

Explanation of Results from Business Perspective

Most of the people faced the problem of flight delay. Wasting time while waiting your flight is not only emotionally frustrating, but can be also critical in sense of health or money issues. Lets imagine a family with children travelling for vacations or young couple planning their honey moon – but instead of deserved rest among their close they are forced to stay in crowdly environment of airport. What about businessman with his tight schedule – he might miss important meeting and loose chance of profitable partnership? And I think there is nor need to talk about people with any kind of health problems, who heed to reach their destination and to get medical help as soon as possible.

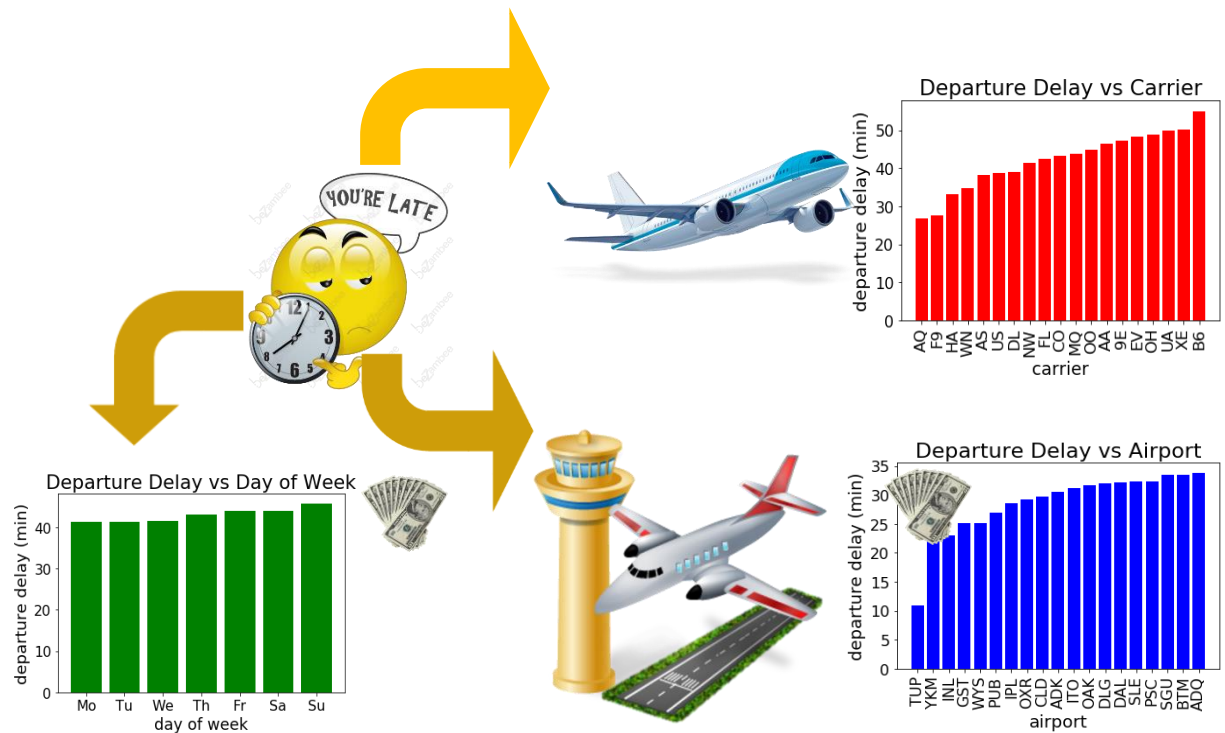
On the other hand one should consider category of travellers for whom flight delay is not an issue: they simply can enjoy some spare time in duty free or hang out with friends. On the top of that such passengers of delayed flight might get some money compensation, that could be even an advantage for some of them.

Thus way, prediction of possible flight delay based on the flight features can very beneficial for most passenger. And this is the use case we have focused on.

Based on the analysis and regression models, the most influential factors contributing to flight delay are carrier (72%) and airport (17%), the rest is almost equally divided between distance of the flight and day of week. If we consider day of week, it is quite obvious, that the most demanding flights are on Fridays, Saturdays and Sundays, when majority of people leave their place for weekend and then come back by the beginning of work week. Prices for these days are higher as well, meaning that you pay more and have higher chance of delayed flight. Concerning distance (or destination), its effect on delay should be studied more in details.

However, the key factors (airlines and airports) raise very interesting findings. Bureau of Transportation Statistics provides data on average flight prices in US airports. Flight prices in Jakson, MS are 15-20% higher comparing to other airports. At the same time in this airport the smallest flight delay time observed. On the other side, it is interesting to note that based on quick internet search there is no correlation between average ticket price and flight delay – although the difference between average minimum and maximum delay time is only about 20 min. Thus way factor of price, that we did not study in present analysis, could also contribute to and correlate with delay time.

To conclude, one can establish some recommendations for those plane ticket customers who desire to either save their time, or money. When the main goal is to have the shortest delay time, the factors to vary first are airlines and airport. If the latter factor often is not a subject to change, one shoul play with the choice of airlines. And what is good to know - you can choose your favorite and less retarded airlines without overpaying! Usually there is no much to do with distance, since the origin and departure airport are your default choice (although not all the time!). But the last parameter, day of week, is more flexible one to change – want to wait less, check tickets for Wednesday, for example. All in all, even if your chosen criteria will reveal undesired delayed time in airport, is not it better to know it in advance and be prepared?! “Forewarned is forearmed!”



Scheme1. Scheme representing the main contributing factors to flight delay. The lower plots indicate money, as a factor affecting bar plot tendency.