

UBER DEMAND SUPPLY GAP ANALYSIS

Name : Sujata Ray

Uber is facing - driver cancellation and non-availability of cars leading to loss of potential revenue.

The analysis scope is restricted to drops and pick from Airport to City and City to Airport.

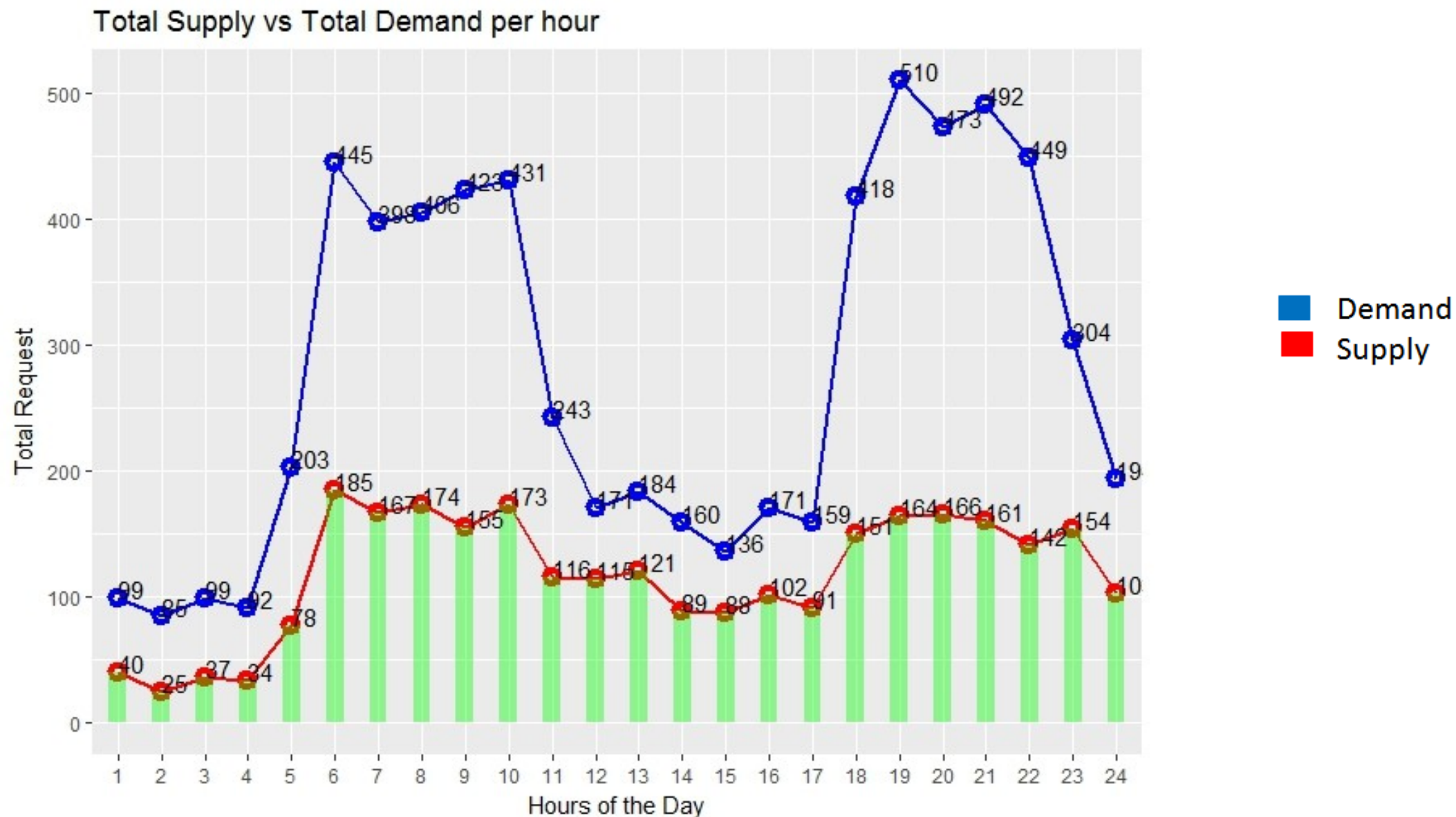
Business objective:

The aim of analysis is to identify the most problematic and recommend ways to improve the situation.

This presentation explains the root cause(s) and possible hypotheses of the problem(s) and recommend ways to improve them.



Supply v/s Demand hours





Supply v/s Demand hours

The above plot depicts the Total Supply and Total demand of the Cab during various time of the day. Which clearly says that the Demands are higher than the Supply.

For further analysis the Requested day time has been considered and all analysis has been done around the requested day time to have better insight of cab supply and demands.

To understand the Gap between the Supply and Demand it is very important to first understand relation of the Supply demand in hourly fashion.

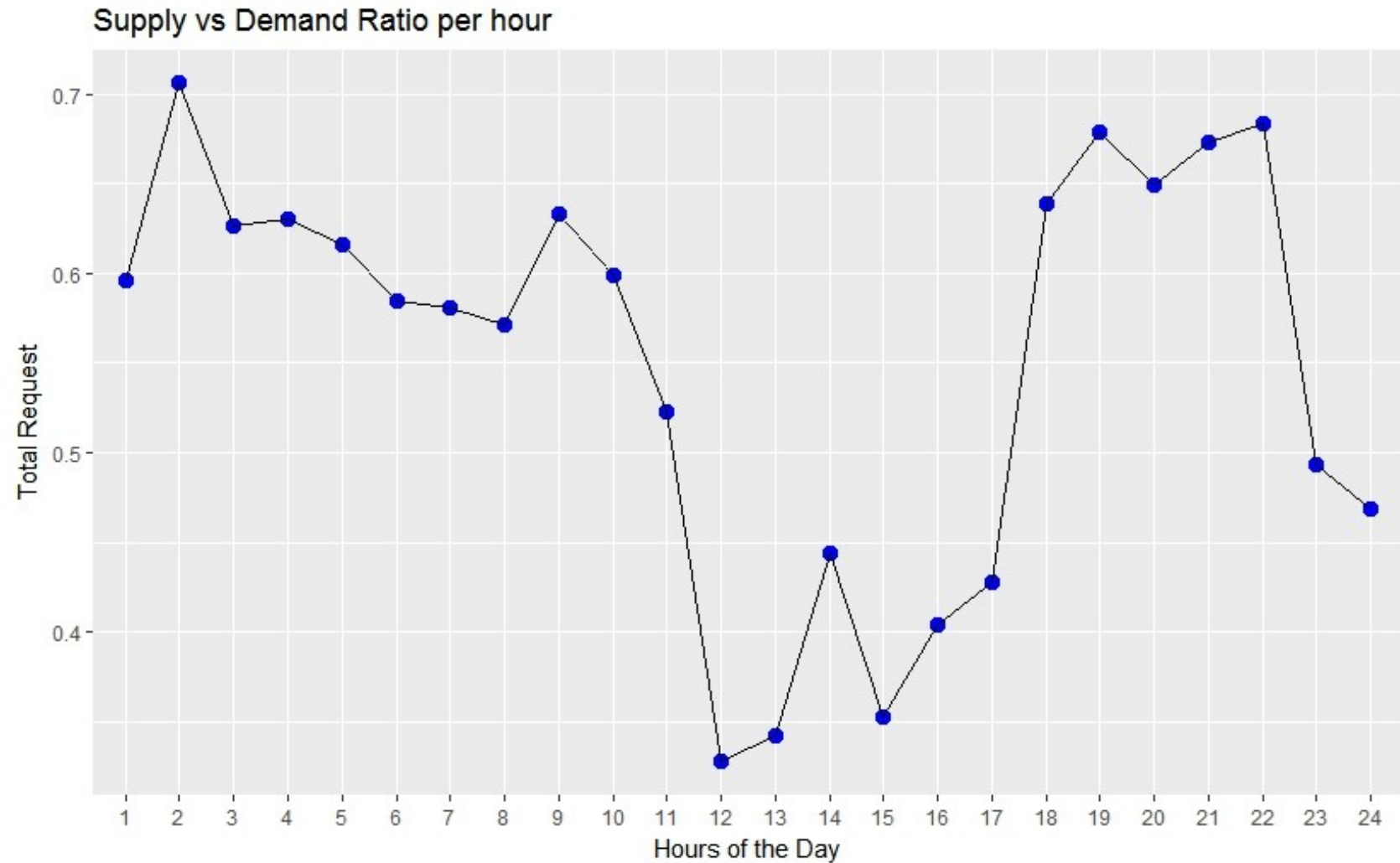
The next plot will show the ratio of Supply and Demand, which gives the answer to the above Question during which day time there is poorest supply and which is the peak hour of supply.



Supply v/s Demand hours

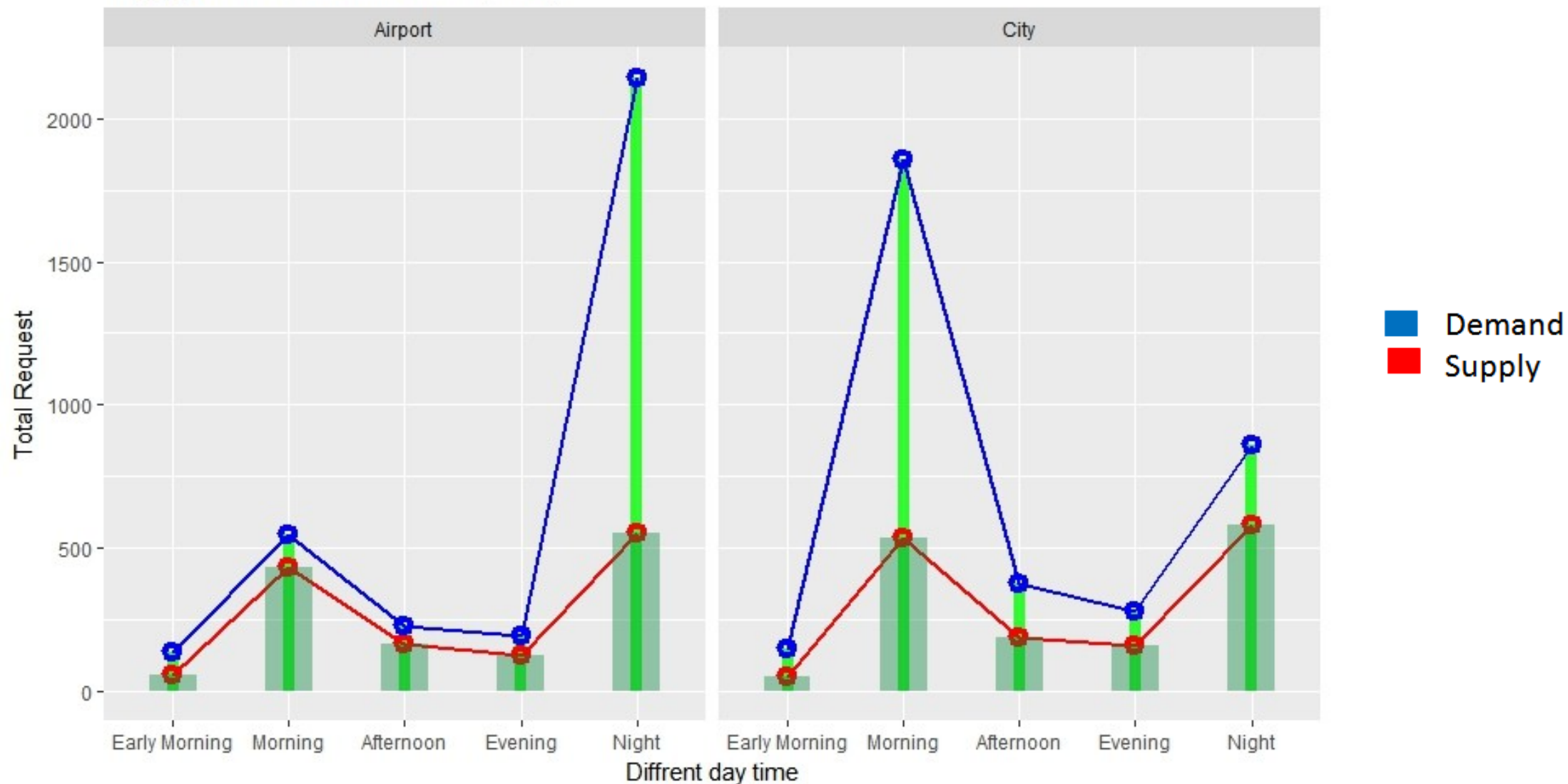
From this plot it is very clear that the poorest ratio is at 2:00 AM while the peak ratio is 12:00 Noon.

This gives a better understanding of the problem of the supply and Demand



Supply v/s Demand- Pickup

Supply vs Demand based on pickup



Supply v/s Demand- Pickup

The above plot depicts the Total Supply and Total demand of the Cab during various time of the day at Airport and City. Here are few observations

At Airport

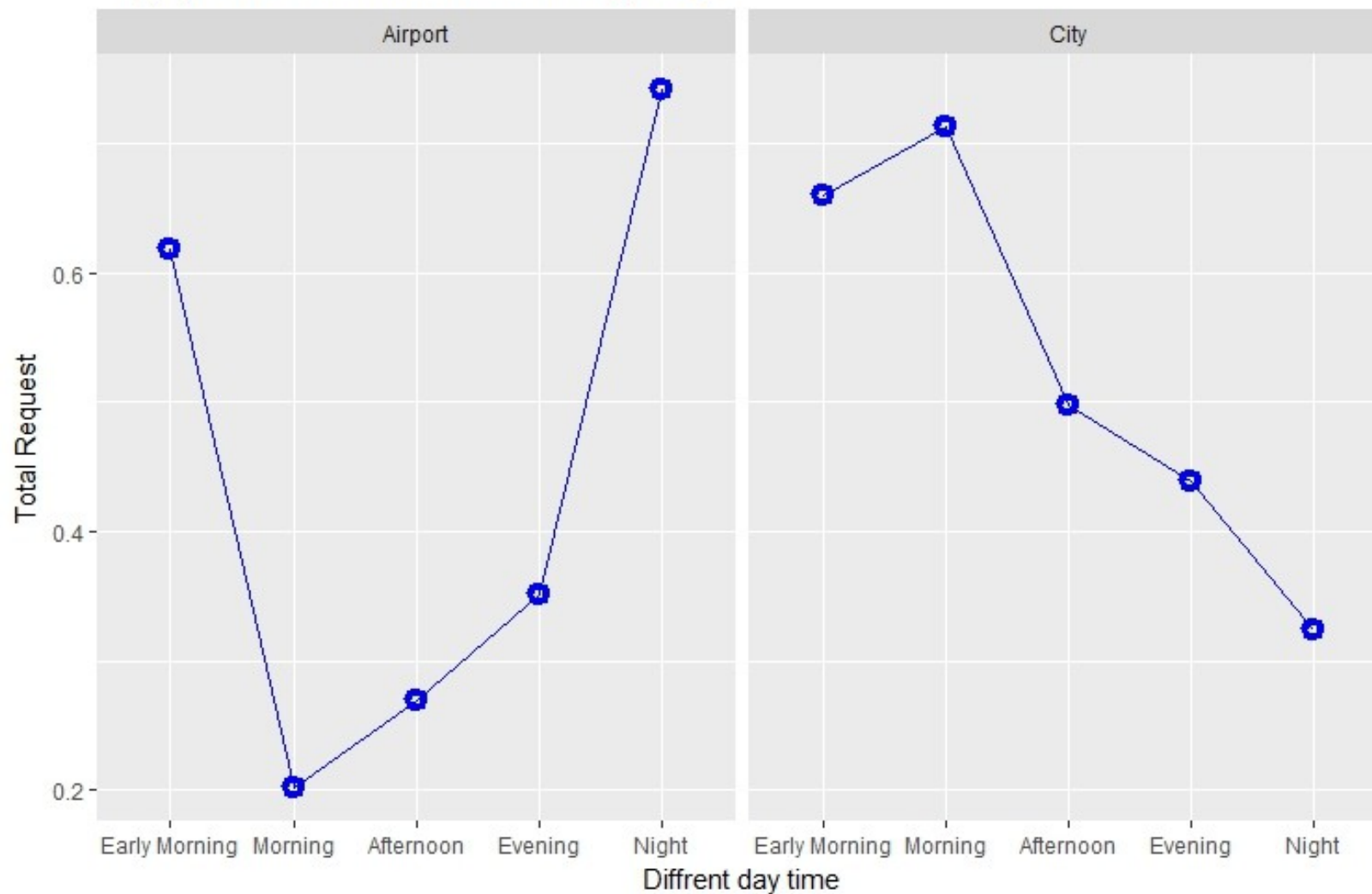
- The Demand and Supply seems good during other day time except the Night.
- Demands during the night is comparatively higher than any other time of the day.
- This concludes that there is a problem during Night at Airport.

At City

- The Demand and Supply seems good during other day time except the Morning.
- Demands during the Morning is slightly higher than any other time of the day.
- This pins the problem for City pickup during Morning time.

Supply v/s Demand- Pickup

Supply vs Demand Ratio based on pickup



For further analysis the Requested day time has been considered and all analysis has been done around the requested day time to have better insight of cab supply and demands at different pickup points.

This plot will show the ratio of Supply and Demand at Airport and City, which gives the answer to the above Question during which day time there is poorest supply and which is the peak hour of supply.

Supply v/s Demand- Pickup

This above plot shows how well the Demands were served at

- Airport : During Morning
- City : During Night

And when is the least or poorest service is , this concludes to the problematic area and below is highlighted for both pick up points

- Airport : During Night
- City : During Morning

It is worth noting that the problematic area for both pickup points are the vice versa of the best served time of the day. This can be taken in consideration while providing any recommendation.

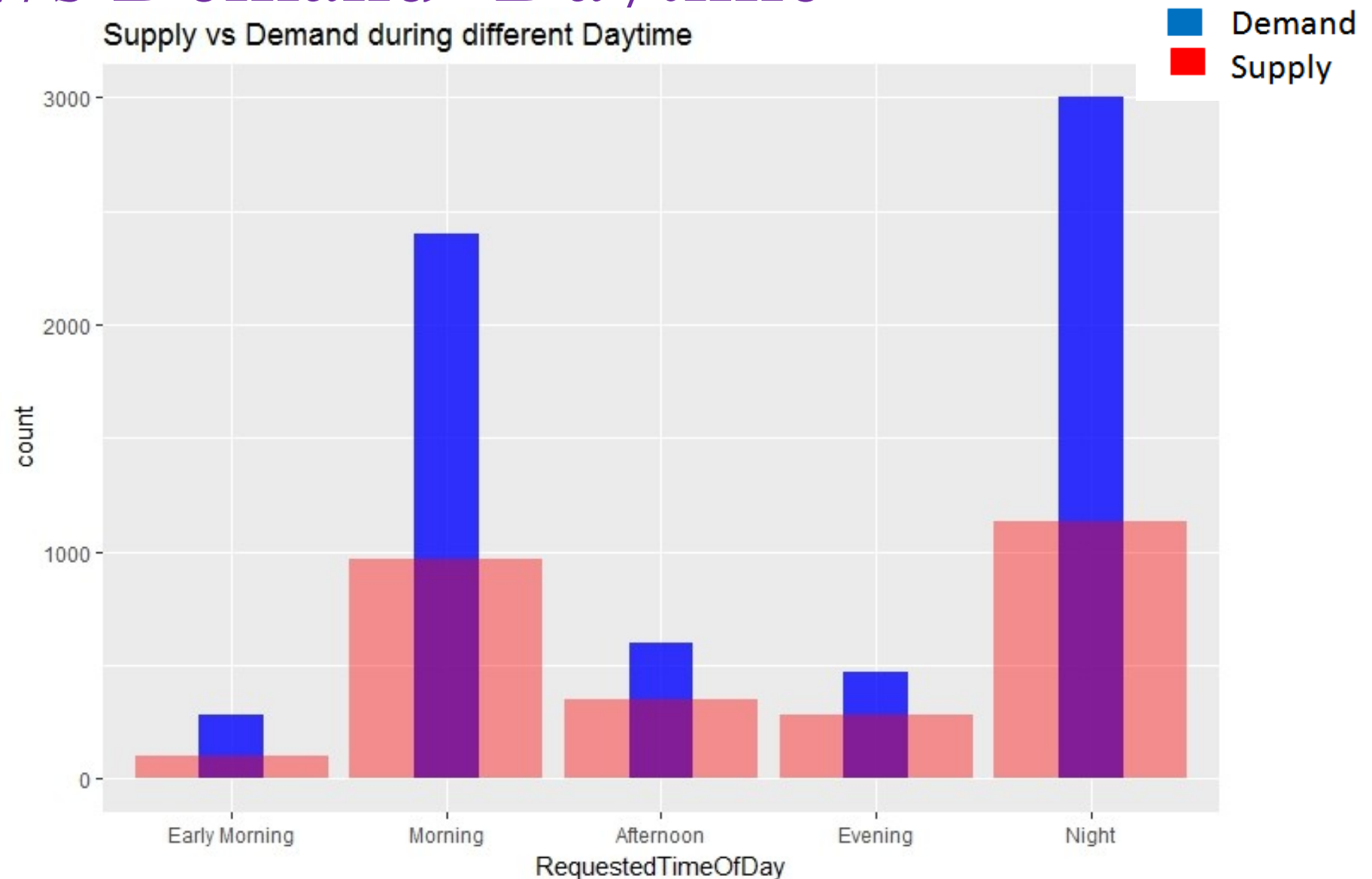


Supply v/s Demand- Daytime

Now when we have a clear picture of the problematic area of Uber Supply and Demand. Its time to get better insight of the total request during different daytime.

Here the pick up point not the driving factor. This plots gives the visualization of the total request made during different day time.

In this plot shows the total demands were slightly higher during the Morning and Night time for which the supply were not up to the mark.





Supply v/s Demand- Daytime

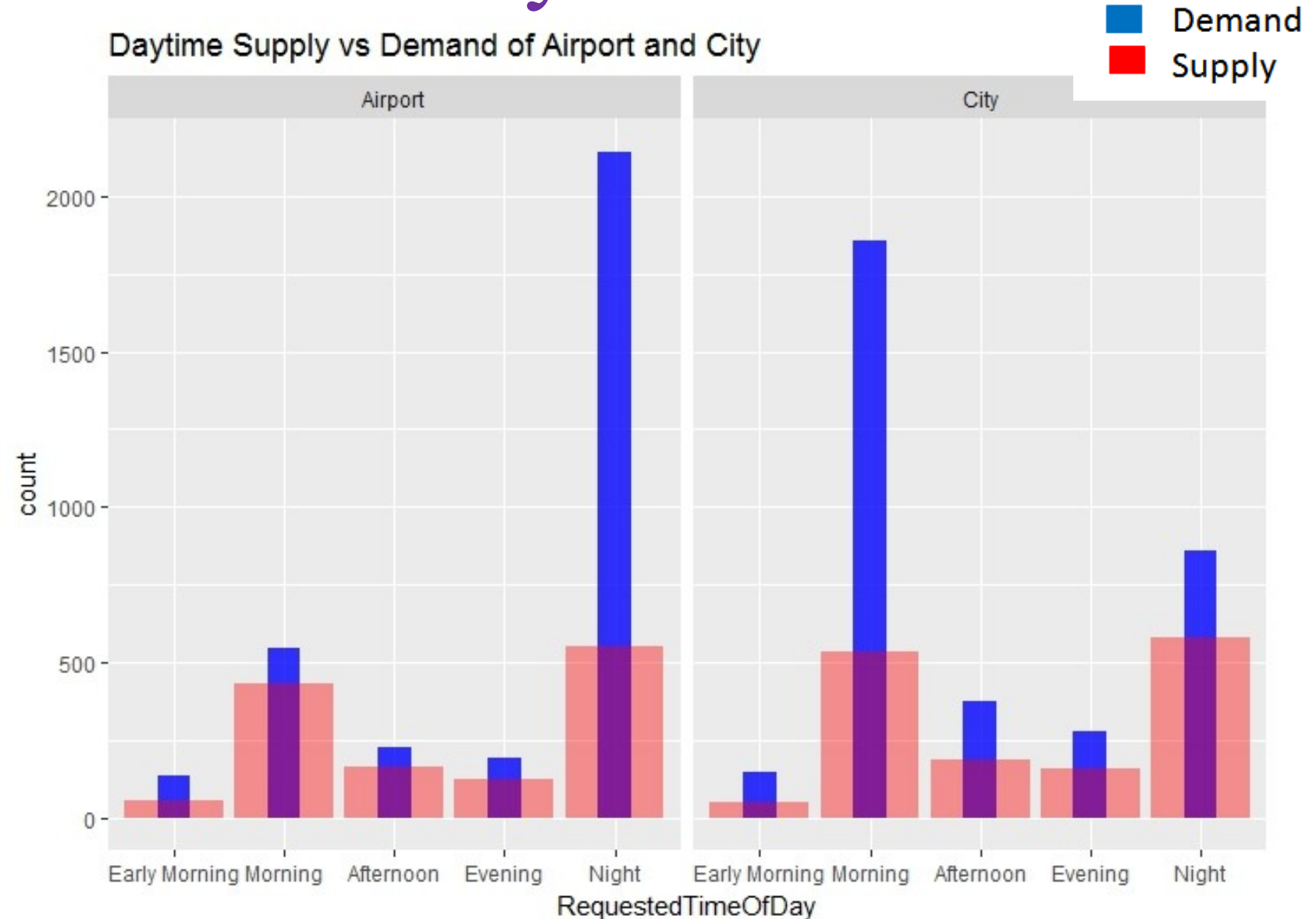
If we divide the total Supply and Demand based on the pick up points we have below observation:

At Airport

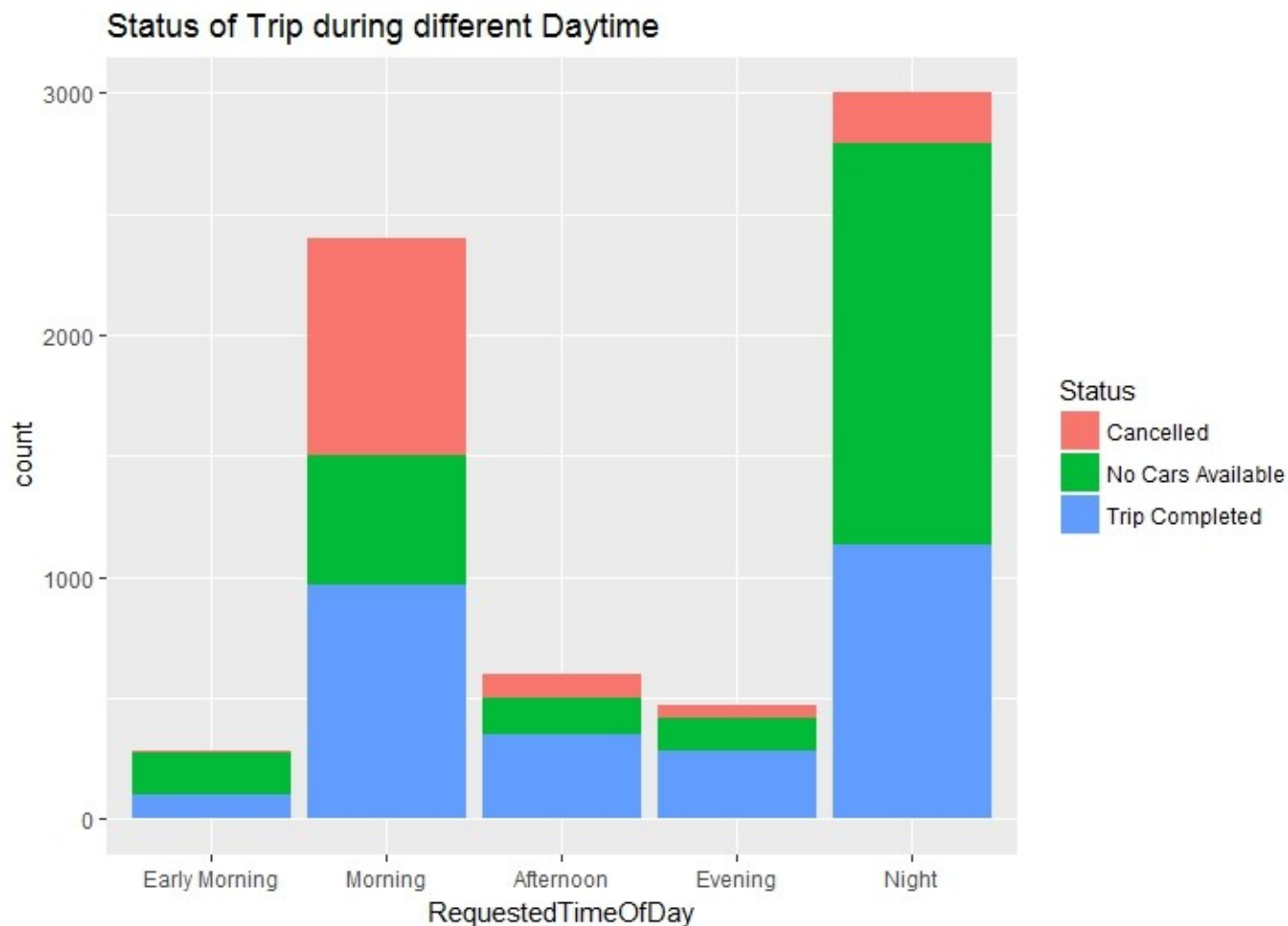
- The Demand and Supply seems good during other day time except the Night.
- Demands during the Night is comparatively higher than any other time of the day.

At City

- The Demand and Supply seems good during other day time except the Morning.
- Demands during the Morning is slightly higher than any other time of the day.



Supply v/s Demand- Daytime



Now when we have clear picture on the problem of the Supply Demand gap, we are now interested in knowing the reason behind these gaps.

This visualization gives a clear insight that the most of the cabs were cancelled and there were no Cars available during the Morning and Night(the problematic area where we are interested).

The plots shows the Status of total requests irrespective of the pick up points.

The Next plot will explain the reason of the gap at Airport and City.



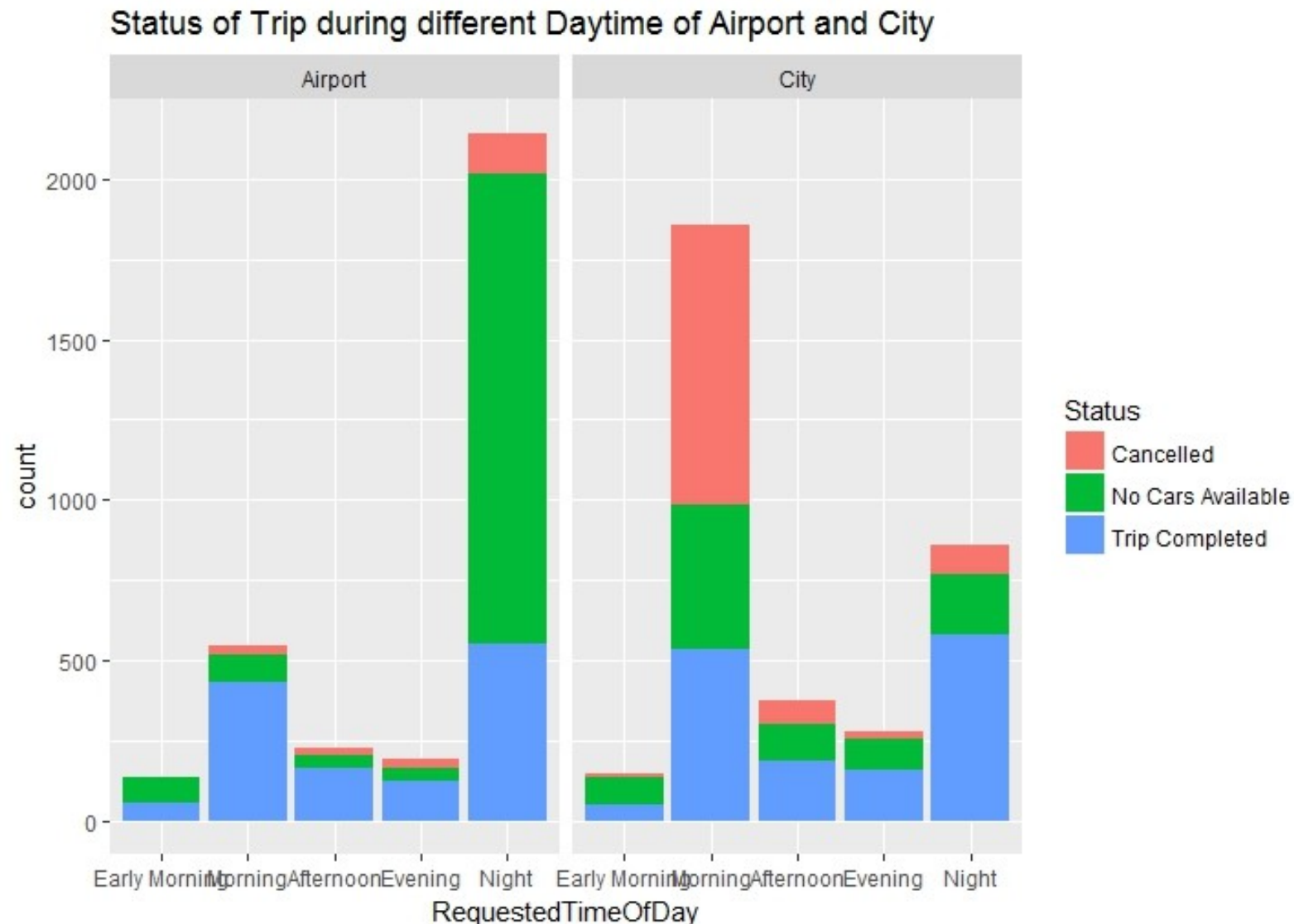
Supply v/s Demand- Daytime

This plot is self explanatory and does not require any further explanation.

Most of the Cars were not Available at Airport during Night

While the trips were cancelled at City during Morning hours.

The next section will cover the possible reasons which is leading to this gap.



Reason for the Supply Demand gap

There could be various reasons behind the Supply demand gap during the Night and Morning time at Airport and City respectively and below are few which could be the possible reasons for the same.

- A large number of flights leave the airport during Morning rush time slot. There are very less incoming flights in the Morning rush.
- We have noted that the best served time in City and the worst at Airport is Night. This could be due to the reason Drivers are not willing to travel to Airport as they have to come back to city (going back to home will be difficult if they take the trip to Airport).
- While the driver who reaches airport during that time has to spend idle time to pick a customer back to the city. The driver could utilize this idle time for other trips if he chooses not to go to the airport. Otherwise he has to return back empty seated which is a waste of gas mileage for him. Due to this a large number of service requests were cancelled in morning rush resulting in huge supply demand gap.



Recommendations

Here are few recommendations to avoid this supply demand gap, so that it does not impact their revenues:

- ✓ Increase incentives for the drivers
- ✓ Increase peak hours surge rates
- ✓ Reducing the percentage charged from cab drivers for utilizing Uber services for making a trip to the airport.
- ✓ Incentives/additional benefits for Cab drivers who would serve at Airport at Night.
- ✓ Additional charges to Customers/Drivers who cancels the Cab during peak hour.