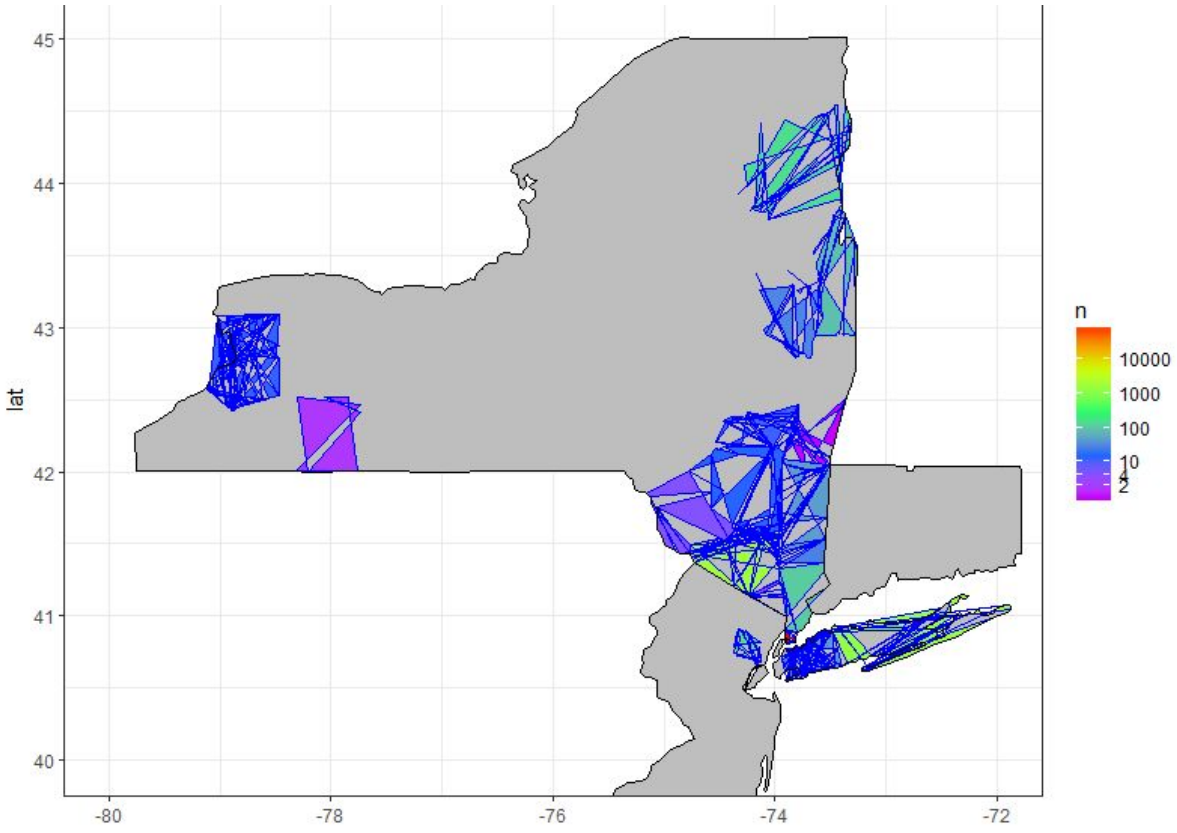
FINAL OBSERVATIONS

The data was analyzed on various parameters and here are the findings for each parameter -

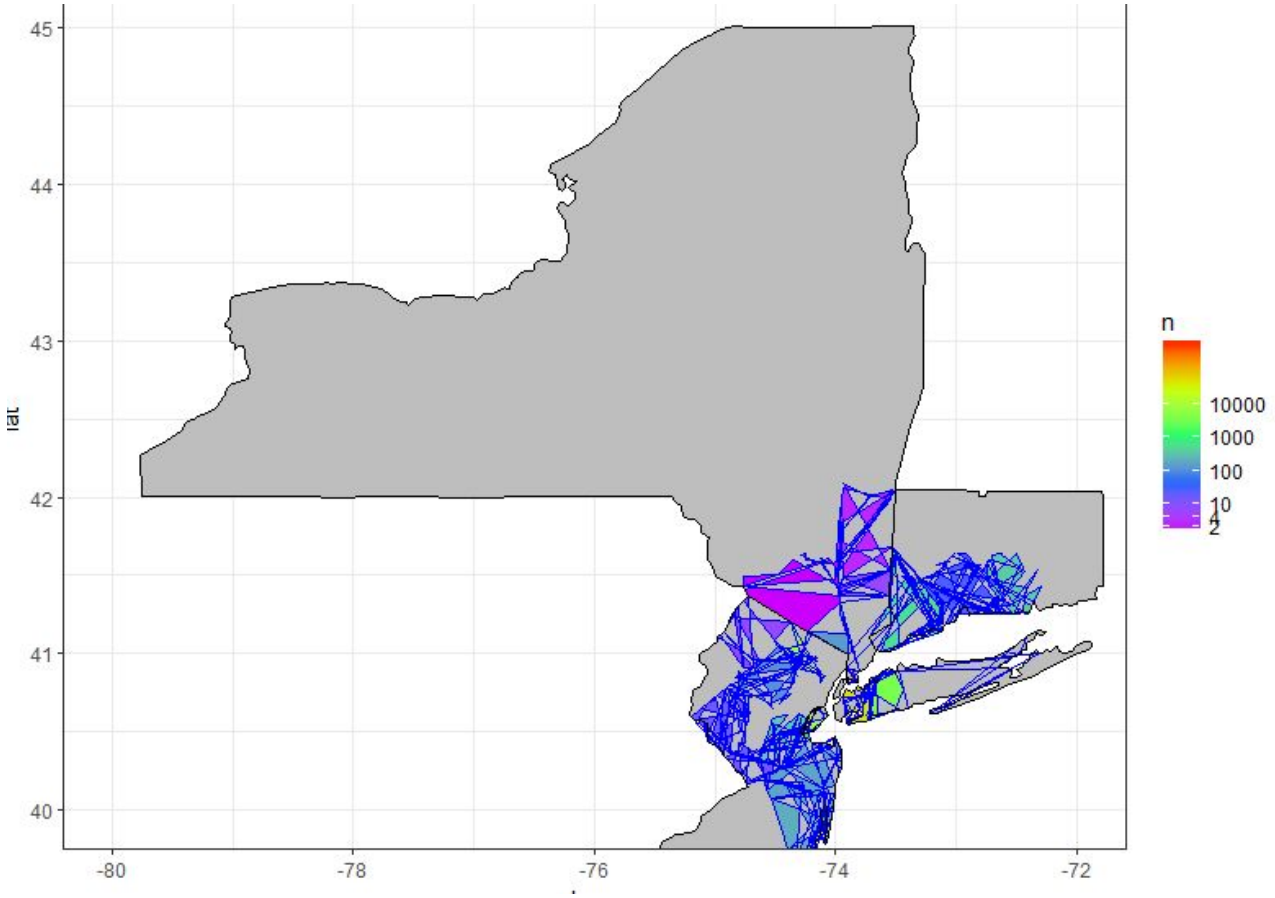
1. **Area**

The data was split into two parts Uber and Non-Uber data. The data was plotted on a map which consisted of states - New York, Connecticut and New Jersey. There were some areas where clearly Uber does not serve where Non-Uber companies serve.

Non-Uber map



Uber map



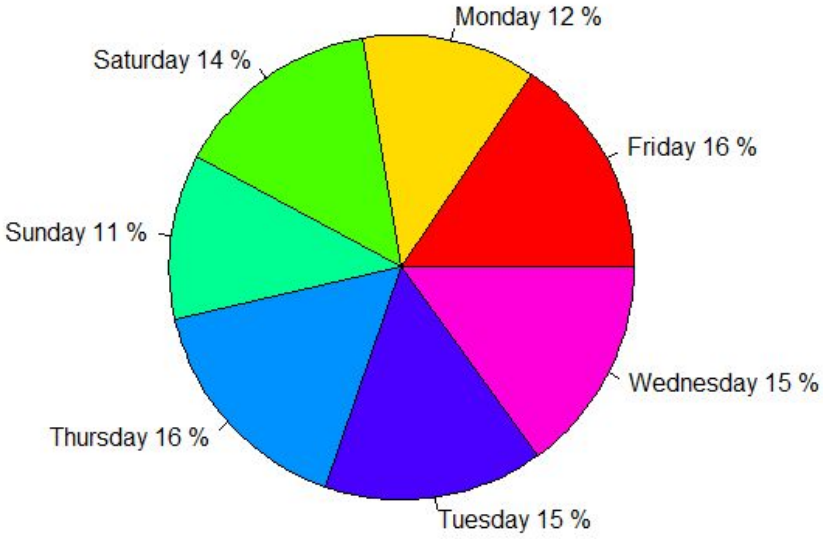
As seen, above there are some regions where Uber distinctly does not provide any service. Those are as follows -
Allegany
Columbia
Erie
Essex
Greene
Saratoga
Sullivan
Ulster
Washington
Uber should provide drivers incentives to start serving in these areas.

2. **Time**

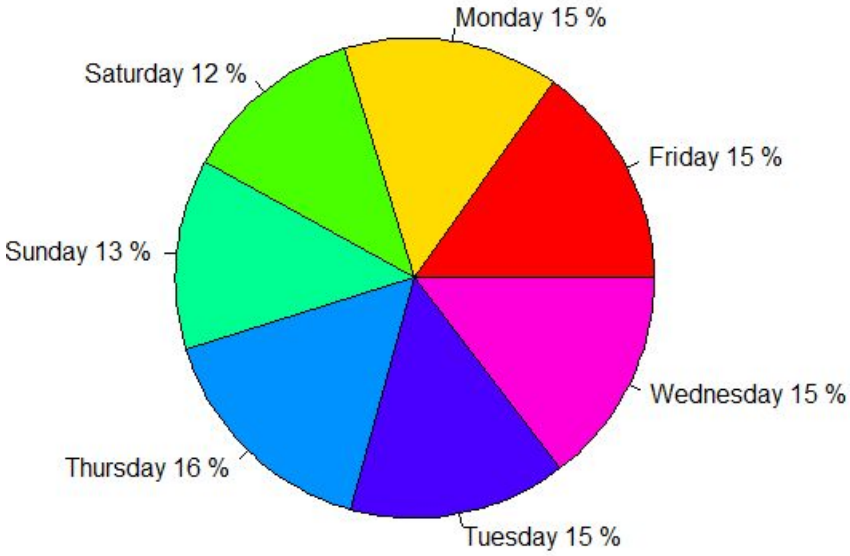
The data provided for Uber and Non-Uber companies had only the pick-up date and time. From the pick-up date and the rides were categorized based on -

a. Day of the week - Pie charts were plotted for understanding the split-up of rides on weekdays and weekends for Uber and Non-Uber rides

Pie Chart of weekdays for Uber

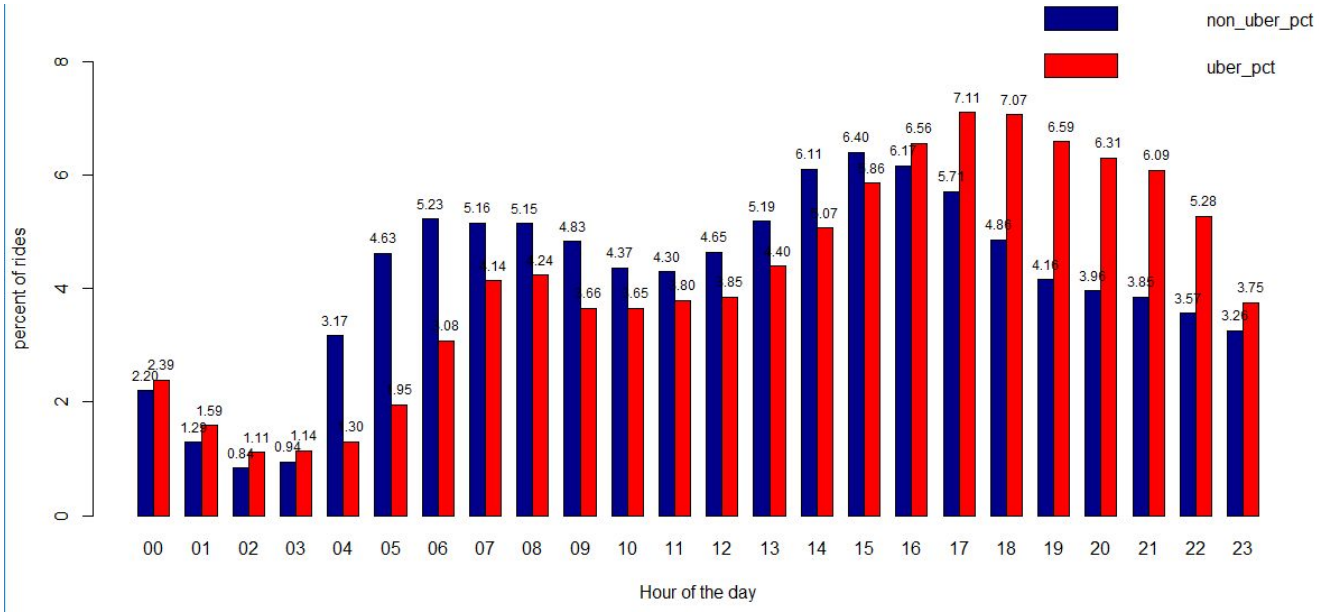


Pie Chart of weekdays for Non Uber companies



Looking at the pie charts, it appears that Non_Uber companies get more rides on Sunday and Monday in comparison to Uber rides. Uber should provide drivers either more incentives to pick-up rides on Sundays by providing higher compensation per ride or increase the number of drivers on Sundays.

b. Hour of the day - The data was also split by the hour of the day for both type of rides. A bar plot was drawn to understand the which time slots are busier for Non-Uber rides in comparison to Uber rides.

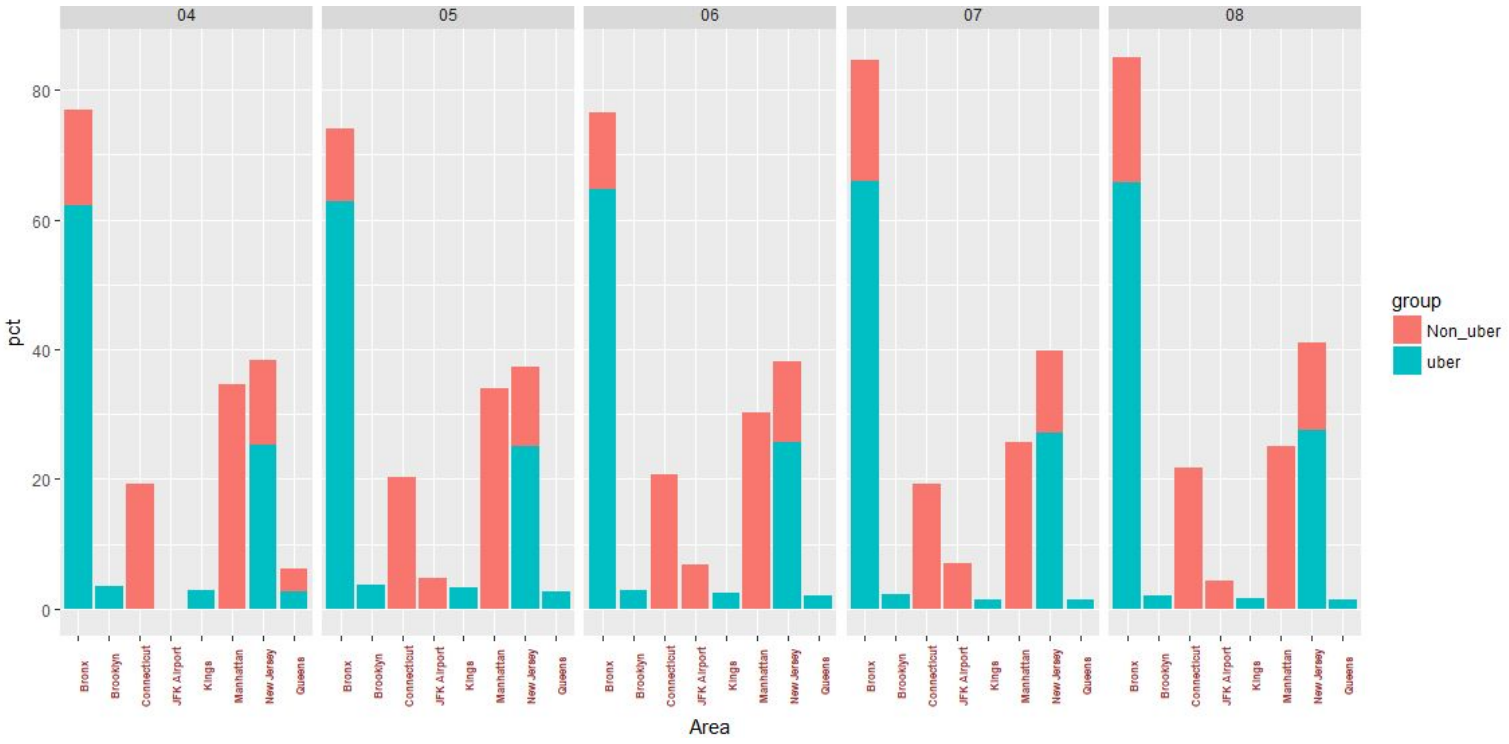


The plot indicates that during the time periods from 4 am - 3 pm is when the Non-Uber rides overall are more than Uber rides. These timings contribute to a major chunk of the day where Uber needs to add more drivers who can match-up with the demands in these timeframes.

3. **Demand**

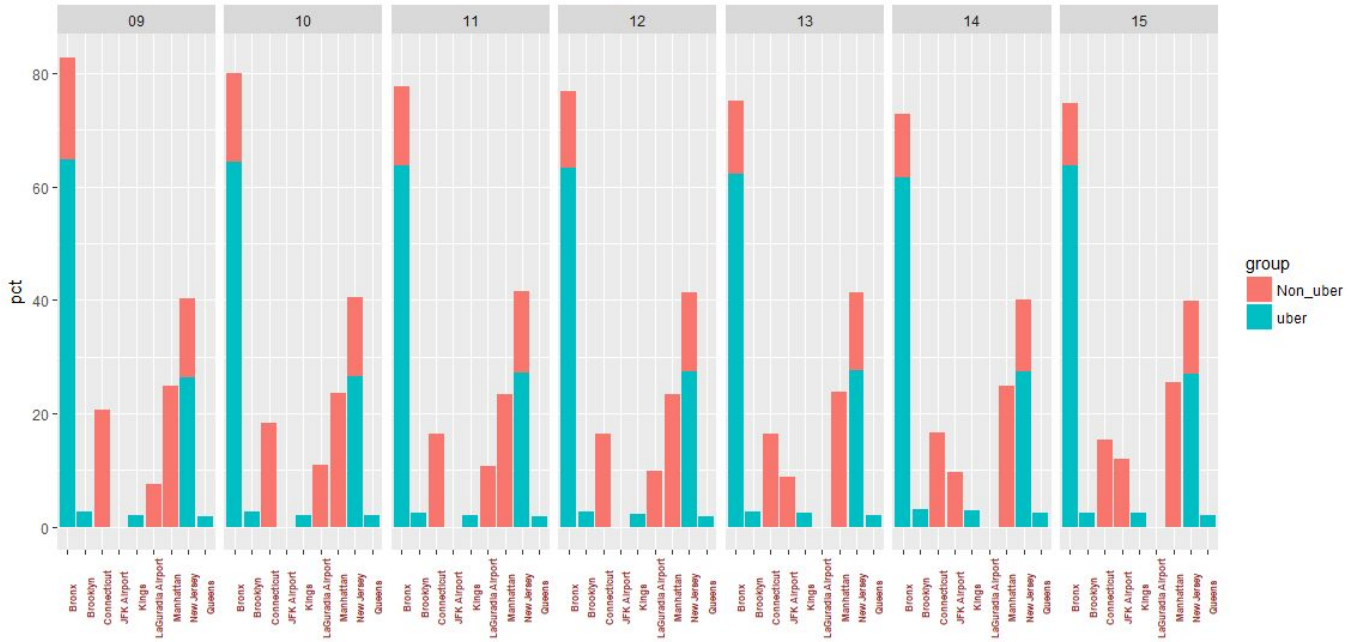
Once the pick-up times were analyzed by hour then the next step was to understand what the demands were for Non-Uber rides. These demands were analyzed based on -

a. Analyze Peak times - As per the observations from the graph above, it is seen that the Non-Uber rides between 4 am to 3 pm time periods are definitely more than Uber. Further analysis was done on the demands in these time frames. This time frame was further split into two parts 4 am - 8 am and 9 am - 3pm. This was done just for the ease of plotting the graphs. Below shown graph is for the time frame 4 am to 8 am.



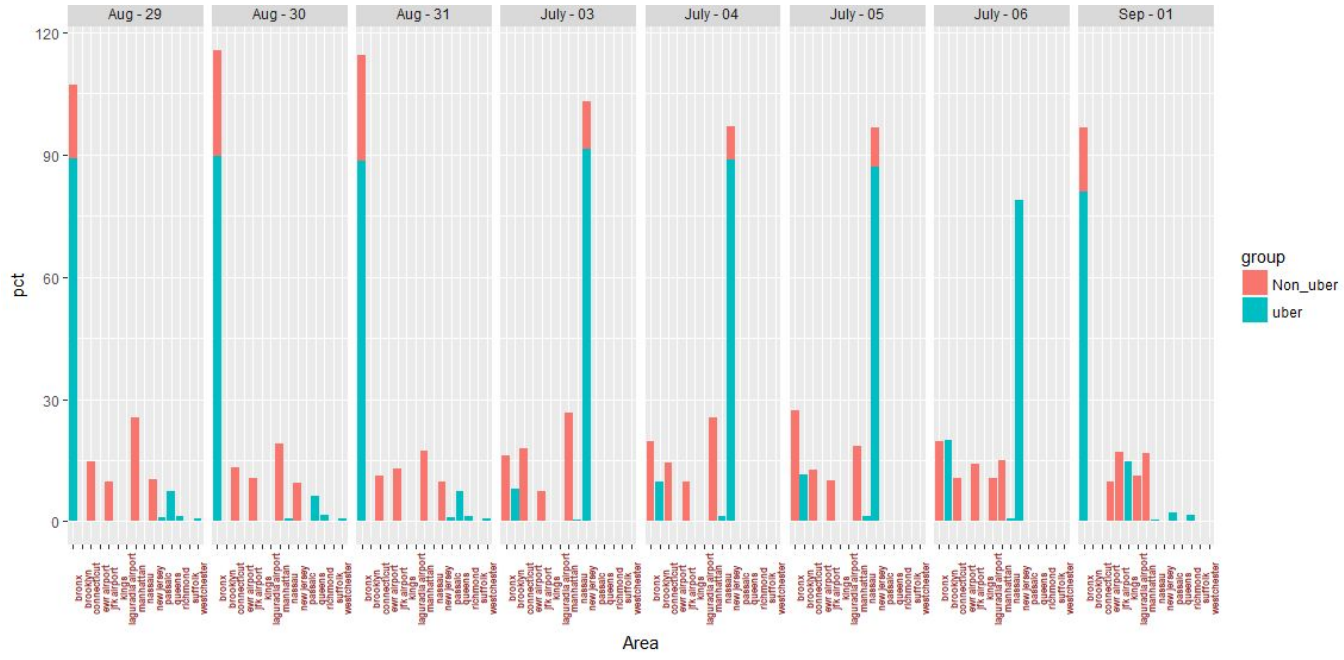
As seen in this graph, the Non-Uber rides are currently serving areas - Connecticut, JFK Airport and Manhattan where Uber currently is not serving any of these areas.

The next graph is for time frame 9 am - 3 pm.



As per this graph, along with the previously observed areas of Connecticut, Manhattan and JFK Airport, one more area was added to the list which was LaGuardia Airport. One point to note here that non_uber rides seem to be heavily serving the two airports in New York City during the peak times whereas Uber does not seem to be addressing any pick-ups from the airports. The typical issue near airport pick-ups for Uber drivers is around payment of the tolls to and out of the airport and the traffic on the route to the airport. The pricing needs to cover for these two issues to make the ride worthwhile for Uber drivers.

b. Analyze long weekends - During the time frames of the data - July through September, there are two long weekends one on 4th July and the other one is Labour Day on 1st Sept. A lot of traffic is expected in the city during these weekends. A graph was plotted indicating the traffic around these weekends.

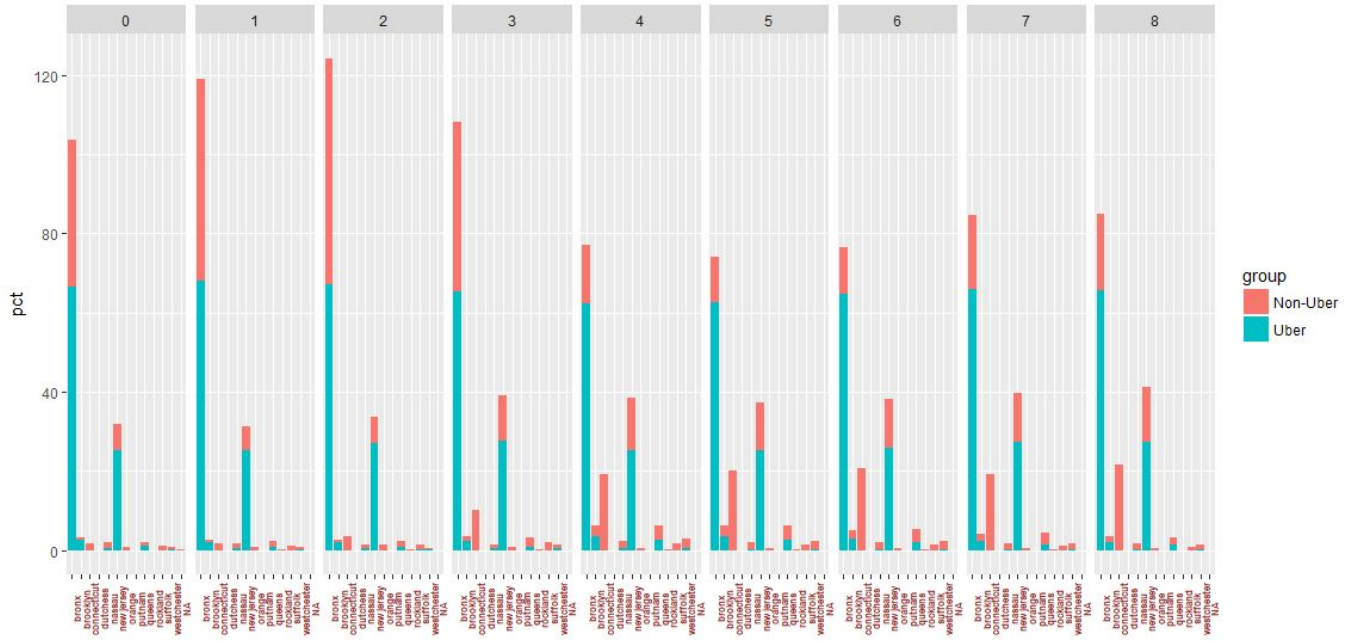


Based on this graph, the Non-Uber rides were again popular at the Airports - JFK, LaGuardia and EWR on Labour day weekend. On the 4th July weekend, areas - Bronx, Connecticut, Manhattan, JFK and LaGuardia were popular. Manhattan is a very popular area for tourists and they have the option of taking the public transport and UberPool can become a very favourable option since the ride per person on UberPool versus the public transport cost would be comparable for consumers to prefer Uber.

c. Understanding areas when Non-Uber demands are increasing whereas Uber demands are steady - Now that we understand the time frames and areas when Non-Uber rides are preferred, another aspect to be observed is that how Uber can improve their service in areas where both Uber and Non_uber companies are serving. In this scenario, the aim is to understand areas where Uber can start adding more drivers in already popular areas so that the heavy demands of the area which are being satistfied by Non-Uber companies can be satisfied by Uber.

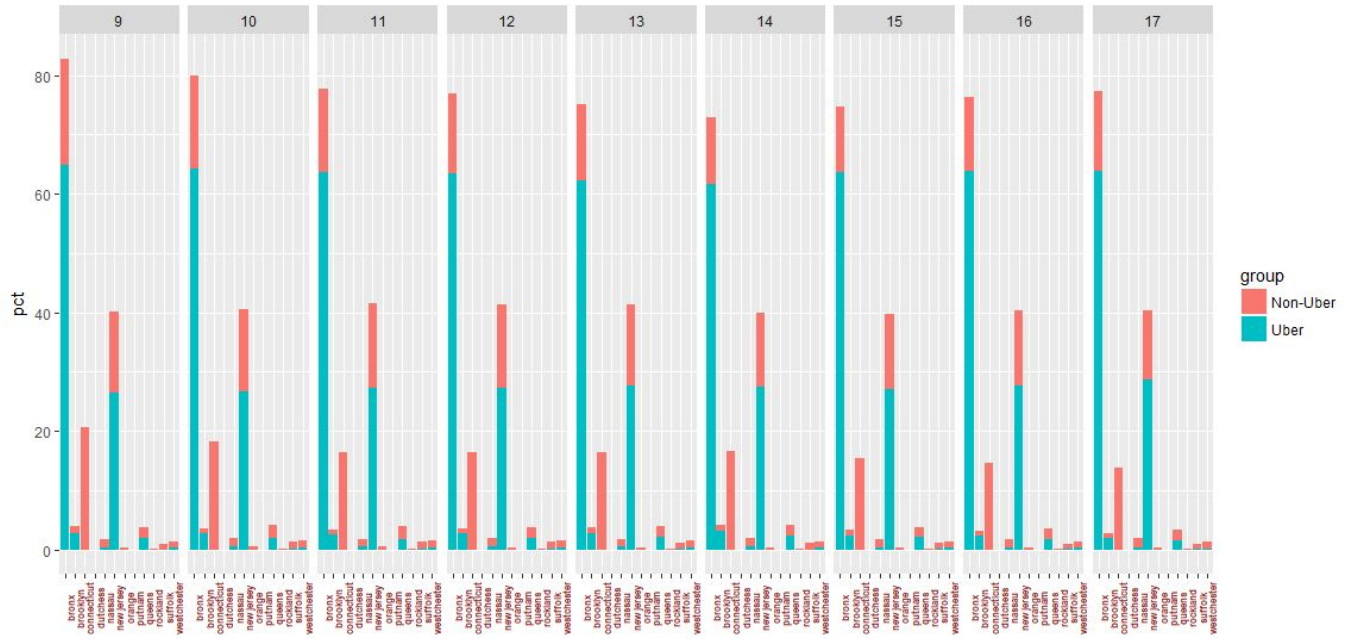
The time slots were divided into 3 parts for this analysis - midnight to 8 am, 9 am to 6 pm and 7 pm onwards.

Here's a graph for time slots from midnight to 8 am.



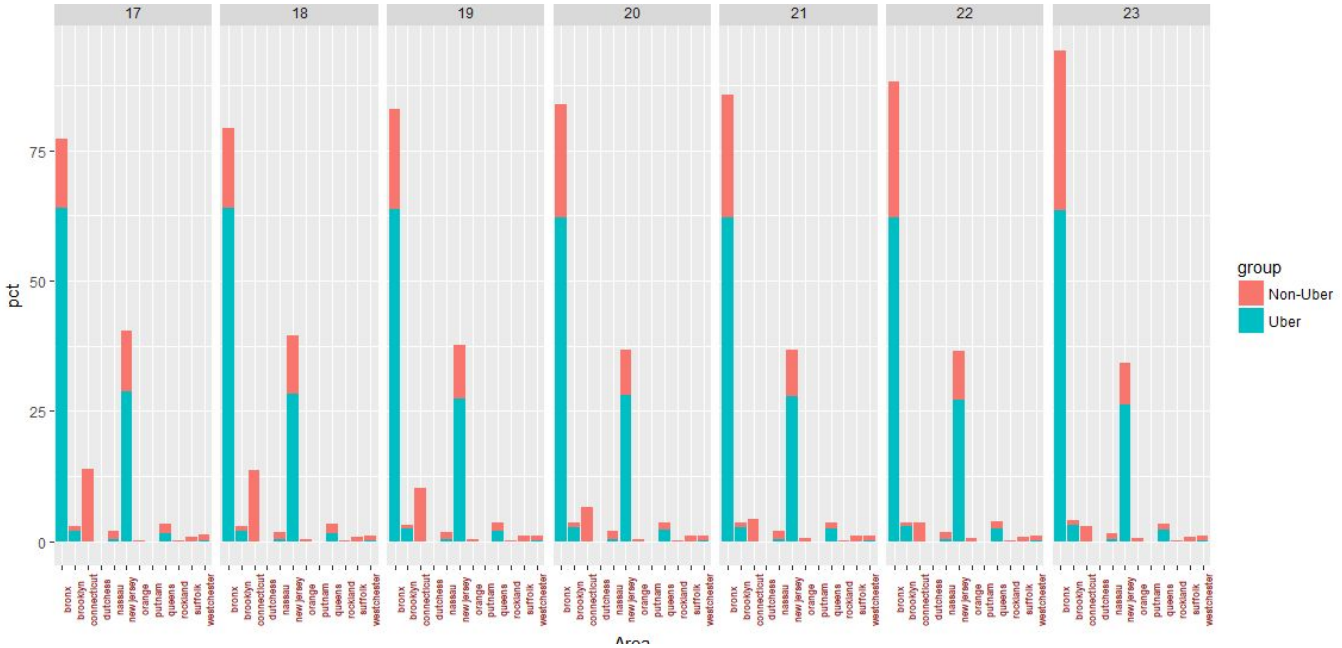
Looking at this graph we can see, in hour slots midnight, 1 am and 2 am the demands in Bronx are increasing for the Non-Uber companies. Similar pattern can be seen in hours from 5 am to 8 am.

Here's a graph for time slots from 9 am to 5 pm.



From this graph we can infer that the Non-Uber demands in Bronx are increasing in hours 2 pm to 5 pm. Similarly for New Jersey the demands are increasing in hours 9 am to 11 am.

Graph for time slots from 5 pm onwards



In this graph, the demand for Bronx is consistently increasing from 5 pm onwards. New Jersey demands seem to keep going down from 5 pm onwards.