Uber

Supply-Demand Gap

Presented By

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Objective

- Find possible hypotheses of the problem i.e. driver cancellation and non-availability of cars.
- Recommend ways to improve the revenue.

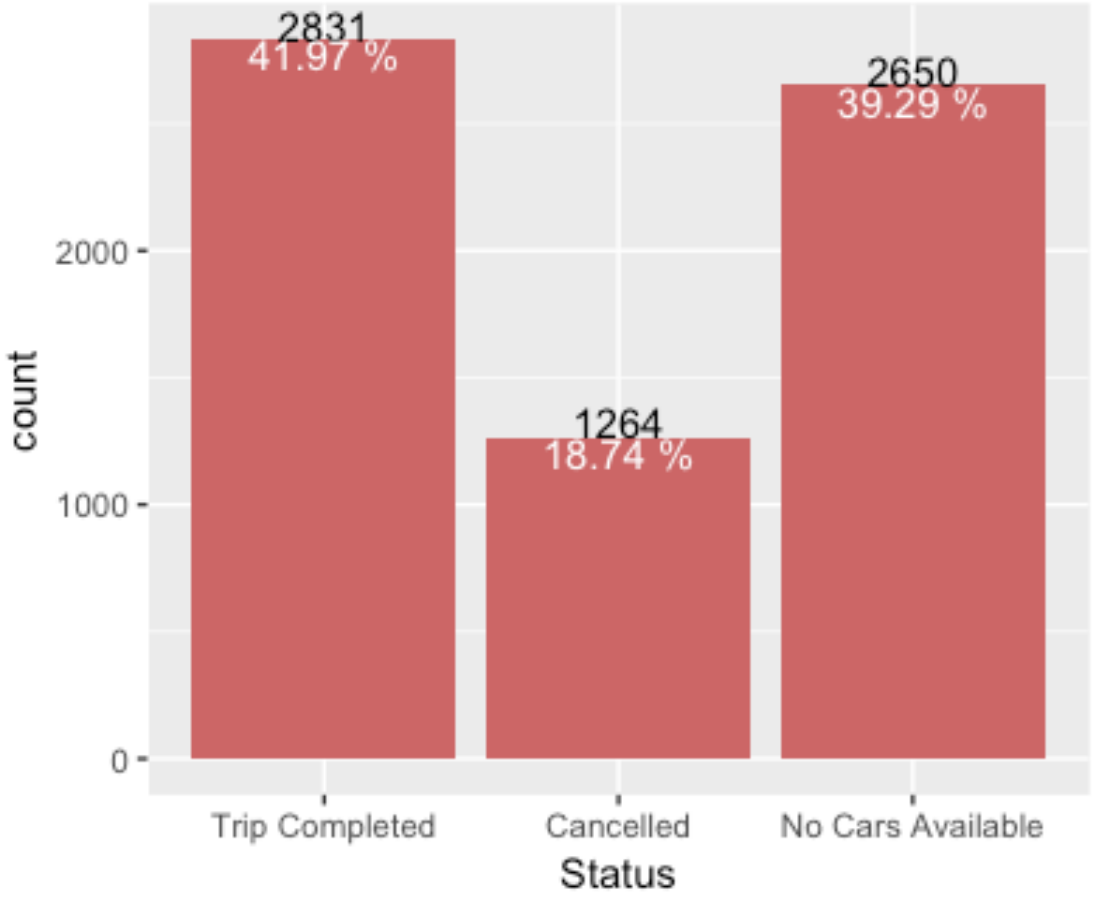
Basic Data observations:

- ✓ Only 5 week day data is available
- ✓ Data is specifically between city and airport pickup point.
- ✓ All requests have one of these 3 statuses : Trip Completed, Cancelled, No Cars Available
- ✓ No drop data, driver data available when status = “No Cars Available”

What is the problem?

Loss of revenue due to driver cancellation and non-availability of cars

- More than 55% requests have status of either “Cancelled” or “No Cars Available”.
- “No cars Available” is double the “Cancelled” trip requests.

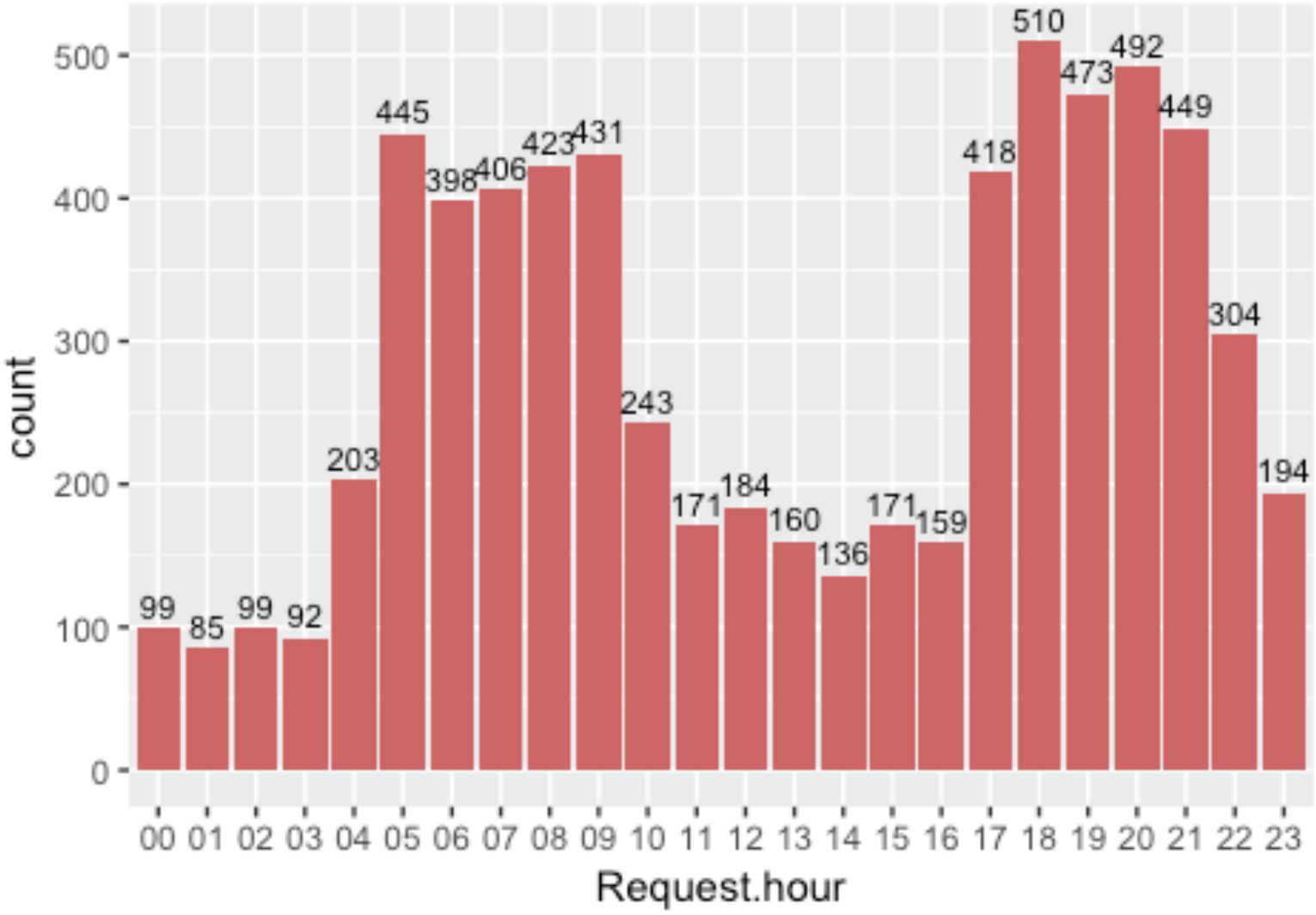


Request Frequencies:

Hourly frequency of requests

Observations:

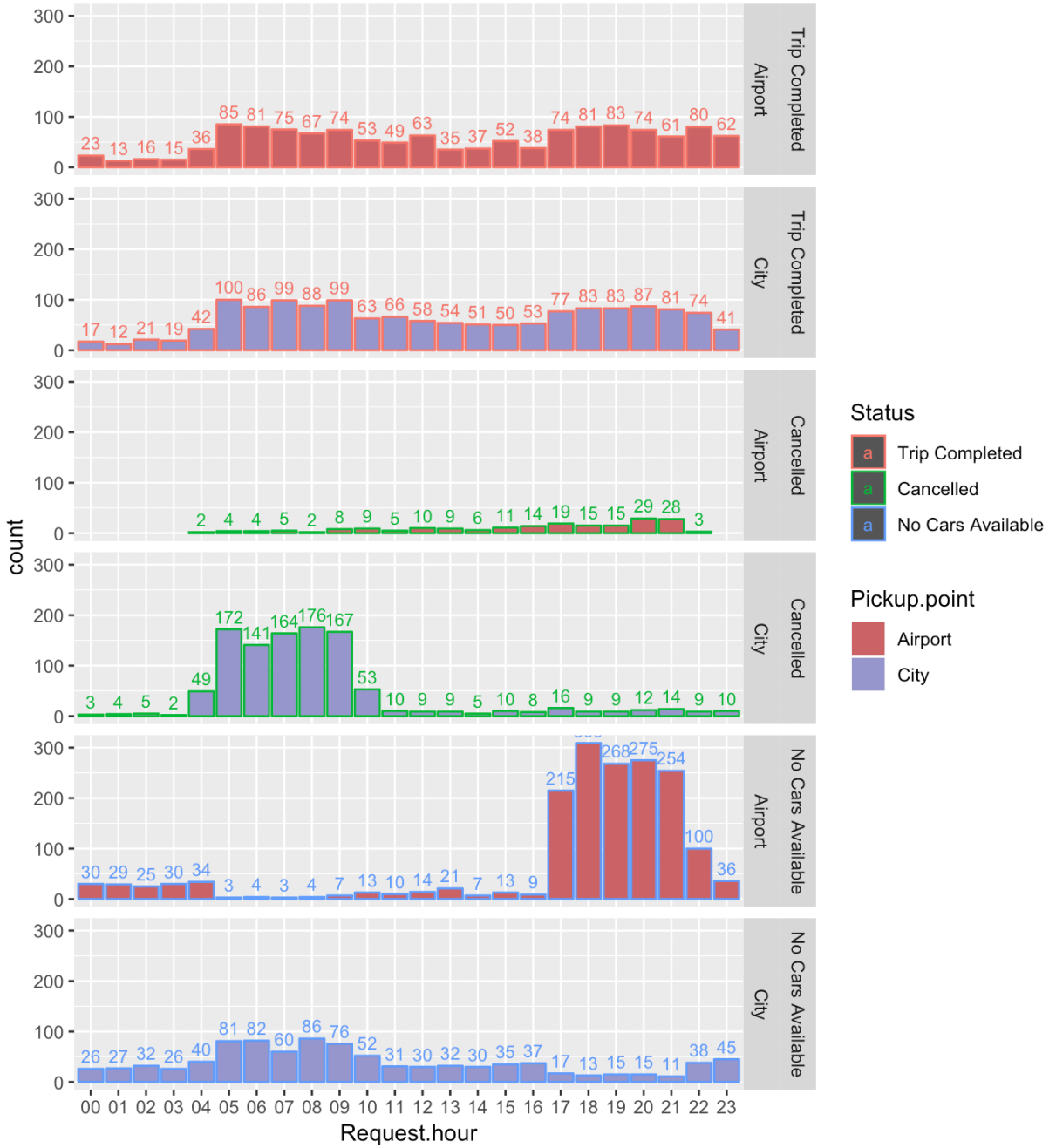
- From hours 5-10 (5am-10am), 17-21(5pm-10pm) there are sudden increase in requests.
- These are Rush hours.



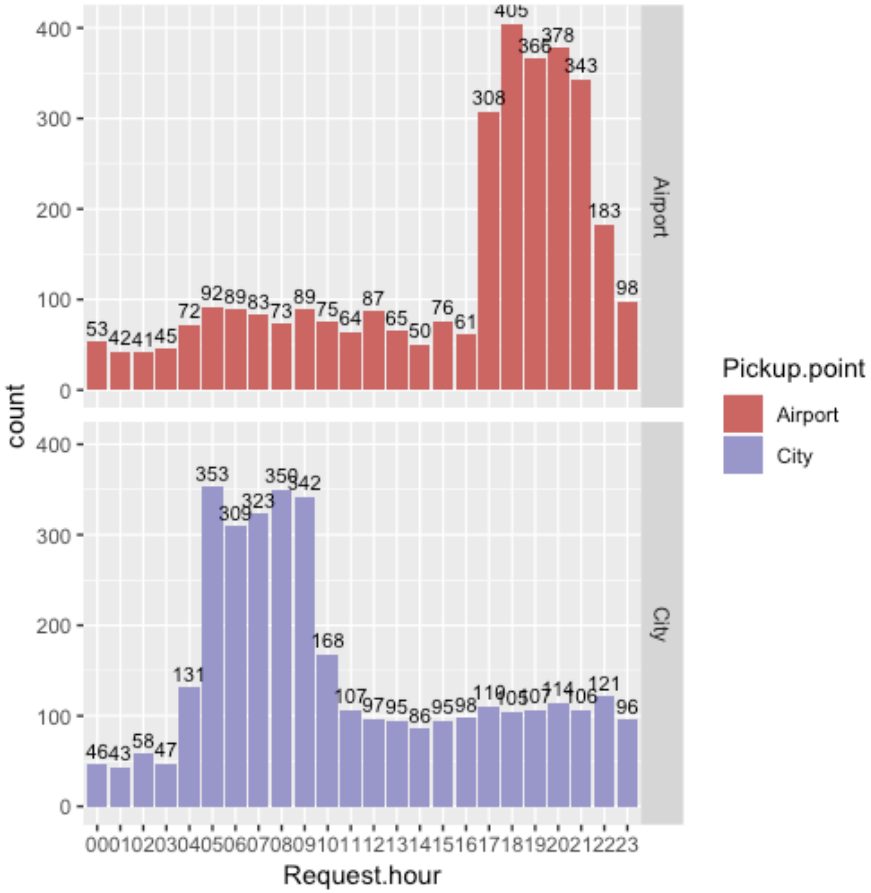
Request Frequencies:

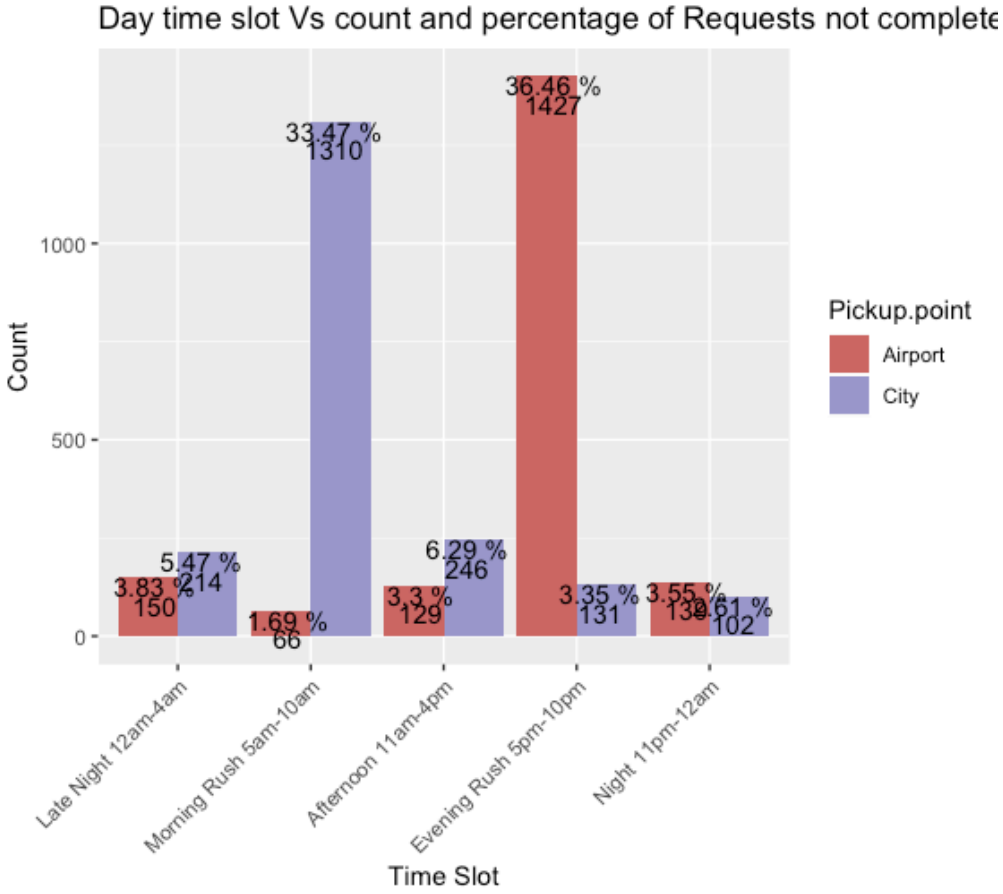
Hourly request frequencies drill down to Status and pickup point

- Trip Completed
  - Both airports and city have same trend hourly.
- Cancelled Trips
  - Airport: very less cancellation happens from driver
  - City: sudden pick in cancellation by drivers in morning rush hours
- No Cars Available
  - Airport: evening rush hours have sudden increase in requests and there are no cars available
  - City: in morning rush hours no car availability is moderate compare to airport



Request Frequencies:





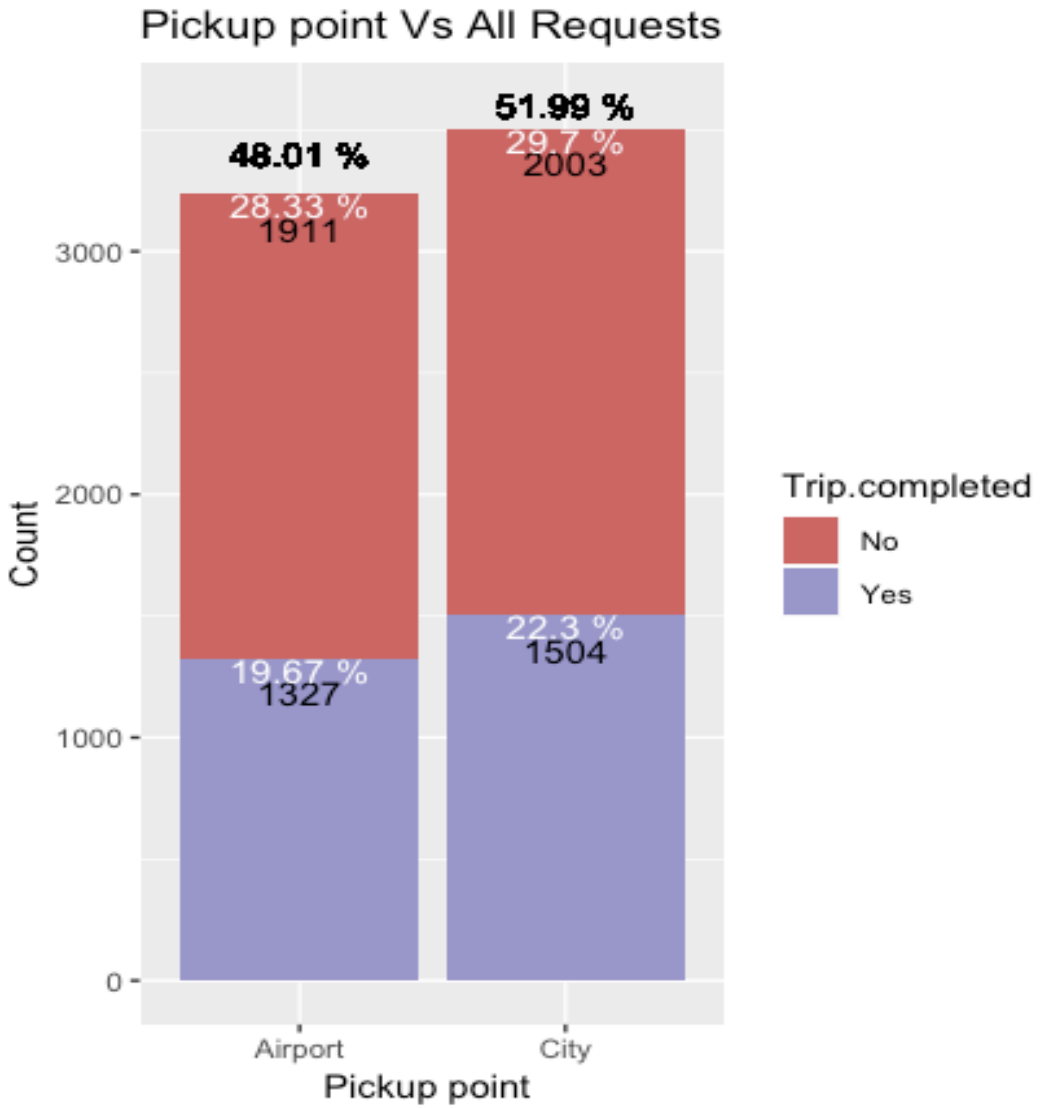
Observations:

- 33.47%of total requests is not fulfilled in morning rush hours from city
- 36.46% of total requests is not fulfilled in evening rush hours from airport

Total revenue loss by location

- Plot shows location wise demand and supply
- Both Airport and City have ~29% loss in business each.

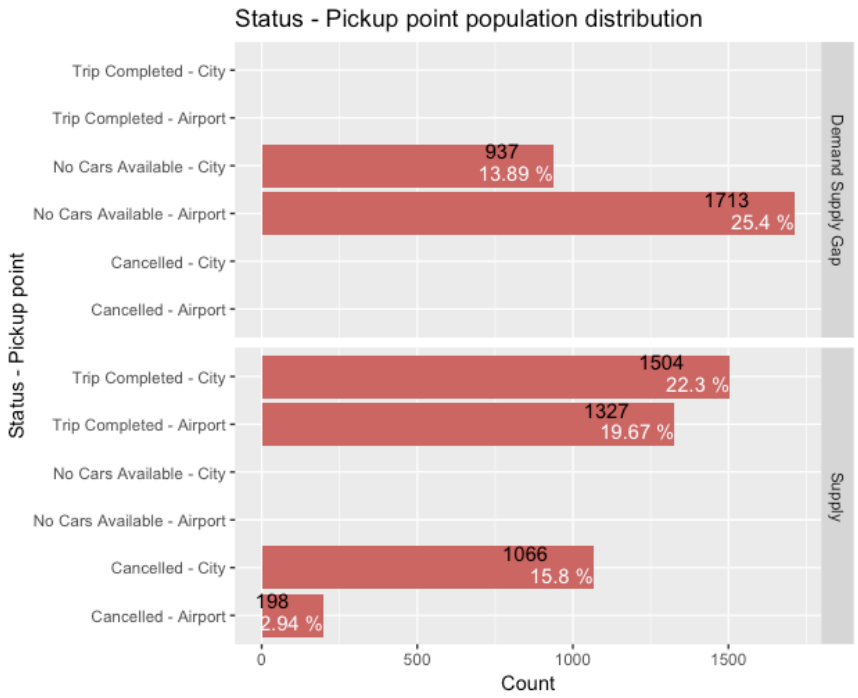
In the plot “Trip completed” : “No” means status is either “Cancelled” or “No Cars Available”

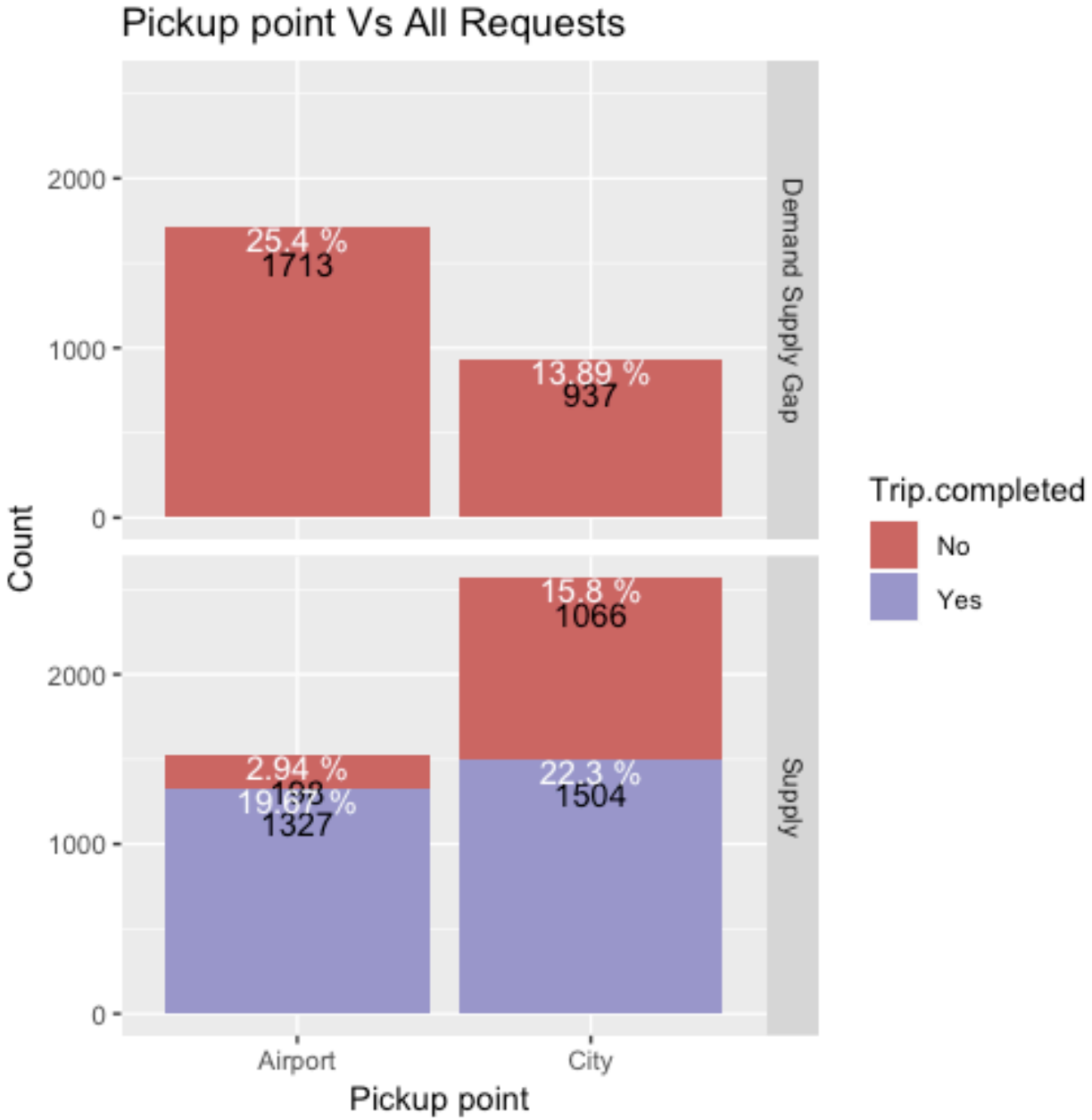


Demand and Supply

This plot shows most pressing problem,
which is:

1. 25.4% demand supply gap at airport and 14% supply gap at city
2. 16% cancellation from driver despite of supply is available

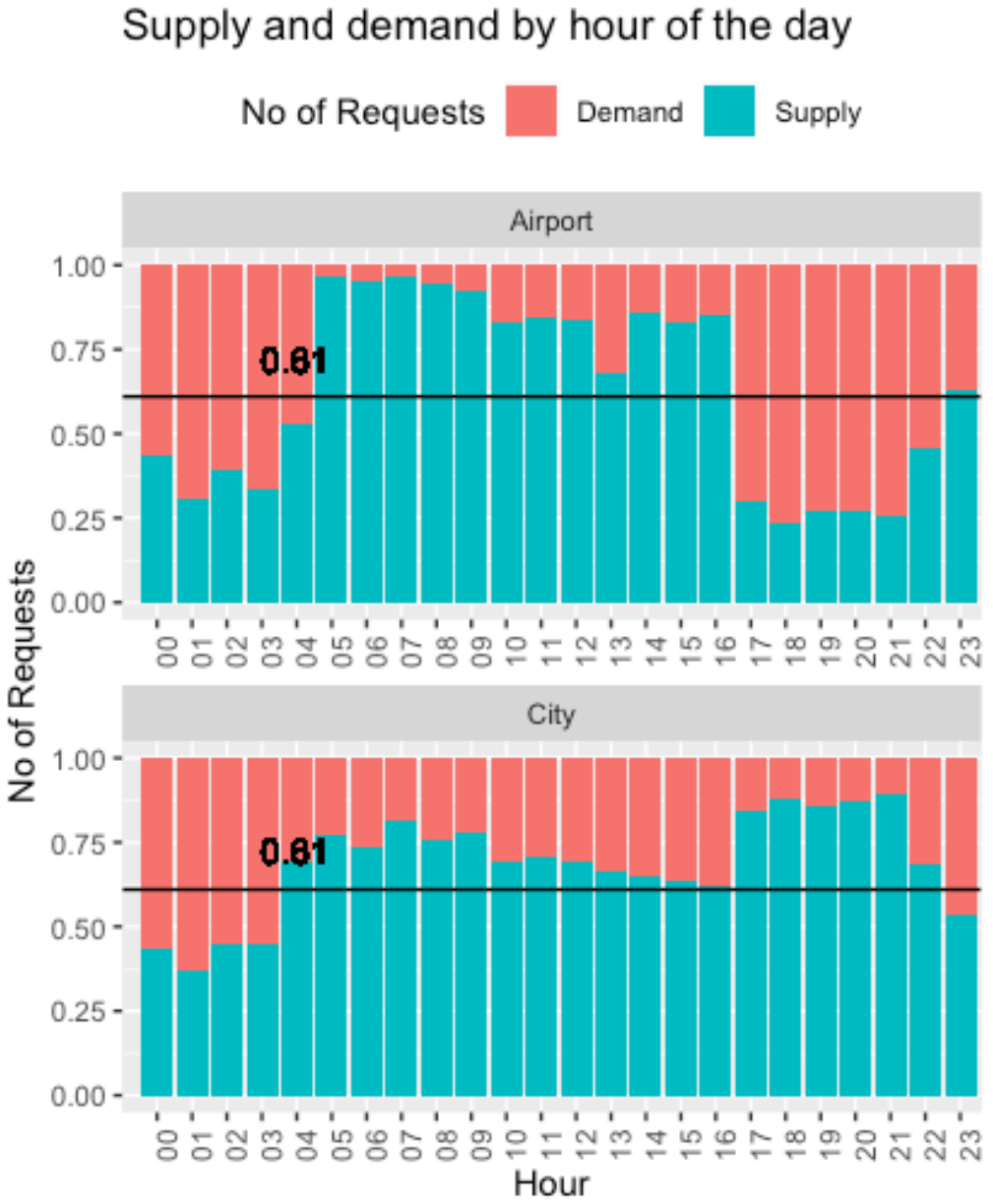




Hourly Supply Demand

Uber is meeting 61% supply of total demand on an average.

- Airport: from 5pm to 4am supply is below average.
- City: from 11pm to 4 am supply is below average.

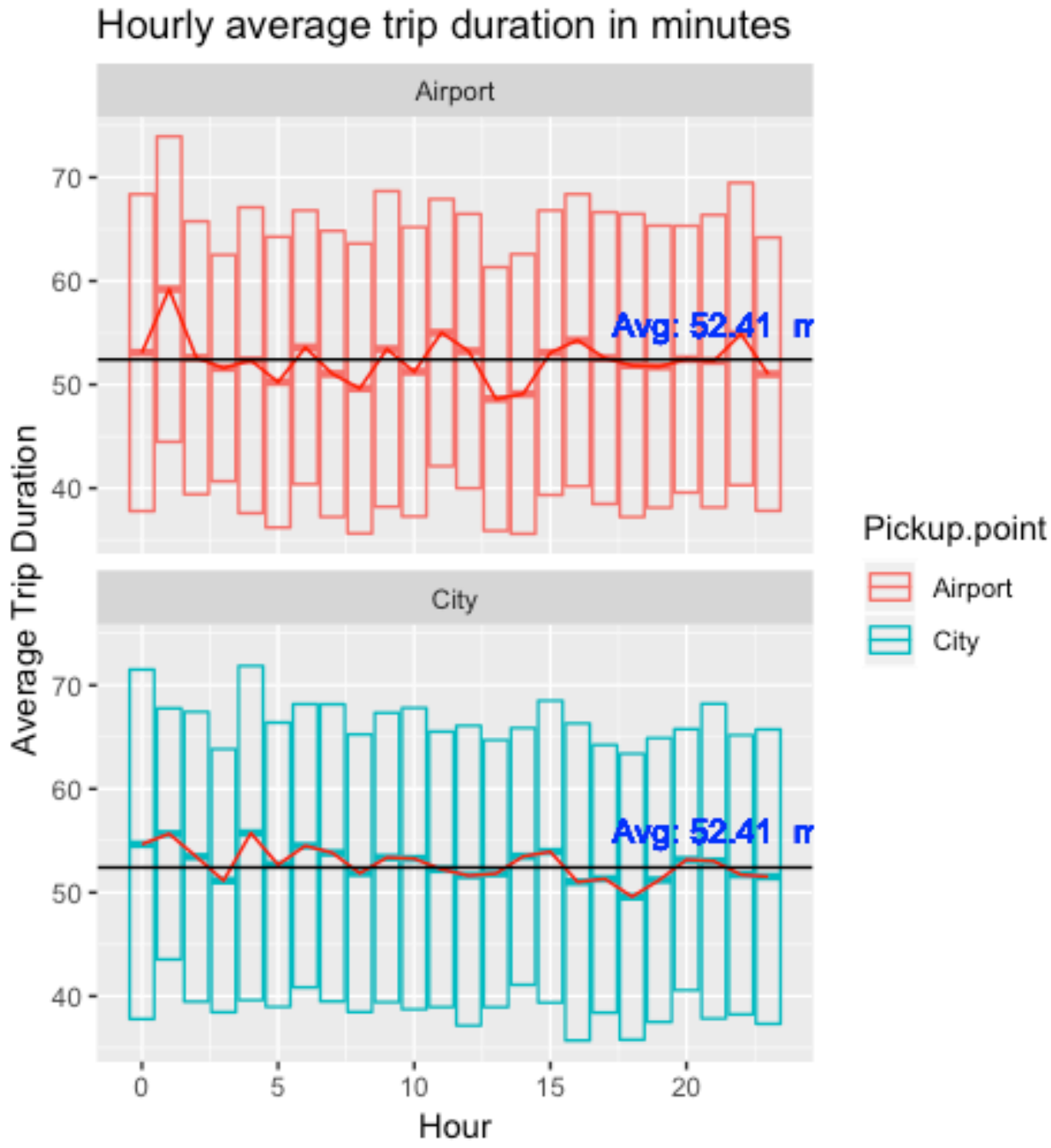


Trip duration and Driver trip cancellation

Hypothesis: “More trip duration leads to cancellation.” cannot be proved.

(only “Trip Completed” requests are being used)
Observations:

- Average trip time is around 52 min from airport to city and visa versa.
- In morning rush hours when cancellation happens the most, correlation with trip time and rush hours is not visible .



Hypothesis:

- Cancellation
  - Its almost an hour long ride from city to airport
  - When driver goes from city to airport in morning rush hours(5am to 10am) because of less request from airport to city in same time slot make them wait till they get ride from airport to city. Which happens after 5pm. This results in to driver cancellation.
  - Less ride requests from airport to city in morning and afternoon hours discourages drivers to go to airport.
- No Cars Available
  - In evening rush hours and night to early morning, supply is less than average at Airport. At city its less at night and early morning hours.
  - Less supply of drivers during evening and night.
- Recommendation:
  - Demand can be predicted based on flight data and drivers can be incentivized based upon supply gap.
  - Give drivers incentive for working in Rush hours, specially from 5pm-4am.