Uber Case Study

SUBMISSION

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Introduction-Uber

Uber Technologies Inc. (doing business as Uber) is a peer-to-peer ridesharing, taxi cab, food delivery, bicycle-sharing, and transportation network company headquartered in San Francisco, California, with operations in 785 metropolitan areas worldwide .

Its platforms can be accessed via its websites and mobile apps. Uber has been prominent in the sharing economy, so much so that the changes in industries as a result of it have been referred to as Uberisation.

Uber wants to improve it’s customer experience .

As a part of this case study they have provided a data set which have details of few days Uber trip. This trip is from

Airport to city and city to Airport.

Uber wants to identify most severe problem on this route day-wise, time slot-wise and request hour wise.

Business Objective

The aim of analysis is to identify the root cause of the problem (i.e. cancellation and non-availability of cars) and recommend ways to improve the situation.

As a result of the analysis, This report will be able to present to the client the root cause(s) and possible hypotheses of the problem(s) and recommend ways to improve them.

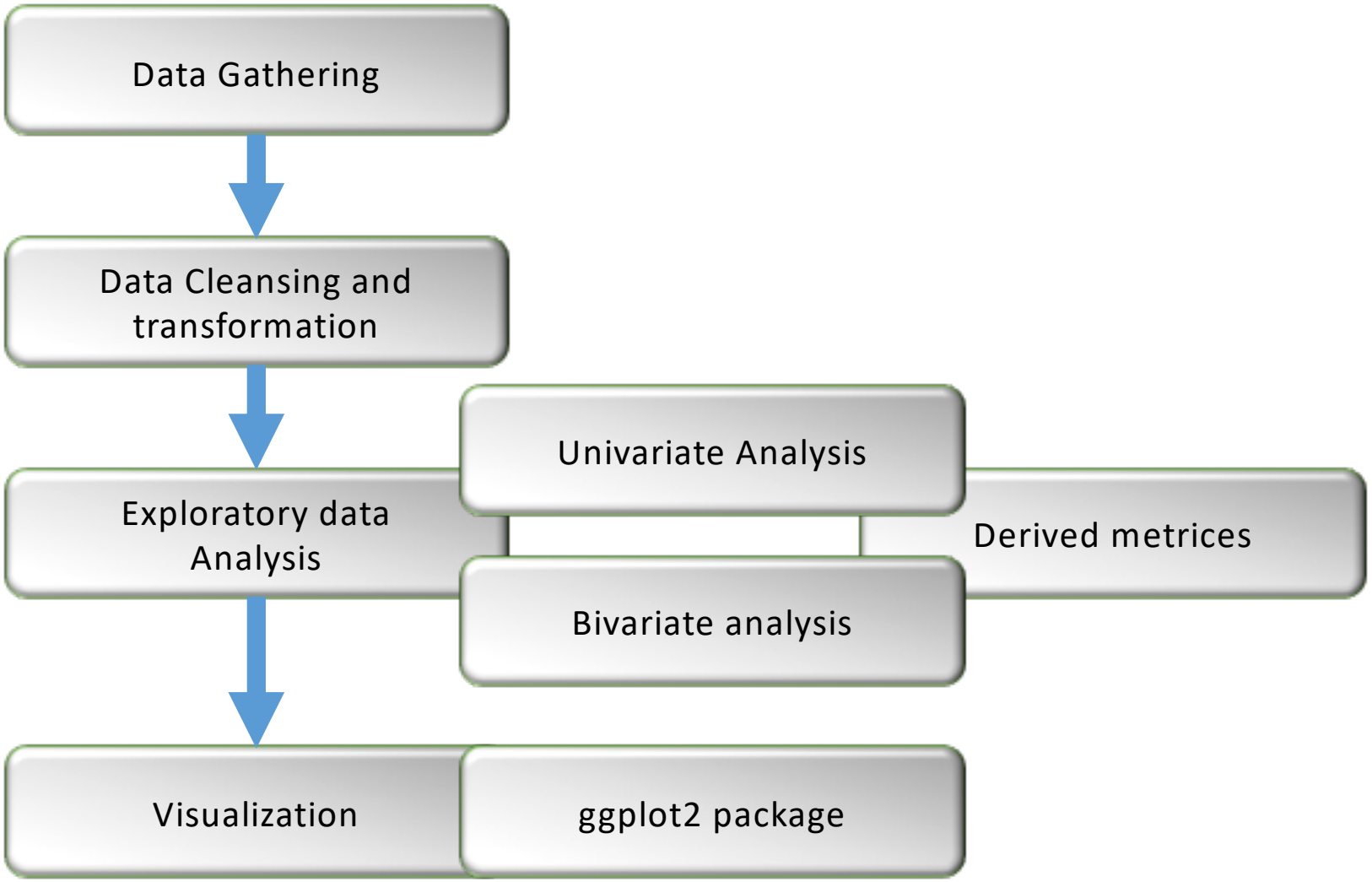
Data Understanding

There are six attributes associated with each request made by a customer:

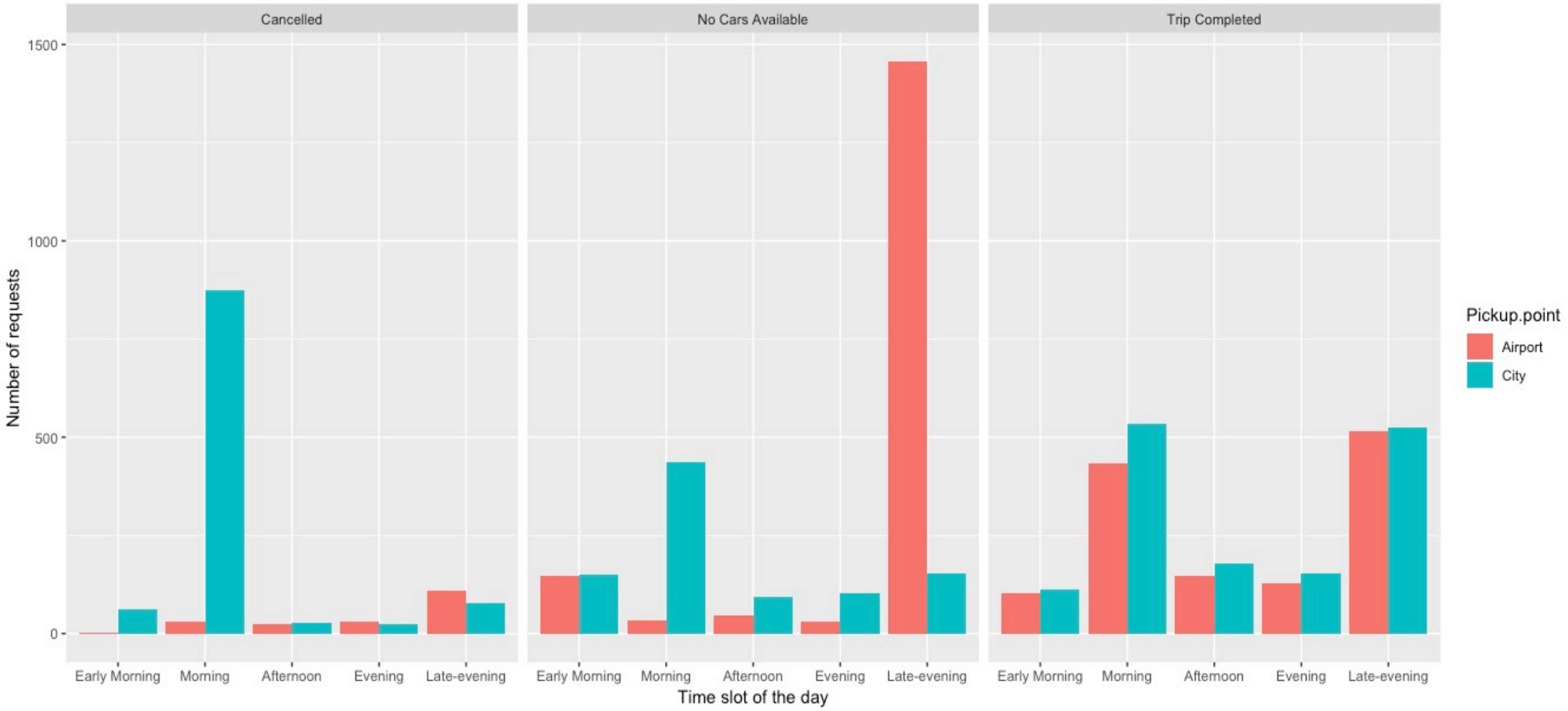
- Request id: A unique identifier of the request
- Time of request: The date and time at which the customer made the trip request
- Drop-off time: The drop-off date and time, in case the trip was completed
- Pick-up point: The point from which the request was made
- Driver id: The unique identification number of the driver
- Status of the request: The final status of the trip, that can be either completed, cancelled by the driver or no cars available

Note: For this case study, only the trips **to and from the airport** are being considered.

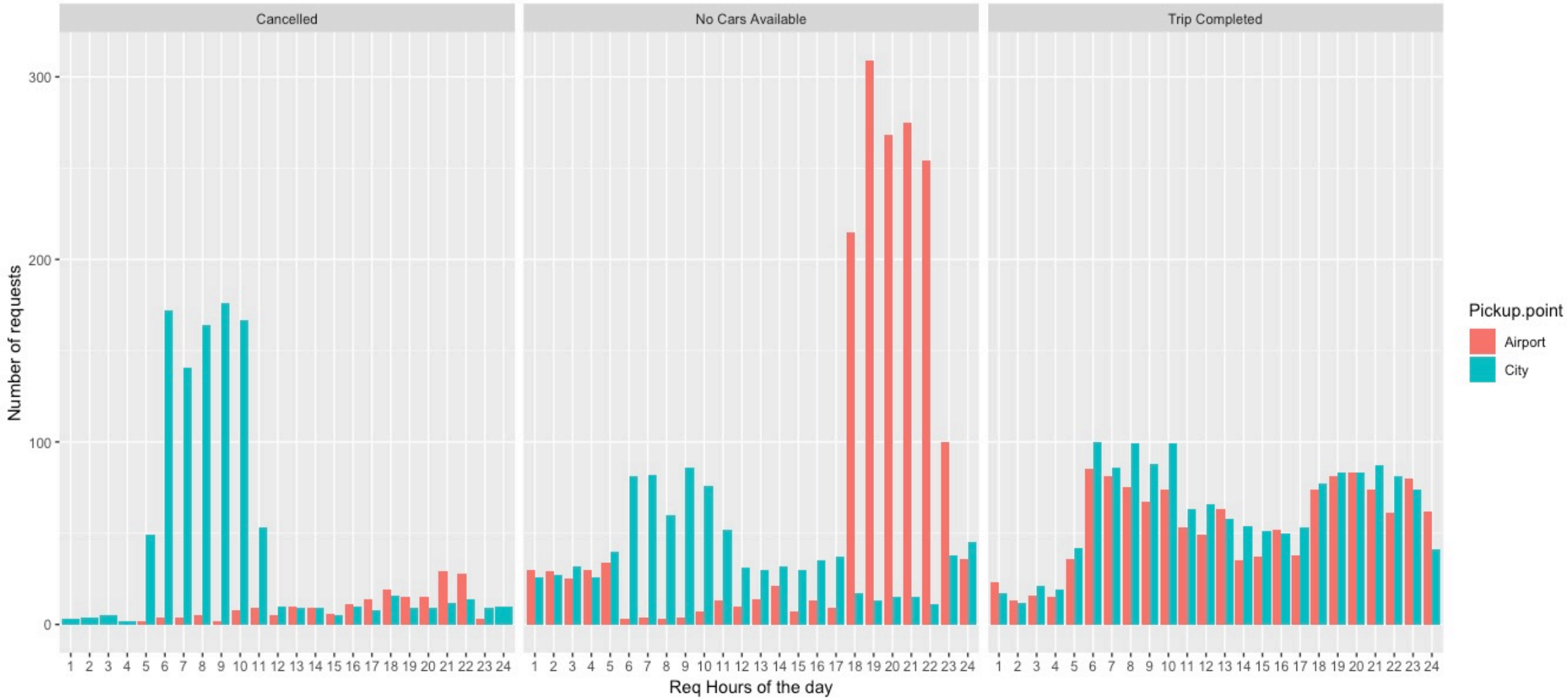
Process Flow



Timeslot-wise and pickup pointwise trip status analysis



Req hour-wise and pickup pointwise trip status analysis

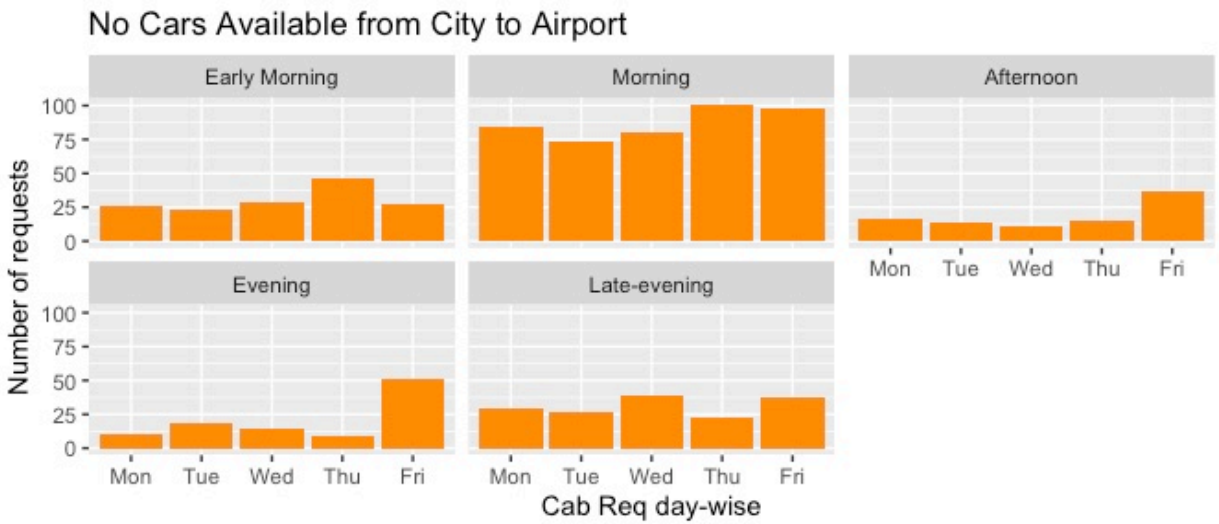


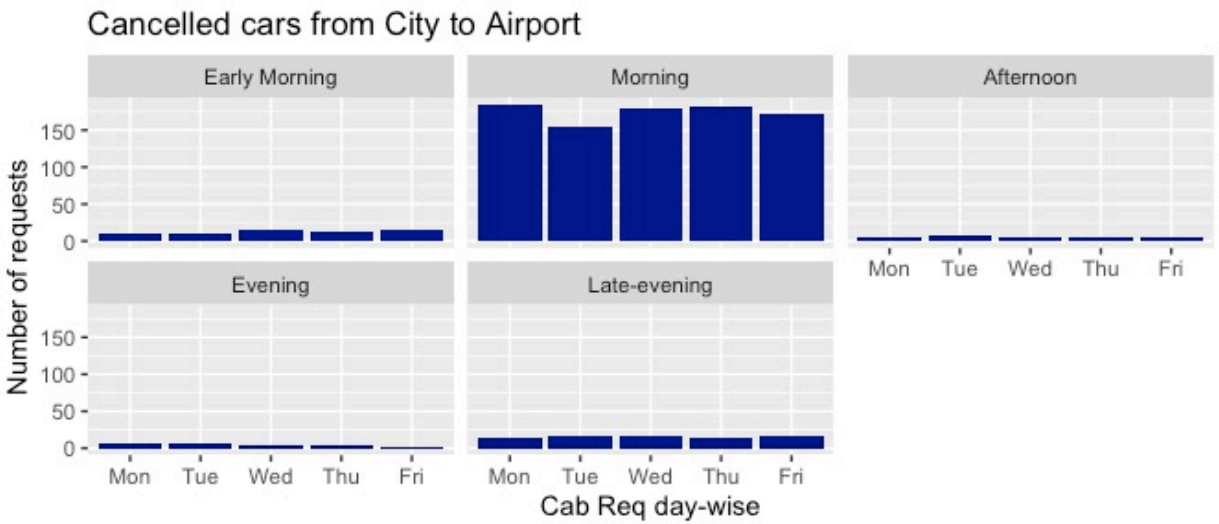
Plot analysis

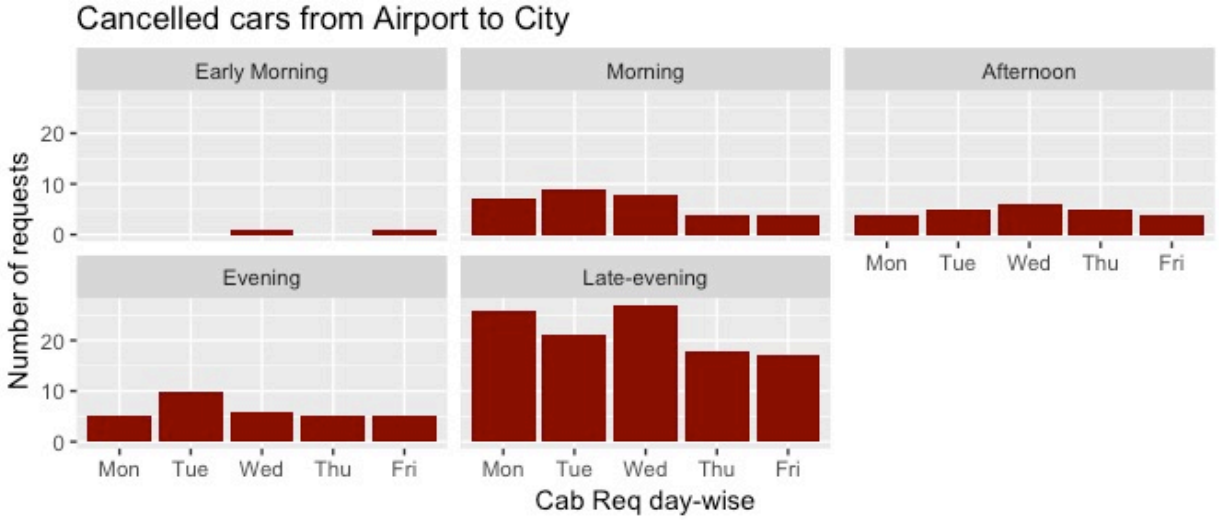
Following are the outcome of trip status analysis based on timeslot and pickup point :

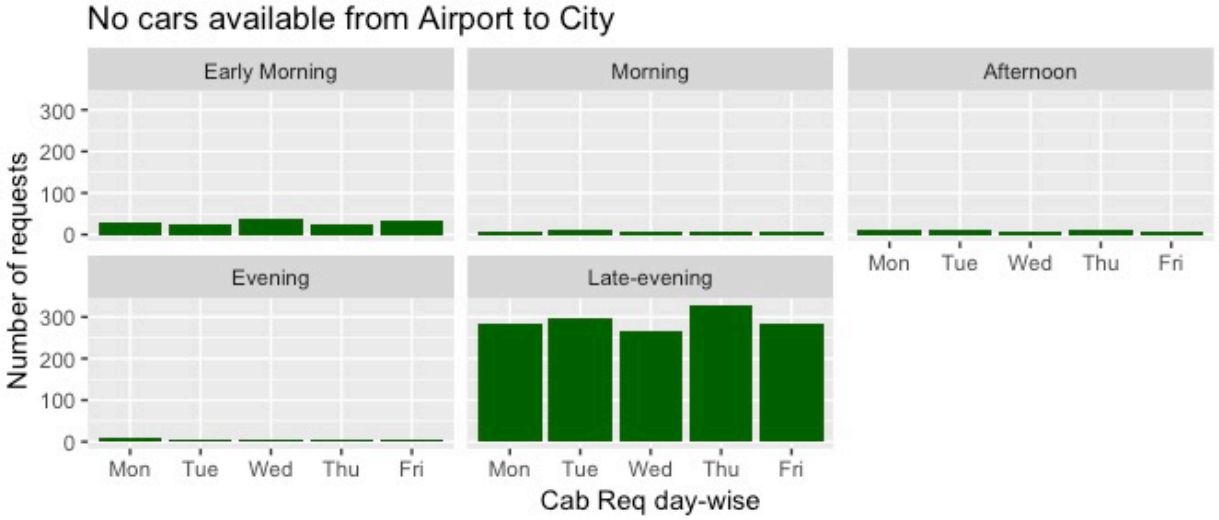
1. Cancellation is more in the morning slot (6-10 am) in the City pickup points.
2. No cars available scenario is more in the late evening slot (6 pm -11 pm)at the airport pickup points.

Day, timeslot and pickup point-wise trip status analysis







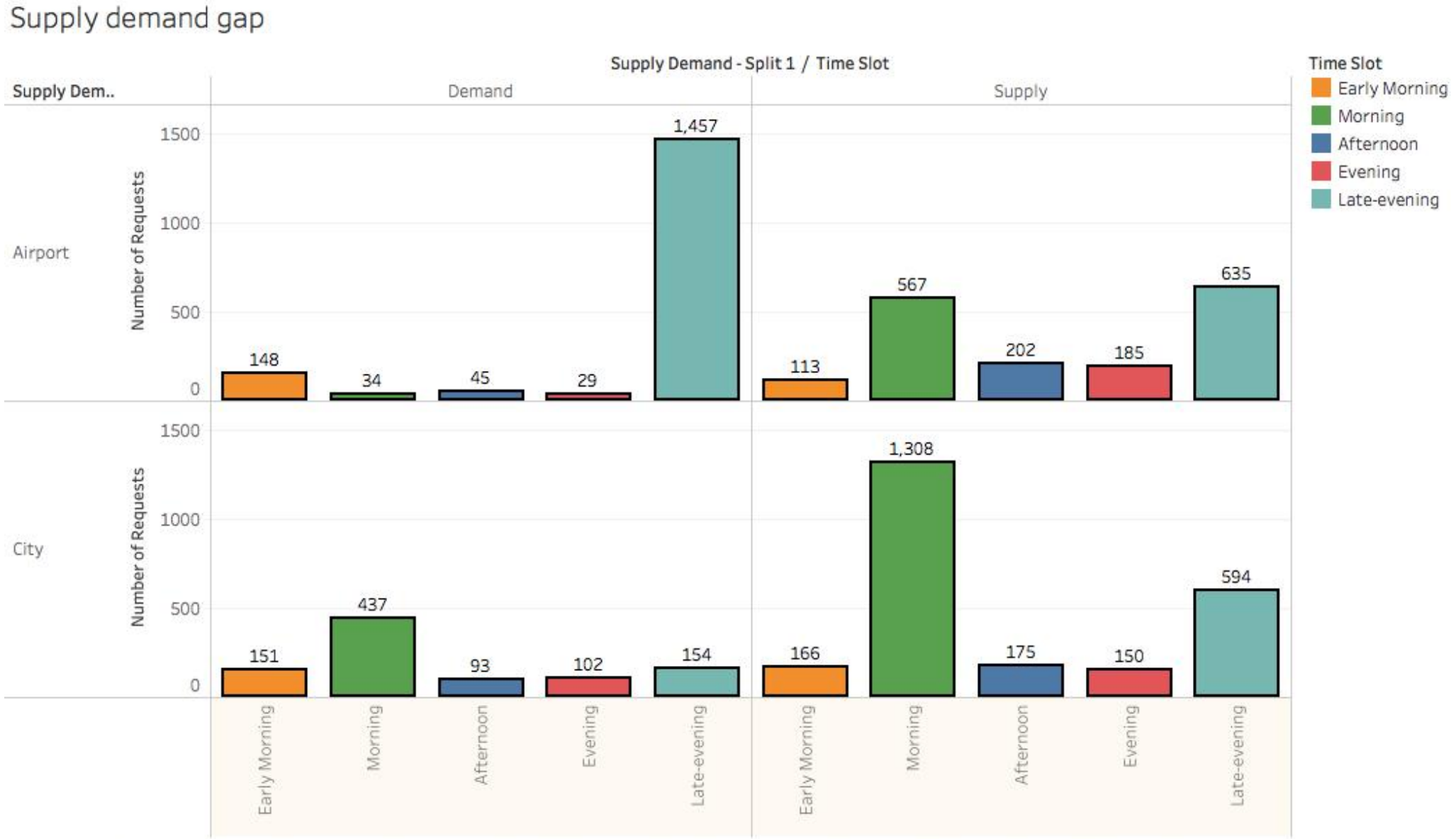


Plot analysis

Following are the outcome of trip status (cancel, no cars available)analysis based on weekdays and pickup point :

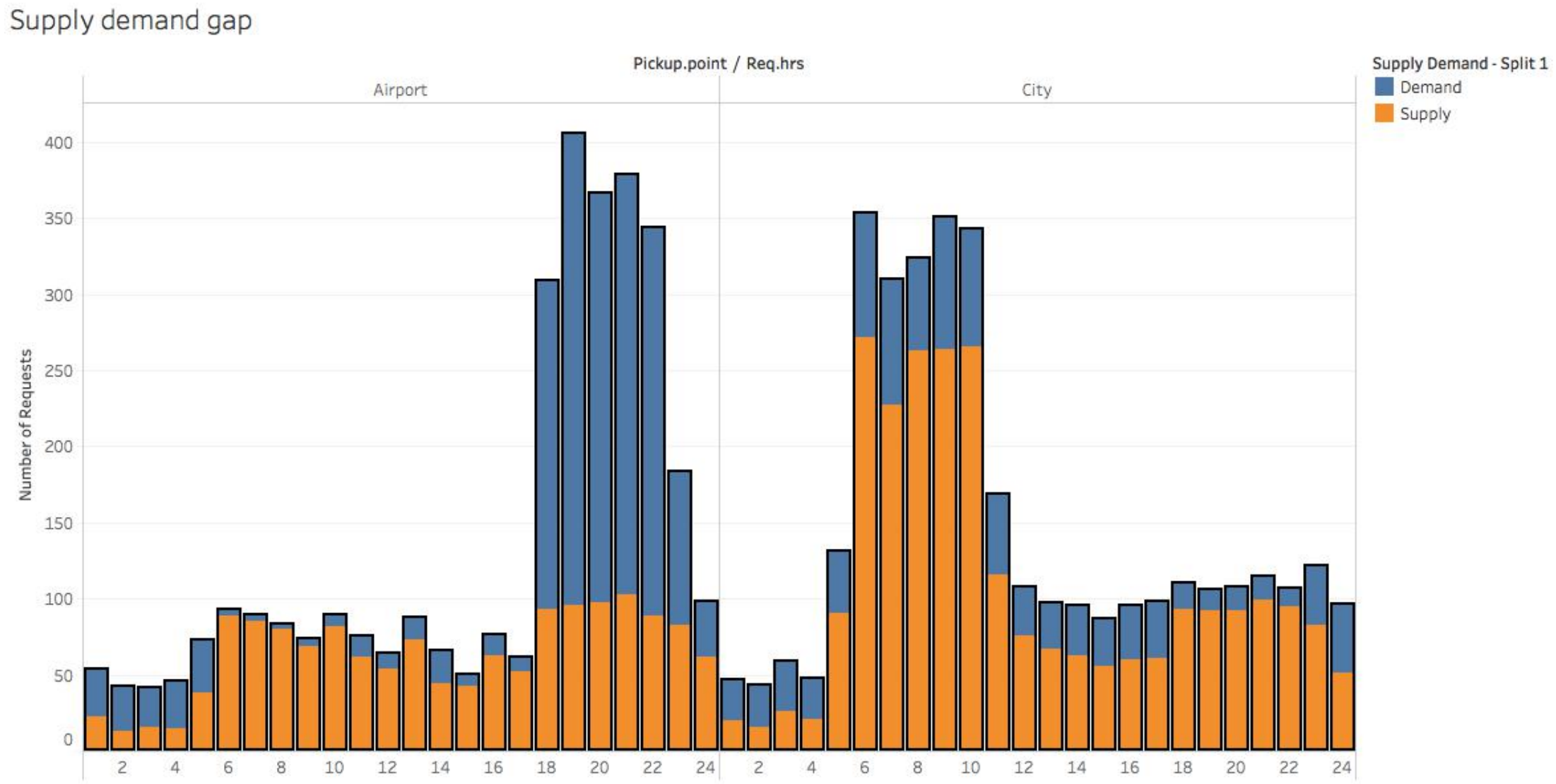
1. No cars available scenario from City to Airport - Though frequency of request is low(around 100) but this scenario is in the morning is more compare to other time slot and is uniform across five days in morning slot.
2. No cars available scenario from Airport to City – The occurrence of this scenario is more in late evening time slot and almost equal across five days of the week and almost negligible in other time slot especially in the morning.
3. Cancelled cars from city to airport - The occurrence of this scenario is more in the morning slot and is almost equal across the five days of the week (Mon,Tue,Wed,Thrs,Fri).While in other time slot it is almost negligible.
4. Cancelled cars from Airport to city - frequency of cancellation is very less at airport and it is around 20-25 requests per time slot . And among these less cancellation ,late evening has more cancellation (20-30 requests per day of the week) across all 5 days of the week.

Timeslot-wise supply demand analysis



Count of Supply Demand for each Time Slot broken down by Supply Demand - Split 1 vs. Supply Demand - Split 2. Color shows details about Time Slot.

Request hour-wise supply demand analysis



Plot analysis

Following are the outcome of Supply demand analysis :

1. Demand and supply gap in the city, is more in the morning time slot while in the airport ,demand and supply gap is more in the late evening.

2. Demand at airport is less in afternoon, Evening and morning but supply is more in these time slots.

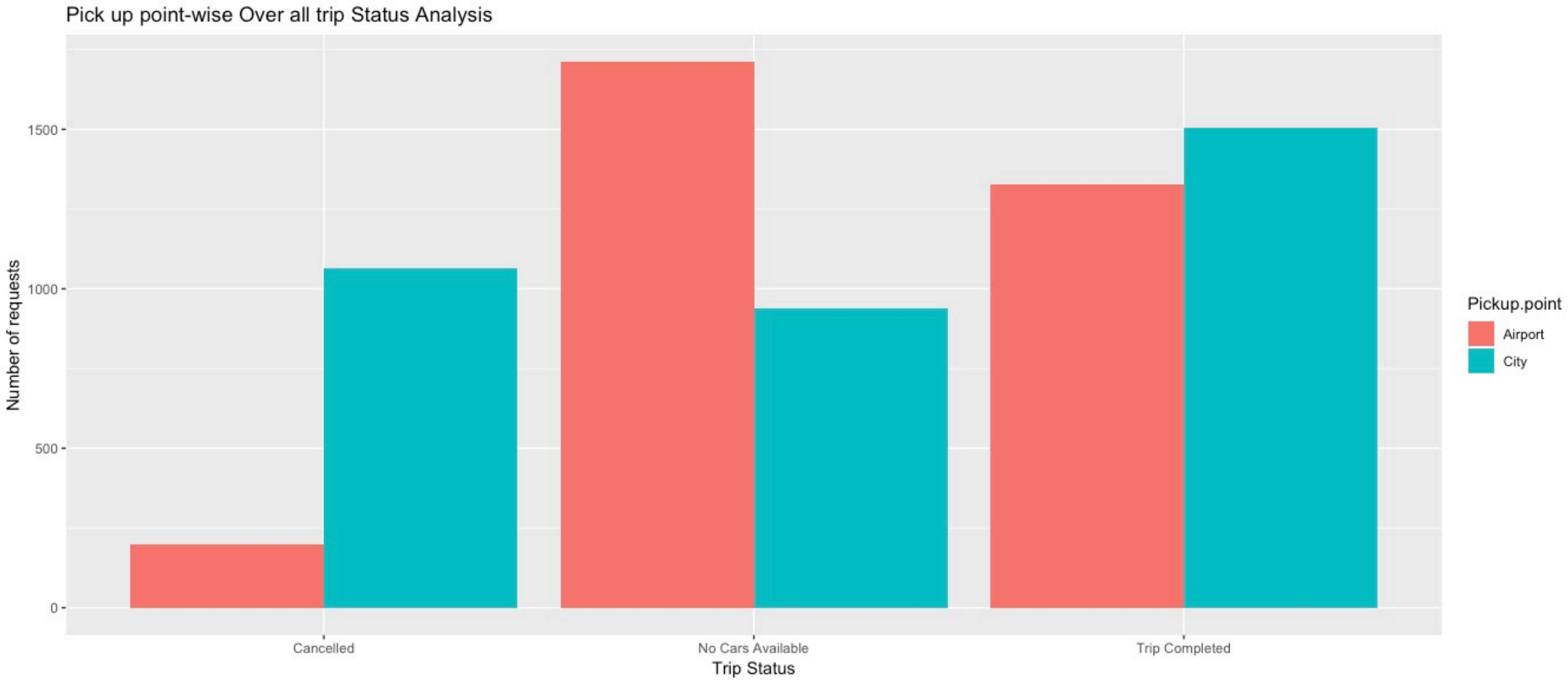
3. Supply in the city is more compare to demand in the city and this gap is more in the morning and late evening.

4. In the late evening, demand at Airport (airport-city), is more and supply is less which in turn hitting the revenue of the company because company is not able to serve cab to these customer.

5. In morning supply is more in the city(city-airport) compare to demand.

6. So most severe gap (Demand-supply) is in late evening at Airport to city route which can be filled in by supplying more cabs.

Pickup point-wise trip status analysis



Recommendations

Recommendation for trip cancellation:

1. Back route should not be assigned to drivers who is heading the location away from the pickup point. This some times lead to cancel the trip because it's not possible for driver to come back for short distance trip.
2. Good incentives can be offered to drivers especially in peak hours to handle cancellation scenario especially for high traffic zone or for short distance trip.
3. During peak hour, Cab whose ETA is more than 15 minutes , should not be assigned to customer .This also leads to cancellation because usually customer does not wait for the cab if it's ETA is more than 15 minutes.
4. Type of cab needs to be captured which can be used to analyze the type of cabs getting cancelled.
5. High price for short trip, it can be the one of reason if demand supply gap is more at any location then price of the trip gets increased. Due to increment in price customer might be cancelling the trip.

Recommendation for No cars Available cases:

1. Alert should be sent to drivers of all near by location where demand is more and supply is less. Incentive of these trips should be increased so that driver take interest in attending these trips.
2. Few number of cabs should be reserved for high demand zone especially in peak hour and this can be done by analyzing historical data.
3. Increasing cabs number in these zones will be helpful to overcome these scenario. This can be done by supplying more cabs from other location to high demand zone or by introducing new cabs.

Thank You!!!!!!!!!!!