KJ Morgan

Statistics Report

Summer Research

Summer 2019

Why Are Flights Delayed?

In the research of delay rates between LAX and ATL, there will be many probabilities and values that will need to be analyzed. The overall research will provide ways to analyzing the delay times and flights in airports around the US. However, I will be researching the delay times from the two largest airports in the US. The airports in the dataset have some significant values that will help me provide a statistical move toward the analyzation. I predicted that LAX, will have the highest delay time due to the high numbers of flights flown there every day. Hartsfield-Jackson has a whole terminal designated for Delta Airlines. The airports have many flights that, get delayed a day. From my perspective I think that, from TSA to take-off that Hartsfield-Jackson will have slightly lower delay times due to the a higher efficiency in airport services. However, this all will be analyzed in the research.

From, the data in the dataset, there will be some high and lows. The high and lows will come from the different variations in the delay times. The airports have many people coming through the airports a day. Most days it will be more than others. The delay times are based off the actual processes of the customers and flight services. One process affects the other and they all affect each other into a domino effect. The more processes and services that occur within a certain amount of time will lead to different high and lows in the delay times.

In the research, I can count many things interesting. From a statistical approach the amount of flights that actually are delayed is something interesting. The high rates in flight delay coming from the two largest airports in the US, will display insight to the overall experience at each airport. The actual effects of the lower delay will benefit a lot of customers in society that prefer to fly for transportation.

By analyzing data from this dataset, the best way to catch trends in the data values is a scatter plot. A scatter plot is analogous to the line graph in which values will be will be measured over time. I can translate my data into a scatter plot and watch the variations in the delay times. The two airports will be measured from a month span of delayed flights. Each airport, ATL and LAX will have variations in delay times. The airport with the higher frequency in delay flights will be one that I feel needs to work on airport services and efficiency techniques, so that the high frequency obtained, can be lowered.

In conclusion, I think that the flights coming out of LAX will cause it to be the airport with the highest delay rate. This is the hypothesis that I will be working to prove valid or invalid through the statistical analysis of this research. The scatter plot will give me accurate frequencies from the delay times. I see correlations in the daily processes and services of the airports to the delay times. The services have a direct relationship with the times. Hence, if TSA is moving slower than usual, then, the huge amount of people that would like to catch a flight, are going to be impacted because the slow process of TSA will create a huge delay. Another variable in the data is the weather delay variable. This variable always has an impact on the delay times. Heavy Rain, Lightning, Snow, and Thunderstorms will create a delay in services at the airport. Other questions come about, from the analysis of the research because there are truly a lot of variables that, tie in tune, to the take-off and delay of a flight. A former question that has already been asked is, “Can crew size affect the delay time of an airplane?” Another question that could be answered from the numerical method is, “Will there be an economical or financial response to customers experiencing a delayed flight?” The effects of this research will come from the outcomes of the statistical analysis.