

# Uber Case Study

Submission – June 10, 2018

**Presentation by :**

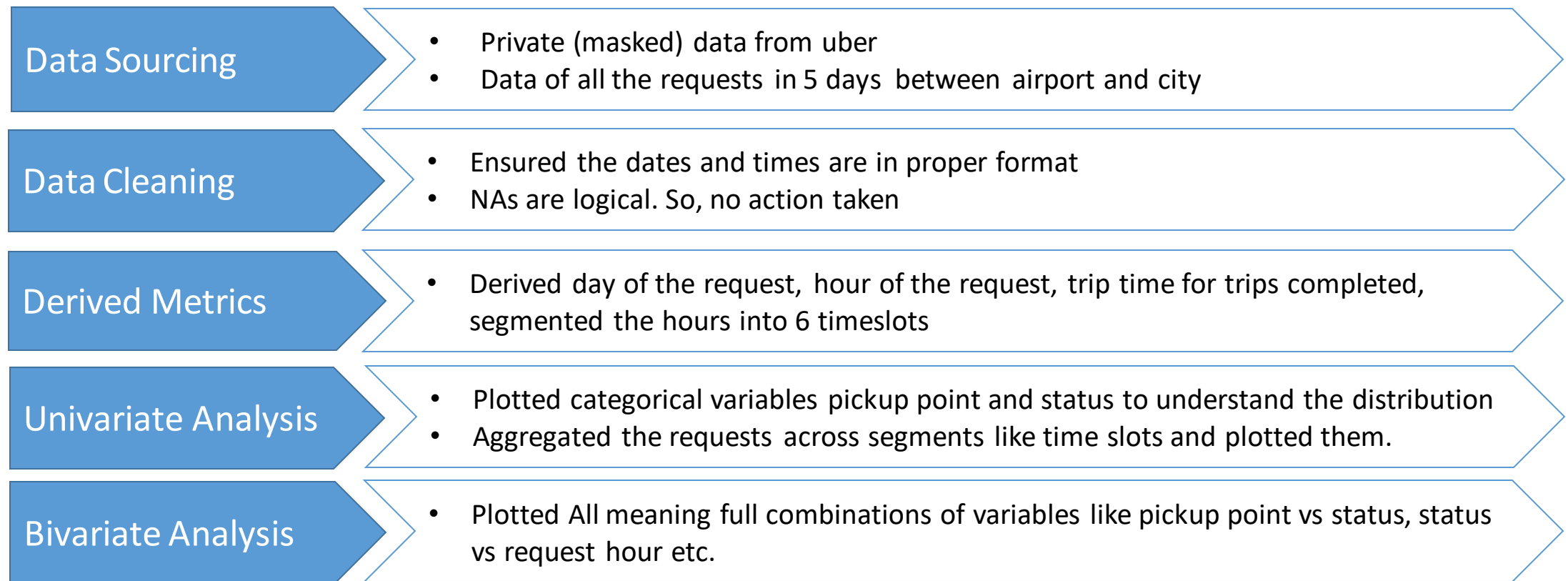


**Manish Reddy Jannepally**

Business Requirement	Data Set	Data Analysis	Outcome
<ul style="list-style-type: none"> <li>The aim of analysis is to identify the <b>root cause</b> of the problem and <b>recommend</b> ways to <b>improve</b> the situation.</li> <li>The problem is <b>revenue loss</b> of uber because of <b>driver cancelling</b> the trip request or <b>No cars available</b> at the time of trip request between the two points <b>Airport and City</b>.</li> </ul>	<ul style="list-style-type: none"> <li><b>Uber Request Data.csv:</b> This data set contains information for each request made by the customer to travel airport to city or city to airport.</li> <li>Below are attributes given in data:               <ol style="list-style-type: none"> <li>Request id</li> <li>Pickup point</li> <li>Driver id</li> <li>Status</li> <li>Time of Request</li> <li>Drop off time</li> </ol> </li> </ul>	<p><b>Objective:</b></p> <ul style="list-style-type: none"> <li>Visually identify the most pressing problems for Uber.</li> <li>Find out the gap between supply and demand and show the same using plots.</li> <li>Finding the reason for the supply – demand gap</li> <li>Suggest recommendations.</li> </ul> <p><b>Tools:</b></p> <ul style="list-style-type: none"> <li>R</li> </ul> <p><b>Technique:</b></p> <ul style="list-style-type: none"> <li>Exploratory Data Analysis.</li> <li>Slicing, Dicing, Roll up, Drill Down, Filtering, Data cleaning, Aggregation, grouping</li> </ul>	<p><b>Problems:</b></p> <p>Cancellations by driver during Early Mornings and Morning for City to Airport requests</p> <p>No cars available during Evenings and Nights for Airport to City requests</p> <p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>Implementation of shifts for drivers</li> <li>Giving additional incentives for airport requests</li> <li>Setting a number for rides to airport per day or week as mandatory</li> </ul>

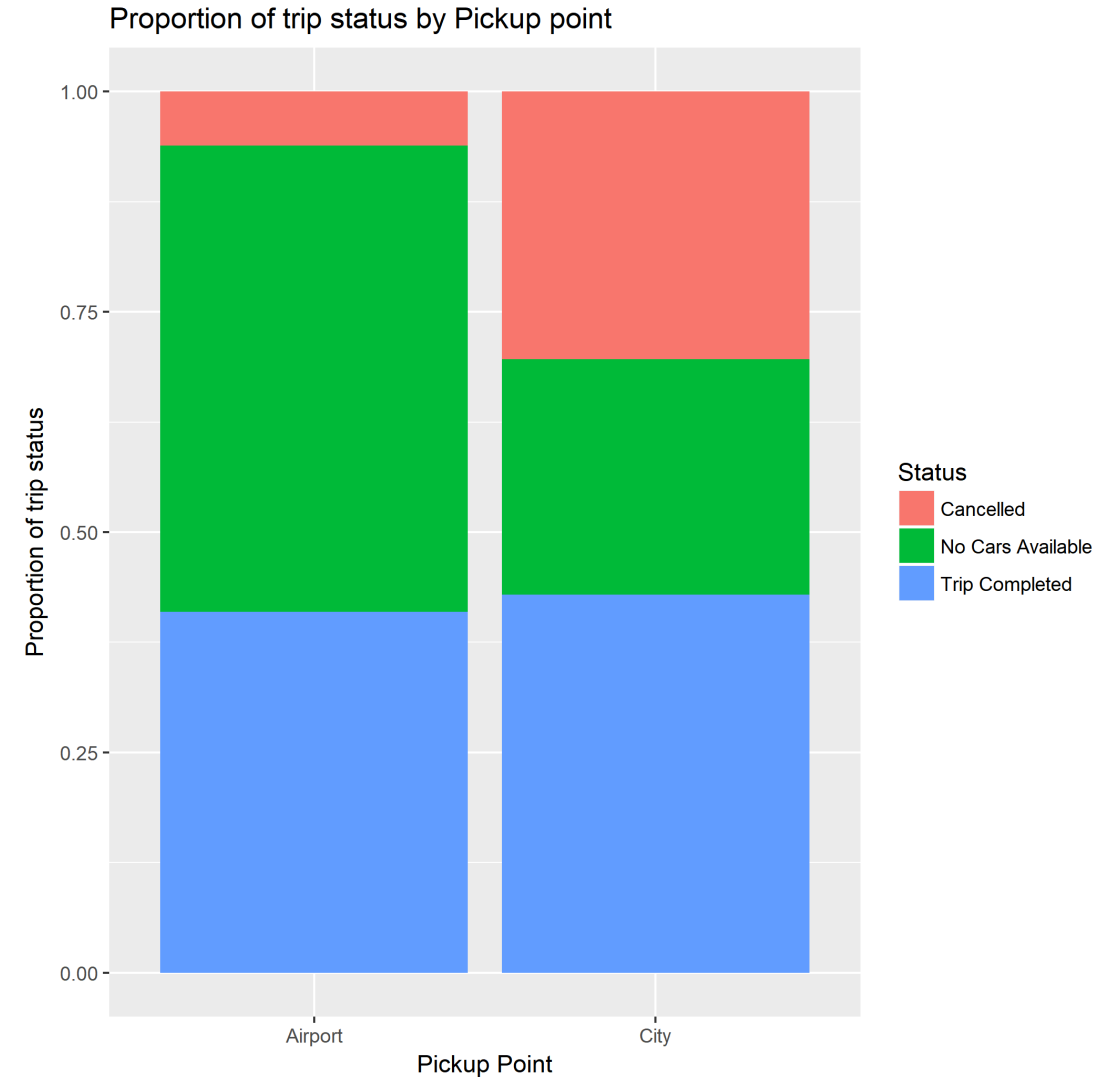
## Approach for this case study

Exploratory Data Analysis (EDA) is the major approach I used to analyze the uber data set. Below are the steps I did,



In the given 5 days of data...

- ❑ **59%** of requests are not completed from **airport to city**.
- ❑ **54%** of requests are not completed from **city to airport**.
- ❑ **90%** of not completed requests from airport to city are due to **no availability of cars**
- ❑ **53%** of not completed requests from city to airport are due to **driver's cancellation**.

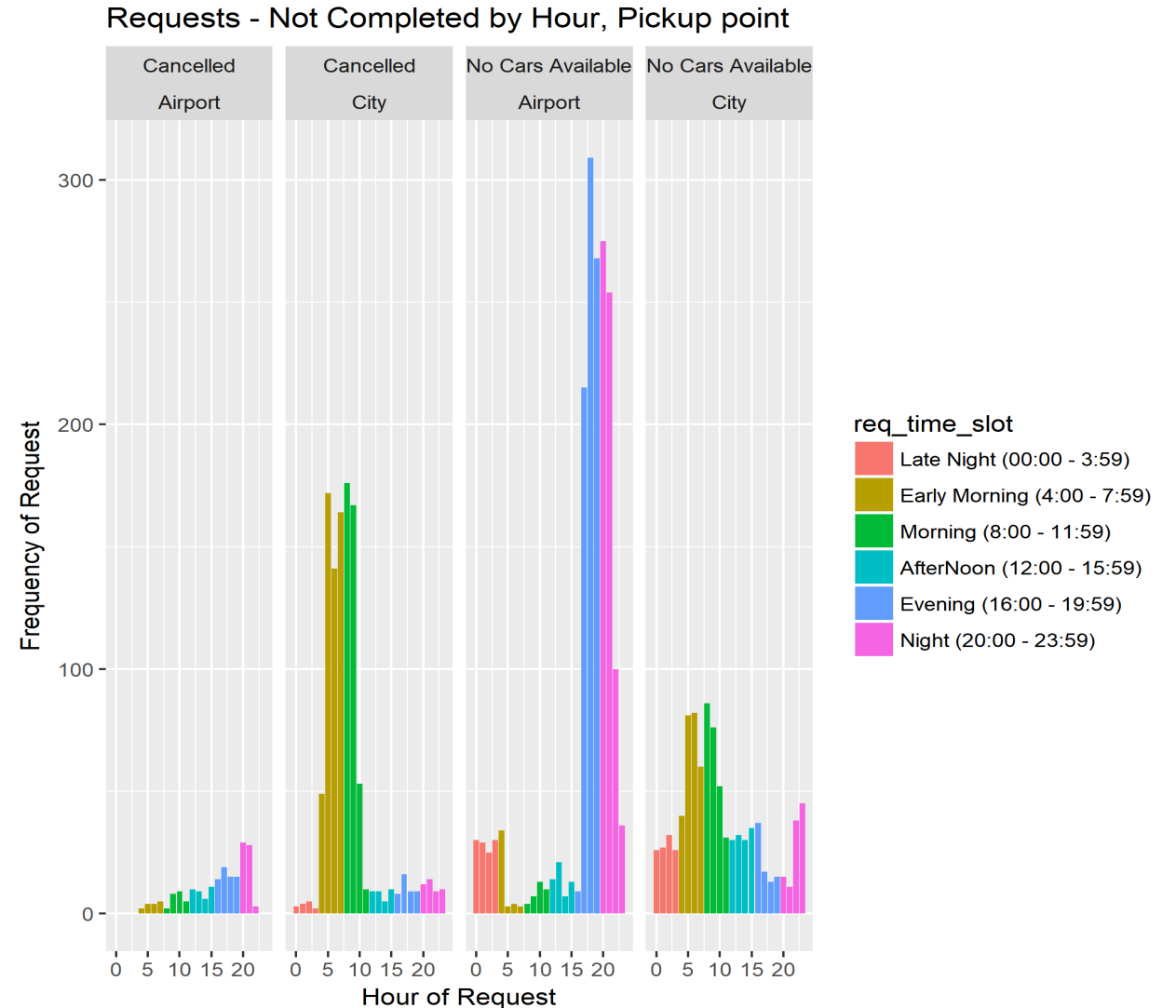


## Analysis of request hour, Trip Status and pickup point

- ❑ City to Airport trips are mostly cancelled by drivers during early hours of the day.
- ❑ Airport to city trips are not completed because of scarcity of cars during evening and nights

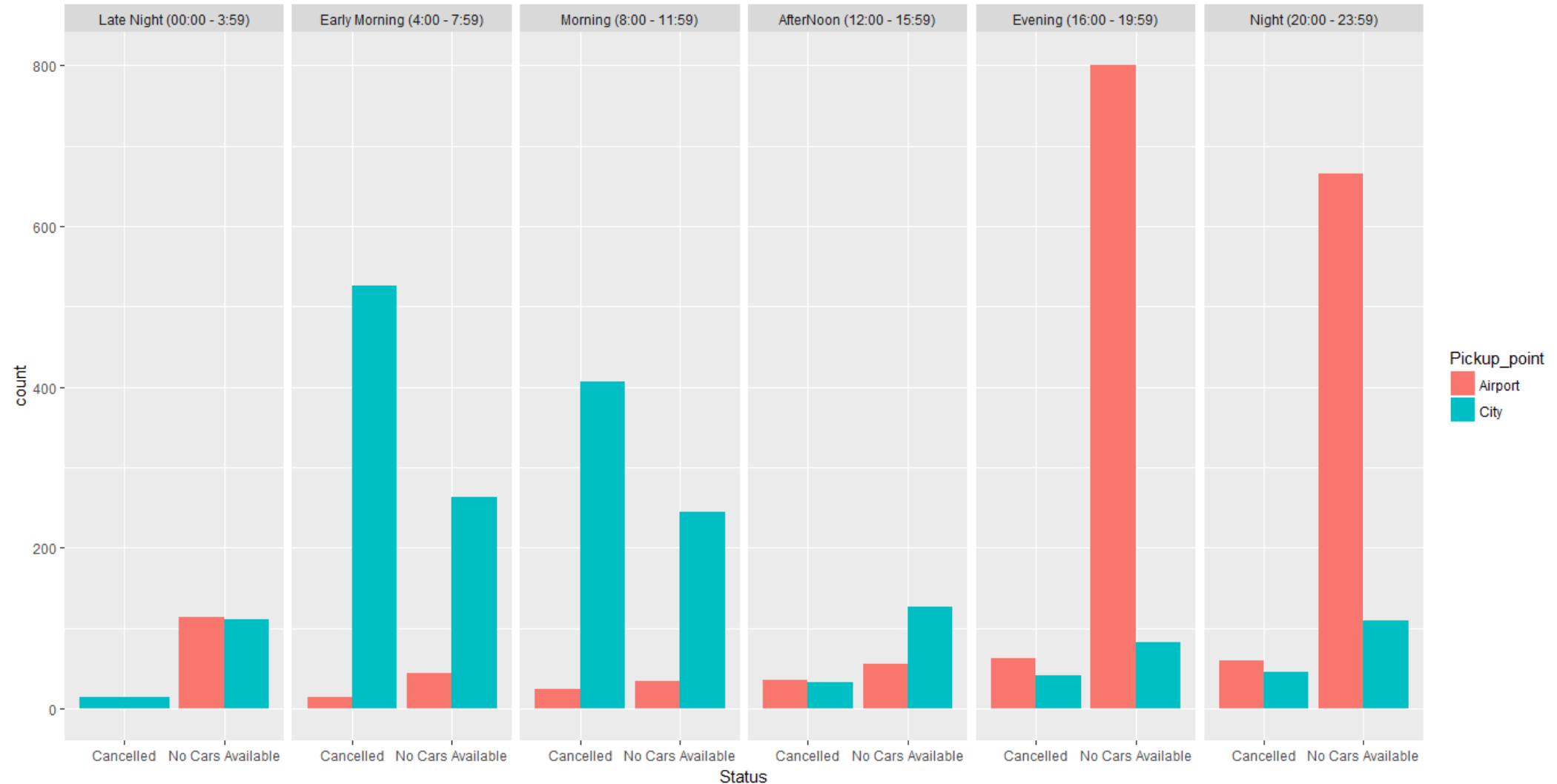
Below are percentages of trips cancelled by timeslot

Timeslot	Requests Not Completed
After Noon	39%
Early Morning	17%
Evening	16%
Late Night	67%
Morning	20%
Night	17%



## Most Pressing Problem for Uber :

- Cancellations by driver during Early Mornings and Morning for City to Airport requests
- No cars available during Evenings and Nights for Airport to City requests



# Analysis of Gap between demand and supply



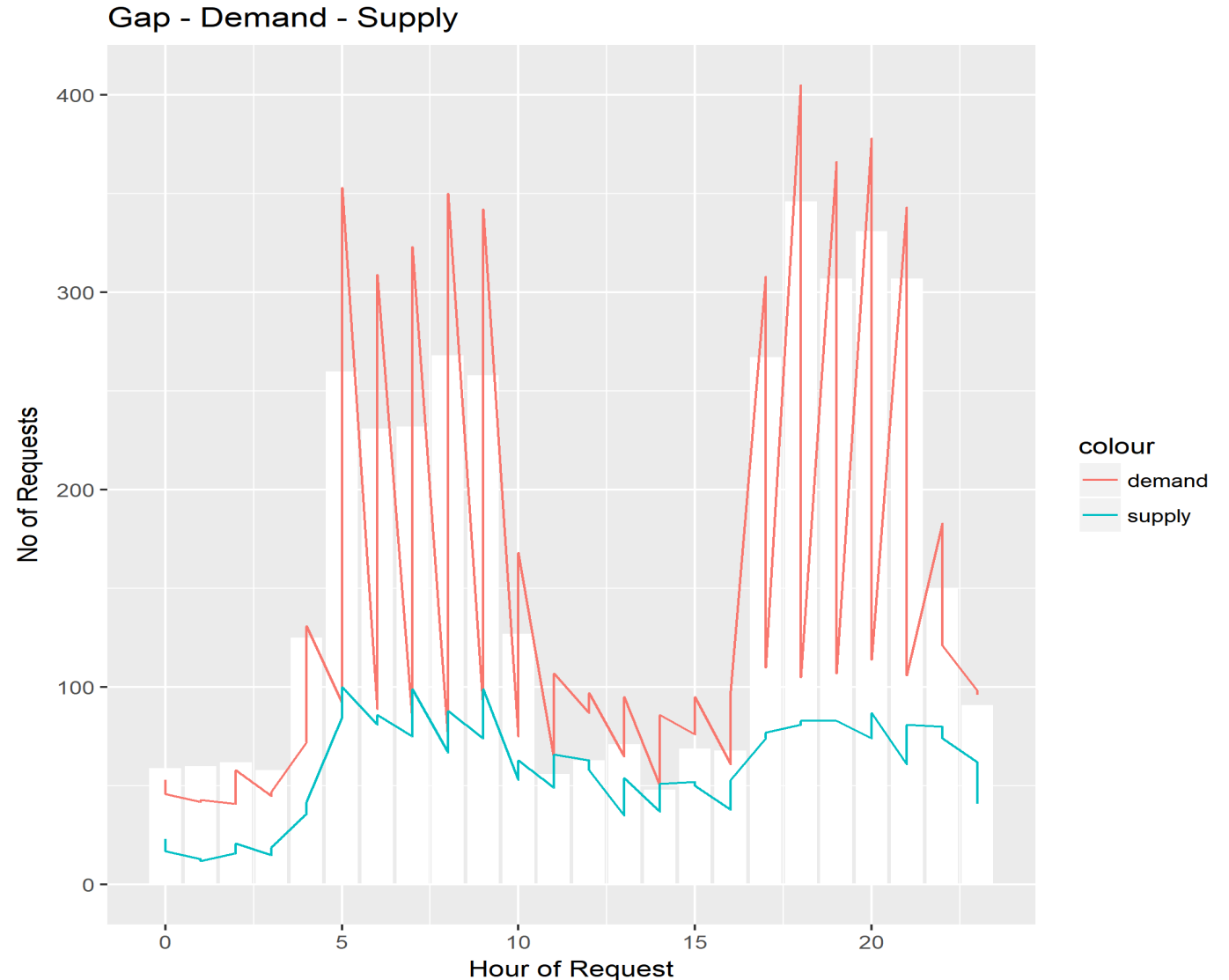
Demand = All the requests  
 Supply = Trips completed  
 Gap = Demand – Supply

- ❑ For City to Airport requests, gap is clearly high for Early Morning and Mornings slots.
- ❑ For Airport to City requests, gap is high during Evening and Night timeslots

As we can see in the graph, gap (white bars) take a pike in two slots. During morning hours (4:00 – 10:00) and (17:00 – 22:00).

The gap pike during morning is for the requests for City to Airport(most of it). After this peak, demand comes down, so the driver may or may not get the return trip immediately. Drivers may be cancelling the request as they don't want to waste time waiting at Airport.

The peak gap pike during evenings is for requests for Airport to City. At this point, most of the day drivers will go back to home. So, there will be only drivers who tend to drive night and they will be mostly in city. That's why there no cars available.





☐ **Implementation of shifts for drivers:**

Drivers have the flexibility to get on and off the job according to their wish. So, most of the drivers work during day time. So, If we make drivers to come in rotational shifts both nights and day, we can avoid the no cars available problem.

☐ **Setting a number for rides to airport per day or week as mandatory:**

Mandatory condition to accept at least a number of requests (ex : 1 for a day or 5 for a week) for each driver otherwise penalize drivers.

☐ **Giving additional incentives for airport requests:**

Giving incentives to driver who completes more number of airport requests will motivate other drivers. Even if they wait for longer durations, incentives will neutralizes their loss.