G2M Case Study

Virtual Internship

20-Jun-2022

Background –G2M(cab industry) case study

- XYZ is a private equity firm in US. Due to remarkable growth in the Cab Industry in last few years and multiple key players in the market, it is planning for an investment in Cab industry.

- Objective : Provide actionable insights to help XYZ firm in identifying the right company for making investment.

The analysis has been divided into four parts:

- Data Understanding
- Forecasting profit and number of rides for each cab type
- Finding the most profitable Cab company
- Recommendations for investment

Data Exploration

- 24 Features(including 9 derived features)
- Timeframe of the data: 2016-01-31 to 2018-12-31
- Total data points :355,032

Cab_Data.csv Customer_ID.csv Transaction_ID.csv City.csv USholiday.csv

Final cab data

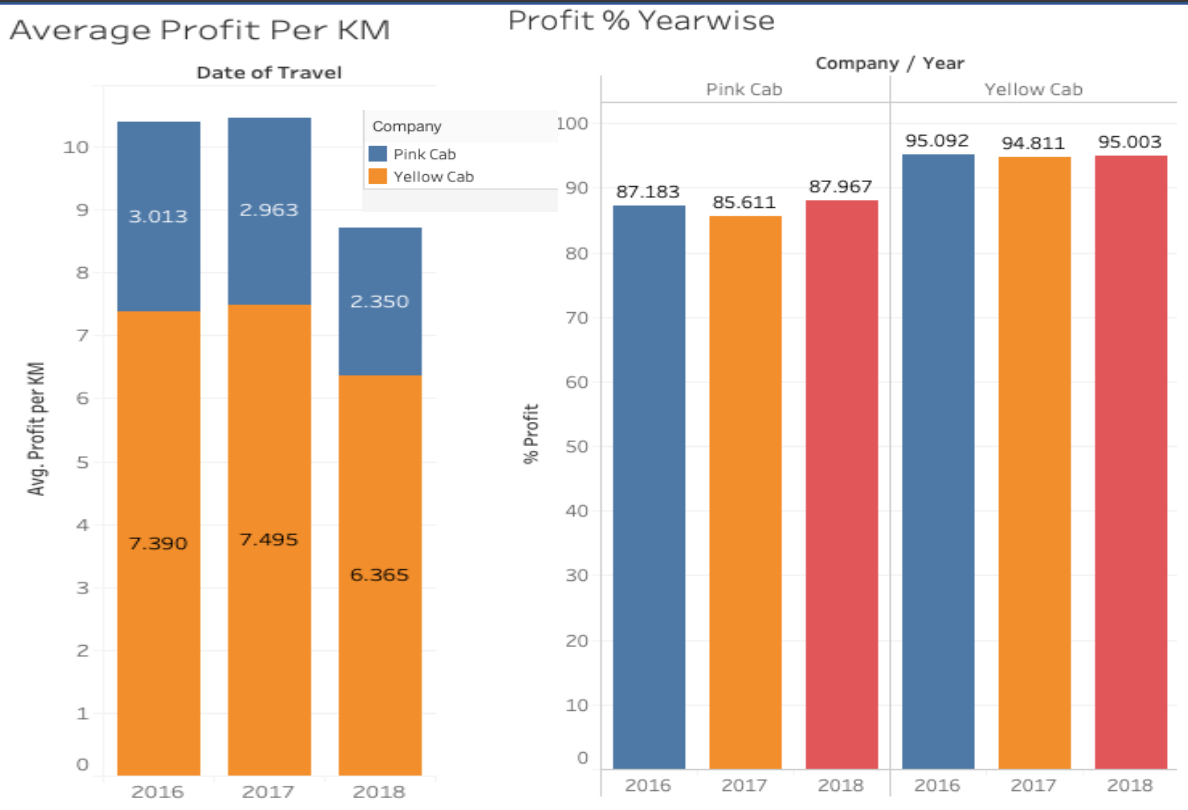
Assumptions:

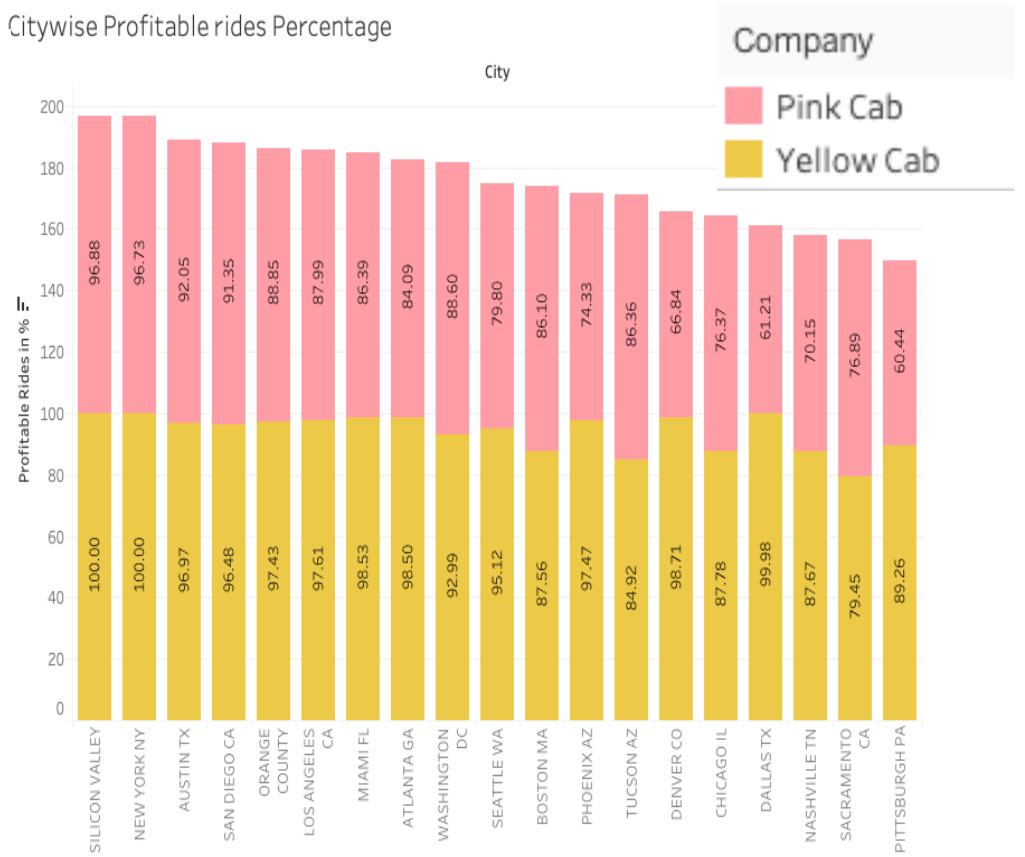
- Outliers are present in Price_Charged feature but due to unavailability of trip duration details ,we are not treating this as outlier.

- Profit of rides are calculated keeping other factors constant and only Price_Charged and Cost_of_Trip features used to calculate profit.

- Users feature of city dataset is treated as number of cab users in the city. we have assumed that this can be other cab users as well(including Yellow and Pink cab)

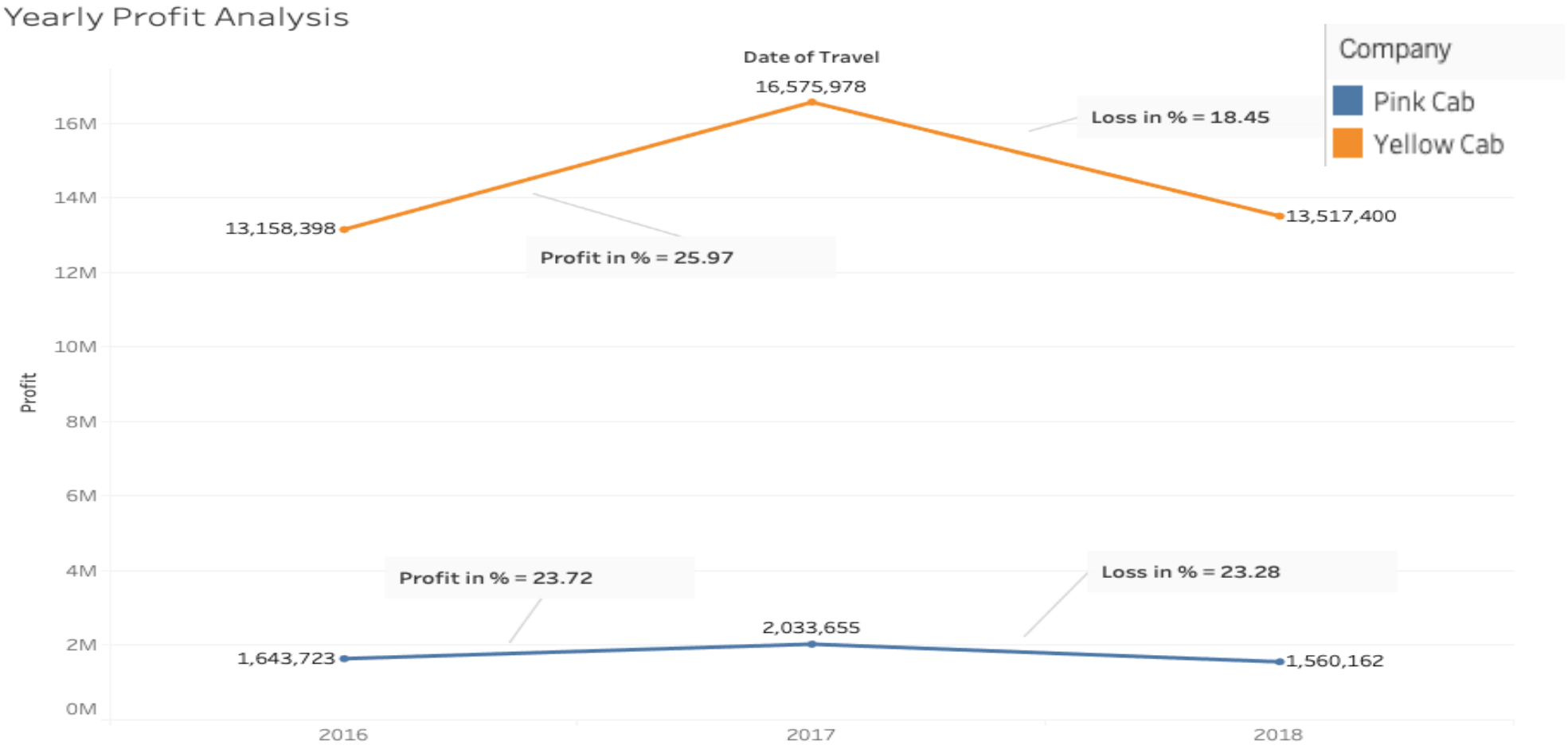
Profit Analysis



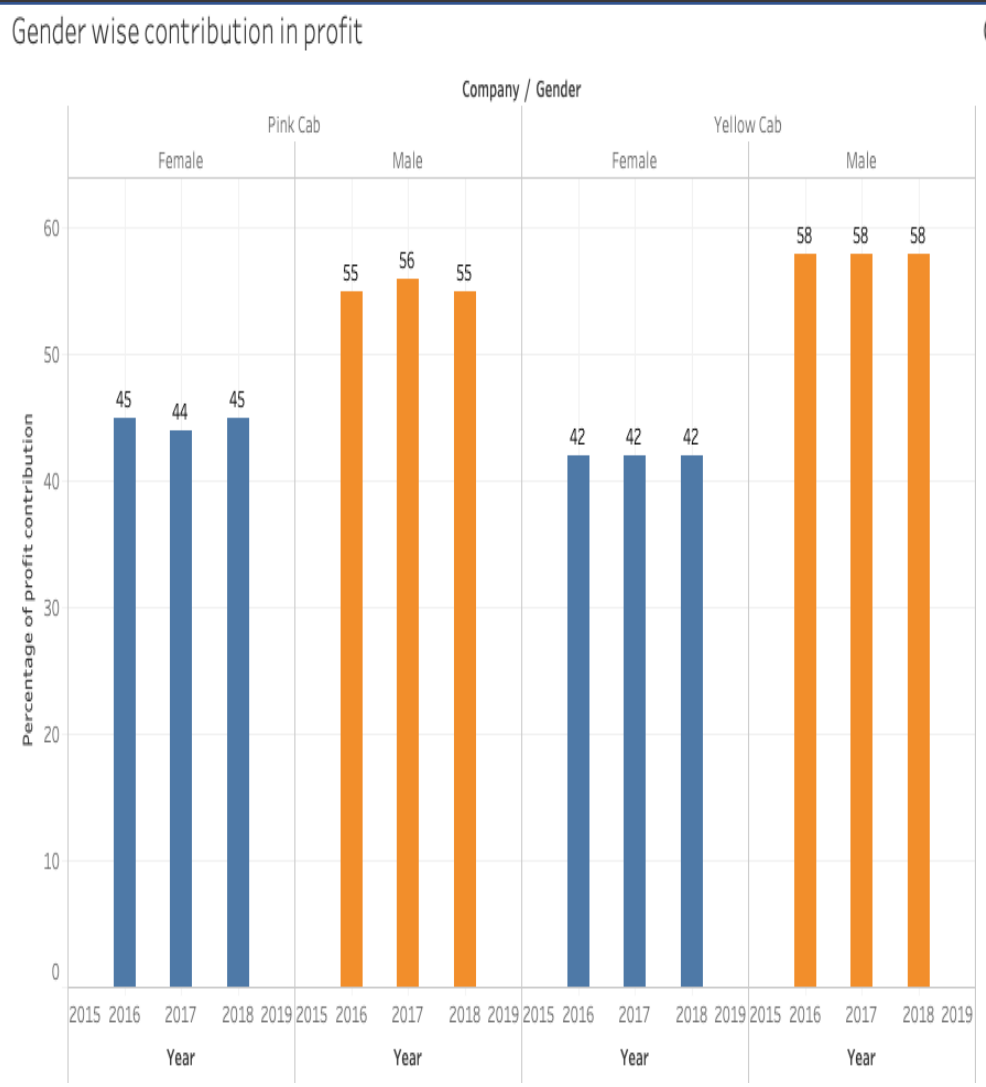


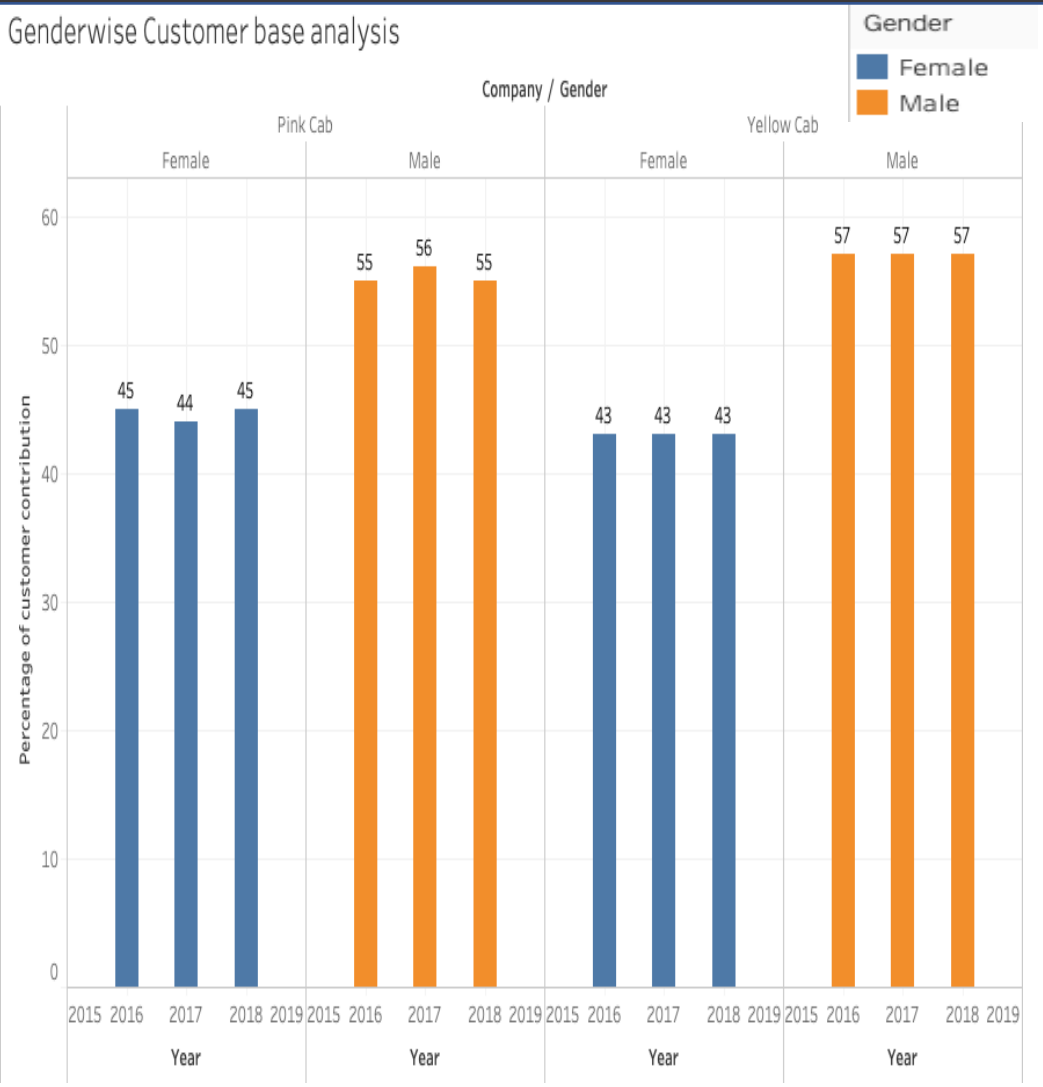
Company	Profit	Total Rides	Profit Per Ride
Pink Cab	5,237,540	83,825	62.48183716
Yellow Cab	43,251,775	271,207	159.4788298

Yearly Profit Analysis



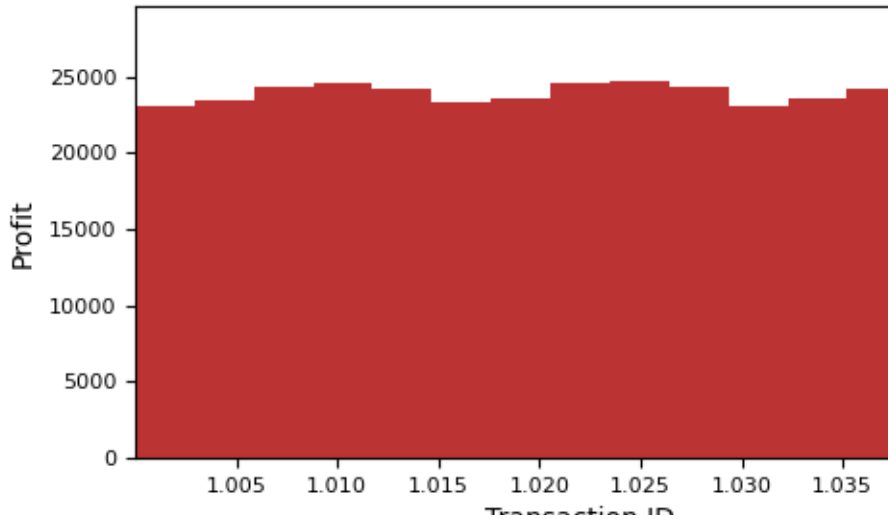
Profit and customer base Analysis Gender wise

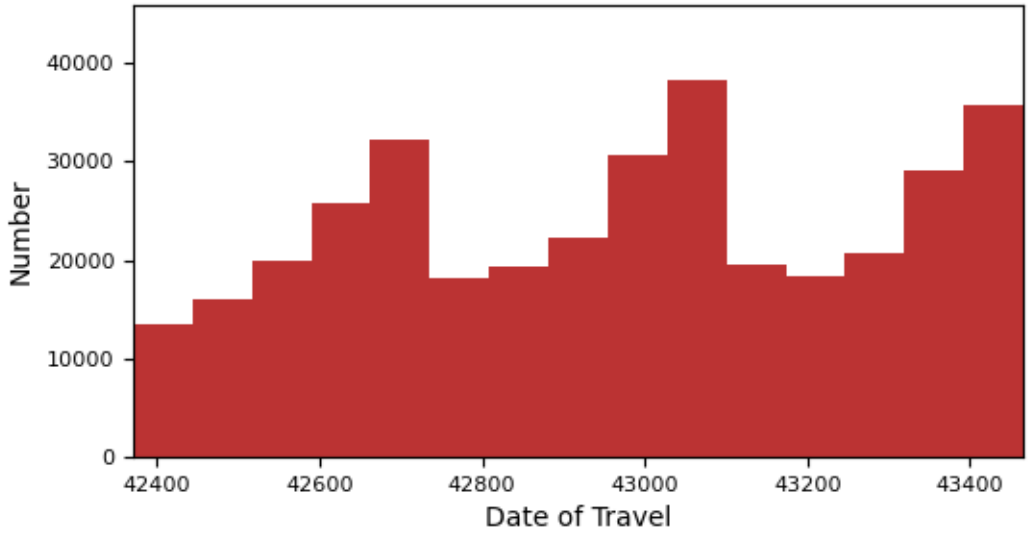


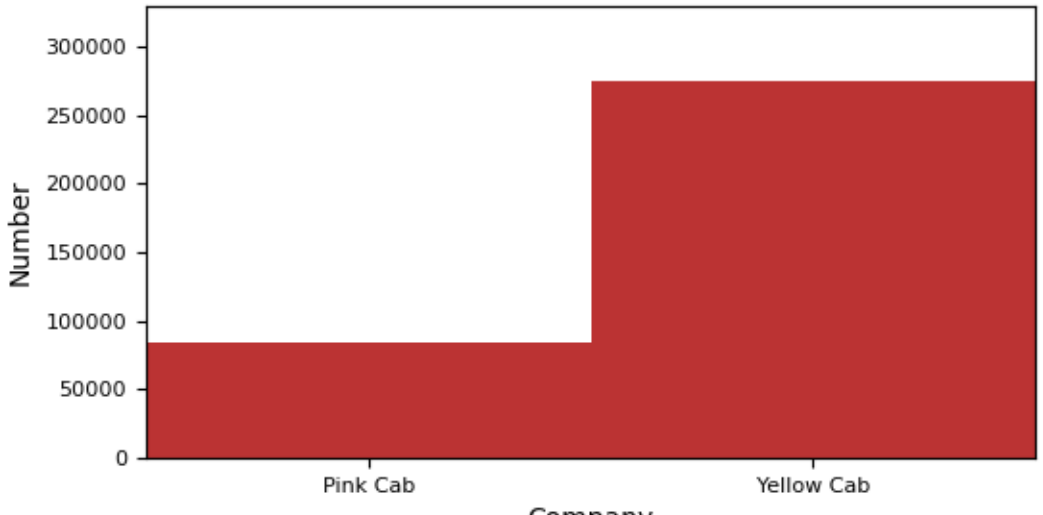


There is almost equal distribution of gender in the Profit and customer base of both the cabs.

Income Class wise Profit and cab base Analysis

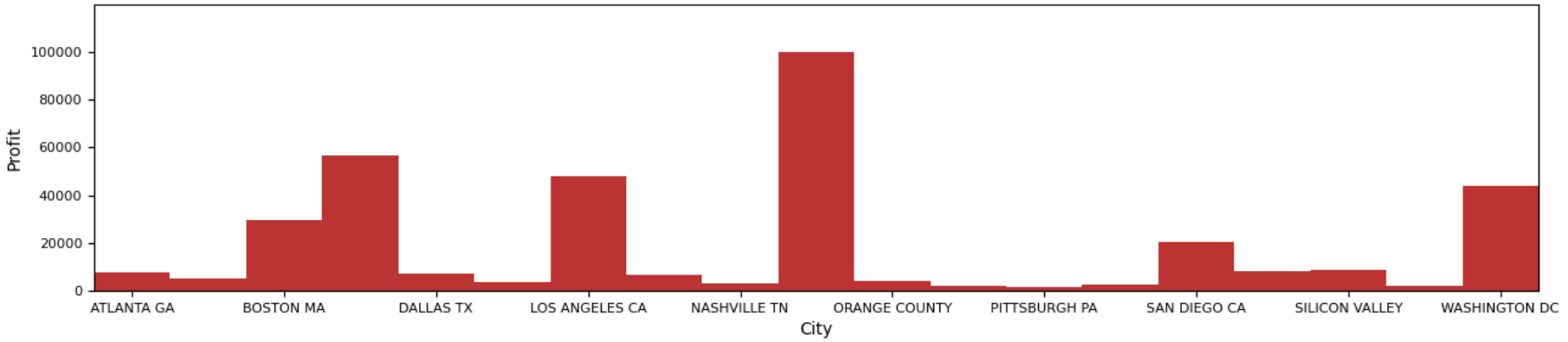


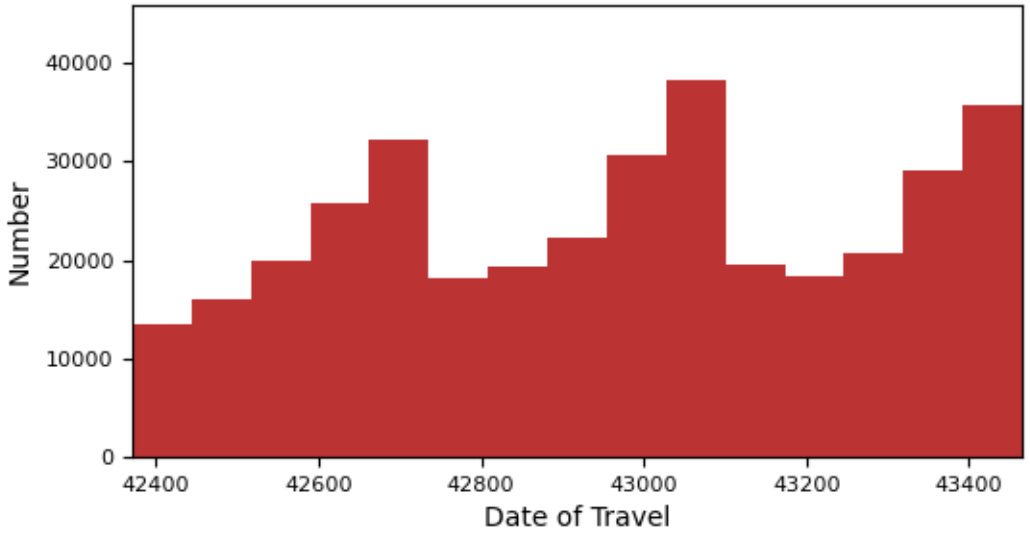




Middle class and high class contributes more in the profit as well as in the customer base of both the cabs

Income Class wise Profit and cab base Analysis

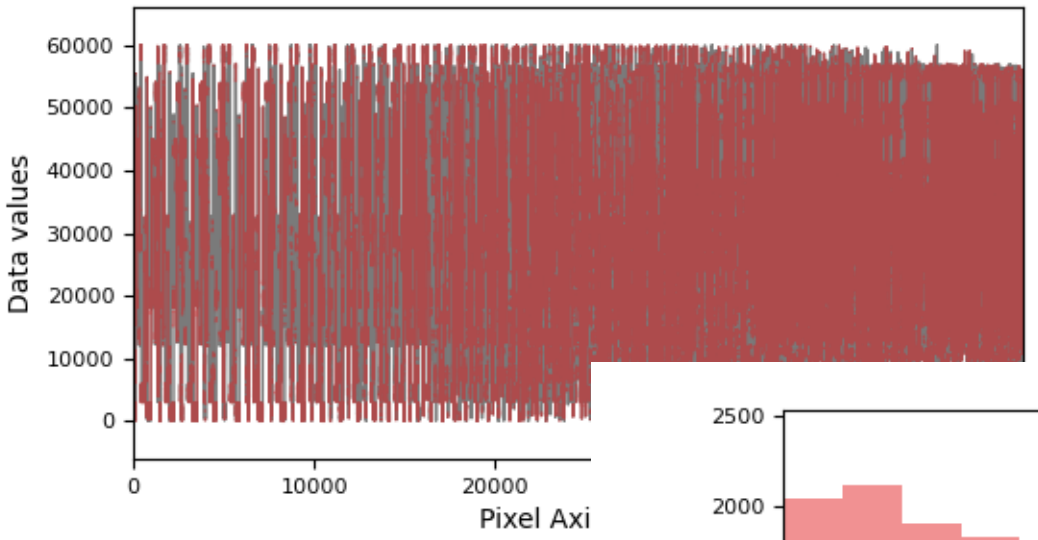


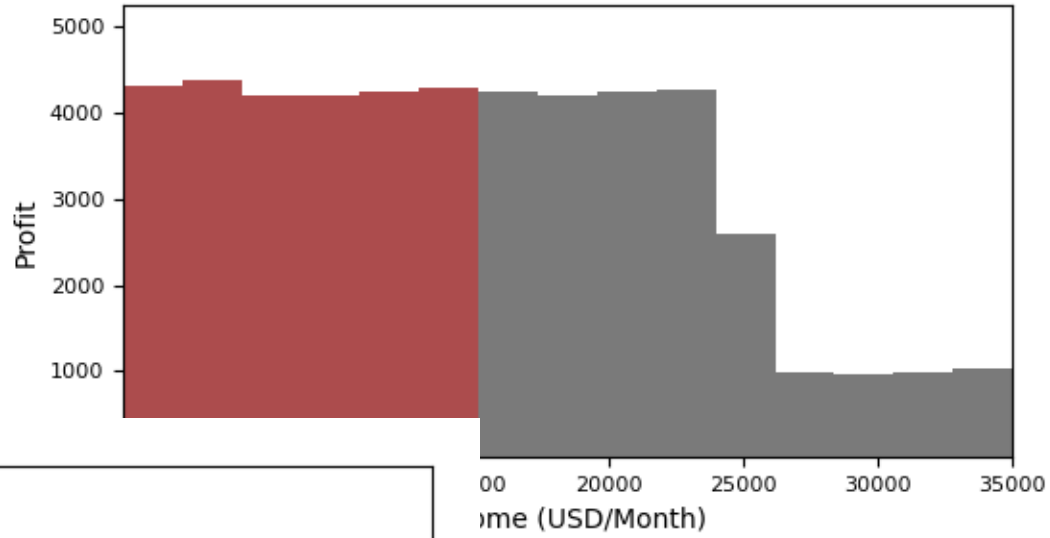


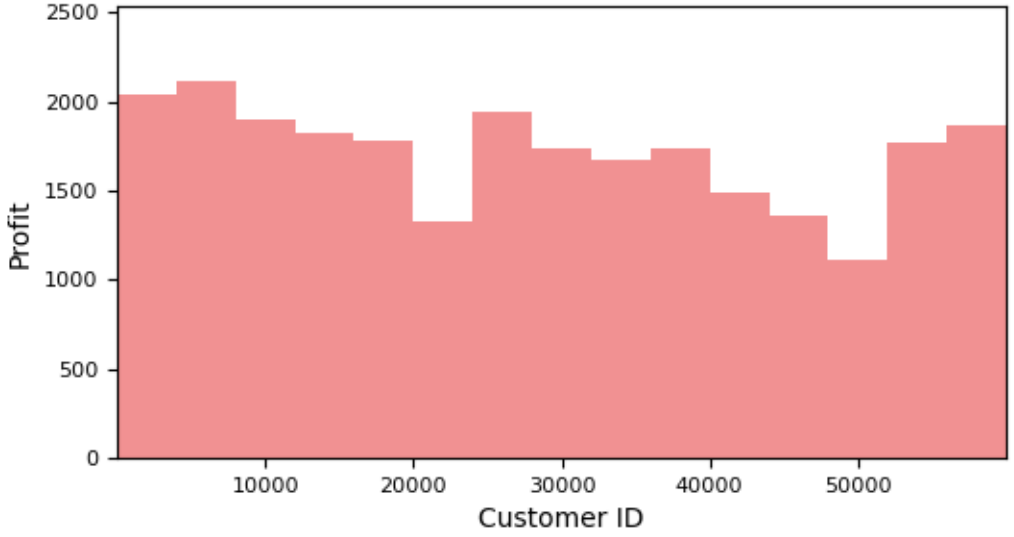
Middle class and high class contributes more in the profit as well as in the customer base of both the cabs

Income Class wise Customer ID with subset selection

Profit and cab base Analysis







Profit analyses

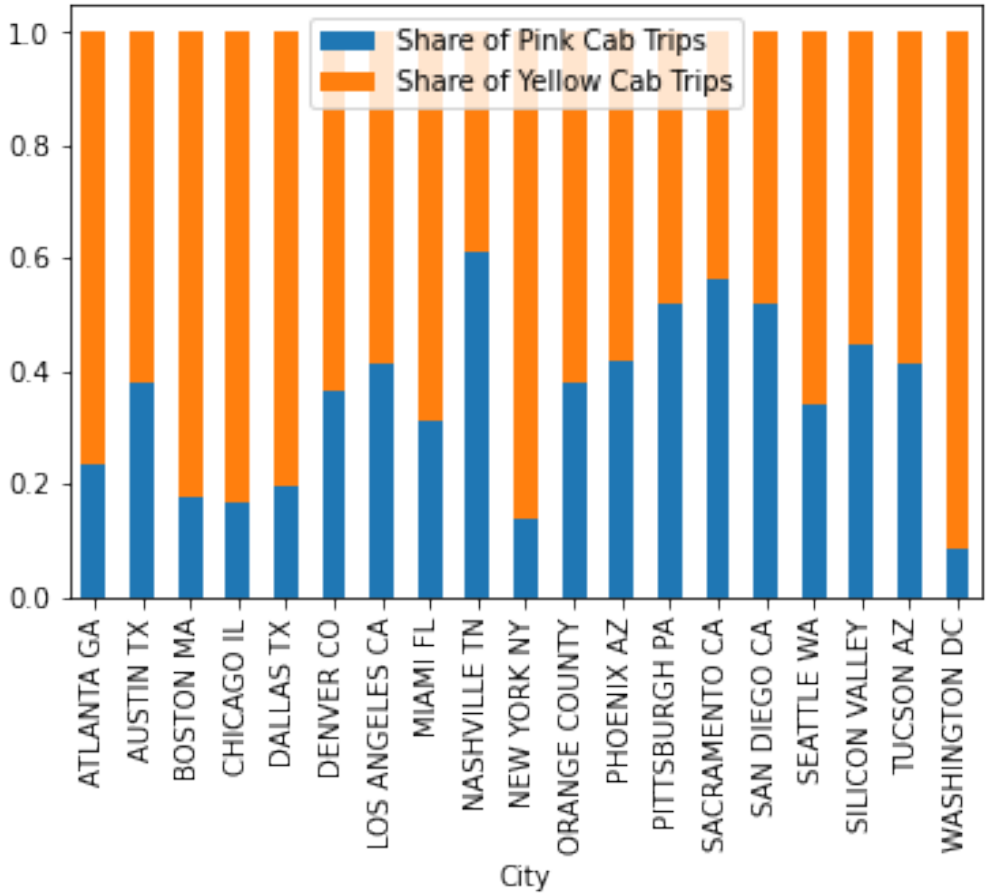
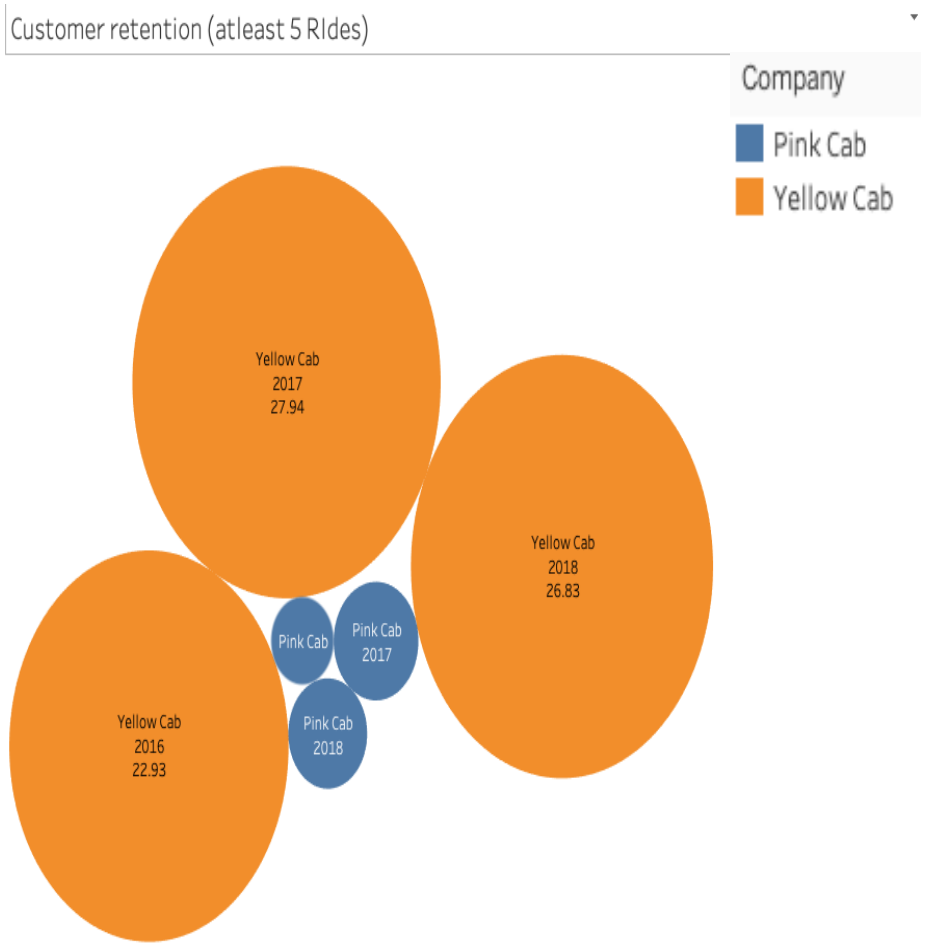
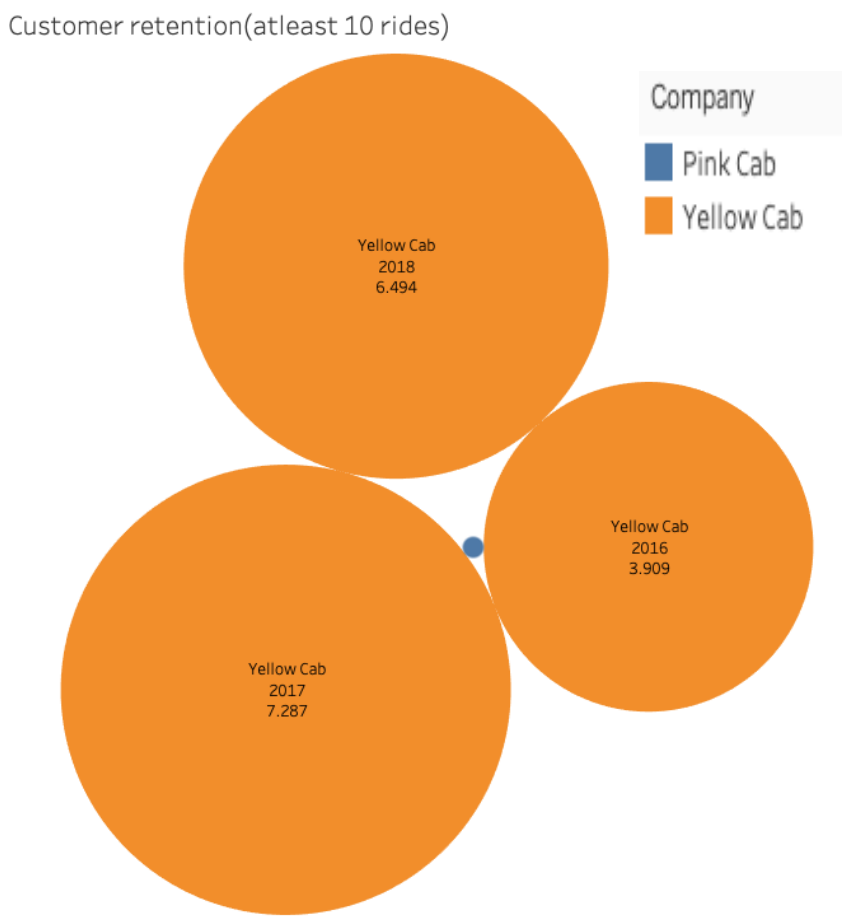


Chart: Share of Pink Cab and Yellow Cab Trips
in different cities.

Customer Retention



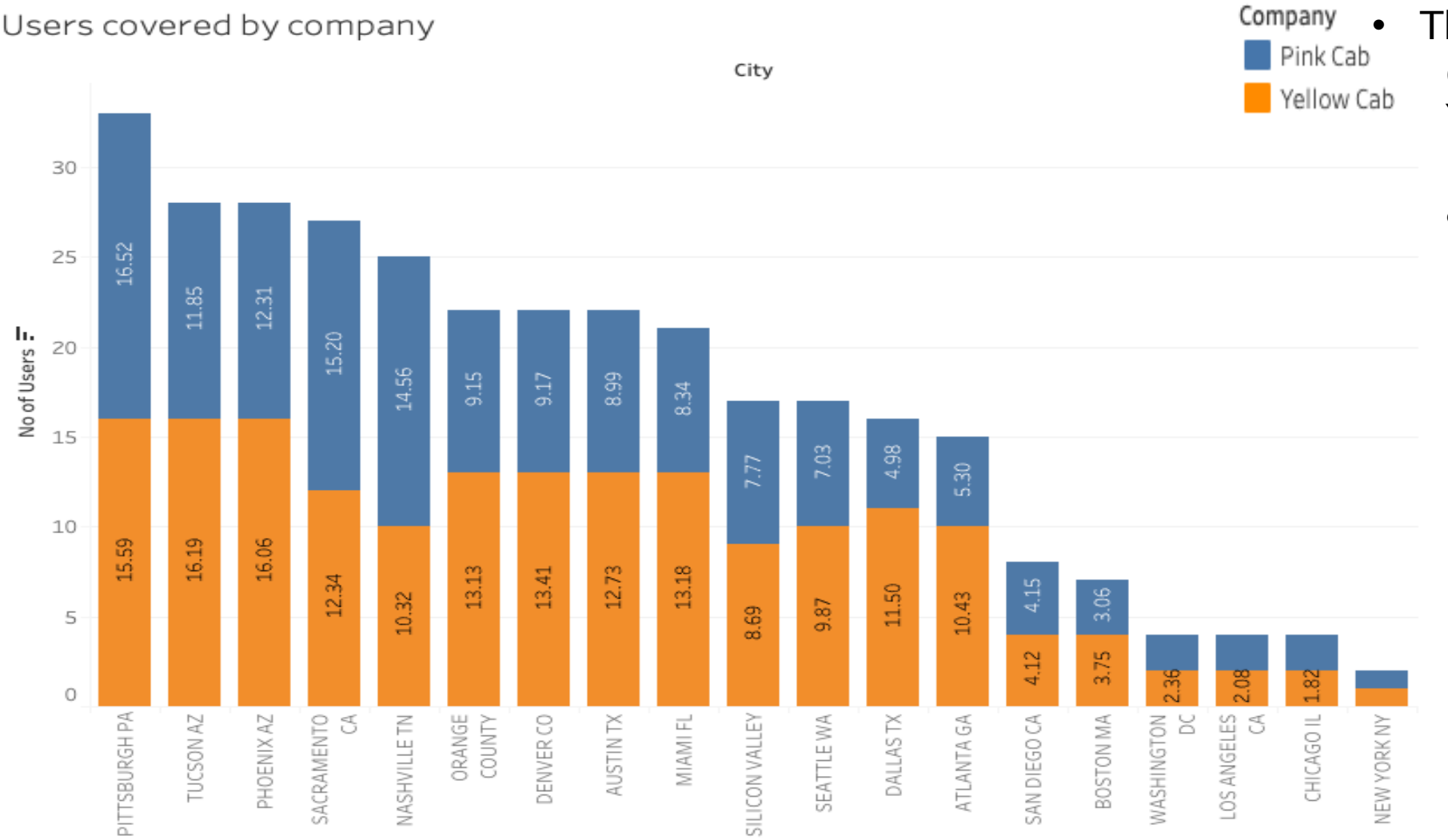
Viz 1



Viz 2

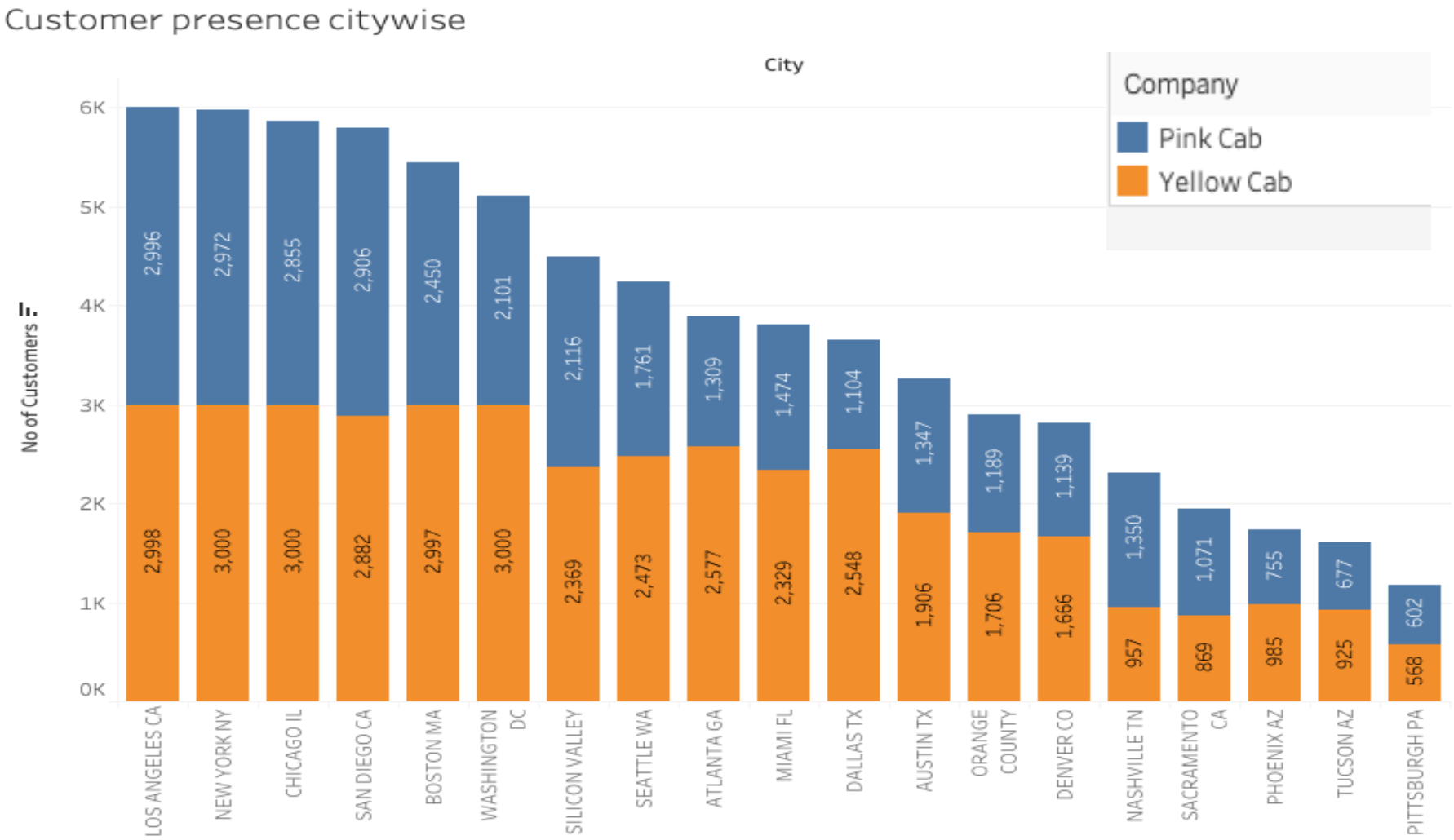
- Customers who have taken at least 5 rides of the same cab company is considered for the viz1
- In Viz 2,only those customers considered who have taken at least 10 rides of the same cab company
- Clearly in both the segments Yellow cab is far better than Pink cab. Which shows Yellow cab is able to retain their customers well as compared to Pink cab.

City Wise Cab Users Covered By Company



- This is the number of users covered by Yellow and Pink cab In the city against **all cab users** present In the city

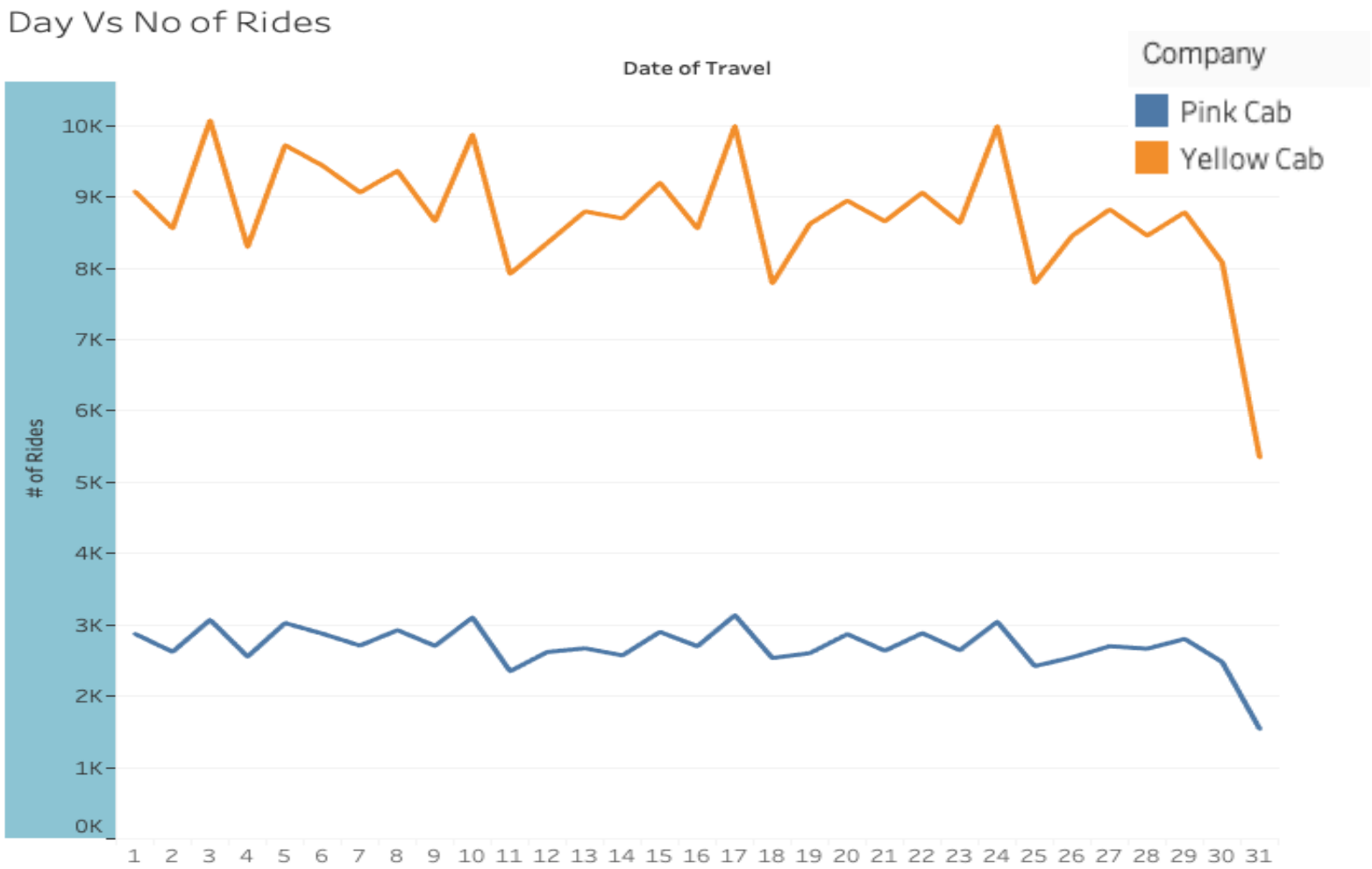
Customer Presence of Yellow and Pink cab city wise



Out of 19 Cities Pink cab have higher customer reach as compared to Yellow cab ,in following 4 cities:

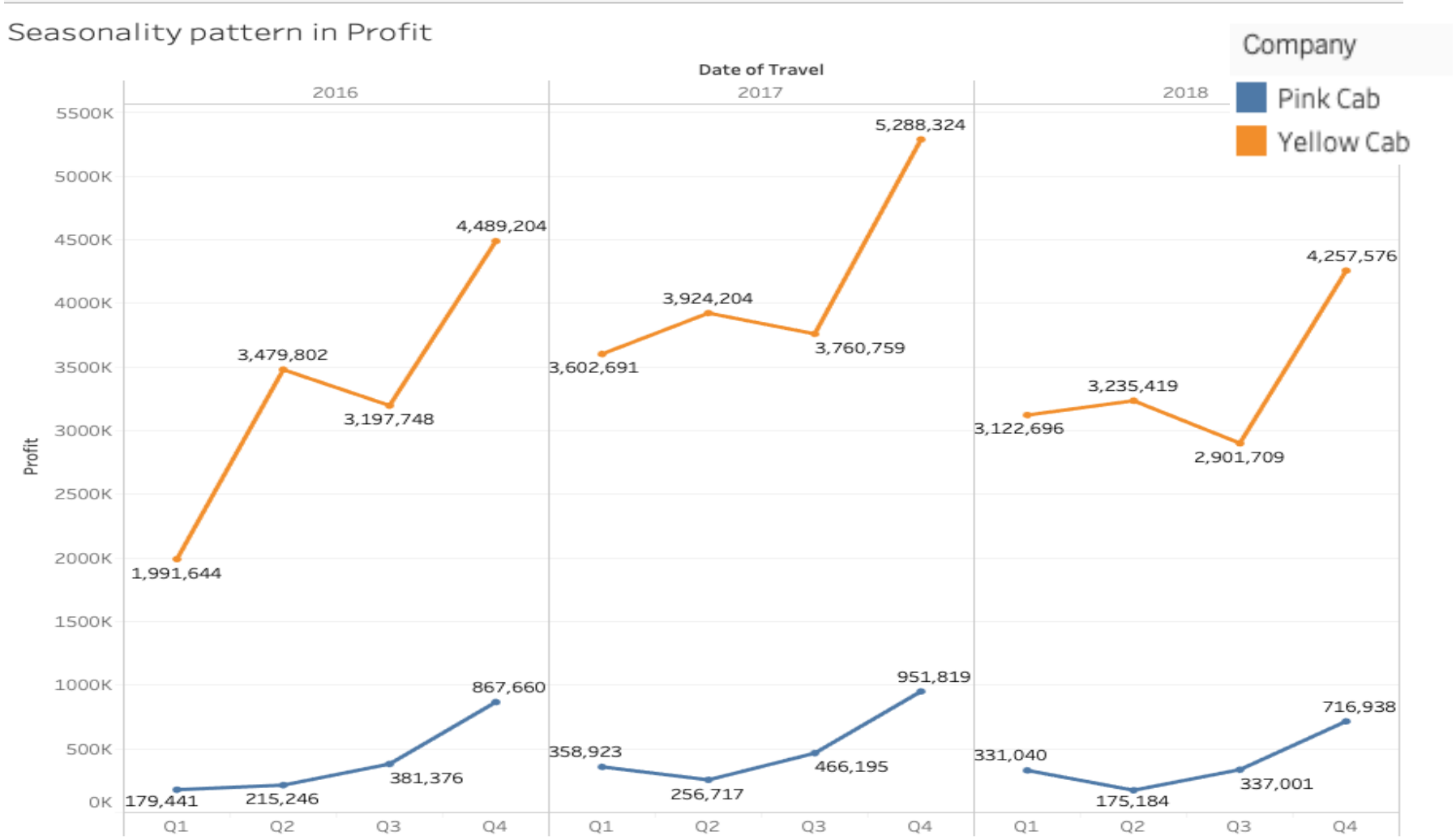
- SanDiego
- Nashville
- Sacramento
- Pittsburgh

Seasonality in the demand



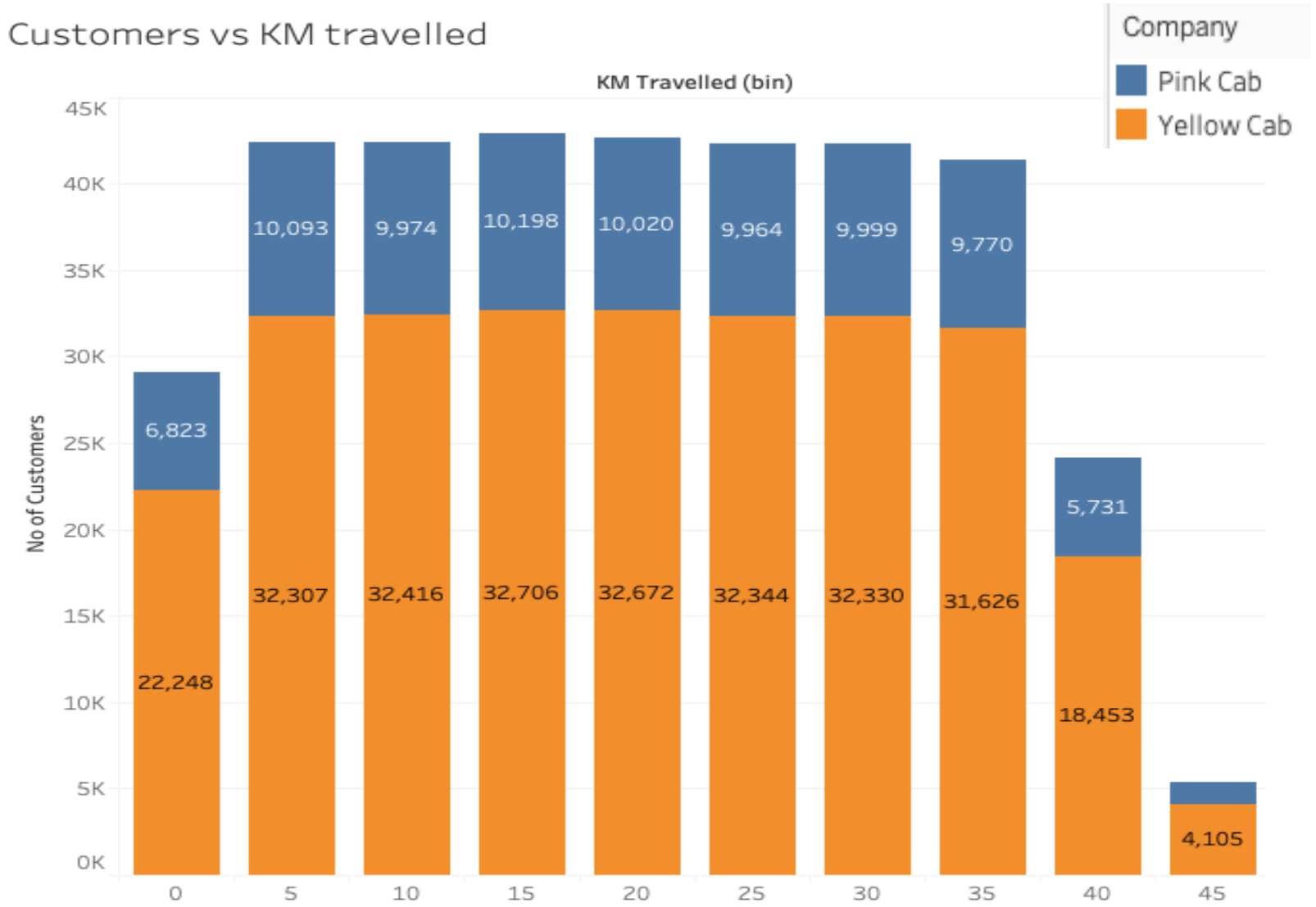
- Seasonal component is present in
  both the cabs.
- Demand is high on 3rd day of the month and it repeats similar pattern every 7 days

Seasonality in the Profit



- Seasonal pattern 4 quarter cycle.

Customer analysis based on ride distance

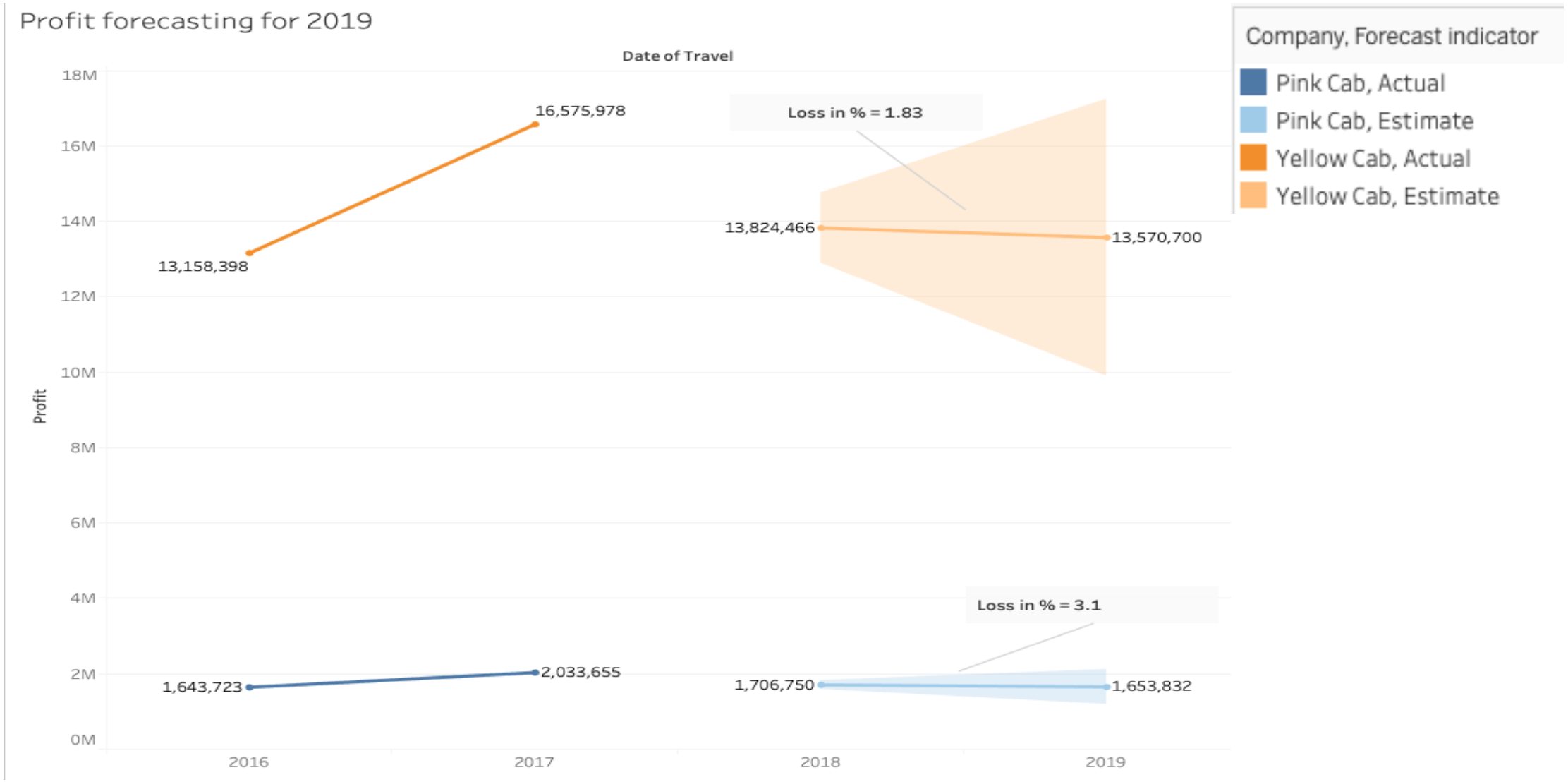


Yellow cab has customers almost uniform for short, medium and long Trip. Which shows yellow cab is offering better customer plan for short, medium and long Trip.

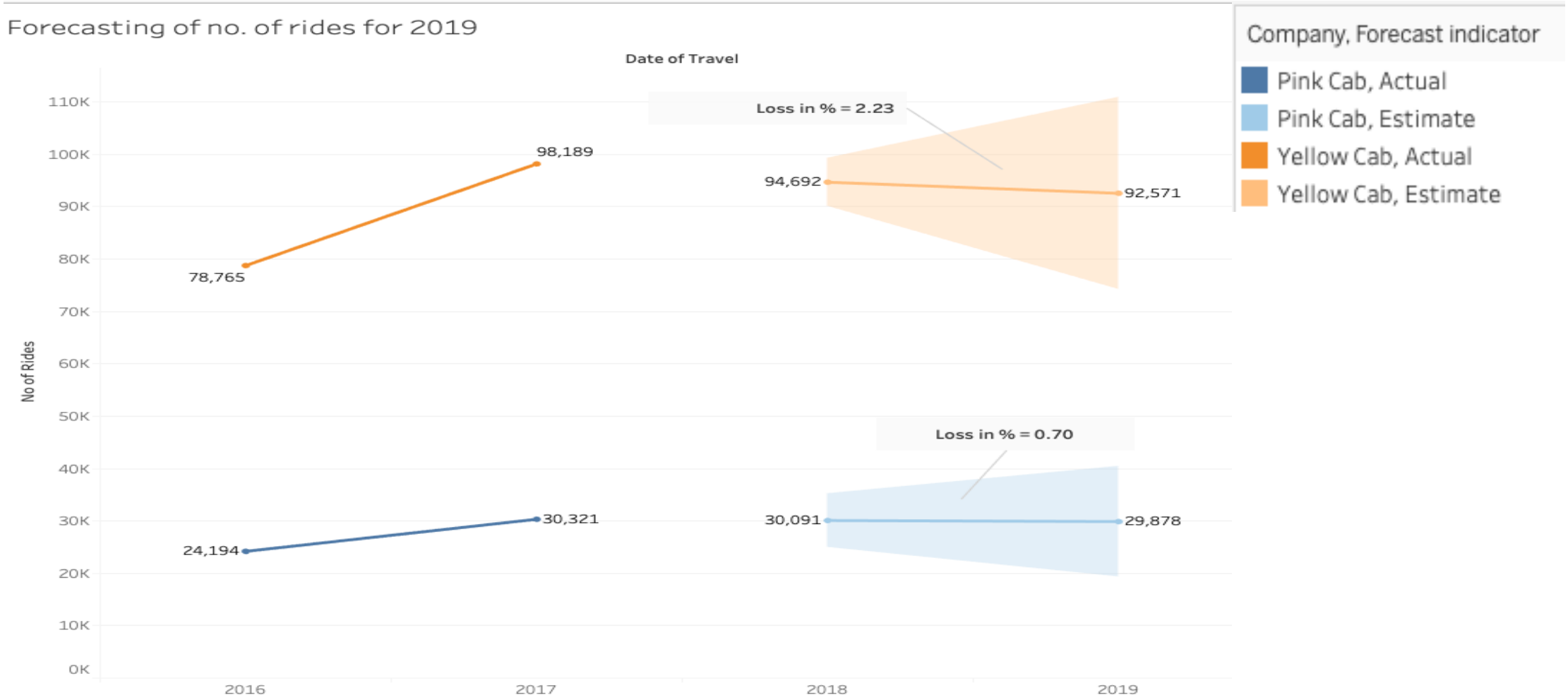
5-35 KM trips are contributing more In both the cabs profit

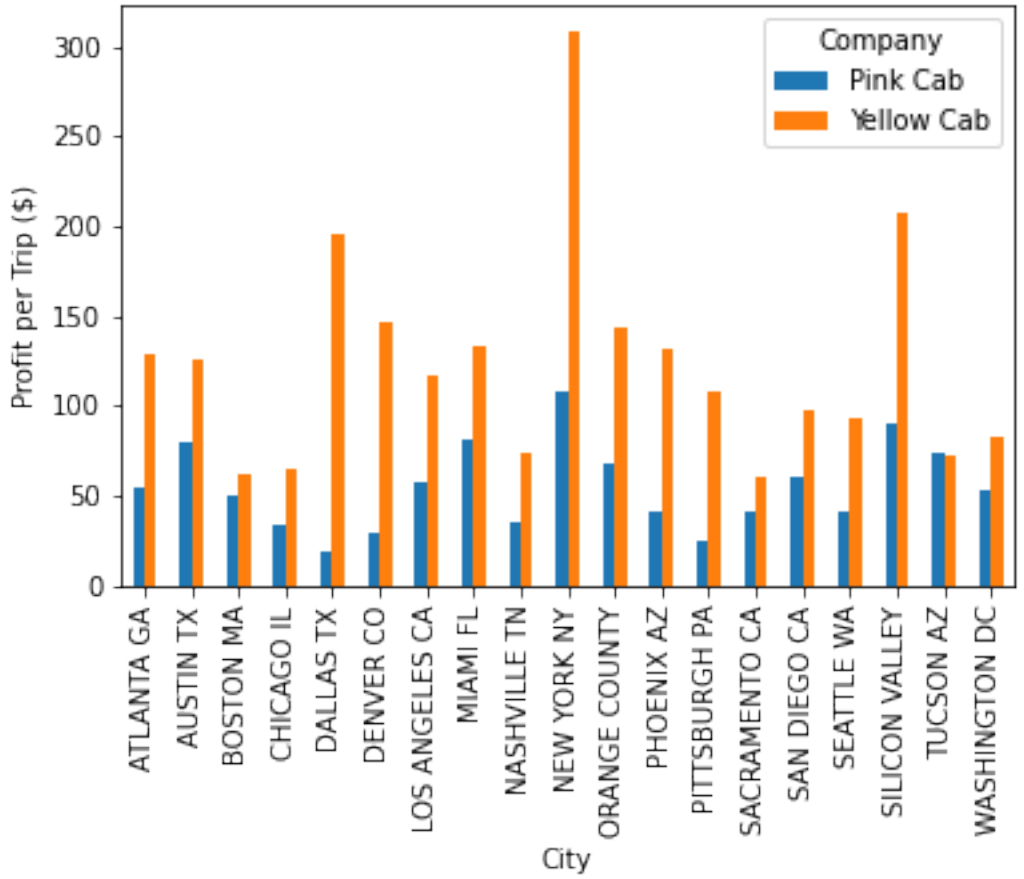
There is a huge difference between yellow and pink cab in customer reach for short and long trip. Yellow cab has very good customer reach in this segment as well

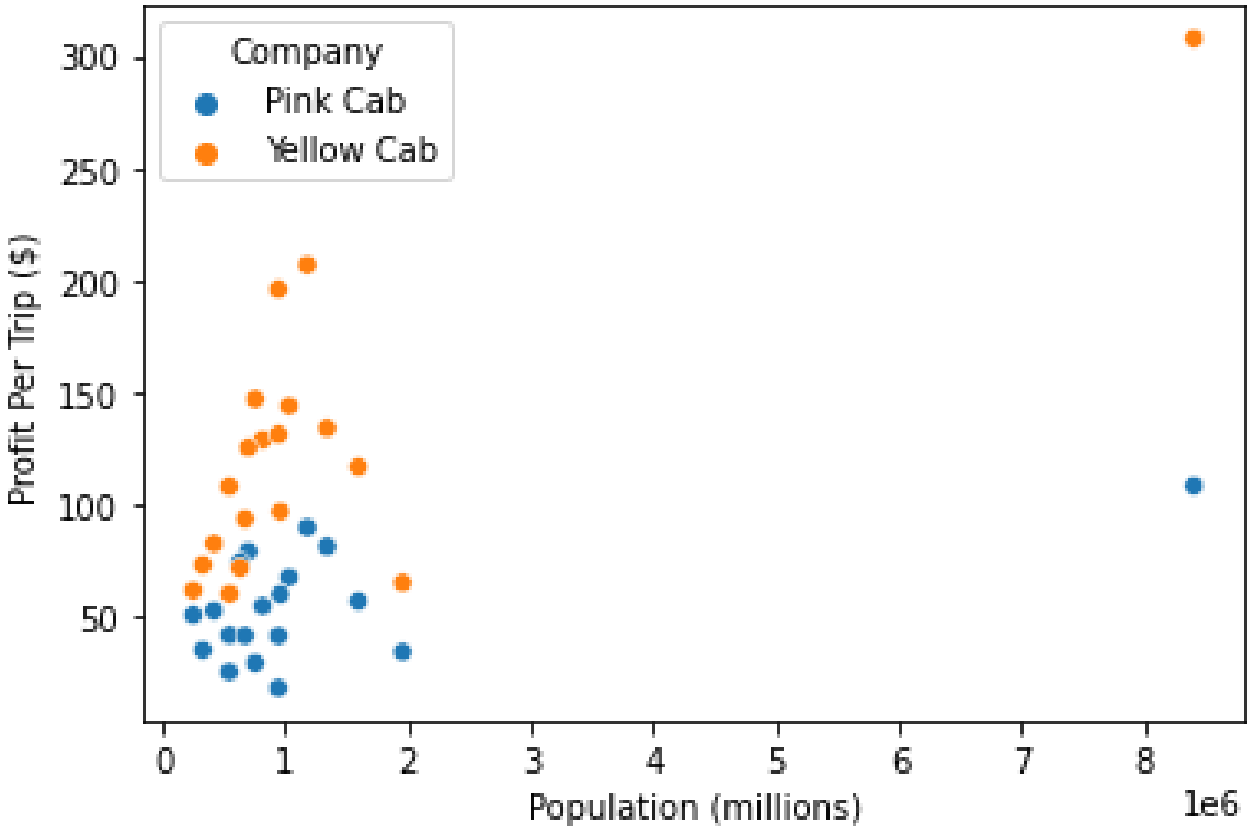
Profit Forecasting for 2019



Forecasting of no. of rides for 2019

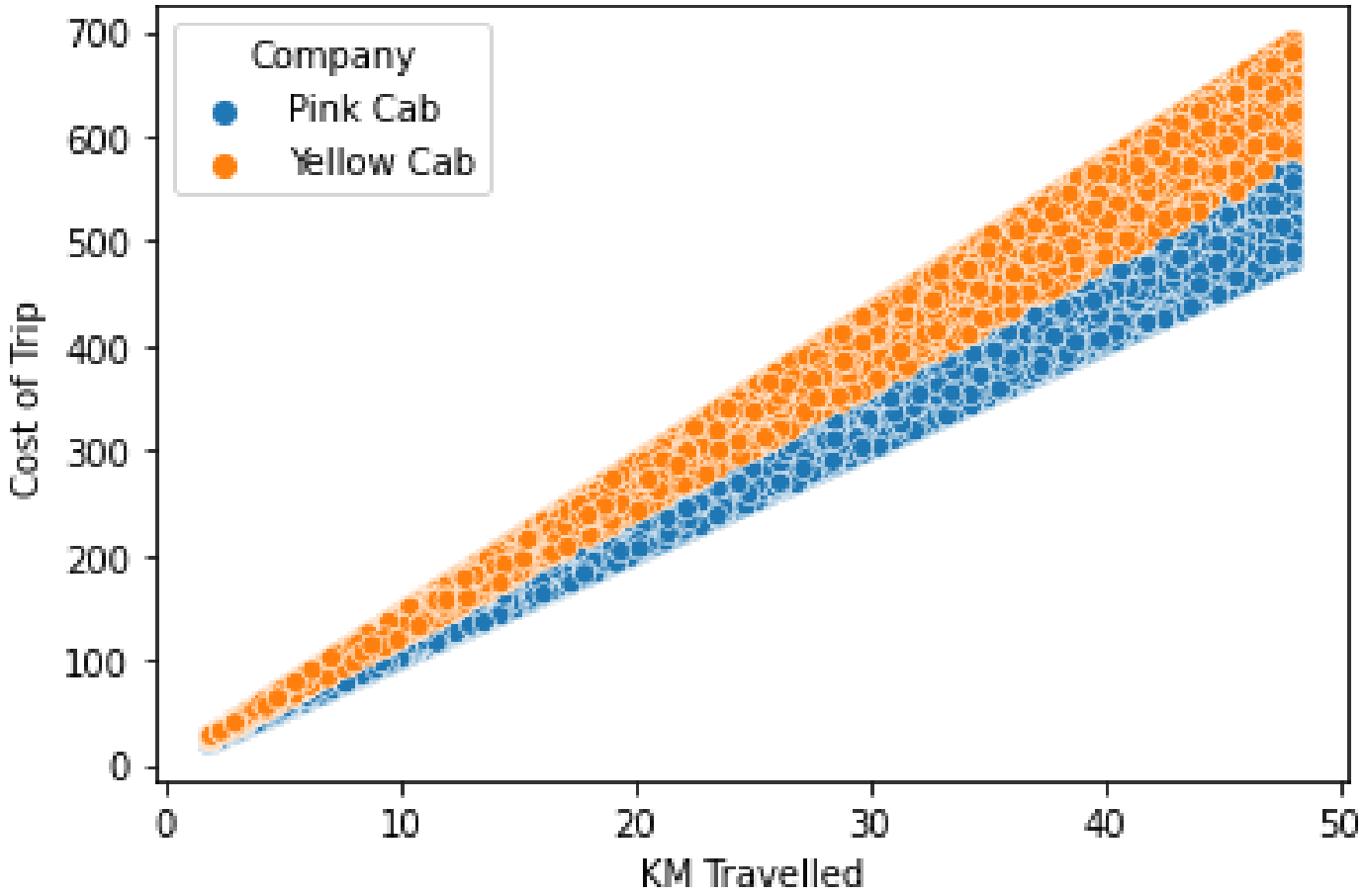



Company
Pink Cab
Yellow Cab
Profit per Trip ($)
300
250
200
150
100
50
0
ATLANTA GA
AUSTIN TX
BOSTON MA
CHICAGO IL
DALLAS TX
DENVER CO
LOS ANGELES CA
MIAMI FL
NASHVILLE TN
NEW YORK NY
ORANGE COUNTY
PHOENIX AZ
PITTSBURGH PA
SACRAMENTO CA
SAN DIEGO CA
SEATTLE WA
SILICON VALLEY
TUCSON AZ
WASHINGTON DC
City

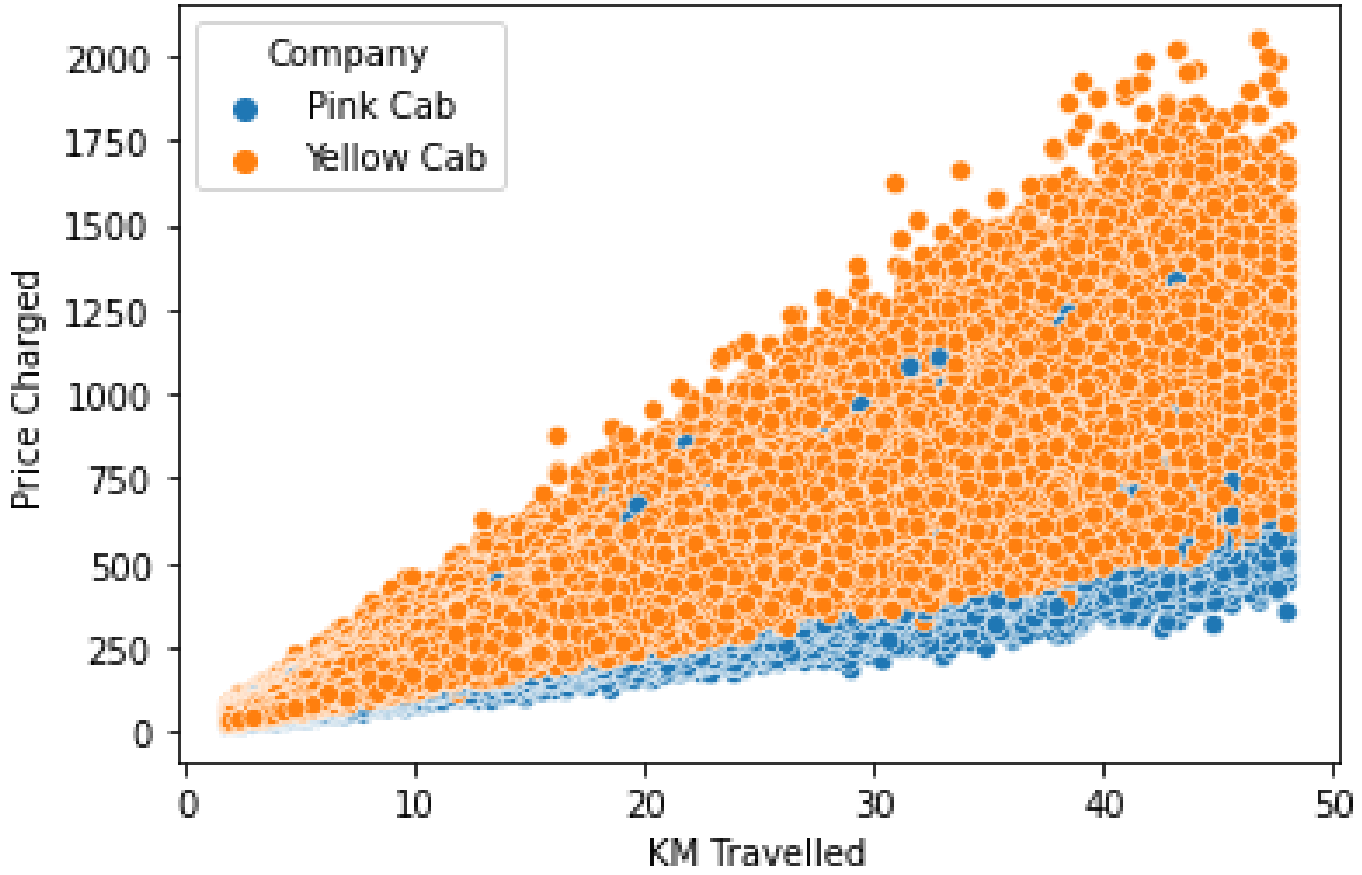

Company
Pink Cab
Yellow Cab
Profit Per Trip ($)
300
250
200
150
100
50
0
1
2
3
4
5
6
7
8
Population (millions)
1e6

Profit analyzing

Cost of Trips based on distance (km):
Pink Cab Average: $11.00/km
Yellow Cab Average: $13.20/km



Profit analyzing

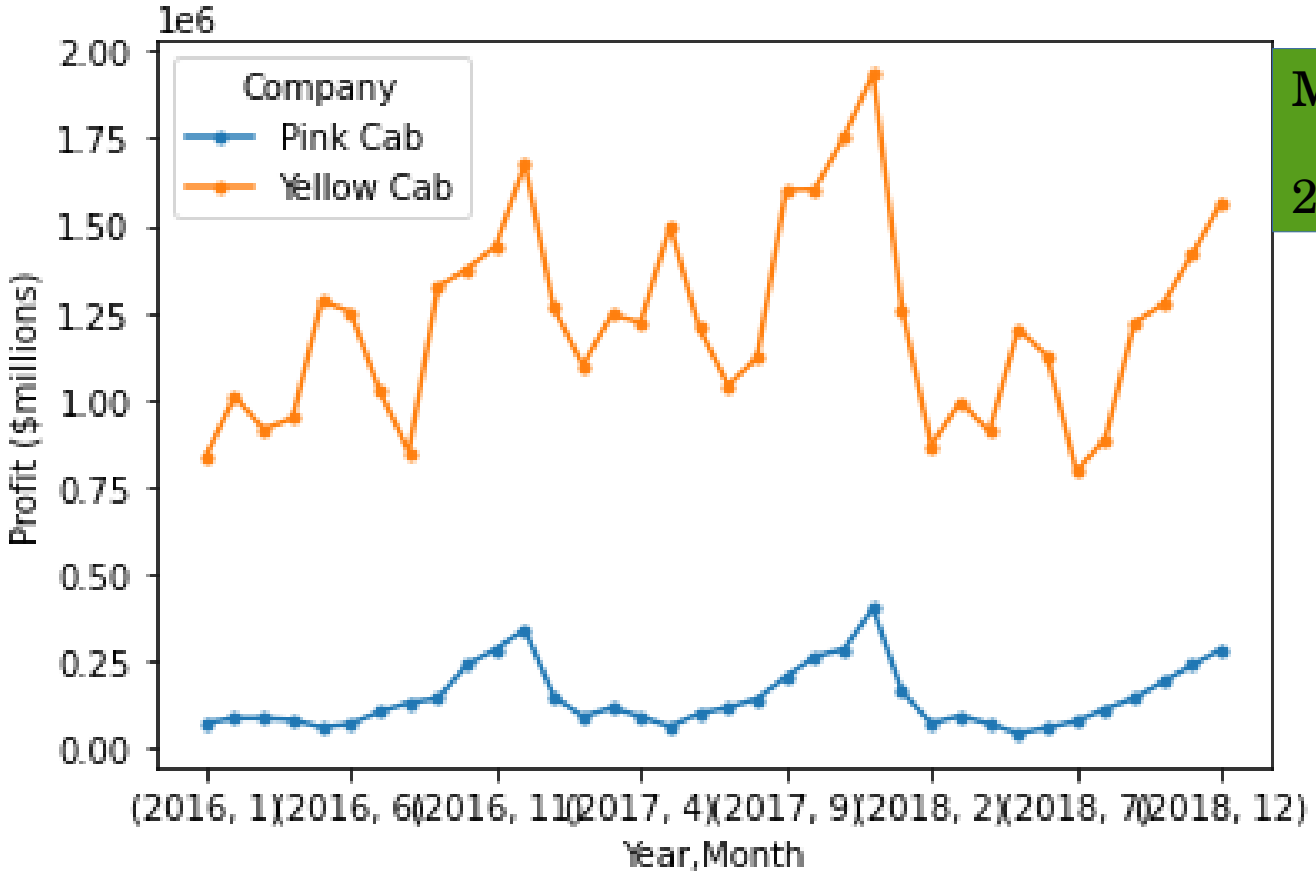


Price Charged based on distance (km):

Pink Cab Average: $13.80/km

Yellow Cab Average: $20.27/km

Profit analyzing



Monthly Profit between January

2016 and December 2018

Recommendations

We have evaluated both the cab companies on following points and found Yellow cab better than Pink cab:

Customer Reach : Yellow cab has higher customer reach in 25 cities while Pink cab has higher customer reach in 4 cities.
We have also observed that Yellow cab is doing good in covering other cab users as compared to Pink cab.

Customer Retention: We have analyzed this in two segments : at least 5 drive and at least 10 drive with the same cab company.
And we found that Yellow cab is doing far better than Pink cab in both these segments.

Age wise Reach : Yellow cab has customer in all age group and it's been observed that it's even popular in 60+ age group as equally as its in 18-25 age group.

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

Thank You