



**Data Glacier**

Your Deep Learning Partner

# Exploratory Data Analysis

## Taxicab Usage Analysis

**16 June 2022**

# Introduction & Background

- XYZ is a private US-based firm looking to invest in the Cab Industry
- In the last few years the cab industry has seen a remarkable growth in the US
- We are looking to provide insights into the cab market. We will analyze by:
  - Profit Analysis
  - Share by City
  - Population-based Trends
  - Seasonal Effects
  - Demographic Reach

# Demographic Reach

- Yellow Cab and Pink Cab have widespread reach across all ages, socioeconomic status, and both genders
- Men tend to use the cab services more frequently
- Yellow Cab frequency is about 3x Pink Cab frequency

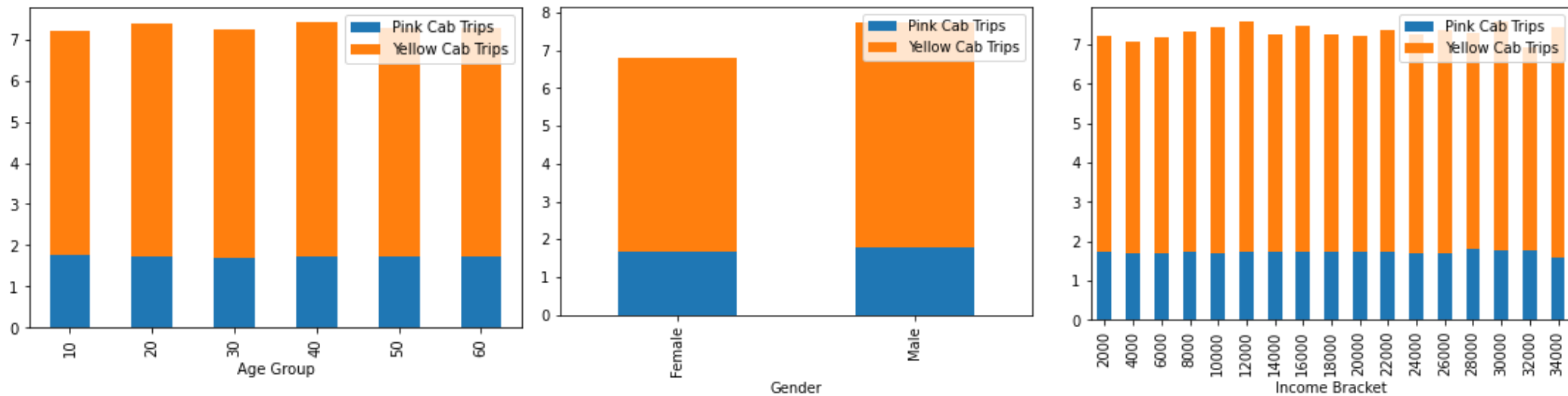
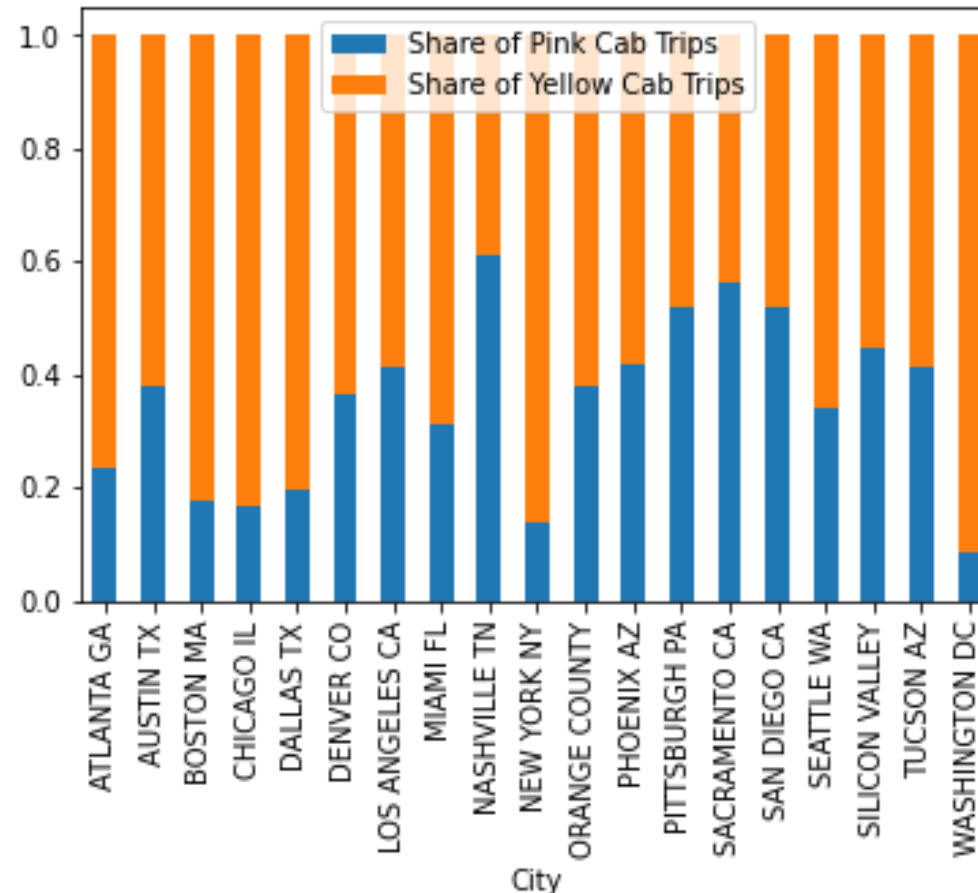


Chart: Average number of trips per customer in 2016-18 grouped by age (10s, 20s, 30s, etc.), and Income Bracket (\$2000+, \$4000+, etc.)

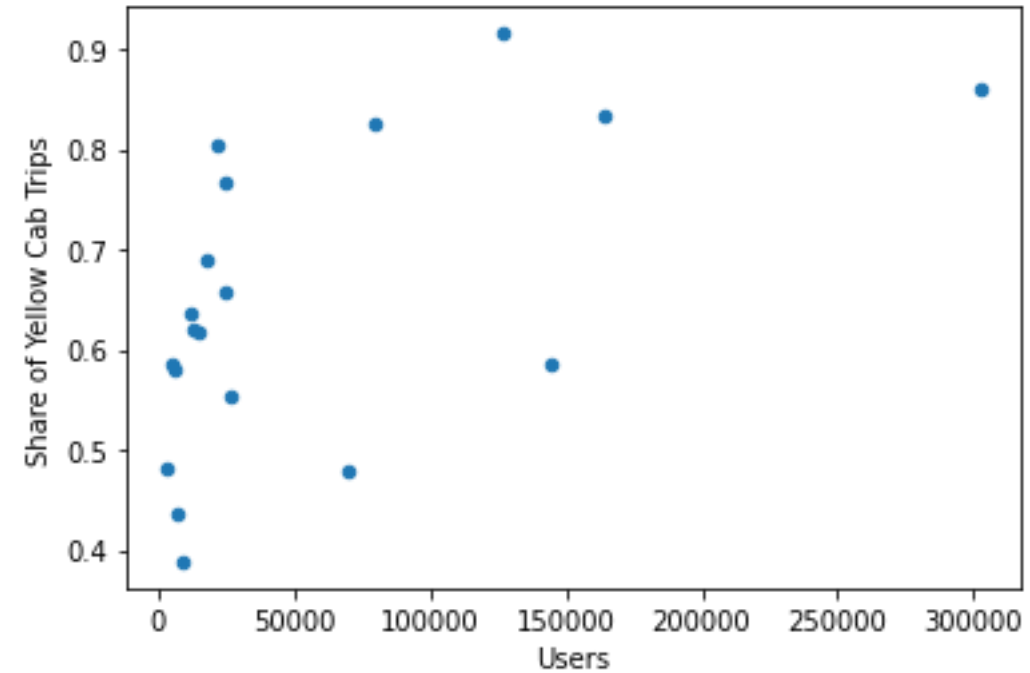
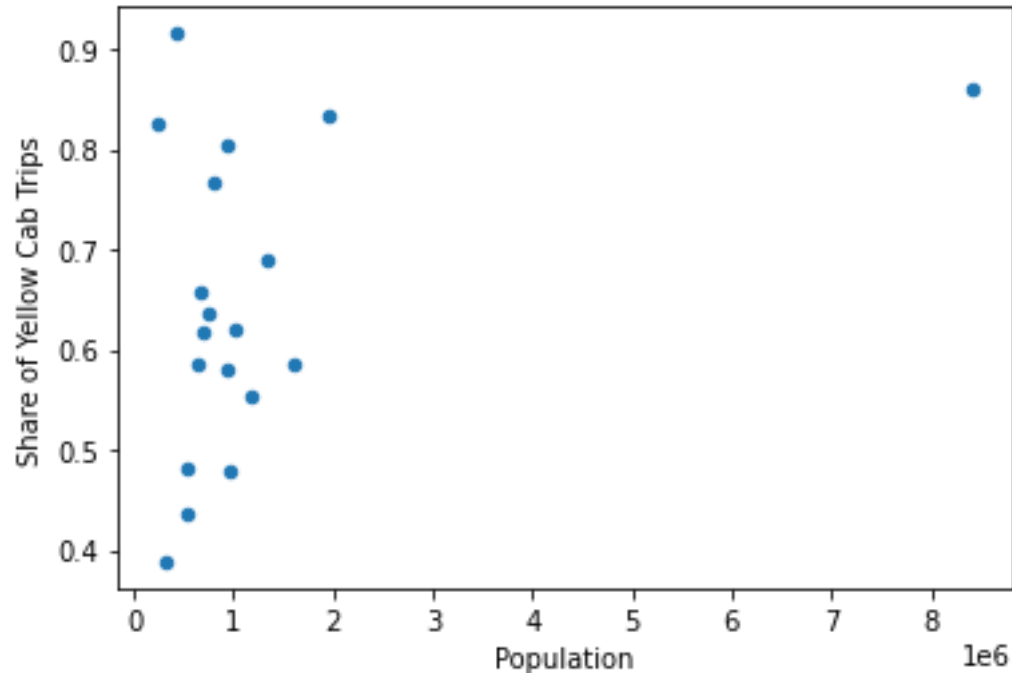
# Reach by City

Chart: Share of Pink Cab and Yellow Cab Trips in each city. In most cities Yellow Cab takes up a larger share



# Reach by City

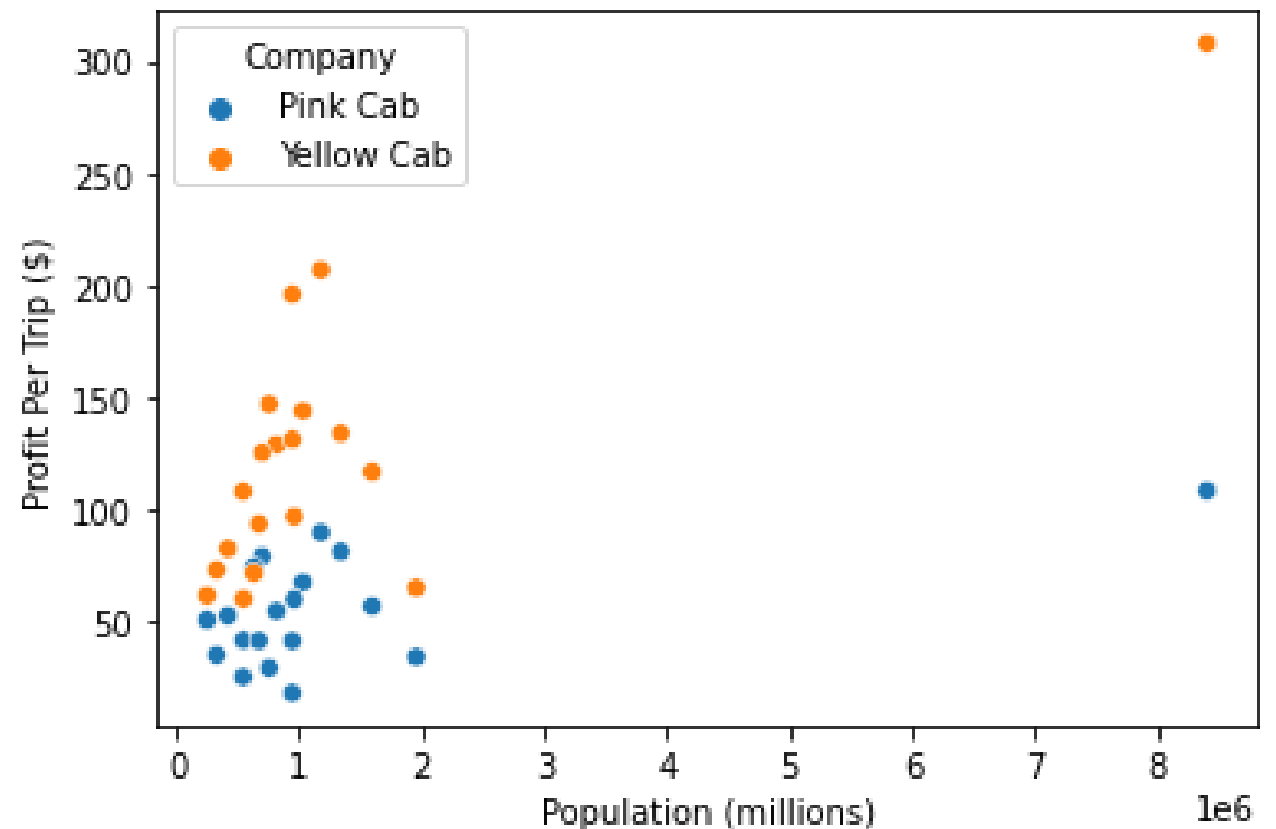
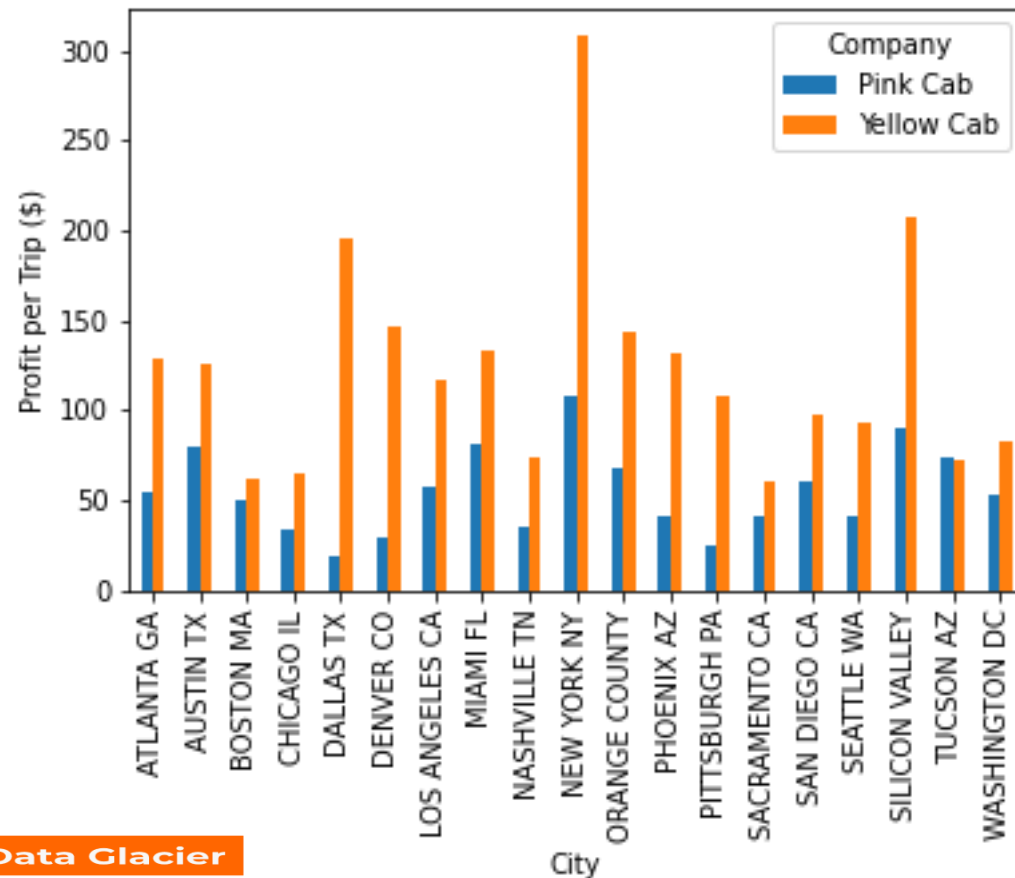
- Yellow Cab has a larger reach compared to Pink Cab in larger cities
- For a 10-fold increase in city population, share of Yellow Cab trips is 13.6% higher



Graph: Share of Yellow Cab trips against population and number of users per city.

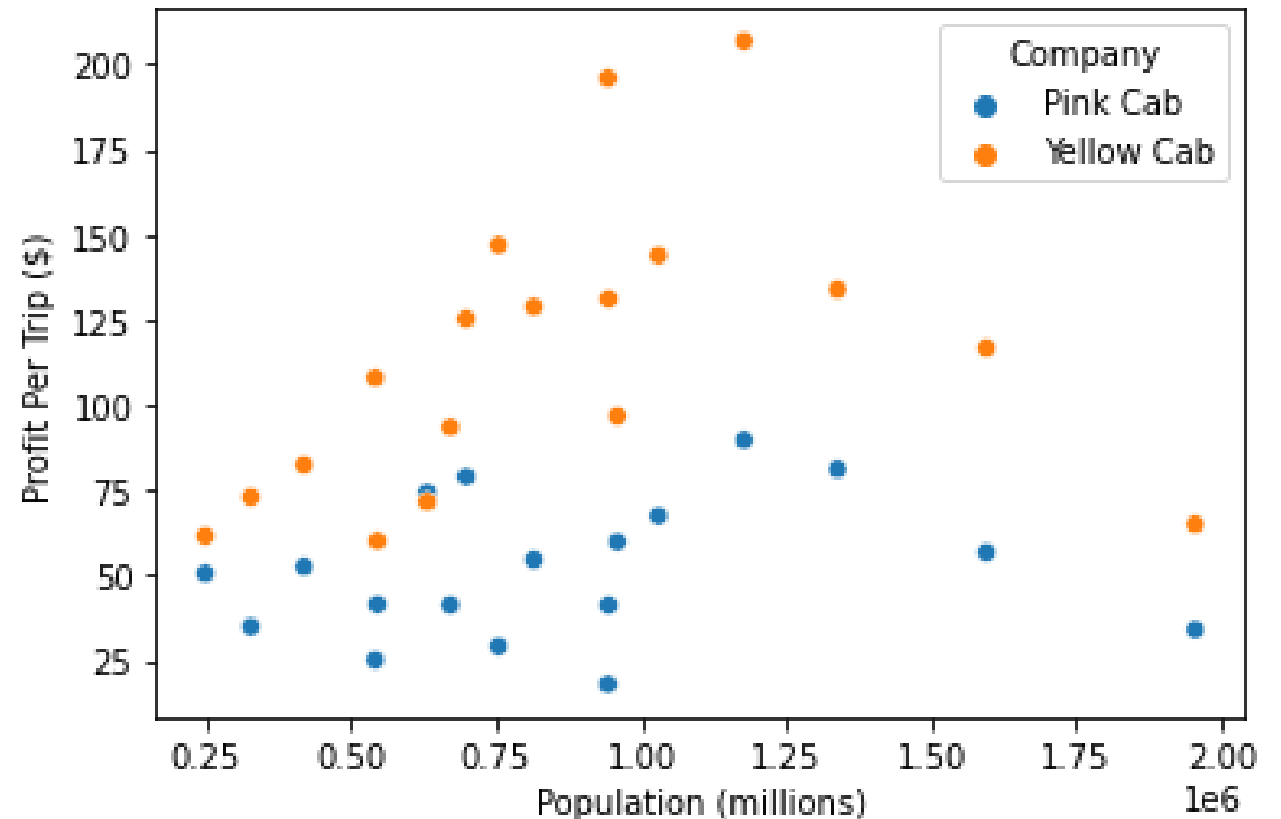
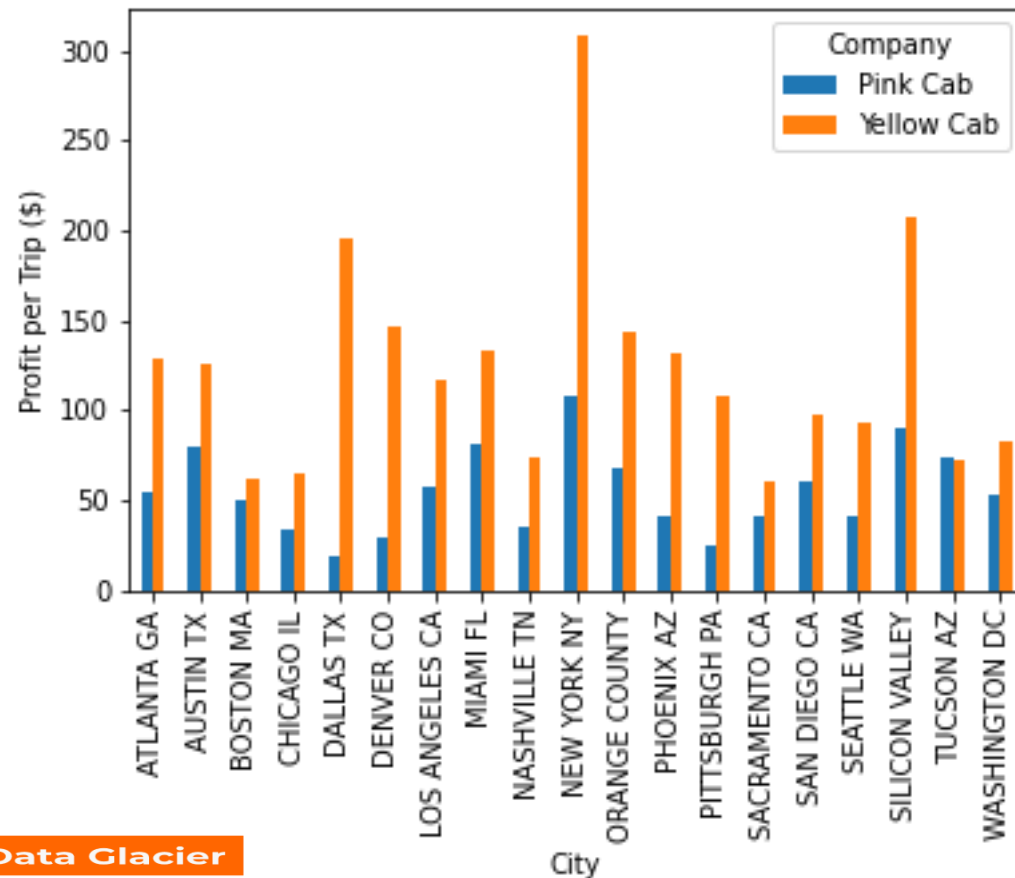
# Profit Analysis by City

- Average profit made per trip by city



# Profit Analysis by City

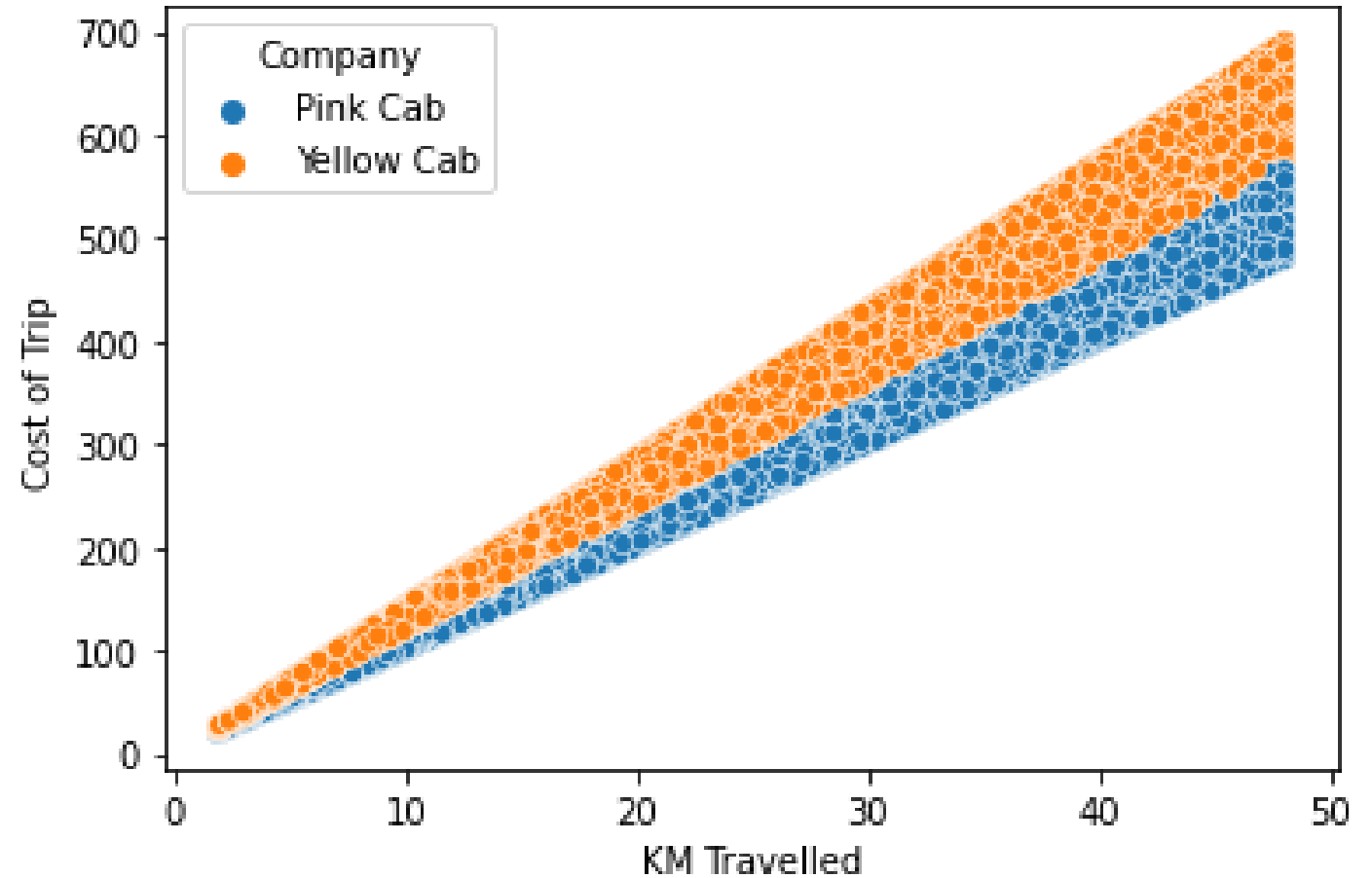
- Average profit made per trip by city (excluding the outlier New York)



# Profit Analysis of Trips

Cost of Trips based on distance (km):

- Pink Cab Average: \$11.00/km
- Yellow Cab Average: \$13.20/km

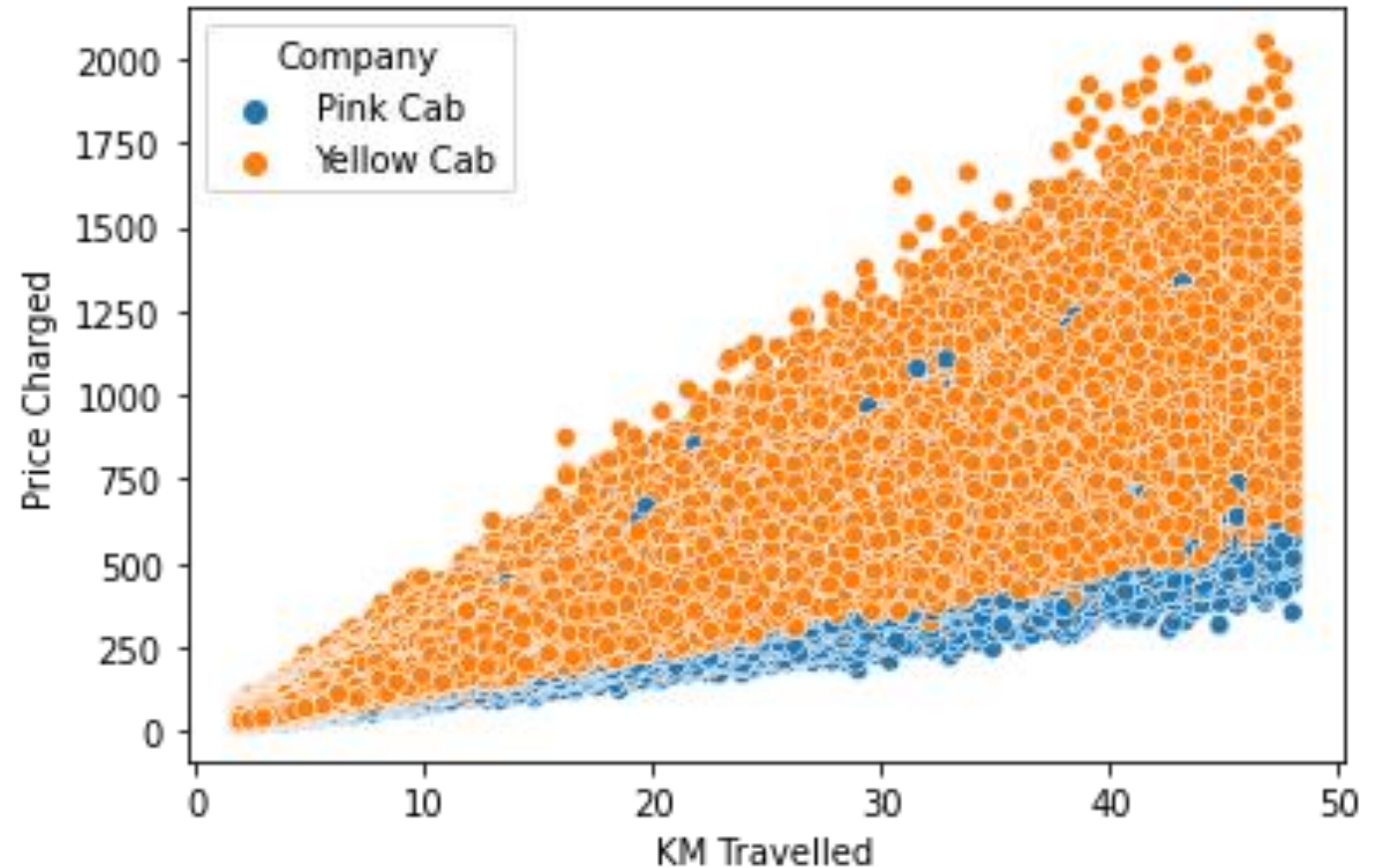




# Profit Analysis of Trips

Price Charged based on distance (km):

- Pink Cab Average: \$13.80/km
- Yellow Cab Average: \$20.27/km

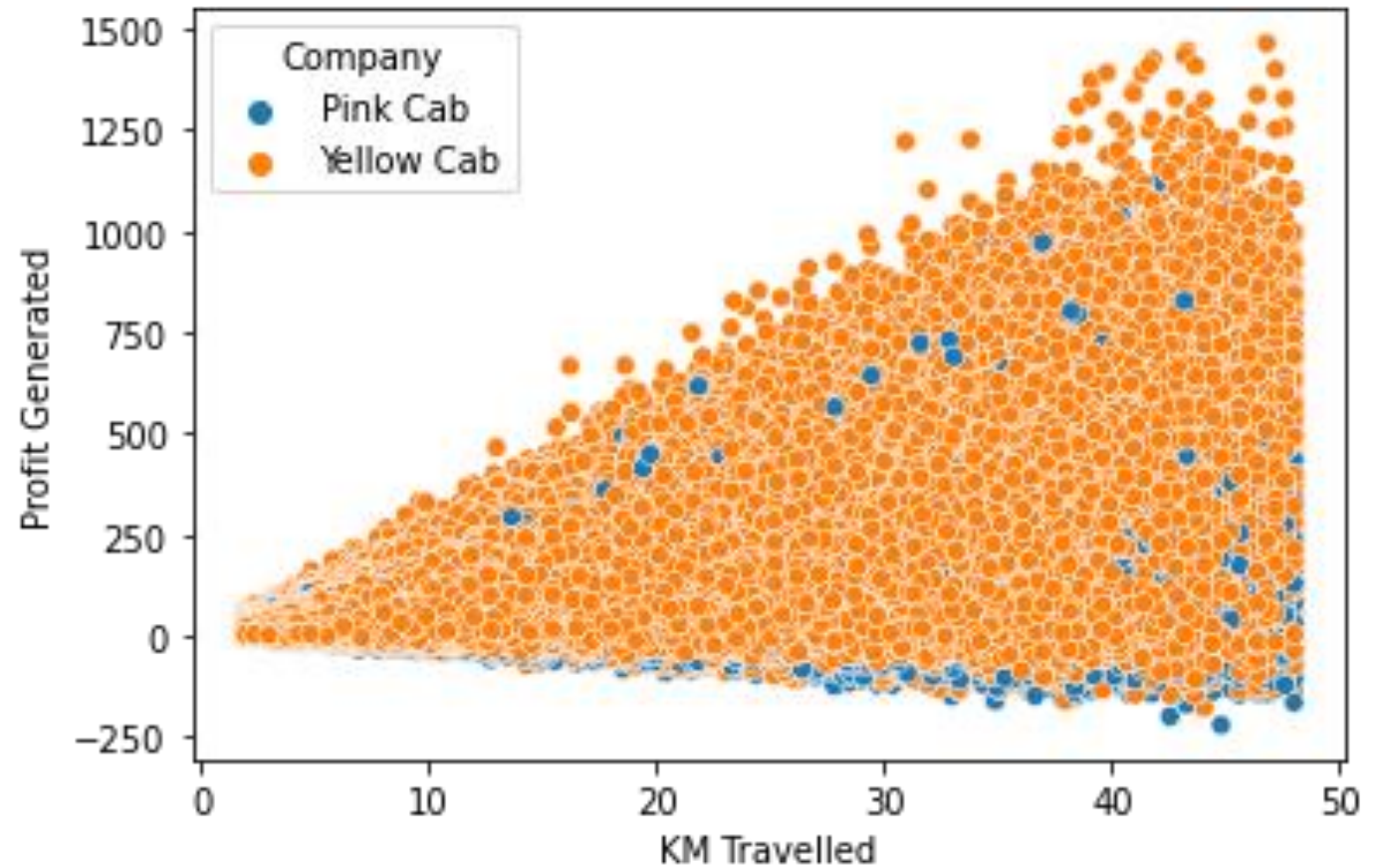


# Profit Analysis of Trips

Profit based on distance (km):

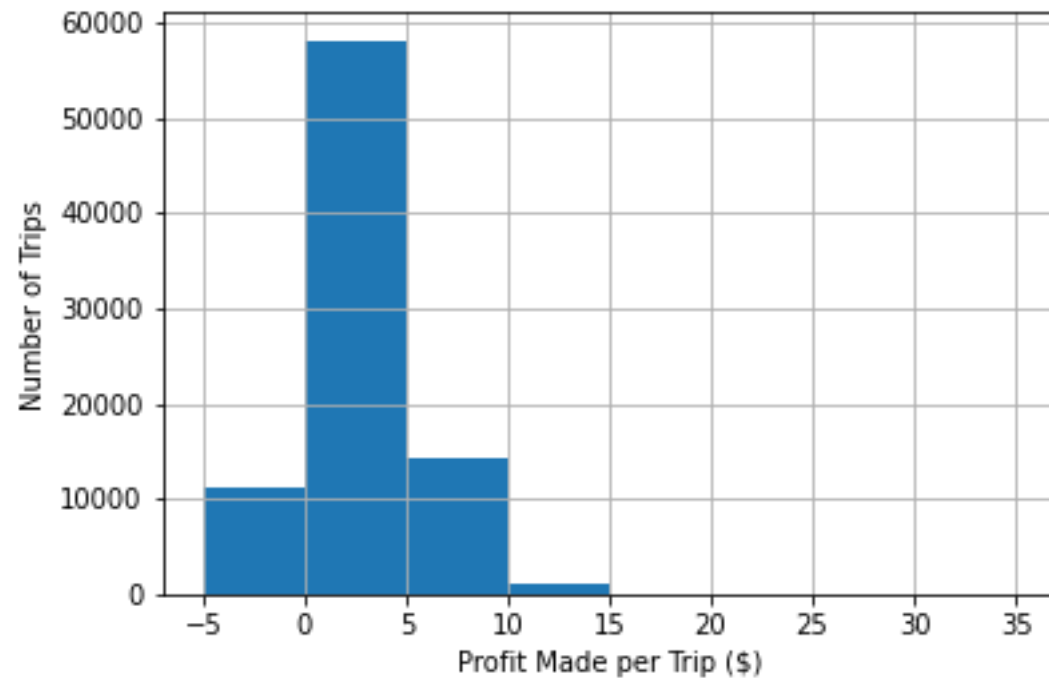
- Pink Cab Average: \$2.81/km
- Yellow Cab Average: \$7.07/km

(Profit per km independent of distance)

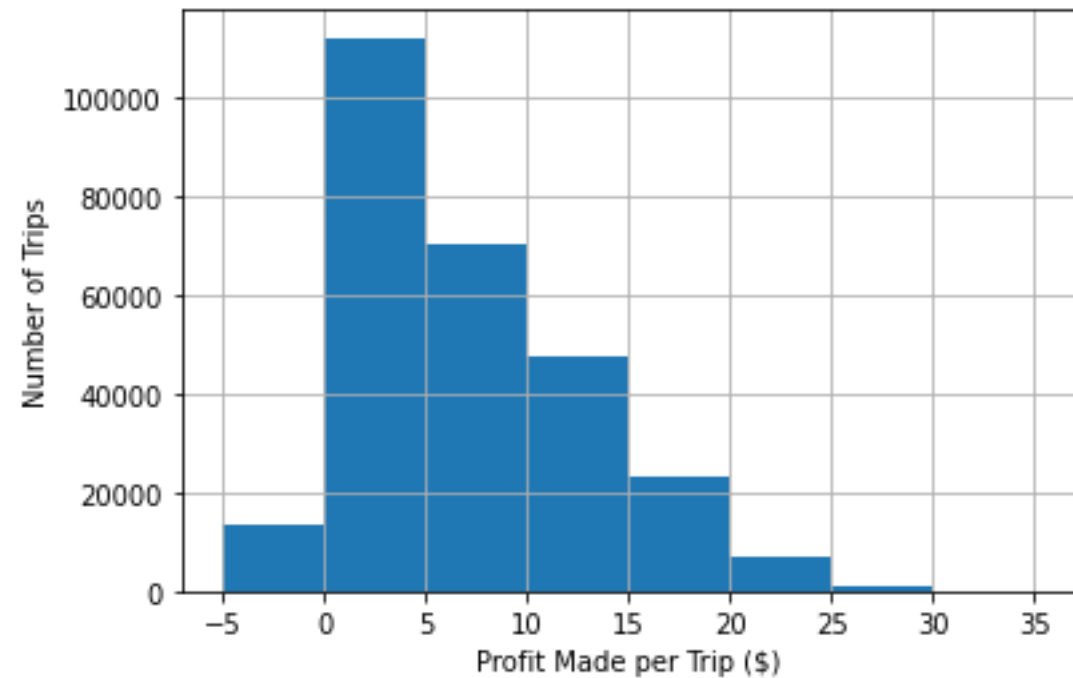


# Profit Analysis of Trips

## Profit Distribution of Trips



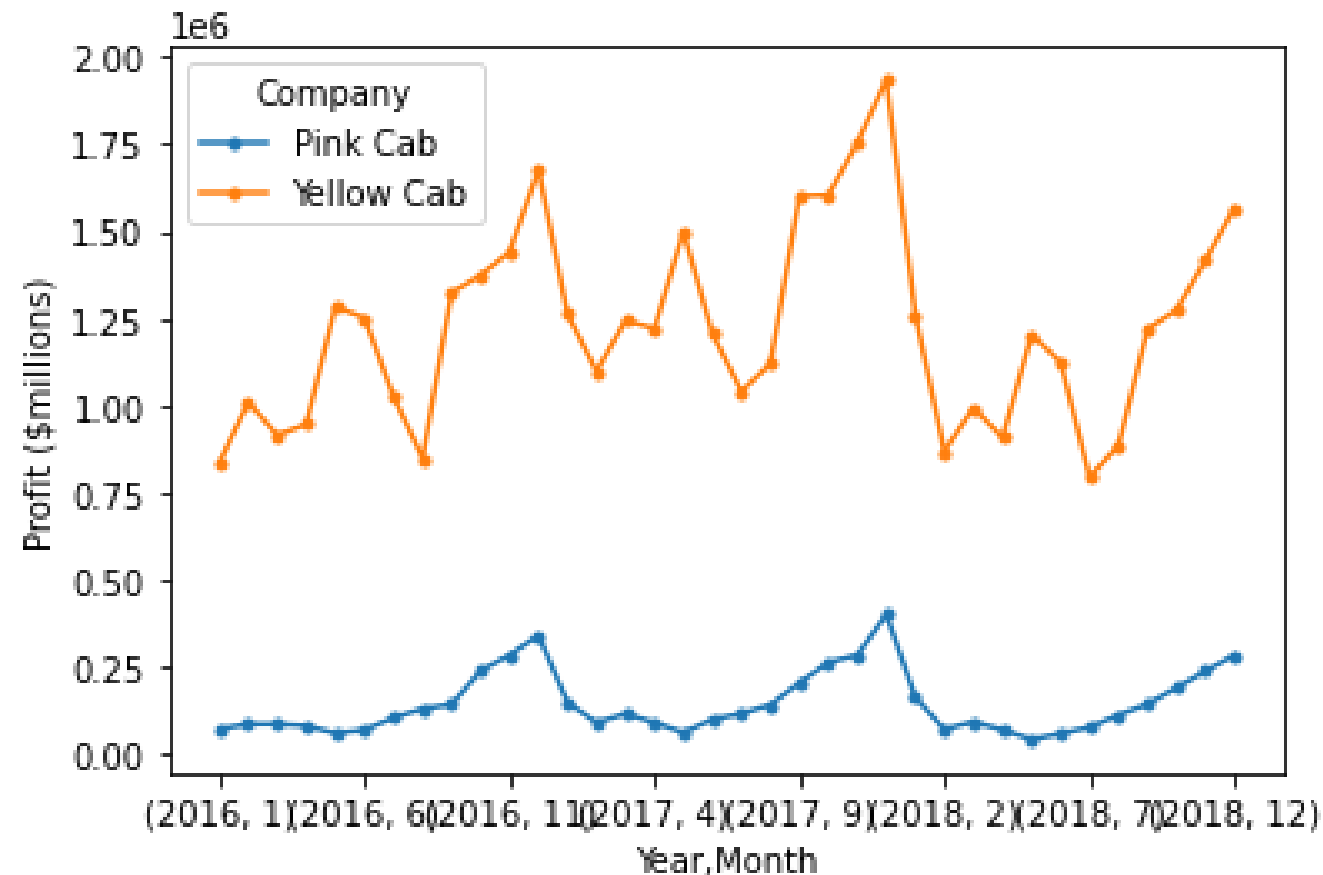
Pink Cab: 13.14% of trips ended in an overall loss



Yellow Cab: 4.98% of trips ended in an overall loss

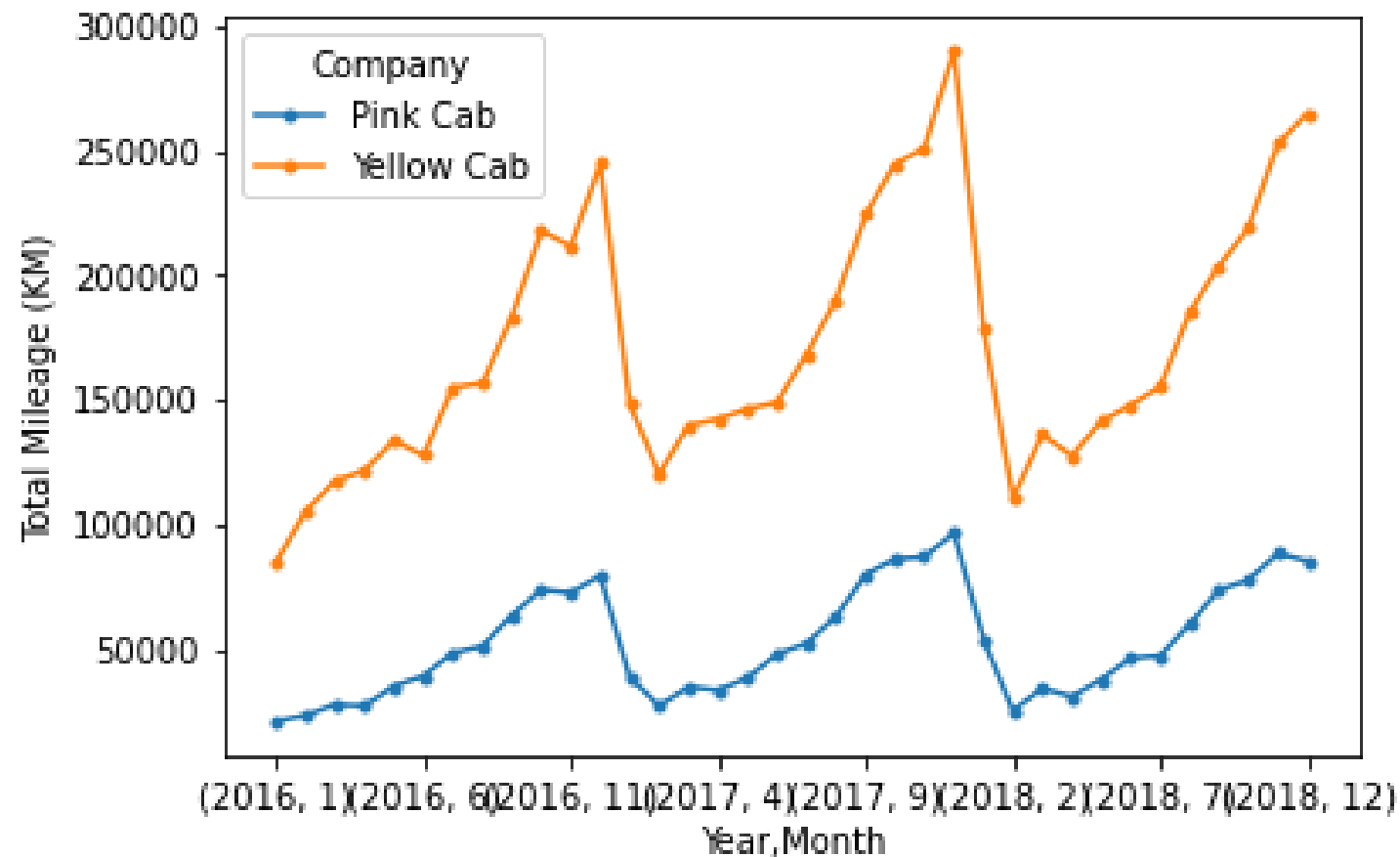
# Seasonal Trends

Monthly Profit between January 2016 and December 2018



# Seasonal Trends

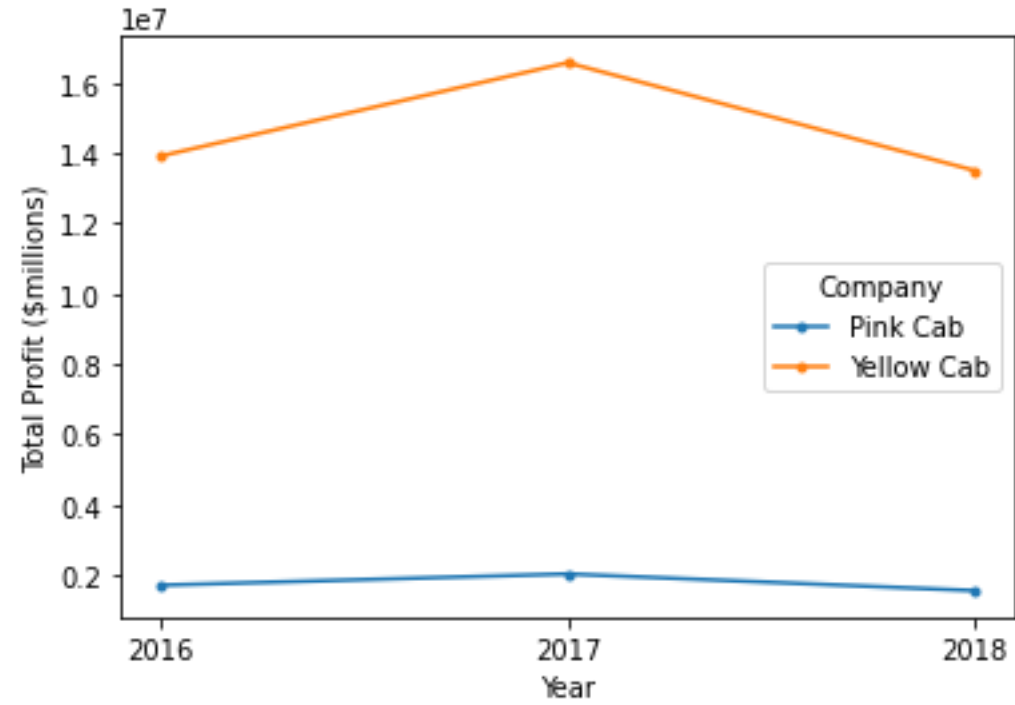
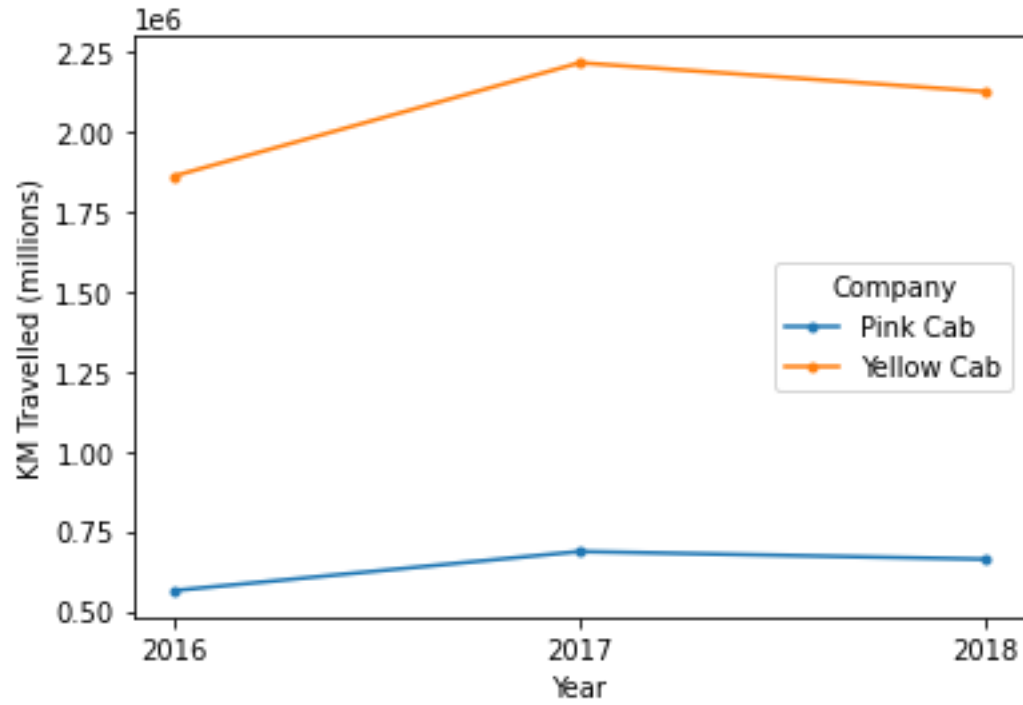
Monthly Mileage between January 2016 and December 2018



# Seasonal Trends

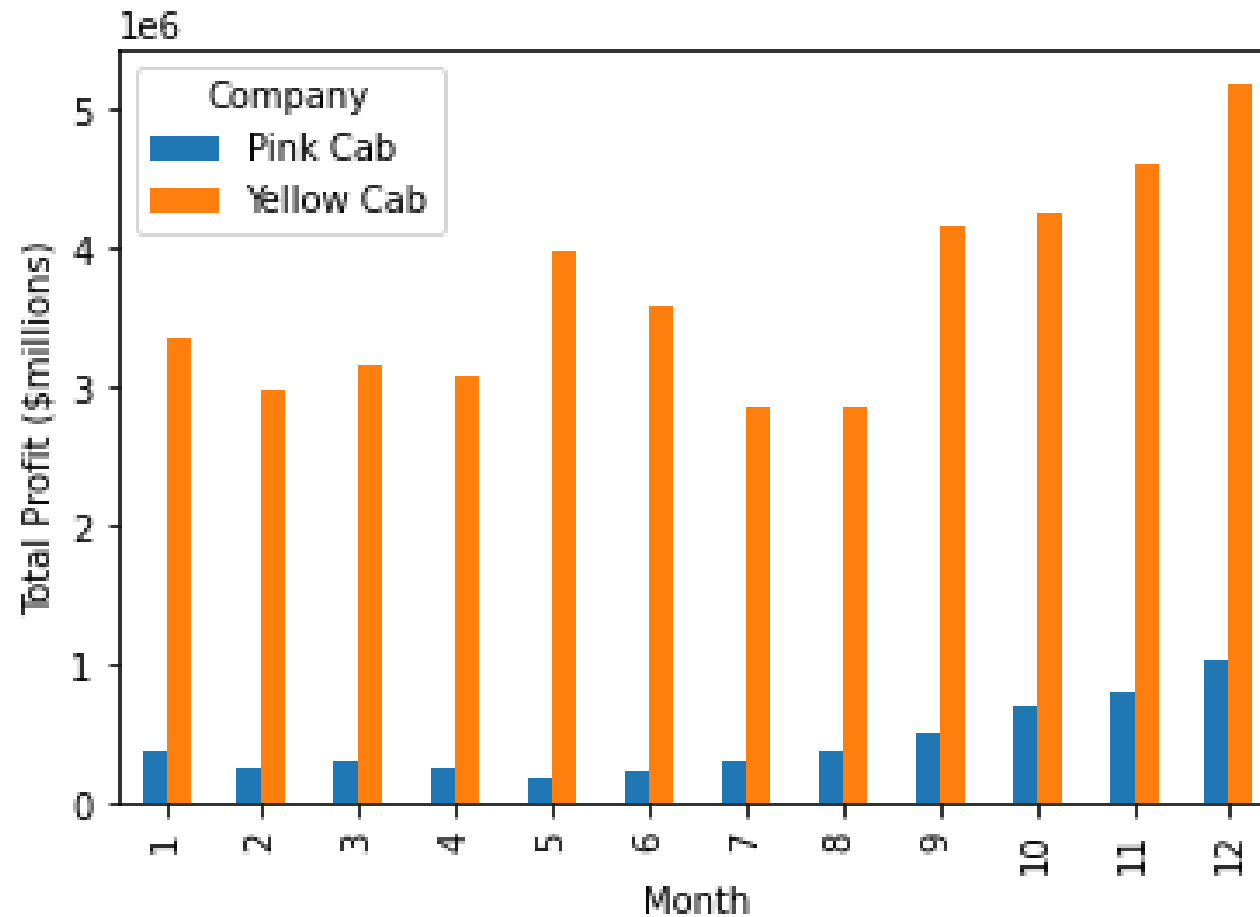
## Annual Mileage and Profit between 2016 and 2018

- Although mileage has increased, profit has seen a slight decrease in both companies.



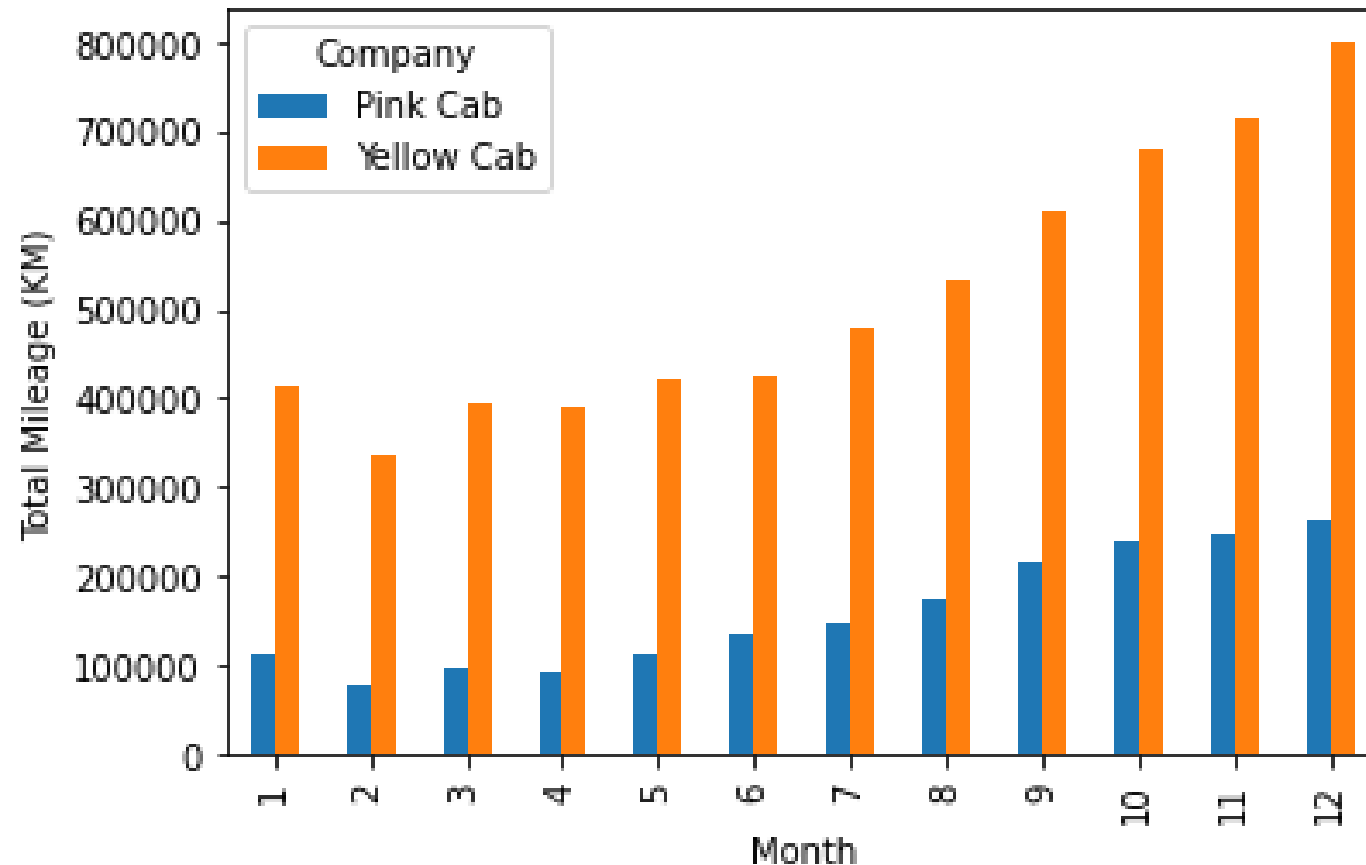
# Seasonal Trends

Total profit by month, 2016-18



# Seasonal Trends

Total mileage by month, 2016-18





# Summary & Recommendations

- Yellow Cab has consistently shown a wider reach across all demographic groups compared to Pink Cab
- Yellow Cab is better at reaching more customers in larger cities, while Pink Cab is better at reaching more customers in smaller cities
- Yellow Cab has better reach in every city except for four
- Average profit made per trip for Yellow Cab is higher than that for Pink Cab in all but one city
- On a per km basis, Yellow Cab is more profitable than Pink Cab, and is less likely to make a loss on a given trip
- Seasonal Trends: Both companies have more frequent trips in the late months of the year (October, November, December)

Based on this data, we recommend to invest in **Yellow Cab** over Pink Cab.

# Thank You