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WHAT DETERMINES THE PRICE OF AIRLINE TICKETS?

Presents

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ABSTRACT

The purpose of this paper is to examine the determinants of airline tickets' price. This paper provides the information on the background of the international airline industry, airline's pricing strategies and regression results. Pricing data and other variables were collected from the airline's websites. Prices were collected from 5 airlines and 6 different routes for 3 main classes, e.g. economy class, business class and first class. In total, 759 observations and 7 determinants were collected. In addition, the results suggest that business and first class seats are relatively more expensive than economy class seats for longer flights. This implies that passengers value luxury more for longer flights. Moreover, it is found out that, after keeping other variables constant, flights that arrive in the morning tend to be cheaper than flights that arrive at other times of the day.

I. Introduction

To travel domestically or internationally, there are many transportation choices for you to choose. For example, travelling by train, by bus, by ship and by plane. It is believed that people tend to go for air travel more these day. Since, it is the safest transportation and takes less time to reach the destination. There are a lot of advantages in travelling by plane. However, it need to trade off with a higher transportation cost. Not even a higher transportation cost you need to pay, sometimes you need to face with an unreasonable price as well. You might wonder why each airline offers a different price even they all take you to the same destination. No matter what types of class seat they fly, not only the conveniences they paid for but there are many other determinants that the airlines charge them as well. This leads to the research question “What determines the price of airline tickets?”.

The focus of this paper will be on examining the determinants of airlines’ ticket price. The paper uses the OLS, the Ordinary Least Squares, in estimating the results. In total, 759 observations and 7 determinants were collected. The prices of airline tickets were collected from 5 airlines and with 6 different routes. The organization of this paper is as follow. Section II shows the literature reviews that related to this paper. Section III provides theoretical frameworks on airline’s pricing strategies. Section IV gives the information on classes of seat. Section V provides the details on methodologies. Section VI lists hypothesis of what influences the airlines in setting the ticket’s price. Section VII presents the results and section VIII shows the conclusions. Section IX specifies the limitation of the study. Apart from examining the determinants, this paper tries to support some of the hypotheses by using the regression results as a key factor.

II. Literature reviews

When there is a product, surely they come with price. (INCquity) stated that there are 3 main factors that we need to consider when we set the price, those are 1. Break Even point and the Target on Profitability 2. Market Demand and 3. Competitors. They also elaborate more on the break-even point and the target on profitability that it is the first thing that we should considered since it helps firm to survive in the industry. Certainly, according to the Law of demand and supply, pricing would follow with market mechanism. For the last factor that is competitors, we need to consider the way the competitors set their own price. Since, the competitor's price can affect the consumers' decision on making a purchase as well.

Nowadays, in the world of competition, just lowering the costs might not help firm compete with its competitors. Vichitrasawat(2012) claimed that the strategy of the "Dynamic pricing" or "Revenue management" would be another strategy that helps firms determine the price of the product according to the demand on each group of the consumer. Surprisingly, airline industry is the first industry that has been using this strategy to increase its revenue. Based on the 2 main groups of consumer, which are tourists and business travelers. Tourists are considered as a group of consumer, who must do a plan, survey and also compare the tickets' price among the listed airlines before they fly. Moreover, they also book their flight 2-3 weeks in advance. They tend to have high price elasticity. Unlike the business travelers, who usually has no advance warning when he or she will travel. Therefore, this group of passengers has very low price elasticity, meaning they can pay at a higher price to guarantee their travel (Scott, 2010).

In fact, an airline attempts to segment its market in one flight as much as possible only if the consumers' willingness to pay is known. Once the willingness to pay for each passenger is known, the airline then adjusts the price according to the types of passengers (Botimer, 1996). In addition, for the segmented pricing in airline industry, customers are

charged more based on their willingness to pay. For example, business travellers are willing to pay a higher price for an airline ticket that fly in the morning time. Some customers are willing to pay more in order to get more features. For example, the tickets may be sold with a travel insurance (Magloff, 2014). Therefore, this is a reason why the airline industry has been using a dynamic pricing and segmented pricing strategy to determine the price for the business travelers to be more expensive than those of tourists.

With different airlines, it comes with different way of pricing. For examples, some airlines divided their tickets by the age of passengers; child and adults. Some divided their tickets by departure date; the tickets with departure date is on Monday till Thursday (weekday) might be cheaper than those with departure date is on Friday till Sunday (weekend). Some divided their tickets by flight time; if the flight time were during the early morning 05.00-06.00am or after midnight, the tickets' price would be cheaper when compared to the usual price (Skyhigh, 2012).

Skyhigh (2012) also presume that each airline would determine their tickets' price by the following types; 1.) Determine the tickets' price by classes; First class, Business class and Economy class. However, some airlines may divided the classes more, for example, Deluxe class, is the class between the Business class and Economy class. 2.) Determine the tickets' price by period of time; peak season, high season and low season. 3.) Determine the tickets' price by Festival holiday. 4.) Determine the tickets' price by the number of seats on the airplane.

By setting the tickets' price, firms need to consider both controllable and uncontrollable factors. Rick (2014) claimed that there are several surprising factors that can influence the price of airline tickets. For example; 1.) Price of fuel, it is considered as an uncontrollable factor, since the airline cannot fix the cost of the fuel price. 2.) Flight distances, passengers may think that the farther the distances, the more expensive they need

to pay. However, this is not always true. Since, there are several factors that can contribute the price of airline tickets, and flight distance is just one of them. 3.) Competition, there are many airlines that provide the same routes for the passengers. The more the airlines generated, the more competitions in the airline industry. 4.) Timing of purchase does matters here, as you can see the tickets' price change all the time. So, it does not guarantee that if you buy the ticket in advance, you will get a cheaper price. However, it depends on the demand and supply of the ticket as well. 5.) Timing of flight, it is the time when you fly, I would say that if you fly during Thanksgiving and Christmas, the airlines have more incentive to charge you at a higher price. Since, there are a lot of demands for the tickets. 6.) Fees, some airlines decide to charge fee from the passengers as most airlines do now. For example, charges for checked bag, carry-ons or even the service on flight.

However, it does not guarantee that the above factors are factors that the airlines always use to determine the tickets' price. All in all, to do a ticket pricing, it needs to consider other uncontrollable factors as well. For example, fuel prices, parking rental, service cost, etc. So, this paper aims to show the regression results that can support some of the above factors.

III. Theoretical frameworks

Surely, the airlines have the theories on setting their price. Basically, you can notice from the way the airlines set the class seats into different levels. This might be one of the strategies that the airlines use to capture the willingness to pay of each consumer. However, from what you have ever experienced you might not even know that it is a kind of price discrimination that plays the important roles here. Most of the airlines used the price discrimination as the pricing strategy. The following are some information on the price strategies and theory in which are used in airline industry.

1.) Price discrimination (Third Degree Price Discrimination or Market Segmentation)

Price discrimination means when firms are charging the different price on the different group of consumers. For the airline industry, airlines can charge consumers in different price depending on time of use (when will the passengers take flight such as during low season or high season), when the tickets were bought and depending on the willingness to pay (which class seats they choose).

First, time of use. You can see that during high season for example during Christmas and New Year's holiday, the tickets will be more expensive than the usual time. Since, the passengers have to pay at the price that the airlines have set anyway. They have no choice to choose. Moreover, the price of weekdays and weekends' tickets is slightly different in some cases. Some airlines set the price of the ticket that takes flight on weekends higher than those on weekdays. However, the airlines do keep in mind that they can capture the revenue from those who are businessman that have to fly for the business trip on the early Monday morning. This can be the reason that the airlines can set price higher on the weekdays.

Second, time of purchase, some airlines industry has monitor the online system on pricing the tickets. For example, the airlines set the total numbers of the first 50 tickets to be 2,190 baht each, after they sold out all the first 50 tickets, the price of the 51st -100th ticket will be automatically change to be slightly cheaper or more expensive due to the system of each airlines. Furthermore, when the flight is approaching to the departure date and there are still be more seats leftover, the airlines will decide to set a price lower in order to attract the consumers to purchase the ticket. However, if there exists a few seats leftover, the airlines will set the price higher since the seats might be the most wanted seats for those who have to buy it at any price. Basically, most of travellers do keep in mind that if they made an advance booking, they would get a cheaper price. This is not always true since, the airlines themselves

be the main actor who has power to set the price. However, there are some other external factors as well which will be studied further in this paper.

Third, the class seats would be the most obvious factor that can explain the price discrimination. Generally, the airlines have set their class seats into 3 main classes, which are economy class, business class and first class in order to capture the different group of consumers who have different willingness to pay. It is no surprise to say that you cannot make an omelet without breaking eggs. Meaning you may need to sacrifice some of your money for a better experience on flying with business or first class seats even it might cost you more than twice from the price of an economy class seat. Some would say that it is not worth to spend money on those expensive tickets for just getting a more comfortable seat. However, people value things differently. Some people may concern more on their convenience and even more on their health, since you can sit on a softer seat, get more spaces for leg-rest and a better food. Moreover, convenience in this case may be the way the passengers get treated luxuriously. For example, you get to board first and you are off the plane first. Some people just want to earn more miles in order to redeem a cheaper ticket price for their next travel. Some people think just flying with economy class would be fine enough for them. However, these are all depending on each consumer's willingness to pay.

1.1) Dynamic Pricing

Dynamic pricing is one of the pricing strategies that is considered as a type of price discrimination theory. However, there is some difference between them. Dynamic pricing tries to maximize the firm's revenue by setting the price according to the changing in consumers' demand. We consider both elastic and inelastic passengers. For example, those passengers who are sensitive to price change, when the ticket prices decreased, their demand for these tickets increased such as leisure travellers

(Magloff, 2015). Thus, most airlines do keep in mind that to maximize their profit, they need to consider the changes in passengers' demand as well.

1.2) Peak-Load pricing

It is said that with a high demand in the market, firm can increase its price whereas when there is a low demand, firm will set prices lower. This pricing strategy is related to what I have mentioned in the 1.) Price discrimination (Third degree price discrimination). For example, if the passengers book the tickets that fly during high season, it would be no surprise for the tickets' price to be more expensive than those during usual time. Since, during high season, there is more demand for the tickets.

2.) Customer segmentation

Different passengers have different travel needs. For the business travellers, they want less restriction on price. Sometimes, they are willing to pay more in order to meet their needs. Unlike, other types of passengers who have limited in budget. They are willing to accept more restrictions on tickets to get a lower price of tickets. In the airline industry, there are many customer segments, for example; the business travellers, individual traveller, leisure travellers, tours, labor and student (Thomas).

IV. Information on classes of seat

In generally, airlines divided their class seats into 3 main classes. However, there are several sub classes that the airlines use to segment the group of the passengers.

(i.) First class

It is the class seats that offer the best service and luxurious accommodation. Seats are located toward the front of the aircraft, which have more space and privacy. The First class passengers usually have special check-in at the airport and they also allowed

entering the lounges at airports while they are waiting for their flights. The passengers can board the aircraft before the other passengers too. So, the price of the first class seats is usually much more expensive than business class and economy class. Moreover, within the first class itself, it is divided into 3 sub-classes which are; P (First Class Premium), F (First Class) and A (First Class Discounted).

(ii.) Business class

This class provides the best services down from the first class. It is the class that considered having an intermediate level of service between first class and economy class. However, the price of business class is sometimes slightly different from the price of first class and a lot different from economy class. Within the business class itself, there are 5 sub-classes which are; J (Business Class Premium), C (Business Class) and D, I, Z (Business Class Discounted).

(iii). Economy class

Another name of economy class is coach class. The economy class varies among airlines. Some airlines provide the audio and visual entertainment and meals, while some airlines charge an additional fee for those entertainments. Even in the economy class itself, there are many sub classes as well, for example; W (Economy Premium), S (Economy), Y (Economy) and B, H, K, L, M, N, Q, T, V, X (Economy Discounted).

V. Methodologies

In order to answer the research question, I have designed the framework on collecting the price of airline tickets within 5 airlines and 6 routes. For the airlines, there are 1.) Thai Airways, 2.) Cathay Pacific Airways, 3.) Singapore Airlines, 4.) Emirates and 5.) Lufthansa. For the routes, there are 1.) Singapore, 2.) Hong Kong, 3.) Japan, 4.) United States of America, 5.) France and 6.) United Kingdom. All the routes are departed from Bangkok,

Thailand. I have collected the price of airline tickets from four classes which are 1.) Economy saver class, 2.) Economy flexible class, 3.) Business class and 4.) First class. All the price of the airline tickets were collected from each airlines' website. The departure dates are during the 19-25 October, 24-31 December, 1-4 January, 6-14 February, 12-15 April, 20 June and 12 August. High season will be during 24-31 December, 1-4 January and 12-15 April. Other time periods will consider as low season. To be more understandable in what determines the price of airline tickets, a regression model is specified.

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n + \varepsilon_i$$

On the left hand side, it is an endogenous variable (Y) which determined by all exogenous variables (X). In this paper, we focus on 8 endogenous variables; 1.) Price of economy saver class, 2.) Price of economy flexible class, 3.) Price of business class, 4.) Price of first class, 5.) Relative price of the business class to economy flexible class, 6.) Relative price of the first class to economy flexible class, 7) Price of business class per mile and 8.) Price of first class per mile. With 7 exogenous variables; 1.) Distance which measured in terms of miles. The shortest route is 881 miles which is the route to Singapore. The longest route is 8677 miles which is the route to New York. 2.) Day (if 1=weekend, 0=weekday), 3.) Season (if 1= high season, 0=low season), 4) Flight (if 1=indirect flight, 0=direct flight), 5) Difference (means the difference in number of days between the booking date and departure date). The lowest difference is 1 day whereas the highest difference is 299 days. 6.) Departure time and 7.) Arrival time. For these variables (Departure and Arrival time), it divided into 3 period of times; morning(06.00am-11.59pm), noon(12.00pm-17.59pm) and night(18.00pm-05.59am), if 1=itself, 0=otherwise. By using the night departure and night arrival as the baseline. For example morning departure=1 means the flight takes off in the morning time(during

06.00am-11.59am). Moreover, I also include 4 airlines dummy variables which are 1.) Cathay Pacific Airways, 2.) Emirates, 3.) Lufthansa and 4.) Singapore Airlines by using Thai Airways as the baseline. A number of observations are as follow; 23 observations for Cathay Pacific Airways, 84 observations for Emirate, 63 observations for Lufthansa, 126 observations for Singapore Airlines and 463 observations for Thai Airways. All the data were collected in the Microsoft Excel. In addition, regression is required in this study in order to examine the determinants that determines the price of airline tickets. I have run a regression with the above endogenous and exogenous variables.

Table 1
Summary Statistics

<i>Variables</i>	<i>Observation</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Price of Economy Saver	560	16553.96	9954.523	6045	53845
Price of Economy Flexible	737	36178.02	26225.22	8690	173795
Price of Business class	580	73183.5	50615.62	15265	281550
Price of First class	501	122852.4	94659.15	15255	395895
Relative price between Business class to Economy flexible	571	195.4425	53.70351	69.62135	329.4488
Relative price between First class to Economy flexible class	497	322.8879	161.1952	128.8503	740.291
Price of Economy saver per mile	560	6.226356	2.645387	3.105336	21.42245
Price of Economy flexible per mile	737	9.281591	3.269635	4.118935	24.37203
Price of Business class per mile	580	15.86336	2.256305	12.00876	32.44785
Price of First class per mile	501	26.01778	10.65245	17.31555	64.85252
Distances	759	4512.08	3209.593	881	8677
Day	759	0.4123847	0.4925883	0	1
Season	759	0.5309618	0.4993695	0	1
Flight	759	0.5006588	0.5003293	0	1
Differences	759	112.5534	66.142	1	299
Morning Departure	759	0.2819499	0.4502458	0	1
Noon Departure	759	0.2345191	0.4239773	0	1
Morning Arrival	759	0.4044796	0.4911147	0	1
Noon Arrival	759	0.3372859	0.4730951	0	1

Note: Summary statistics provide the data in Observation, Mean, Standard Deviation, Minimum and Maximum.

VI. Hypotheses

Before analyzing the regression results, I have come up with the hypothesis of what determines the price of airline tickets.

- 1.) The price of the long route's tickets would be more expensive than the short route's tickets. Since they need to pay more fuel fee as well as the service fee.
- 2.) The price of the tickets that considered as a direct flight would be cheaper than the indirect flight. Since for the indirect flight, the airline needs to pay for the parking rental.
- 3.) If the passengers make an advance booking, they would get a cheaper price (Brian, 2013).
- 4.) During a holiday's period, the tickets' prices that have been booked on weekday will be cheaper than the weekend's ticket. Because people tend to fly on weekend for their holiday trip for example, Friday's night.
- 5.) During high season, for example, Thanksgiving and New Year holiday, the price of tickets would be more expensive than the usual time. Since, there is a lot of demand for the airline tickets during high season (Melonyce, 2006).
- 6.) If you book the ticket with the airlines that belongs to the origin's country, the price will be more expensive. Since, most of the travellers will get the service that accustomed to their nation. For example, Thai people booked the flight from Thai Airways that take off from Bangkok to Hong Kong. This is called the " Host Hospitality".

VII. Results

After running the regression with several endogenous variables, I decide to focus on the results from running a regression with 4 endogenous variables that are 1.) Relative Price

between the Price of Business class to Economy Flexible class, 2.) Relative Price between the Price of First class to Economy Flexible class, 3.) Price of Economy save per mile and 4.) Price of Economy flexible per mile ” as shown in Table 2.

The result from running a regression with “*Relative Price between the Price of Business class to Economy Flexible class*” as an endogenous variable, tells us that the relative price tends to increase as the distance increases. Next, for the variable “season”, it comes with a negative sign, which implies that, the relative price between Business class to Economy flexible class are not that much different when the passengers take a flight during high season. Since, the airlines may consider the consumers’ demand as the core factor in setting price. They realize that during high season, the passengers demand more for the tickets. So, most of the airlines tend to charge a higher price not only for the business class but for economy class as well. Moreover, the relative price tends to be smaller when the flight is considered as an indirect flight. Flights that departed during morning and noon (06.00a.m. -17.59 p.m.) influence the relative price to be smaller as well. However, with the flights that arrive in the morning time give us a larger difference in relative price. Here, the airlines may think that they can charge a higher price for the flight that arrive in the morning time, since those who need to arrive in the morning time tend to be businessmen which tend to fly with business class.

Among 4 airlines, I have found out that Emirates provide the larger difference in the relative price between the Business class to Economy flexible class whereas Lufthansa gave us the smallest differences. In this case, the result shows that there are some variables that are insignificant to explain the relative price as well. Those are “day”, “difference” and “noon arrival”.

For the other relative price variable, we look at the “*Relative price between the prices of First class to Economy flexible class*”. The result is slightly difference from the previous

relative price. Since, it appears to have a significant on morning arrival instead of noon arrival. However, the result also suggests that the difference in prices becomes larger as the passengers travel with a longer flight. This might not be surprised. Since, passengers may value more on convenient for a longer flight that they decide to fly with the first class. This would be another opportunity for the airlines to increase the tickets' price as well.

Among 4 airlines, Singapore Airlines appears to have the largest different followed by Emirates. There is no surprise to see this result. Since Singapore Airlines is well recognized as the world's most luxurious airline that provide the best services on flight. Moreover, it noted for the World's Best Cabin Staff, Best Airline in Southeast Asia and Best First Class Seat as well. For Emirates, it got a reward " Best of In-Flight Entertainment" three years in a row (Chanpat, 2012).

All in all, with an increasing in relative price, it comes from 2 ways, which are 1.) An increasing in the price of Business class seats or 2.) A decreasing in the price of Economy flexible class seat. However, in this paper, it does not provide the in-depth information whether there is an increasing in price of Business class or decreasing in price of Economy flexible class.

Moreover, we have look at the price of airline tickets per mile as well. For this, we focus on the 1.) Price of Economy saver and 2.) Price of Economy Flexible class.

First, the result from running a regression with "*Price of Economy saver per mile*" as an endogenous variable, suggests that the price per mile becomes cheaper as the passengers fly with longer distances. This seems impossible. However, the price may increase as the number of miles increase to some level. The price of Economy saver per mile is likely to be higher when the passengers fly during a high season. This implies that during a high season, the airlines charge a higher price since they know that the passengers need to pay it anyway. As the passengers fly with an indirect flight, they tend to pay more. Moreover, we found out

that if the passengers book the tickets in advance, they tend to pay more by 0.003 Baht per mile.

In addition, the result suggests that the flights that departed during the morning and noon time (06.00 a.m.-17.59 p.m.) are likely to be more expensive than those departed at the other time of the day. Among 4 airlines, it found out that Cathay Pacific Airways provides the highest price of Economy saver per mile. Apart from the Economy saver tickets, most airlines do provide the Economy flexible tickets as well. This is because the airlines can get the revenue from those passengers who are not sure with their flight schedule. For example, Mr. A wants to go for a holiday within this month but he is not sure whether his meeting will be postpone to come earlier, so he thinks that booking an Economy flexible ticket is better than Economy saver for sure. Even he needs to pay more, but it would be better if at the end he needs to change the flight schedule. Since, most of the Economy saver tickets cannot change the schedule and cannot redeemed the ticket as well.

The result from running a regression with "*Price of Economy flexible per mile*" as an endogenous variable tells us that the price per mile is likely to be cheaper when the distance is longer. However, the price per mile tends to be more expensive when the flights fly during a high season as well as the flights is indirect flight. In addition, the result gives us the same outcomes as the previous result for the departure time. In this case, Lufthansa offers the highest price of Economy flexible per mile. Lufthansa also considered as the luxurious airline. However, it might not share the same standard as the Emirate and Singapore Airlines. Lufthansa is the largest airline in Europe (Victoria and Peter, 2015). This may be one of the reasons that it offers the highest price per mile in the class of Economy flexible. Since, the majority of the passengers tend to fly with the Economy class the most. There are 6 other endogenous variables that I use to study. See the regression result at the Appendix.

Table 2
Regression results

<i>Determinants</i>	<i>Relative Price between the Price of Business class to Economy Flexible class (1)</i>	<i>Relative Price between the Price of First class to Economy Flexible class (2)</i>	<i>Price of Economy Save per mile (3)</i>	<i>Price of Economy Flexible per mile (4)</i>
Distance	0.014 (0.001)**	0.031 (0.002)**	-0.001 (0.000)**	-0.001 (0.000)**
Day	-1.189 -2.255	-1.339 -6.226	-0.104 -0.169	-0.046 -0.161
Season	-8.857 (2.282)**	-14.242 (6.211)*	0.386 (0.162)*	0.318 (0.155)*
Flight	-17.237 (4.169)**	-20.51 -14.108	1.775 (0.249)**	2.878 (0.254)**
Differences	-0.012 -0.015	-0.012 -0.042	0.003 (0.001)**	0.002 -0.001
Morning Departure	-6.482 (2.593)*	26.499 (7.253)**	0.778 (0.176)**	0.85 (0.152)**
Noon Departure	-14.731 (2.937)**	10.111 -9.18	0.674 (0.162)**	1.019 (0.154)**
Morning Arrival	14.075 (3.266)**	9.599 -9.196	-1.002 (0.168)**	-1.422 (0.207)**
Noon Arrival	3.886 -3.612	-29.555 (9.183)**	-0.211 -0.192	-0.549 (0.212)**
Cathay Pacific Airways	0.596 -3.785	68.435 (32.517)*	3.147 (1.345)*	2.746 (1.243)*
Singapore Airlines	43.333 (3.905)**	278.017 (14.805)**	-0.608 (0.132)**	-2.407 (0.182)**
Emirates	67.77 (4.122)**	158.304 (12.334)**	-2.169 (0.190)**	-4.561 (0.186)**
Lufthansa	-66.911 (4.478)**	-56.093 (12.655)**	-0.348 -0.227	3.552 (0.320)**
Constant	128.764 (4.340)**	114.25 (11.890)**	7.628 (0.242)**	12.169 (0.248)**
R-squares	0.81	0.86	0.63	0.72
Observation	571	497	560	737

Note: Regression coefficients are reported in columns (1)-(4). The Ordinary Least Squares tests are significant at the 0.05 level of significance as *p < 0.05 and significant at the 0.01 level of significance as **p < 0.01.

VIII. Conclusions

There are many factors that can affect the price of airline tickets. The main cost of the ticket price is the fuel price (Mahnosh, 2011). However, in this paper, it does not take this factor into account. From the regression results, there are no exact determinants that can determine the overall price of airline tickets. However, by focusing on the study of this paper, it is found out that the price of airline tickets tends to be higher for a longer flight. The flights that fly during high season are likely to be more expensive as well. This implies that passengers demand for the tickets more than the usual time. Moreover, the flights that departed in the morning time are likely to be more expensive than those departed in the other time of the day.

IX. Limitation on the study

In this paper, there are some limitations of the study. Among these 5 airlines, each airline has their own characteristics not even its reputation but the quality of the service as well. So, by collecting the price of airline tickets from a different standard of each airline may mislead the results. Moreover, some of the indirect flights did not operate within the whole airlines. This might caused a higher price for some airlines. Some flights did not available in some airlines. A limited in the number of determinants may provide biased results. However, in this paper it provides the information that be able to collect from the airlines' website only. Due to limited time in the study, therefore, it does not cover other independent variables such as fuel price, cost of tickets, cost of services etc.

References

- "ศาสตร์แห่งการตั้งราคา ตอนที่ 1 : ทฤษฎีการตั้งราคา." INCquity, n.d. Web. 18 Nov. 2015. <<http://incquity.com/articles/pricing101-pricing-theory>>.
- "Airline Industry Background." N.p., n.d. Web. 13 Nov. 2015.<<http://www.galbi think.org/topics/ka/industry.htm>>.
- สุขสวัสดิ์ ณ อยุรยา, วิจิตรสวัสดิ์, ดร. "กลยุทธ์ราคาแบบ Dynamic Pricing Strategy." N.p., 12 Apr. 2012. Web. 2 Nov. 2015. <<http://www.freightmaxad.com/magazine/?p=3176>>.
- Chanpat, Sasiprapai. "Classes of Service." รอบรู้เรื่องที่นั่งแต่ละระดับชั้นบนเครื่องบิน. N.p., 1 July 2012. Web. 10 Nov. 2015. <<http://class-of-service.blogspot.com>>.
- Escobari, Diego. DYNAMIC PRICING, ADVANCE SALES AND AGGREGATE DEMAND LEARNING IN AIRLINES (2012): 697-99. Web. 12 Nov. 2012.
- Kons, Alex. Understanding the Chaos of Airline Pricing 8.The Park Place Economist (n.d.): 18-20. Web. 20 Nov.2015.<<https://www.iwu.edu/economics/PPE08/alex.pdf>>.
- Kouhpaei, Mahnosh. Airfare Price Elasticity over Non-Business Passengers (2011): 359-360. Web. 24 Nov. 2015. <<http://www.ipedr.com/vol12/65-C149.pdf>>.
- Magloff. "Dynamic Price Strategy of the Airline Industry." MARKETING MANAGEMENT BLOG. Group 193, 3 Sept. 2015. Web. 20 Nov. 2015. <<https://mpk732t22015.wordpress.com/2015/09/03/dynamic-price-strategy-of-the-airline-industry/>>.
- McAfee, Melonyce. "How Do Airlines Set Their Ticket Prices?" N.p., 22 Nov. 2006. Web. 18 Nov. 2015.<http://www.slate.com/articles/news_and_politics/explainer/2006/11/how_do_airlines_set_their_ticket_prices.html>.

Mccartney, Scott. "You Paid What for That Flight?" N.p., 26 Aug. 2010. Web. 12 Nov 2015. <<http://www.wsj.com/articles/SB1000142405274870454090457545165348962606>>.

Porter, Michael E., Brian Pearce, and Kevin Dobby. "The International Air Transport Association (IATA)." *Vision 2050* (2011): 23-24. Web. 12 Nov. 2015. <http://www.iata.org/pressroom/facts_figures/Documents/vision-2050.pdf>.

Seaney, Rick. "9 Surprising Factors That Influence the Price of Your Airline Ticket." FOX NEWS, 13 Jan. 2014. Web. 20 Nov. 2015. <<http://www.foxnews.com/travel/2014/01/13/surprising-factors-that-influence-price-your-airline-ticket/>>.

Stiving, Mark. "Price Segmentation – Introduction." PRAGMATIC PRICE. N.p., 21 Apr. 2010. Web. 15 Nov. 2015.<<http://pragmaticpricing.com/2010/04/21/price-segmentation-introduction-and-id-for-discount/>>.

Sumers, Brian. "Airlines Reveal Ticket Pricing Strategies." Los Angeles Daily News, 30 June 2013. Web. 20 Nov. 2015. <<http://www.dailynews.com/general-news/20130629/airlines-reveal-ticket-pricing-strategies>>.

APPENDIX

Table 3
Regression results

<i>Determinants</i>	<i>Economy Saver</i> (1)	<i>Economy Flexible</i> (2)	<i>Business</i> (3)	<i>First</i> (4)
Distance	3.342 (0.070)**	6.06 (0.223)**	14.435 (0.238)**	30.844 (0.866)**
Day	-196.281 -307.281	224.898 -747.767	-876.198 -1,052.69	-230.768 -3,227.55
Season	1,011.80 (298.224)**	1,581.78 (723.312)*	965.876 -1,091.09	-704.695 -3,096.51
Flight	1,105.55 (526.691)*	4,515.11 (1,181.059)**	11,721.05 (1,464.675)**	-28,501.71 (5,825.526)**
Differences	4.081 (2.015)*	-2.474 -3.544	-6.266 -5.538	-26.373 -19.969
Morning Departure	-352.254 -352.201	203.014 -749.581	-979.625 -851.596	21,074.50 (3,183.580)**
Noon Departure	-597.461 -441.59	1,458.68 -1,024.43	1,686.74 (824.271)*	22,310.72 (3,930.976)**
Morning Arrival	-1,662.78 (319.902)**	-3,607.45 (1,090.080)**	-3,708.59 (905.078)**	-21,281.71 (3,331.678)**
Noon Arrival	798.078 (331.983)*	-306.478 -1,119.72	1,742.60 -947.913	-5,071.58 -3,156.77
Cathay Pacific Airways	3,779.18 (1,371.918)**	2,675.79 -1,412.45	2,309.35 -1,546.08	27,265.68 (3,452.602)**
Singapore Airlines	-169.17 -432.789	-8,229.19 (1,168.164)**	-12,124.38 (1,477.531)**	74,306.57 (5,609.826)**
Emirates	-3,913.66 (484.016)**	-17,096.32 (1,109.459)**	-20,330.09 (1,416.198)**	346.35 -3,030.23
Lufthansa	3,275.93 (937.922)**	32,042.48 (2,725.452)**	11,299.90 (4,349.187)**	70,109.42 (9,734.219)**
Constant	4,473.99 (487.306)**	7,219.75 (1,001.563)**	5,512.61 (1,497.291)**	-25,055.13 (5,297.668)**
R-squares	0.91	0.91	0.96	0.91
Observation	560	737	580	501

Note: Regression coefficients are reported in columns (1)-(4). The Ordinary Least Squares tests are significant at the 0.05 level of significance as *p < 0.05 and significant at the 0.01 level of significance as **p < 0.01.

Table 4
Regression results

<i>Determinants</i>	<i>Price of Business class per mile (5)</i>	<i>Price of First class per mile (6)</i>
Distance	0.000 (0.000)**	0.00 0.00
Day	-0.132 -0.19	-0.081 -0.73
Season	0.243 -0.185	-0.429 -0.706
Flight	2.017 (0.247)**	5.817 (1.410)**
Differences	0.001 -0.001	-0.006 -0.005
Morning Departure	0.537 (0.174)**	6.826 (0.808)**
Noon Departure	0.792 (0.122)**	5.857 (0.855)**
Morning Arrival	-0.688 (0.162)**	-3.897 (0.715)**
Noon Arrival	0.243 -0.19	-3.88 (0.722)**
Cathay Pacific Airways	2.728 (1.107)*	11.586 (0.577)**
Singapore Airlines	-0.824 (0.248)**	17.566 (1.308)**
Emirates	-3.329 (0.174)**	-2.624 (0.728)**
Lufthansa	1.555 (0.514)**	9.508 (1.543)**
Constant	16.091 (0.290)**	18.525 (1.077)**
R-squares	0.41	0.63
Observation	580	501

Note: Regression coefficients are reported in columns (5)-(6). The Ordinary Least Squares tests are significant at the 0.05 level of significance as *p <0.05 and significant at the 0.01 level of significance as **p<0.01.