New York City Passenger Air Travel

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*Abstract*—Passenger Air Traffic in the five New York City area airports (ACY, EWR, JFK, LGA, and SWF) was analyzed by airport, year, month, and domestic vs. international passengers from 1977 to 2015. Overall travel was found to increase over time (particularly at JFK), be highest in the summer months, and international travel was found to be dominated by JFK and EWR.

# Overall Description

The data set used was found on the US Government website, and it was titled “Air Passenger Traffic per Month, Port Authority of New York New Jersey, beginning 1977.” As mentioned above, the variables in the data set included airport, year, month, and domestic vs. international passengers. There are data inputs per month from each different airline that uses these airports. This data is certainly important for many infrastructure-related reasons. The New York city area airports need to have sufficient space for all travelers and for the required aircrafts, there needs to be a sufficient workforce at the airports, and the city can also use this data to make similar predictions for infrastructure-related reasons for New York City itself. The number of passengers utilizing these airports would certainly be correlated with how many people come to visit New York City.

# Figures

## Passengers by Year

Chart, line chart

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## Domestic vs. International Passengers by YearChart, line chart Description automatically generated

## Passengers at each Airport by Year

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## Domestic vs. International Passengers at each Airport by Year

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## Average Passengers at each Airport per Month

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## Average Domestic vs. International Passengers at each Airport per Month

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# Conclusions from Figures

First, before delving into these figures, is important to note that this data set only goes through 2015. Thus, the effects of the COVID-19 pandemic are not present in this data set or in these figures.

There are several main conclusions I take away from these figures. First, in Figures A and B, you can see that the air traffic in general continues to increase each year. This makes sense as flights are becoming cheaper and our world is becoming more and more global each year. Domestic and international passenger totals have also followed very similar curves. For all of these figures, I kept in mind perception and design considerations that were discussed in our lectures. In light of this, I have a couple comments in regard to this topic for Figure B. I like that the figure clearly displays the similar trends in both groups of passengers, but in doing so I believe that it gives a bit of a false impression at first that the numbers of passengers in each category are similar. This happens because there is a separate scale used for both categories. The curves appear close to each other due to the adjusted scale, but in reality, the number of domestic travelers is about twice that of international travelers. I don’t think this is inherently wrong, as the scale definitely shows the true numbers, but this came to mind as I was considering the perception of the figure by my audience.

Next, in Figures C and D, we also consider the five individual airports: Atlantic City Airport (ACY), Newark Liberty International Airport (EWR), John F. Kennedy International Airport (JFK), LaGuardia Airport (LGA), and New York Stewart International Airport (SWF). Another thing to note here is that lack of data for ACY and SWF since 1977 is due to the fact that these airports did not offer flights to the public at that point. Here you can see that the other three airports have many more passengers than the newer two airports. Additionally, the international travel is dominated by JFK and EWR, with JFK having three times the passengers compared to EWR in recent years. The number of international passengers at JFK has significantly increased compared to EWR and LGA in the last five years. LGA has a small number of international passengers, while ACY and SWF do not have any international passengers.

Lastly, in Figures E and F, we consider the monthly averages instead of the totals by year. The peak travel times are the summer months, and interestingly the difference between summer and winter are even greater when we consider international travel vs. domestic travel.

# Other Comments and Conclusions

I really enjoyed our discussion this week regarding Gibson’s Affordance theory. While I was doing this assignment I made sure to always consider the perspective of the audience and remember that everything that I perceive is not always perceived by others. That is why I made the comments about Figure B earlier related to the different scales. The videos on the Tableau website about how to use the program as well as Dr. Szczurek’s lecture were very helpful in learning about the theory and application of basic data visualization techniques. I am excited to learn and apply more techniques soon.

This data set does not have too many variables and I did not find any particularly interesting or surprising conclusions, but I think it is a very complete that data set that provides a lot of good information related to passenger air traffic. I would be interested to see the updated data set with the impact of COVID-19. That is actually why I originally looked for an air traffic data set. This data (and especially more updated data) would be more important this past year more than ever as the air traffic has fluctuated incredibly due to the pandemic and subsequent restrictions. I’m sure airlines have been constantly checking the data to predict patterns of air traffic in the near future to maximize efficiency and profit – how many planes to use, how many flights on the same route to run each day/week, what time to run the flights, etc.