**Uber Supply-Demand Gap Case Study**

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Part I : Preparation of Data

The master data .csv file was cleaned and organised so as to plot the hourly demand of the Uber cabs on a weekday (5 day) basis. The number of cabs (y-axis) was aggregated and shown with reference to the demand distributed among the 24 hours (x-axis) present in a day. The grouped bar-chart can be seen in dual colours; red indicating the pickup point located at the airport and blue indicating otherwise (from the city).
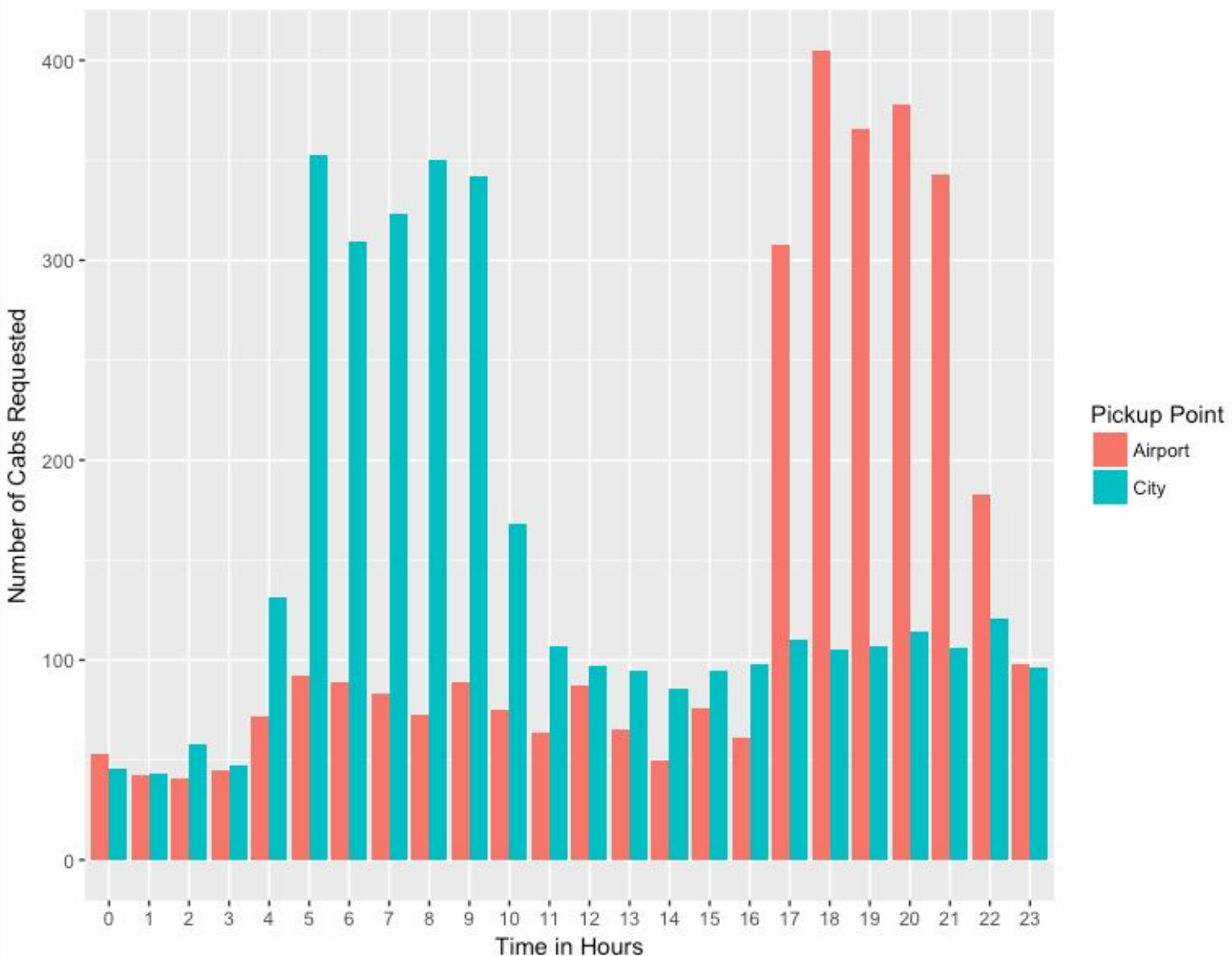
Part II: Initial Analysis

It is very important to figure out the maximum number of engagement in any business with reference to time. Thus for our initial analysis, we aggregated the number of trips completed (y-axis) with respect to the time-slots (x-axis) the requests were made. The request time-slots have been divided into 5 intervals, namely:

- Morning_Rush (932 trips)
- Day_Time (722 trips)
- Evening_Rush (784 trips)
- Late_Night (257 trips)
- Pre_Morning (136 trips)
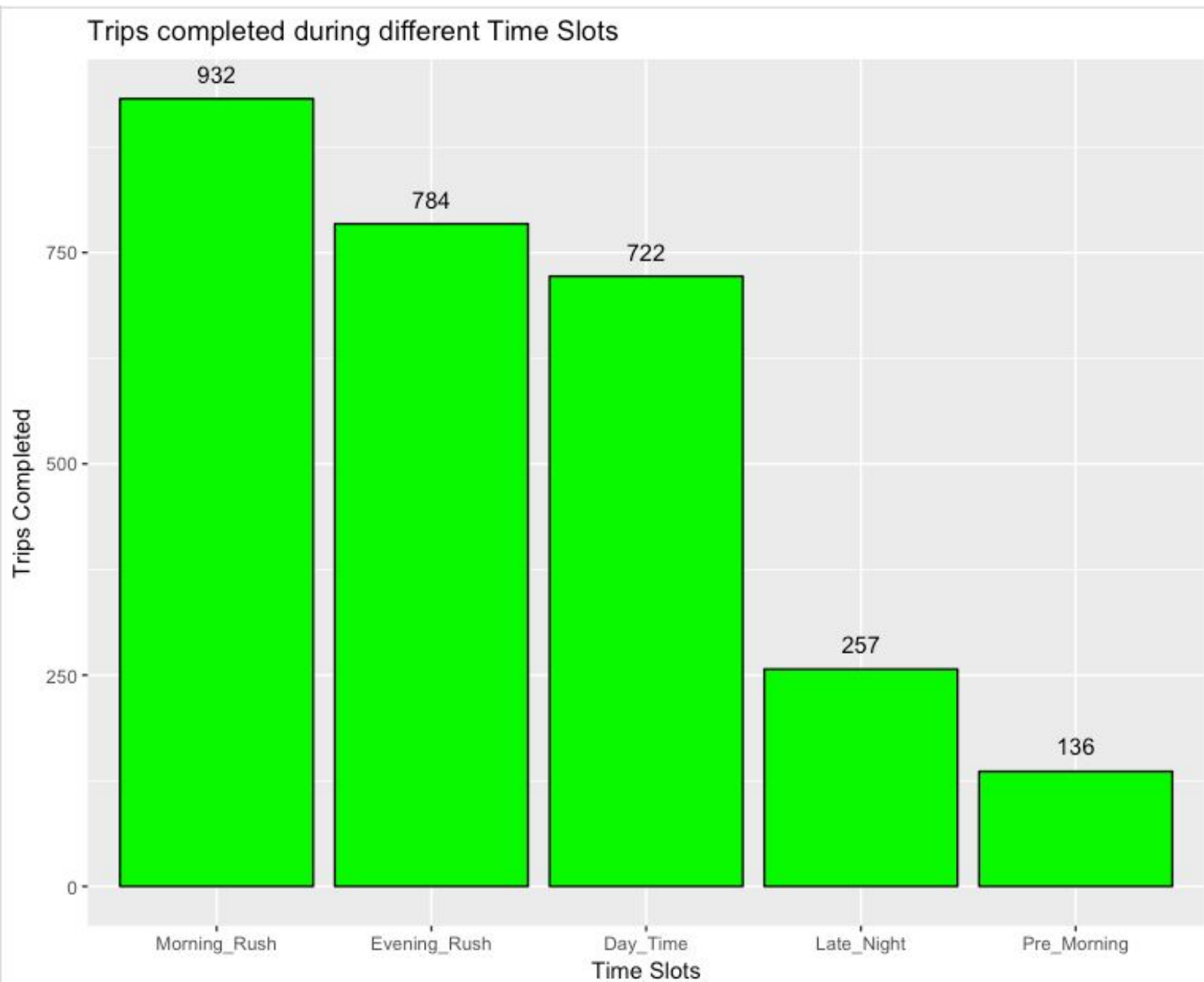
Part III: Identifying the Problem(s)

From the bar graph below, it is very easy to determine that the two most pressing problems faced by Uber are:

1) Cancelled trips during Morning_Rush
2) No cars available during Evening_Rush

The above two problems stand out when compared with all the fifteen scenarios (3 trip status x 5 time-slots).

Let's find out further details about Problems 1 and 2.
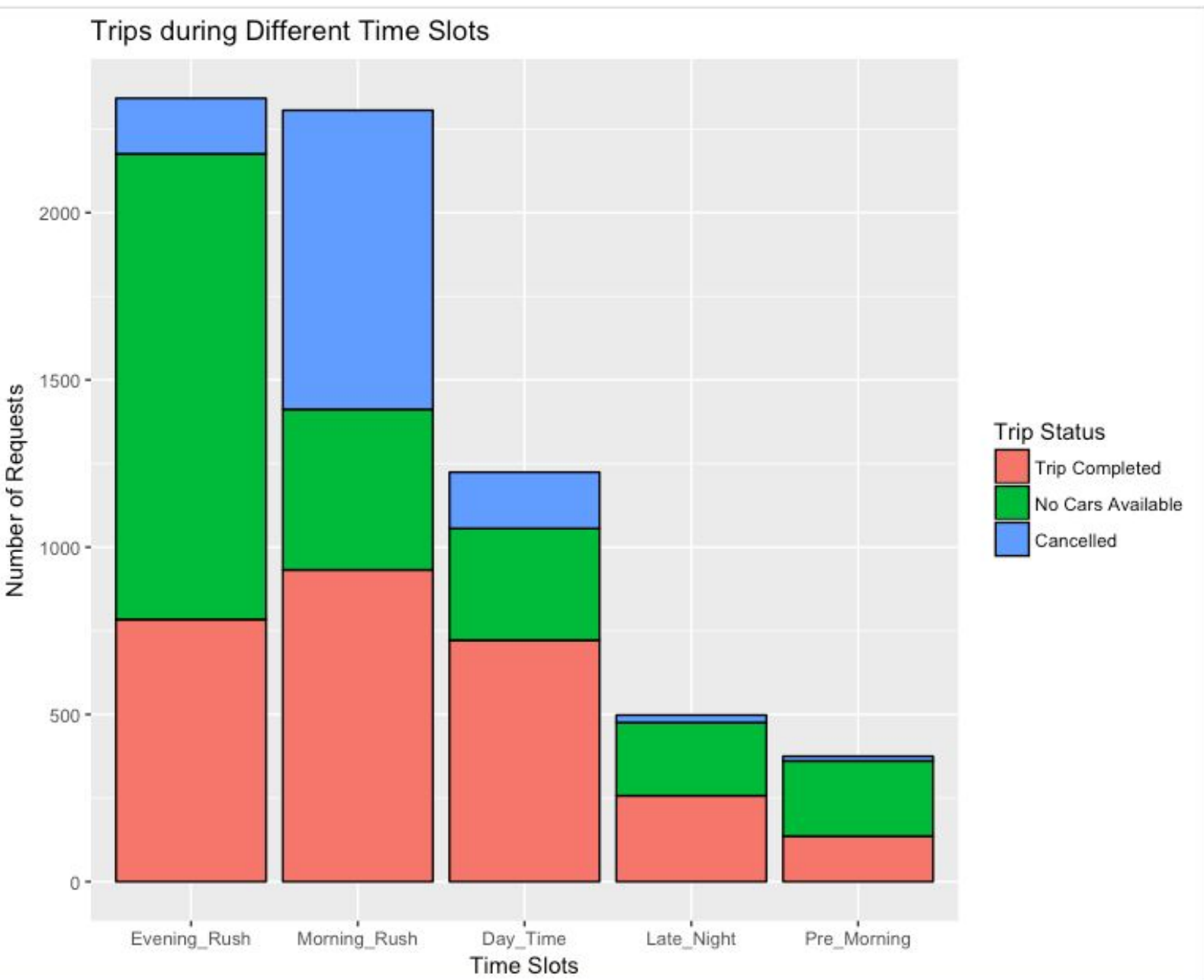
Part IV: Problem 1

A stacked bar graph is plotted in order to visualise the underlying problems faced by Uber during the morning rush. Considering the plea of cancellation of requests by cab drivers might be somehow related to the pick-up points, we can figure out that:

- **97.21%** of the requests were cancelled in the case of customers travelling from the city to the airport.
- Only **2.79%** of the requests were cancelled in the case customers of travelling from the airport to the city.
- **1808** requests were made by customers to travel from the city to the airport (demand).
- **514** of those trips were actually completed (supply).

Morning Rush Cab Status — Airport - 2.79% & City = 97.21%
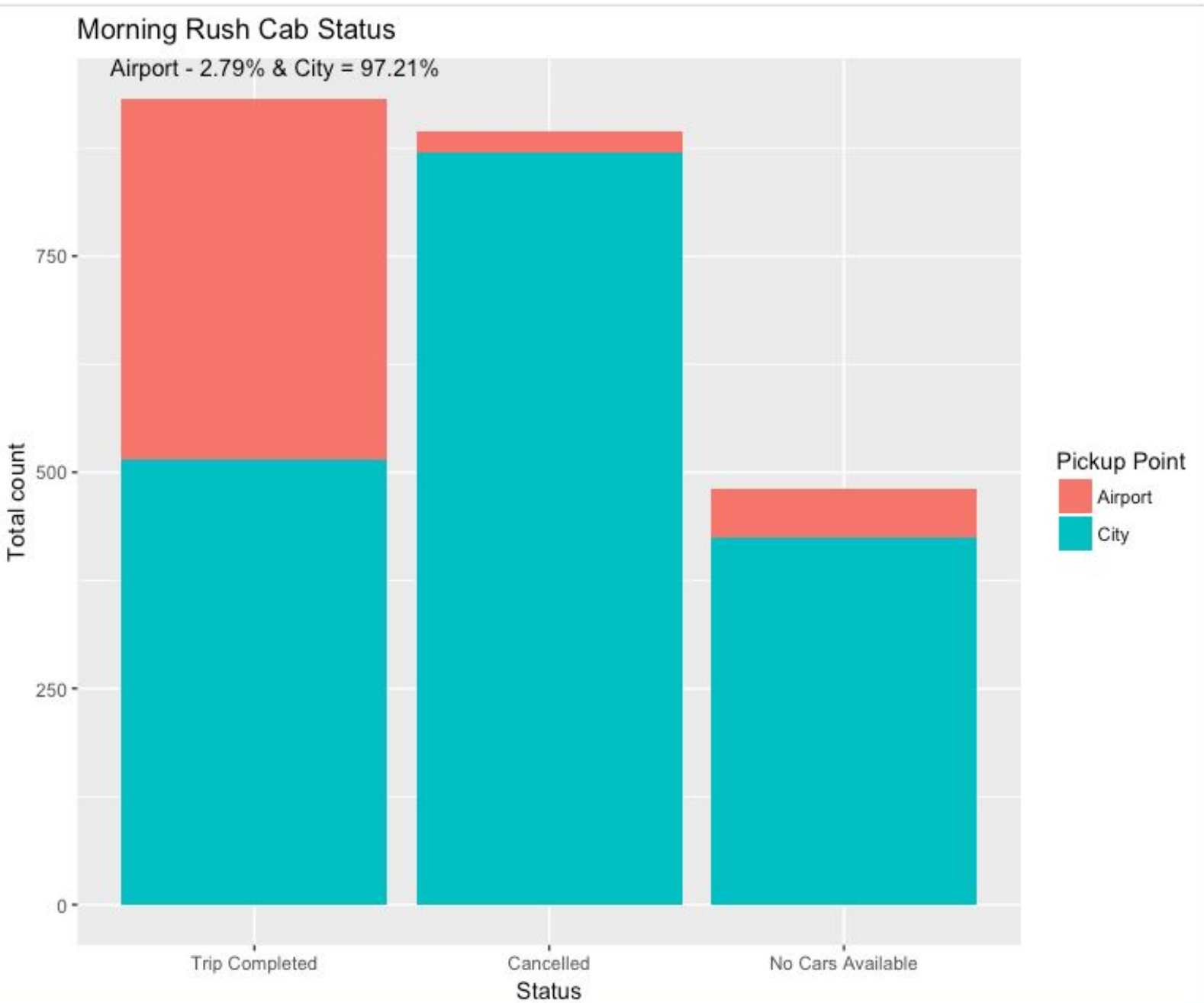
Part IV (contd.)

Reasons

The causality of this supply-demand gap can be focussed on the fact that majority of the flights are outgoing in the morning. Therefore, there is a lack of incoming flights during the same period. In terms of the cab-driver, there are many customers who travel from the city to the airport but only very few travel from the airport to the city in the morning. Hence, a lot of cab drivers inevitably have to return to the city all the way from the airport but without any customer. Moreover, the drivers may end up wasting precious time, idling around airport, in order to find a customer travelling to the city. This is not at all profitable for the cab drivers and hence they end up cancelling majority of the city to airport requests made in the morning .

Recommendations

Here are 3 steps that Uber can take in order to curb the supply-demand gap present during the morning rush hours:

1) Increasing the percentage of the fare kept by the cab drivers travelling from the city to the airport during the morning rush. Reducing the service charge levied on the cab drivers by Uber is a lucrative option and may enamor many drivers to take up the task.
2) Charging more money to customers travelling from the city to the airport during the morning rush.
3) Sharing this data with both the customers and the cab-drivers so as to make them understand the subtle dynamics of the problem.

Part V: Problem 2

A stacked bar graph is plotted in order to visualise the underlying problems faced by Uber during the evening rush. Considering the non-availability of cabs might be somehow related to the location of the pick-up points, we can figure out that:

- **94.9%** of the total requests were unfulfilled in the case of customers travelling from the airport to the city.
- **5.1%** of the total requests were unfulfilled in the case of customers travelling from the city to the airport.
- **1800** total requests were made by the customers willing to travel from the airport to the city during the evening rush (demand).
- **373** requests were actually fulfilled by Uber cab drivers (supply).
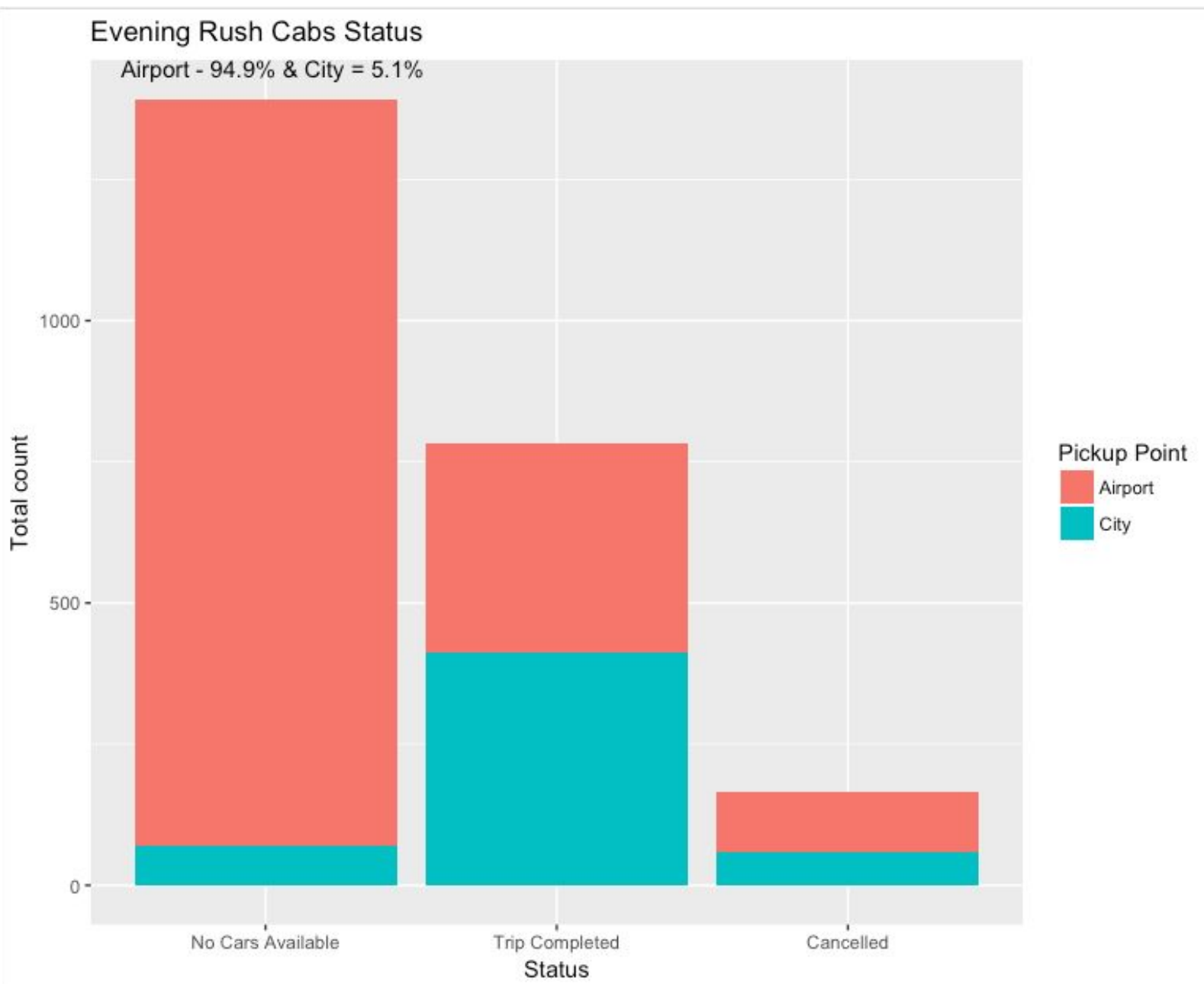
Part V (contd.)

Reasons

The causality of this supply-demand gap can be focussed on the fact that majority of the flights are incoming in the evening. Due to the lesser amount of outgoing flights, there is a lack of outgoing passengers travelling from the city to the airport during the same period. As a result, the supply of cabs in the airport is far lesser than its demand. In terms of the cab driver, they rarely get passengers travelling to the airport in the evening. Many a times, passengers arriving at the airport by the evening pre-book the more expensive airport shuttle prior to their arrival, so as to avoid the hassle of availing a cheaper cab. Although, the huge gap in the supply and demand of the cabs in the airport during the evening hours is one of the main motivator behind the existence of a pre-booked shuttle service.

Recommendations

Although Uber has the lesser market share in India, it has the advantage of being the global leader in this business. Uber is already headed towards a successful diversification of its fleet and services.

1) More focus should be given on the outstation and pre-booked airport shuttle services. This is a new feature incorporated by Uber to break through the long distance shuttle market.
2) Reducing the percentage charged from cab drivers for utilizing Uber services for making a trip from airport to city.
3) Create a niche by introducing expensive cabs with added services like in drive entertainment etc.

(End)