Paris Montparnasse Rapsail	
	Hotel Mercure Paris Bercy Bibliothèque	2.3
	Mercure Paris Opéra Garnier-Hotel & Spa	3
	Hotel Mercure Paris Centere Gare Montparnasse	2.5
	Novotel Paris Gare Montparnasse	3
	Hôtel Mercure Paris Saint Cloud Hippodrome	10.2
	NH Paris Champs-Elysées	3.6
	NH Paris Opéra Faubourg	2.6
	NH Paris Gare de l'Est	2.6
	3*: Moxy Paris Bastille	1.5
	Moxy Paris Charles de Gaulle Airport	23.2
	4*: Courtyard Paris Gare de Lyon	1.8
	Paris Marriott Opera Ambassador Hotel	2.4
	Le Pigalle, a Member of Design Hotels	3.3
	Courtyard Paris Arcueil	5
	Le Méridien Etoile	5.6
	Courtyard Paris Porte de Versailles	5.5
	AC Hotel Paris Porte Maillot	6
	Courtyard Paris Saint Denis	7.7
	Le Parchamp, Paris Boulogne, a Tribute Portfolio Hotel	8.5
	Renaissance Paris La Defense Hotel	9.6
	Courtyard Paris La Defense West – Colombes	11

	Renaissance Paris Hippodrome de St. Cloud Hotel	11.4
	AC Hotel Paris Le Bourget Airport	13.4
	Paris Marriott Charles de Gaulle Airport Hotel	20.8
	Residence Inn Paris Charles de Gaulle Central Airport	23.2
	Courtyard Paris Charles de Gaulle Central Airport	23.1
	Sheraton Paris Charles de Gaulle Airport Hotel	23.2
Rome (29 hotels)	3*: Hampton by Hilton Rome East	10.6
	4*: DoubleTree by Hilton Rome Monti	1.3
	Cosmopolita Hotel Rome, Tapestry Collection by Hilton	0.3
	Hilton Garden Inn Rome Claridge	3.1
	Hilton Rome Eur La Lama	7.3
	Hilton Garden Inn Rome Airport	20.3
	Hilton Rome Airport	22
	Hampton by Hilton Rome North Fiano Romano	28.7
	3*: Mercure Rome Piazza Bologna	3.6
	Ibis Rome Fiera	10.9
	4*: Mercure Rome Centre Colosseum	1.6
	Mercure Rome Corso Trieste	3.8
	Aparthotel Adagio Rome Vatican	4.7
	Ibis Styles Roma Aurelia	5.3
	Ibis Styles Rome Eur	7.6
	Novotel Rome Eur	8.5
	Novotel Roma Est	11.4
	Mercure Rome West	12.8
	Mercure Rome Leonardo da Vinci Airport	24.3
	NH Collection Roma Giustiniano	1.9
	NH Collection Roma Vittorio Veneto	1.8
	NH Roma Villa Carpegna	3.6
	NH Collection Roma Centro	1.9
	Palazzo Velabro, a Member of Design Hotels	0.7
	Rome Marriott Grand Hotel Flora	1.6
	Le Méridien Visconti Rome	1.6
	The Regency, Rome, a Tribute Portfolio Hotel	1.9
	Sheraton Rome Parco de' Medici	10.8
	Rome Marriott Park Hotel	10.8
Vienna (28 hotels)	3*: Hampton by Hilton Vienna Messe	2.4
	4*: Hilton Vienna Park	0.8
	Hilton Vienna Waterfront	3.6
	DoubleTree by Hilton Vienna Schonbrunn	4.6
	3*: Ibis Wien Messe	2.4
	Ibis Wien Hauptbahnhof	2.6

	Ibis Wien City	2.8
	Ibis Wien Mariahilf	3
	Ibis Styles Wien City	3.1
	Ibis Vienna Airport	10.7
	4*: Hotel Mercure Wien City	0.8
	Aparthotel Adagio Vienna City	0.8
	Novotel Wien City	0.9
	Hotel Am Konzerthaus Vienna MGallery	1
	Mercure Grand Hotel Biedermeier Wien	1.1
	Novotel Wien Hauptbahnhof	2.6
	Novotel Suites Wien City Donau	2.6
	Hotel Mercure Wien Westbahnhof	2.8
	Mercure Hotel Raphael Wien	3.1
	NH Vienna Airport Conference Center	17
	NH Collection Wien Zentrum	2.2
	NH Wien Belvedere	1.6
	NH Danube City	4.7
	NH Wien City	1.7
	3*: Moxy Vienna Airport	17.1
	4*: Imperial Riding School, Autograph Collection	1.6
	Courtyard Vienna Prater/Messe	3
	Renaissance Wien Hotel	4.2
Warsaw (20 hotels)	3*: Hampton by Hilton Warsaw City Centre	0.7
	Hampton by Hilton Warsaw Reduta	4.5
	Hampton by Hilton Warsaw Airport	6.1
	Hampton by Hilton Warsaw Mokotow	6.3
	4*: Hilton Warsaw City	1.4
	DoubleTree by Hilton Hotel & Conference Centre Warsaw	10.6
	3*: Ibis Styles Warszawa City	1
	Ibis Warszawa Stare Miasto (Old Town)	2.6
	Mercure Warszawa Airport	5.2
	Ibis Styles Warszawa Airport	8.5
	Ibis Styles Warszawa West	10.1
	Ibis Styles Warszawa Centre	2.5
	Ibis Warszawa Reduta	3.2
	4*: Novotel Warszawa Centre	0.6
	Hotel Mercure Warszawa Grand	1
	Novotel Warszawa Airport	4.9
	Mercure Warszawa Ursus Station	8.3
	Mercure Warszawa Centre	0.3

	Four Points by Sheraton Warsaw Mokotow Courtyard Warsaw Airport	5.3 7.1

Appendix B

Table 2: Correlation table

	Distance (km)	4Stars	Pool	Airport
Distance (km)	1.000			
4Stars	0.012	1.000		
Pool	0.086	0.201	1.000	
Airport	0.559	0.068	0.073	1.000

Appendix C

Table 8: Non-linear regression analyses of relation between distance and price for distance categories version 2.

	19-9	14-11	18-7	26-12
3-6 kilometres	-42.145***	-27.469**	-35.442***	-29.398***
	(12.572)	(10.918)	(10.997)	(9.718)
6-9 kilometres	-71.969***	-15.694	-72.091***	-41.748***
	(15.870)	(14.291)	(14.026)	(12.561)
9+ kilometres	-102.728***	-69.071***	-91.872	-59.647***
	(15.095)	(13.425)	(13.387)	(12.071)
Pool	9.112	2.368	1.287	-1.911
	(10.397)	(9.100)	(9.121)	(8.060)
Airport	1.529	-13.052	7.811	-4.723
	(12.889)	(11.463)	(11.515)	(10.258)
Competition	0.139***	0.087***	0.084***	0.104***
	(0.021)	(0.018)	(0.018)	(0.162)
4Stars	86.282***	74.027***	73.501***	70.547***
	(7.748)	(6.774)	(6.773)	(5.954)
Hilton	47.986***	50.353***	50.930***	42.317***
	(9.572)	(8.490)	(8.437)	(7.516)
NH group	60.001***	32.240***	13.602	36.811***
	(11.564)	(10.187)	(10.073)	(9.224)
Marriott	45.815***	55.072***	51.854***	56.562***
	(9.536)	(8.298)	(8.441)	(7.333)
Constant	179.813	161.101	165.498	132.774
	(9.681)	(8.504)	(8.519)	(7.605)
R^2	0.373	0.313	0.330	0.363
Observations	779	792	786	782

Dependent variable is price on 19-9; Standard errors are in between brackets (); *p<0.1 **p<0.05 ***p<0.01.

Table 9: Non-linear regression analyses of relation between distance and price for distance categories version 3.

	19-9	14-11	18-7	26-12
5-10 kilometres	-70.831***	-18.621	-64.505***	-44.884***
	(12.916)	(11.553)	(11.381)	(10.065)
10-15 kilometres	-103.040***	-59.743***	-91.703***	-54.974***
	(18.903)	(16.840)	(16.572)	(15.227)
15+ kilometres	-92.120***	-76.428***	-91.069***	-66.559***
	(18.451)	(16.704)	(16.693)	(14.529)
Pool	6.823	-0.895	0.130	-4.834
	(10.329)	(9.107)	(9.061)	(7.987)
Airport	7.549	-8.172	6.803	3.182
	(13.234)	(11.882)	(11.695)	(10.473)
Competition	0.133***	0.082***	0.079***	0.095***
	(0.015)	(0.013)	(0.013)	(0.012)
4Stars	87.868***	74.182***	74.559***	72.241***
	(7.655)	(6.732)	(6.686)	(5.841)
Hilton	46.363***	49.151***	48.927***	40.840***
	(9.497)	(8.480)	(8.358)	(7.397)
NH group	60.858***	33.150***	14.527	36.972***
	(11.467)	(10.174)	(9.990)	(9.097)
Marriott	44.928***	53.845***	48.709***	54.653***
	(9.476)	(8.299)	(8.373)	(7.241)
Constant	171.643	155.947	159.372	128.217
	(8.772)	(7.745)	(7.699)	(6.846)
R^2	0.383	0.314	0.339	0.380
Observations	779	792	786	782

Dependent variable is price on 19-9; Standard errors are in between brackets (); *p<0.1 **p<0.05 ***p<0.01.