



Uber Supply-Demand Gap Study

SUBMISSION

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Business Objective

- To identify the root cause of the problem (i.e. cancellation and non-availability of cars) and recommend ways to improve the situation.
- To present to the client the root cause(s) and possible hypotheses of the problem(s) and recommend ways to improve them.

Data Cleaning and Manipulation

- Data check was done and validate the number of NA/Null values in each column.
- Retrieved some new columns from existing such as hours, minutes, date, day etc.
- A new column was created with name as Time Slot which defined the Duration of the day when the trip timestamp was received.

Timeslot was divided into 6 parts namely:

>Early Morning 4-8AM

>Morning 8-12PM

>Noon 12-16PM

>Evening 16-20PM

>Night 20-24AM

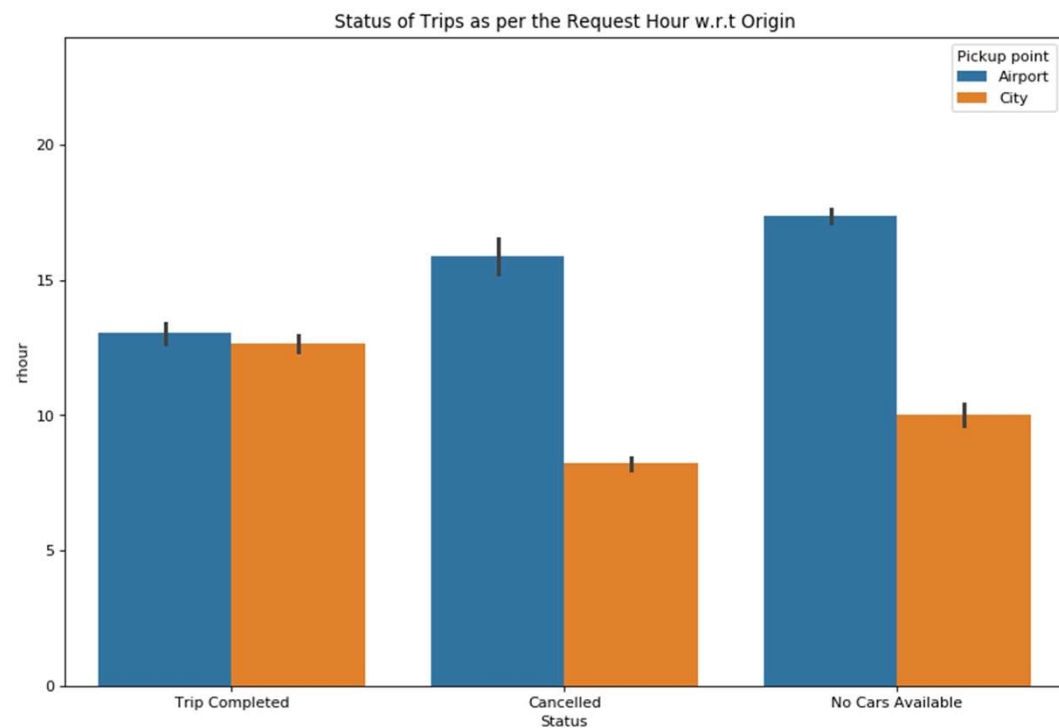
>Late Night Beyond 24AM till 4AM

Analysis using Plots

The plot is designed to analyse at which hour of the day the average the trips were completed/cancelled and no cars were available with respect to the (Received Timestamp) for both city and airport pickup points.

There is a linear increase between the status of the trips straight considering airport as pickup point.

Also, most number of trips completed considering City as pickup happens to be during Noon.

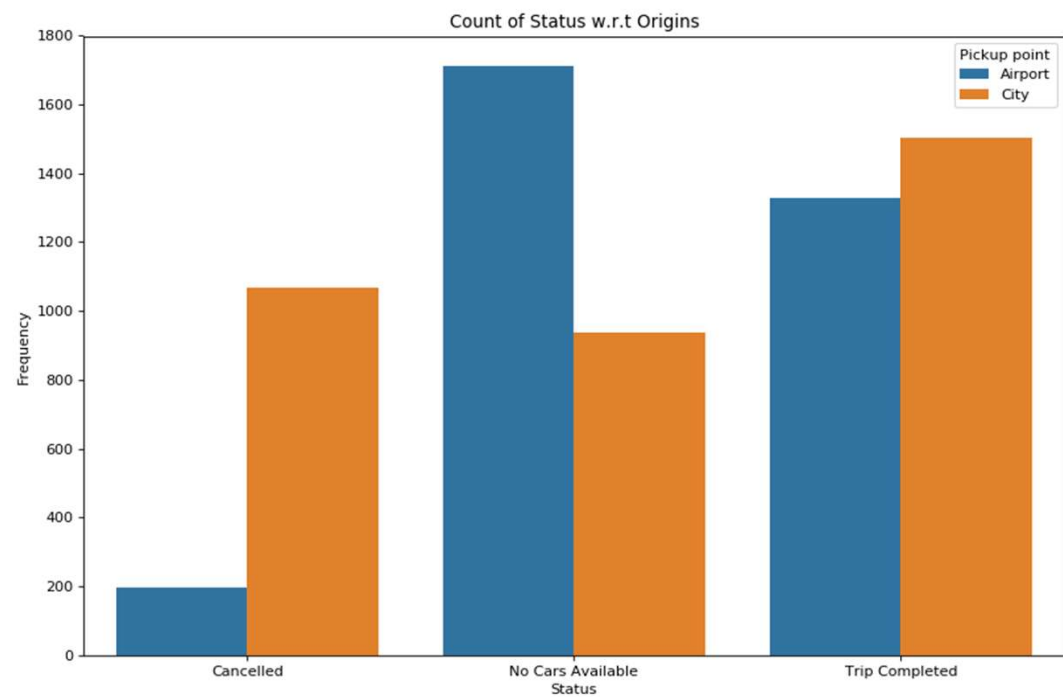


Analysis using Plots

This plot refers to the status of the trips with respect to the Origins(Pickup Point).

Maximum number of cars are not available from airport whereas, least are cancelled when cabs are taken from airport.

Though, there is a huge number of completed trips from the city, there is also a rise in Cancelled status. No availability of cars are also being seen w.r.t city as origin.



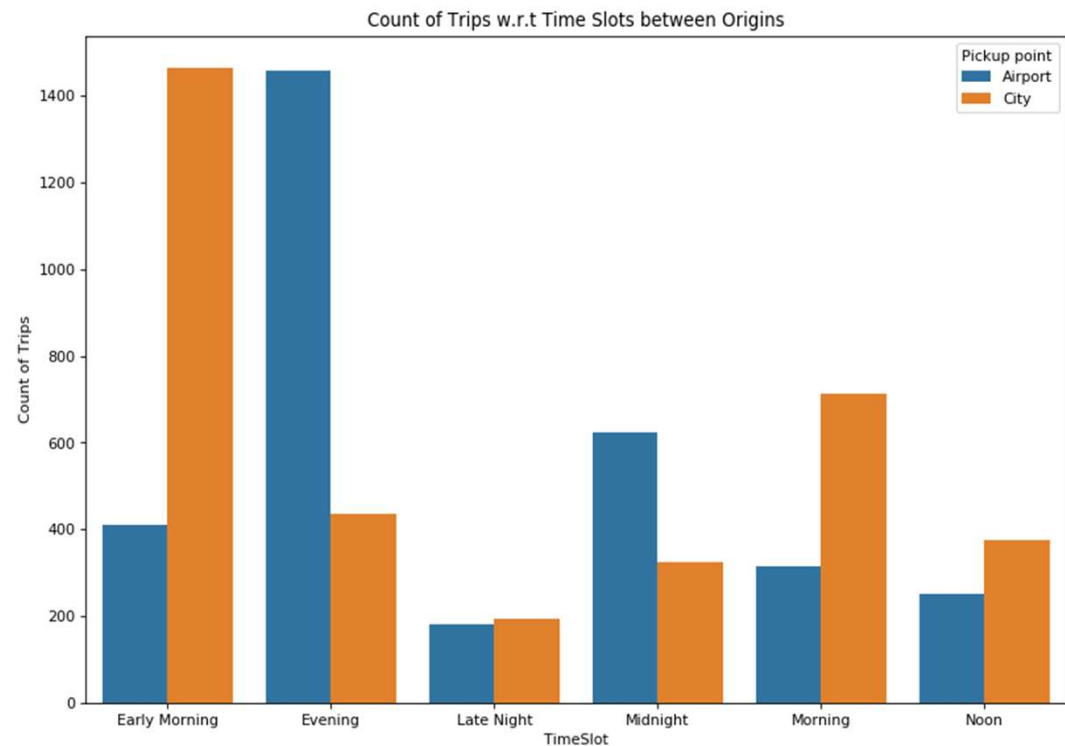
Analysis using Plots

This plot refers to the Time Slot of the trips with respect to the Origins (Pickup Point).

There is a huge number of received trips during early morning time from city and evening time from airport.

There is still quite number of trips received in morning as well.

The least number of trips being received is during late night time slot

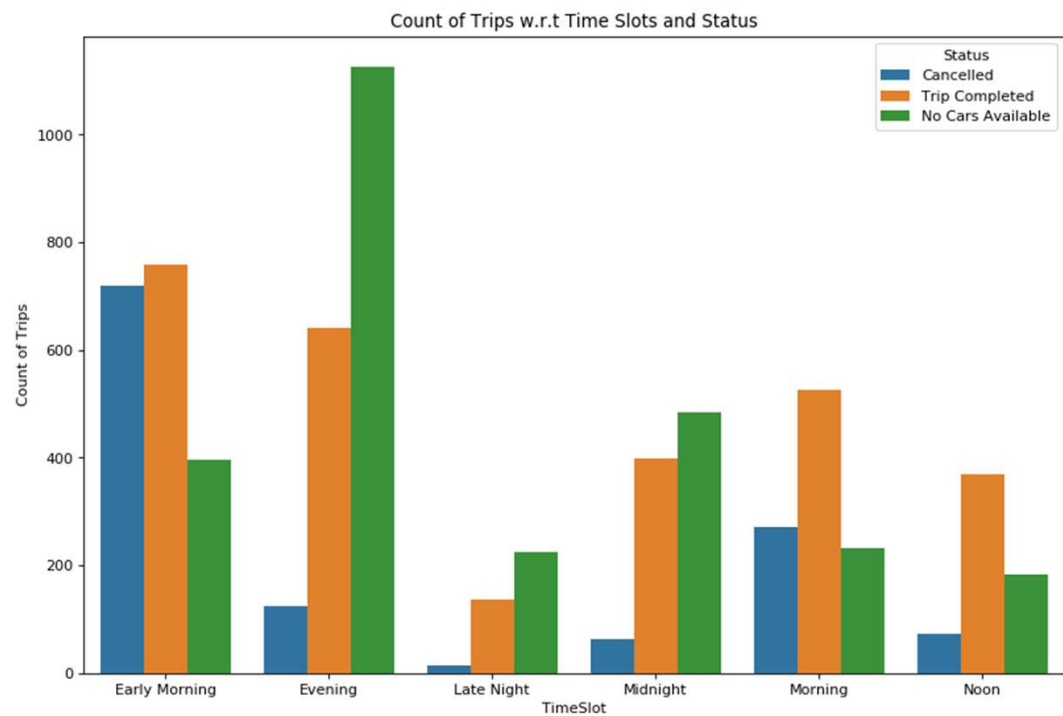


Analysis using Plots

This plot depicts the status of the trips with respect to the timeslots.

There is still quite number of trips received in morning as well.

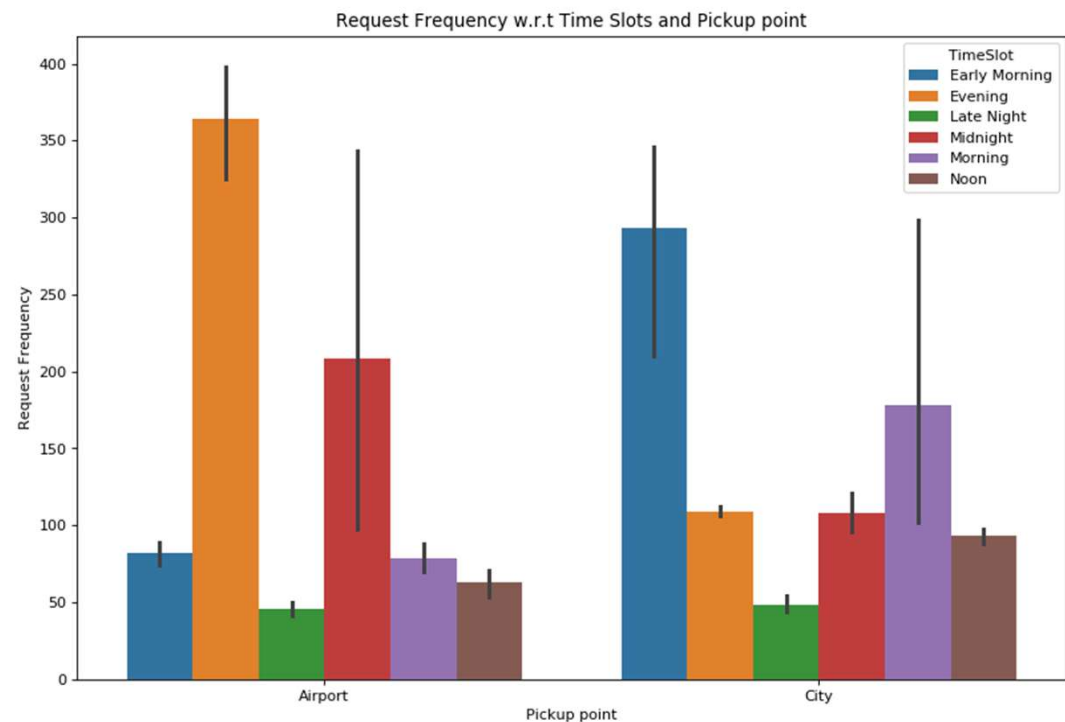
The least number of trips being received is during late night time slot



Analysis using Plots

This plot depicts the frequency of the trips with respect to the timeslots and pickup point

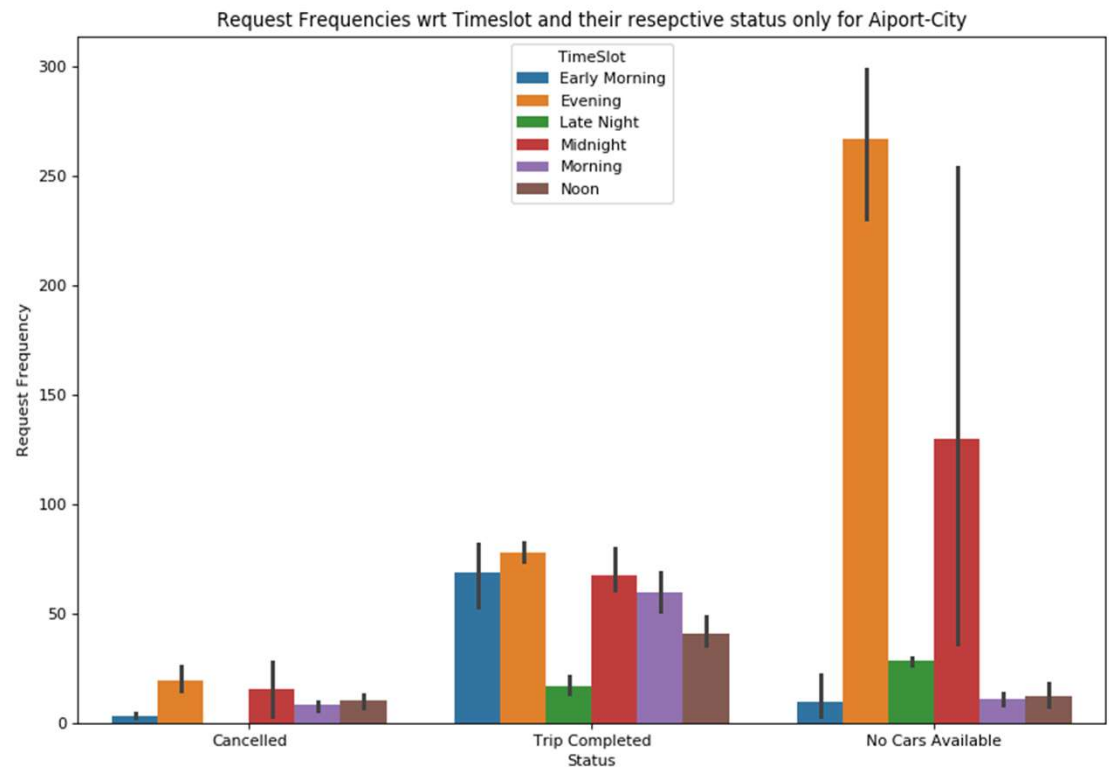
There is a huge demand in the evening from the airport and the during the early morning from the city.



Analysis using Plots

This plot depicts the frequency of the trips with respect to the status and subdivided considering the Time Slot only for **Airport-City**

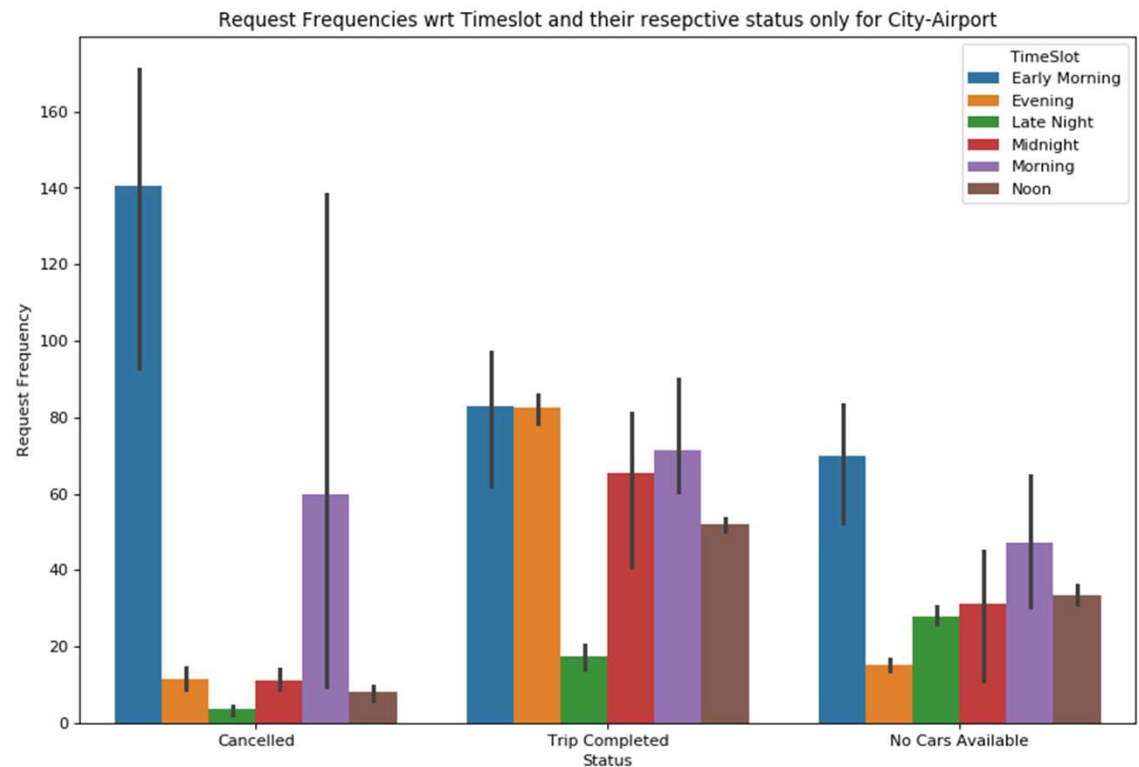
From this plot we can see that there is '**Non Availability**' of cabs during the evening.



Analysis using Plots

This plot depicts the frequency of the trips with respect to the status and subdivided considering the Time Slot only for **City-Airport**

From this plot we can see that there are lot of **Cancelled**, **No Cars Available** status for trips during the Early Morning and morning from the city.



Uber Supply Demand Gap Analysis

From all the previous plots we can infer that-

- There is a huge demand Early Morning and Evening from City and Airport respectively.
- During Evening and Midnight Time slots there is gap because of the Non Availability of Cars for airport as origin
- And also, Early Morning and morning time slots have status as Cancelled and No cars available which impacts the gap when the origin is City

To Mitigate the gap at an overall level, below status needs to be decreased-

Gap= Decrease in (Cancelled Trips) + Decrease in (No Cars Available).

Uber Supply Demand Gap Analysis

- Possible Reasons for the GAP
 - Considering Airport as Origin, since majorly the non-availability of cars happens to be during the Evening and Midnight, it can be because of the end of their working hours or because of the less number of flights landing in those interval leading to increase in their waiting period.
 - Considering City as Origin, there is a huge frequency of Cancellation and also non availability of cars which can be because of higher waiting period during the morning or noon time slot. Also, the chances of trip completion within the city is more than being at airport.

Recommended ways to Resolve the Supply-Demand Gap

- Increase in trips(status as completed) and also availability of cars during the **Early Morning** and **Morning** Hours from **City to Airport**
- Increase in **availability** of cars during **Evening** and **Midnight** from **Airport to City** trip