Exploratory Data Analysis

G2M Case Study

10 March, 2021

Agenda

Data Glacier

Your Deep Learning Partner

Executive Summary

- XYZ is a private 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 : Produce unique insights to help XYZ firm in identifying the right company for making investment.

- Dataset: 4 individual files have been provided, these are:

  - Cab_Data

  - Customer_ID

  - Transaction_ID

  - City

Problem statement

- XYZ is a private 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 : Produce unique insights to help XYZ firm in identifying the right company for making investment.

The analysis has been divided into four parts:

- Data Cleaning

- Data Understanding

- Recommendations for investment

- Communication of findings

Approach

Assumptions:

- There's difference in the contribution of each city.

- There's a large margin between card payers and cash payers.

- There're different contributions according to season.

- The income of each costumer influences in the number of trips.

- There's a preference for one of cab companies.

- The travel distance influences in the numbers of trips.

- There's different contributions according to age.

Approach

Problem Statement

- What's is the city with more tripes and the biggest percentage profit comparing the two companies using the cab service?

- What's the most frequent payment method and what more earnings gives using the cab service?

- Which are the seasons with the greatest movement in numbers of rides and more profit using the cab service?

- What's the relationship between customers' salaries and the amount of their trips using the cab service?

- Which is the company that better retains its customers?

- Which ranges of KM that have more numbers of rides and costumers based on company?

- Which is the range of age that have more profit and more percentage of customers based on company?

City Analysis

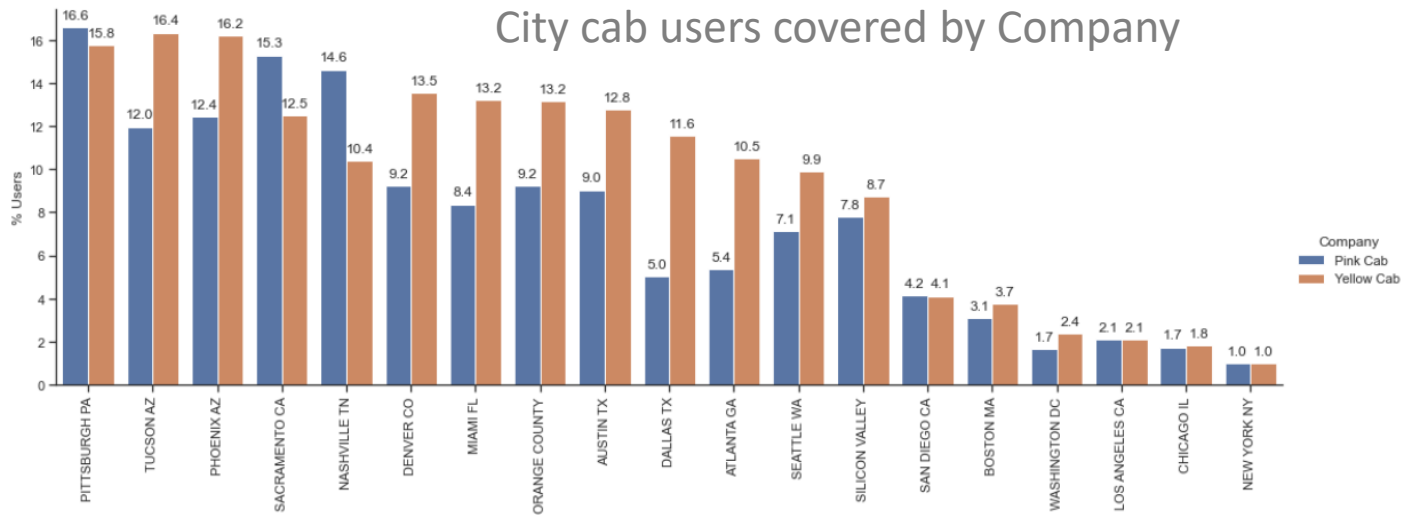Number of trips by city

Profit percentage by City
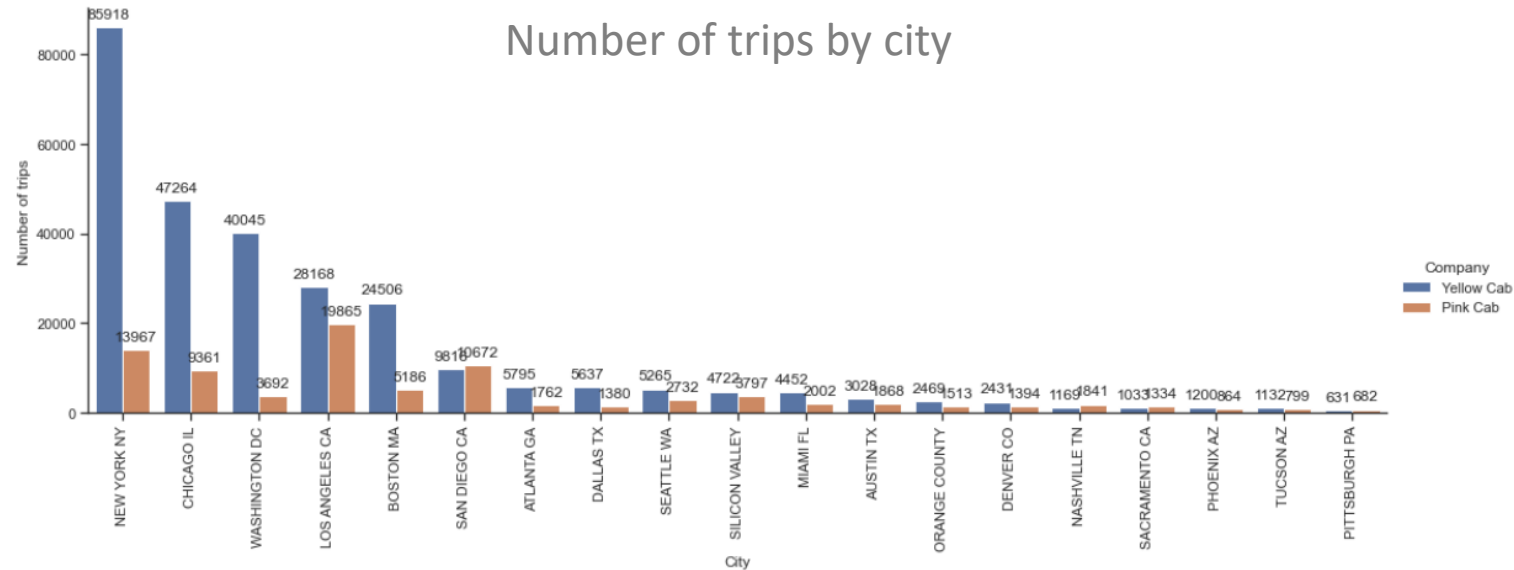
For example, Washington DC has a lot of rides, but the profit isn't very well.

The Yellow Cab Company has more rides in almost all cities, but the profit of the Pink Cab Company is not too far in many cities.
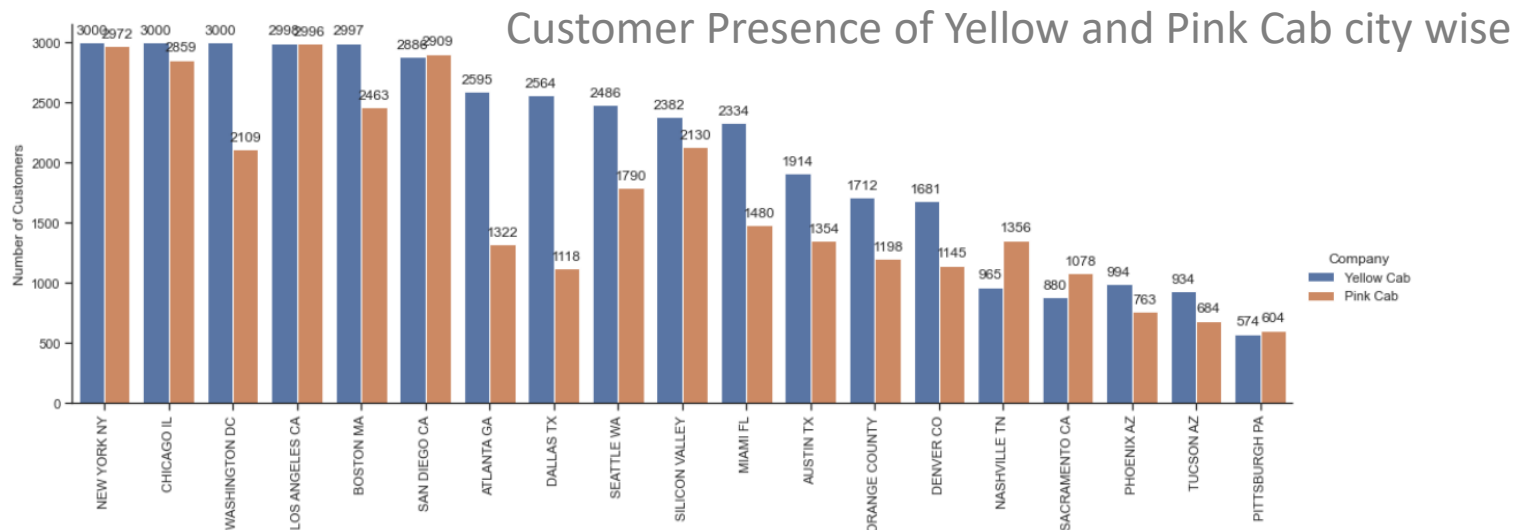
City Analysis

City cab users covered by Company
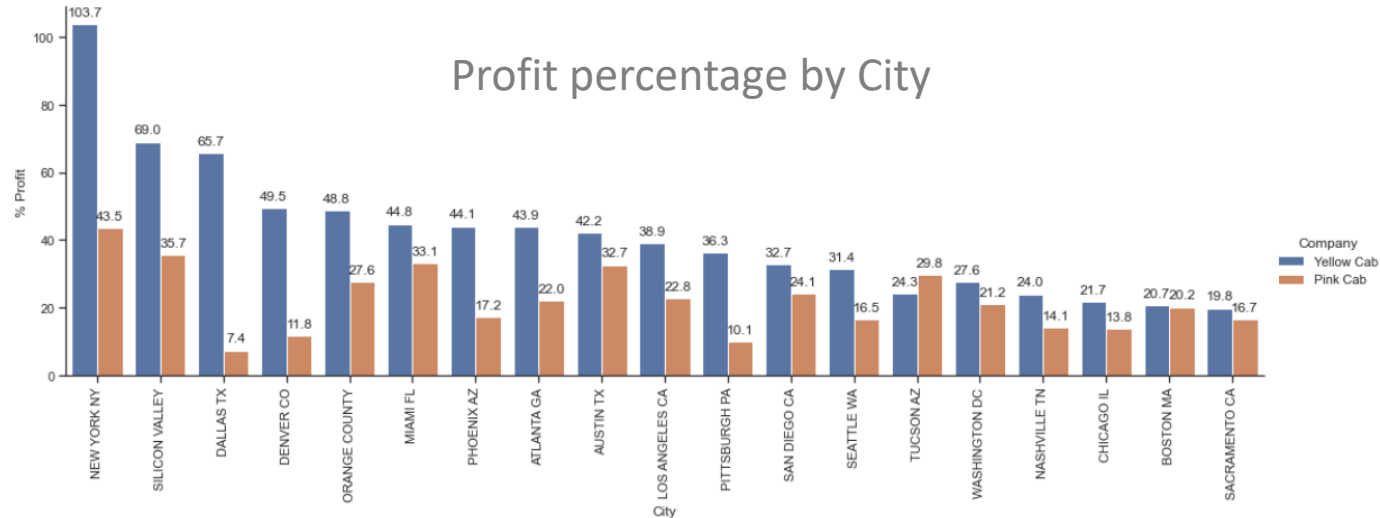
The distribution of customer in both companies is very similar, only the Pink Cap Company has more customer in the following cities:
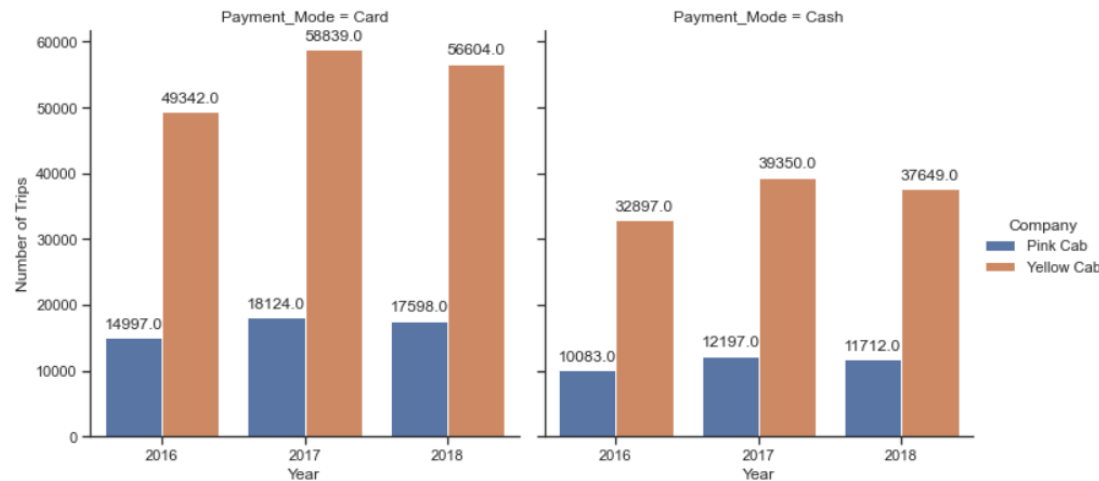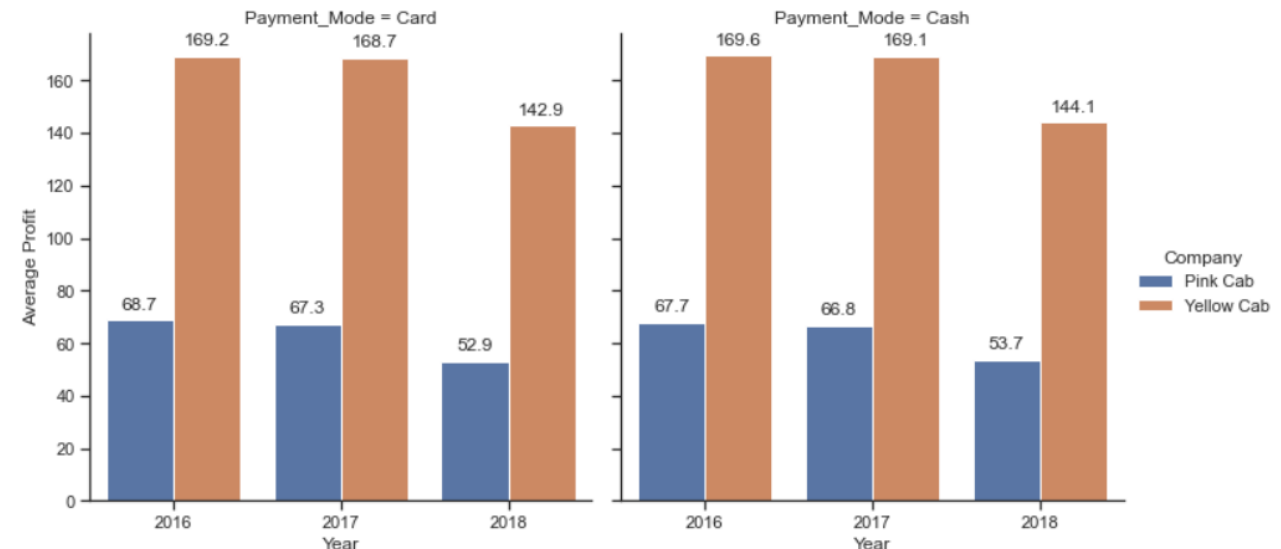
- San Diego

- Nashville

- Sacramento

- Pittsburgh

Customer Presence of Yellow and Pink Cab city wise
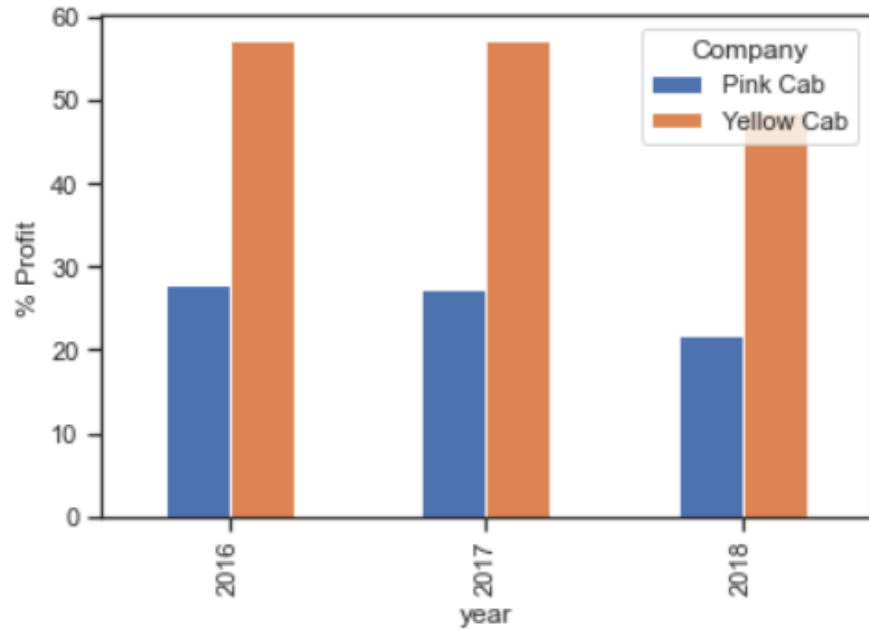
Payment Method Analysis

Number of Trips by payment method
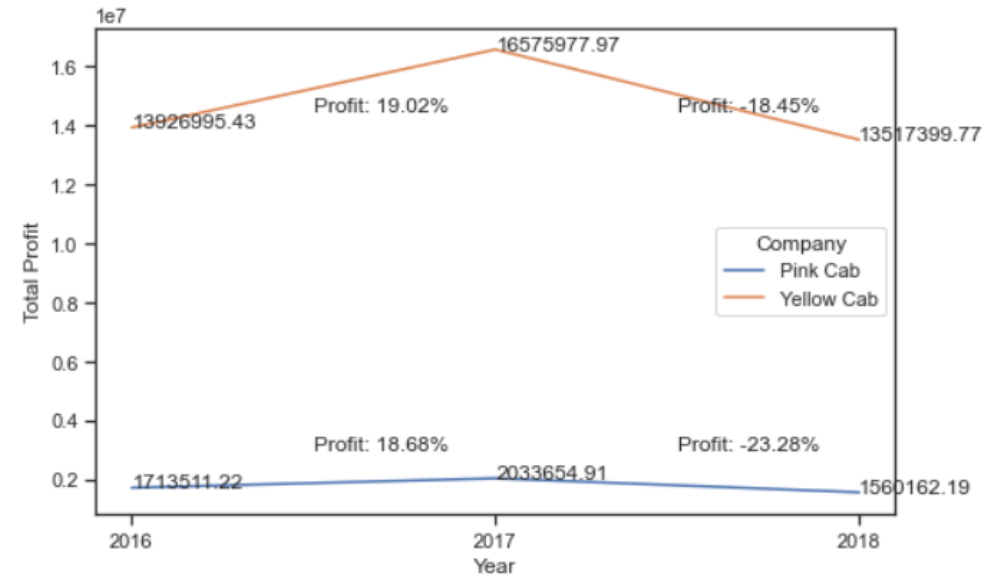

Average Profit by payment method

Both payment method have average profit seemed, but the payment method through card is more frequent in both companies.

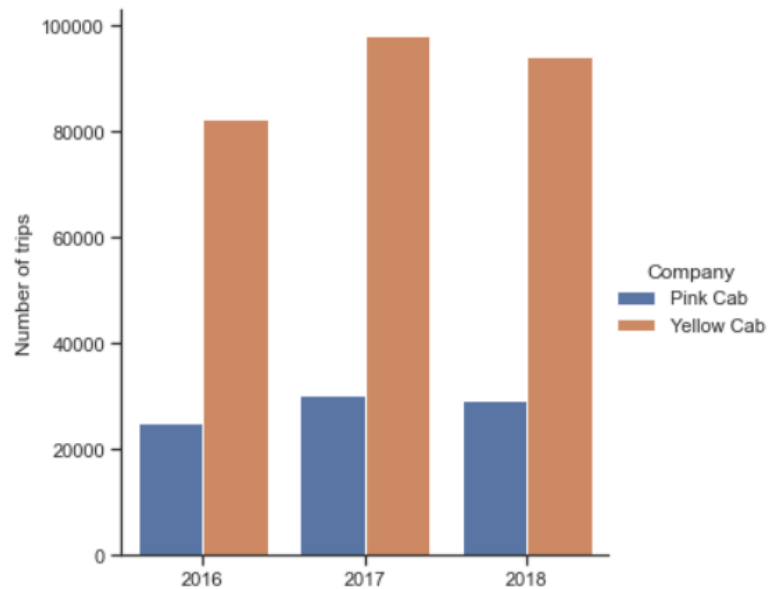# Seasonality Analysis

Profit percentage average
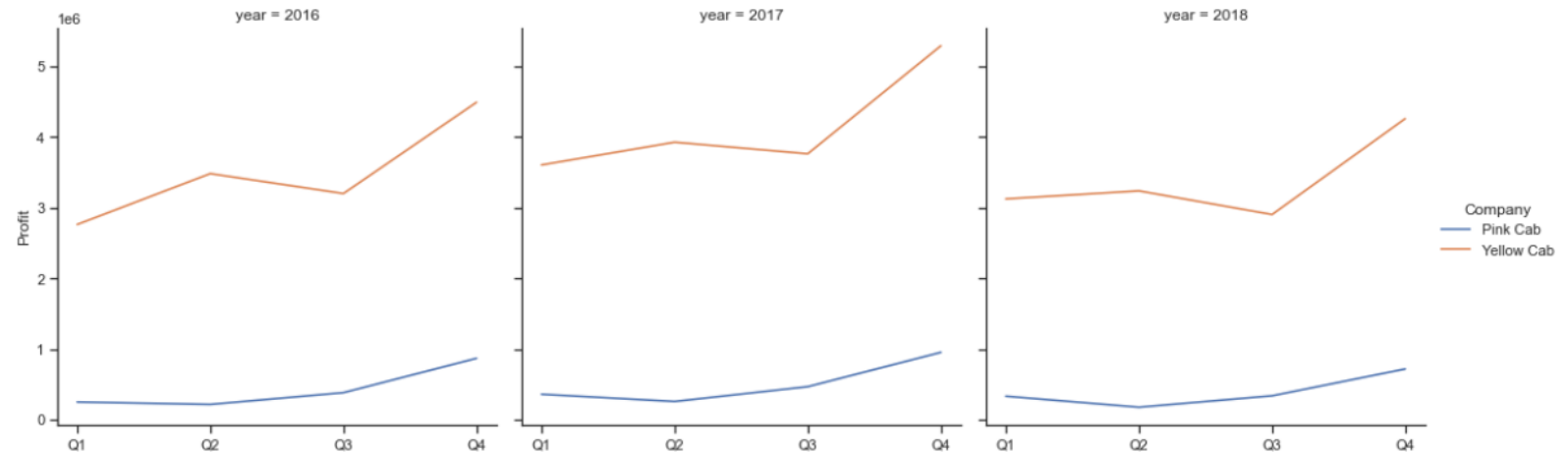

Yearly profit analysis

The profit on both companies is very similar, between the years 2016 and 2017 there is a improvement, and between the years 2017 and 2018, there are losses.
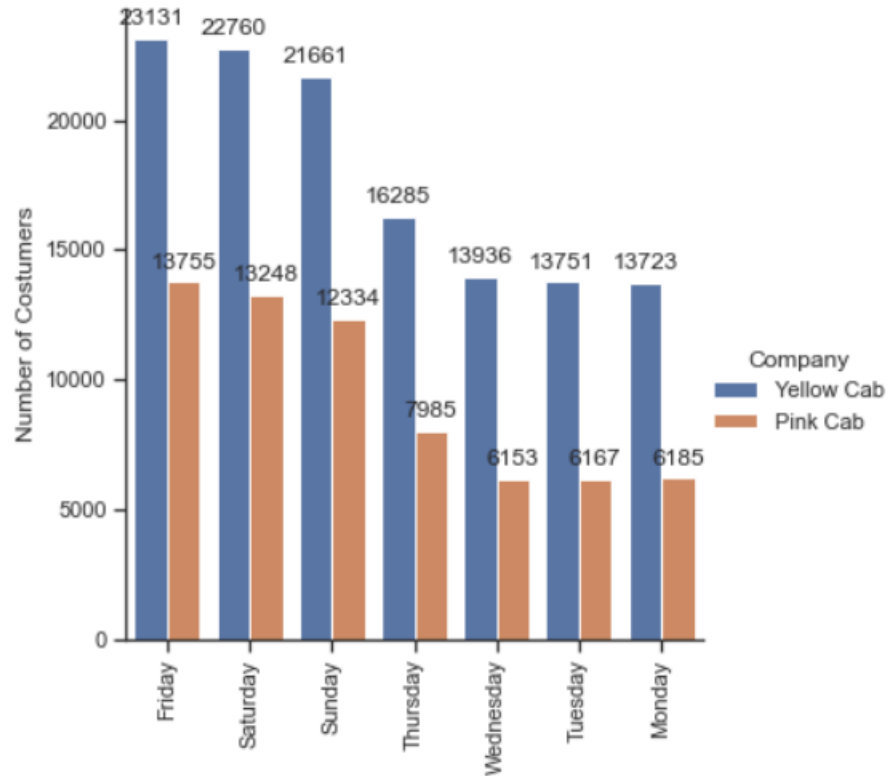
Seasonality Analysis

Number of trips by year

Quarterly profit analysis

There is a behavior different in both companies, for the second quartile the yellow cap profit increases, but the pink cap profit has a minimum fall. For the third quartile the yellow cap profit fall but the pink cap profit improves a little. By the end of the year, the yellow cap profit improves a lot and the pink cap profit also improves.
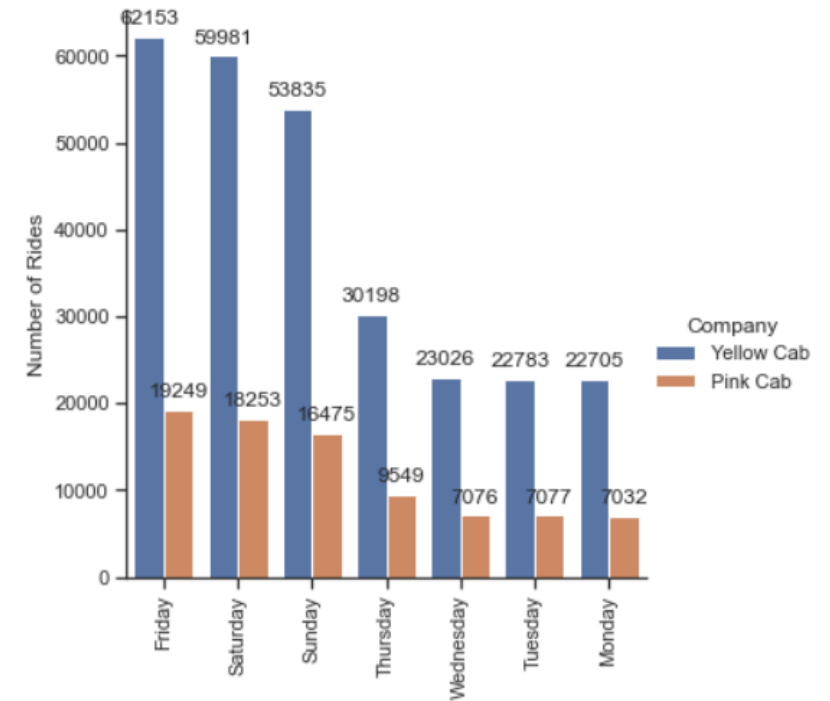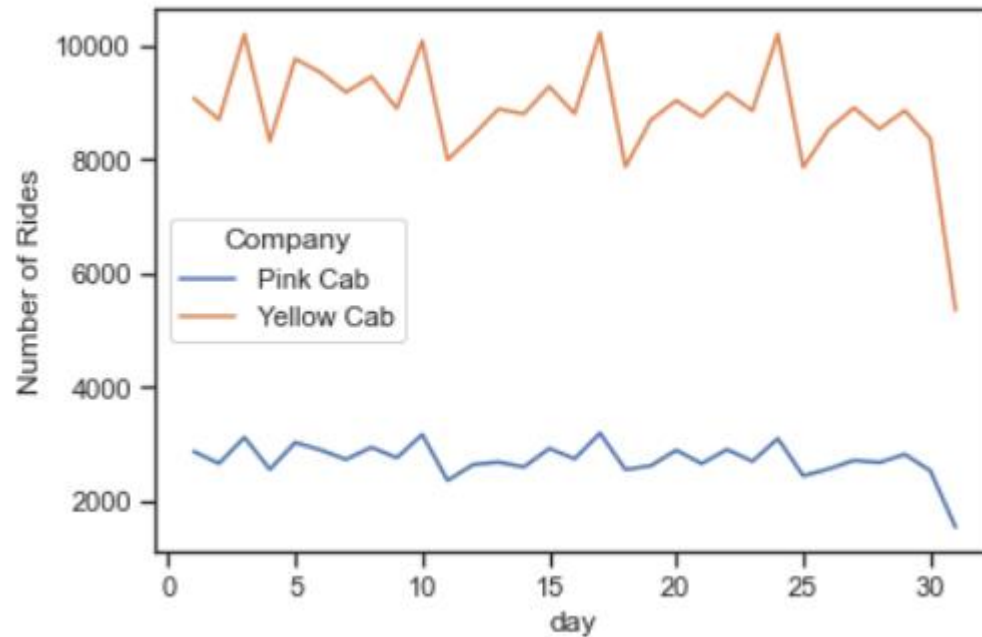
Seasonality Analysis

Customer Analysis by day

Rides Analysis by day

Analyzing day by day of the week, the Yellow Cab Company has more costumers and rides in each of the days.
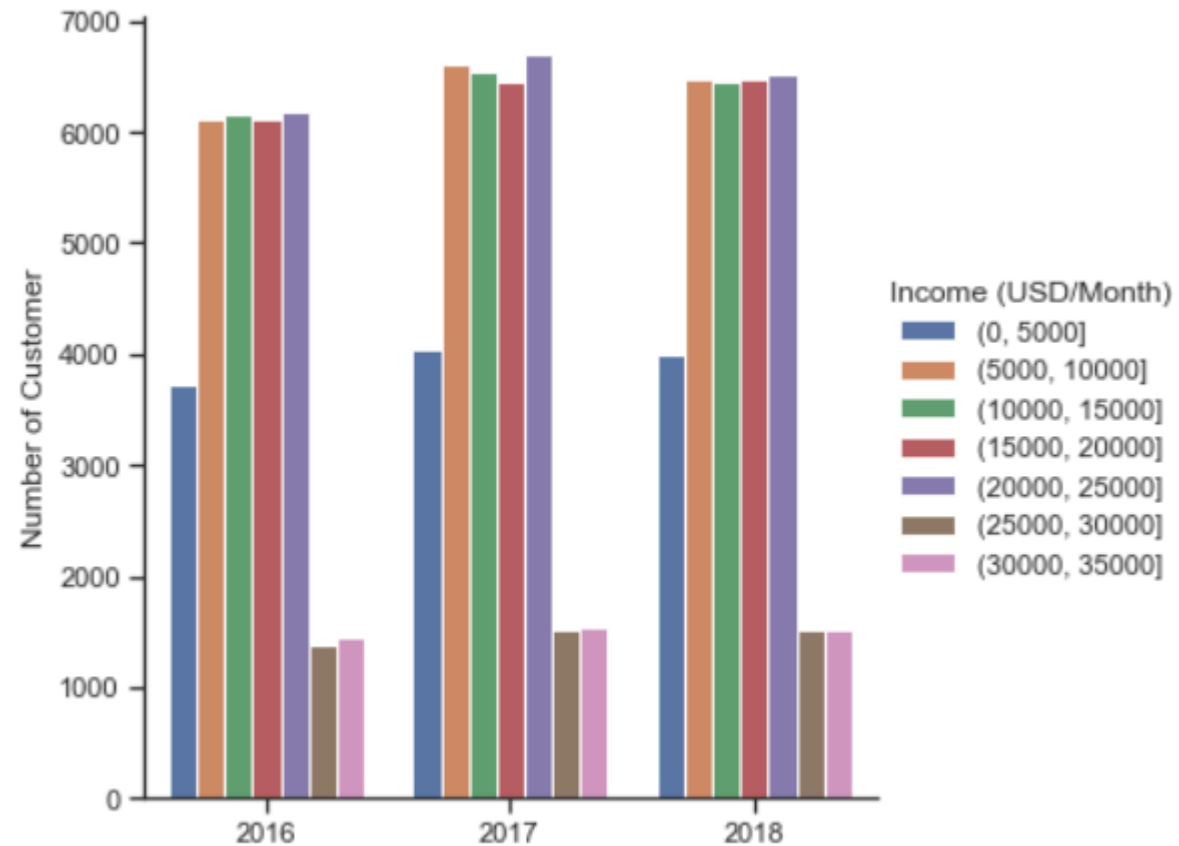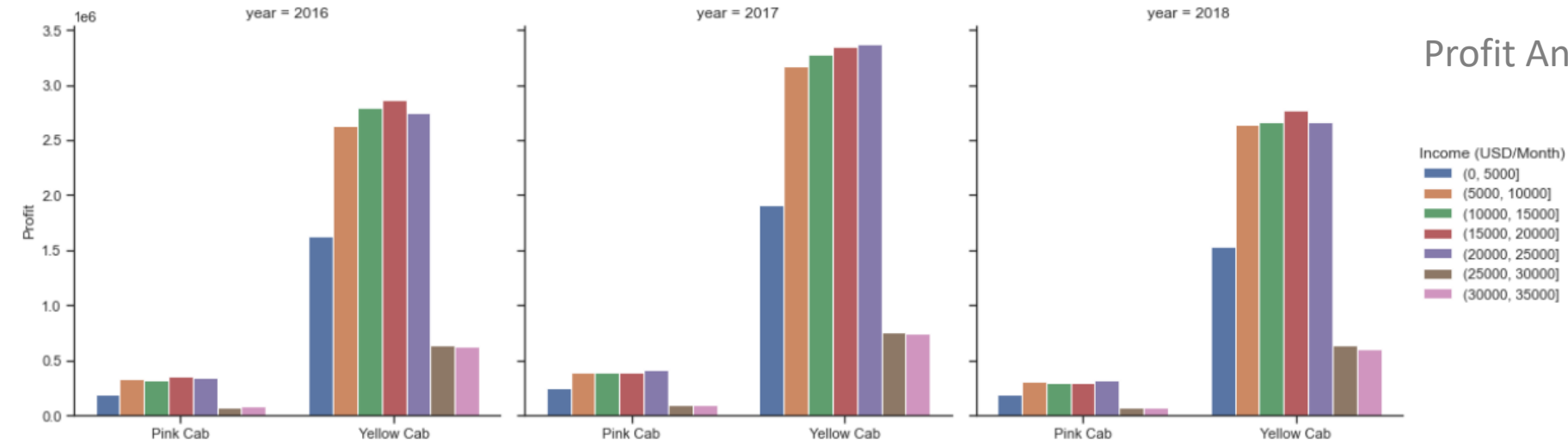
Seasonality Analysis

Demand by day

There is a similar pattern every 7 days, and this synchronizes with the Friday day in the previous analysis.
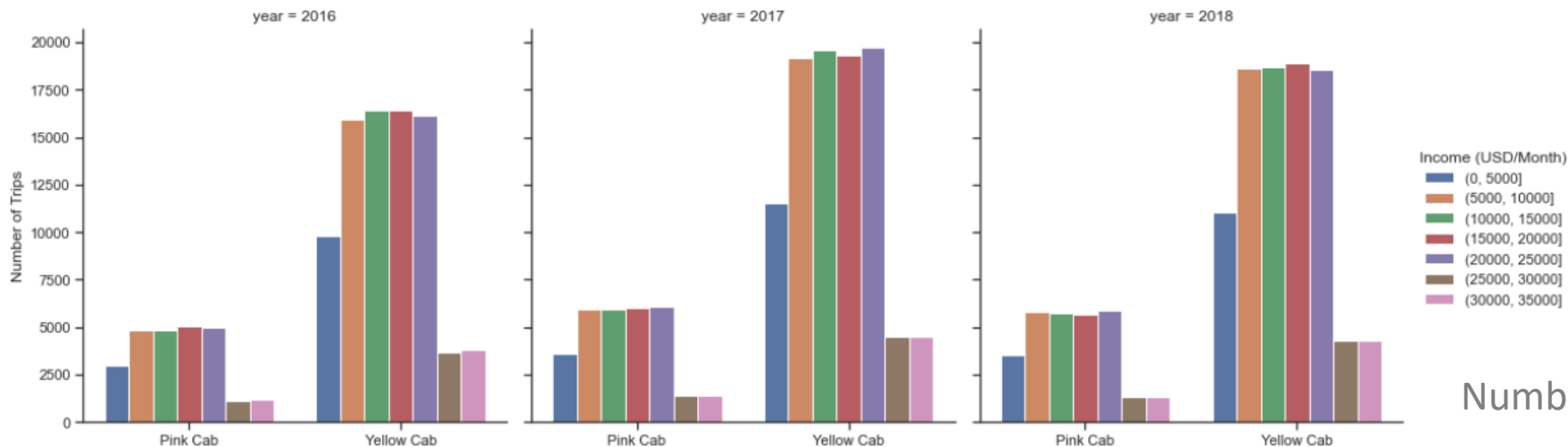
Incomes Analysis

Number of customer by Income
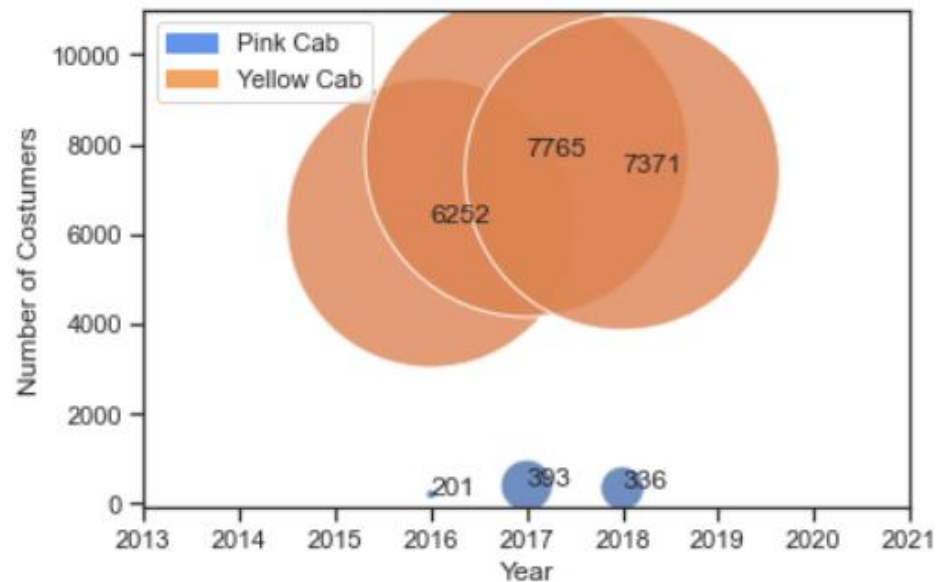
Incomes Analysis

Profit Analysis by Income

There is more numbers of trips and also the profit is better in the customer that have incomes between 5000 Dollars and 25000 Dollars, but also can related with the number od customer that have the same pattern seen in the previous graph
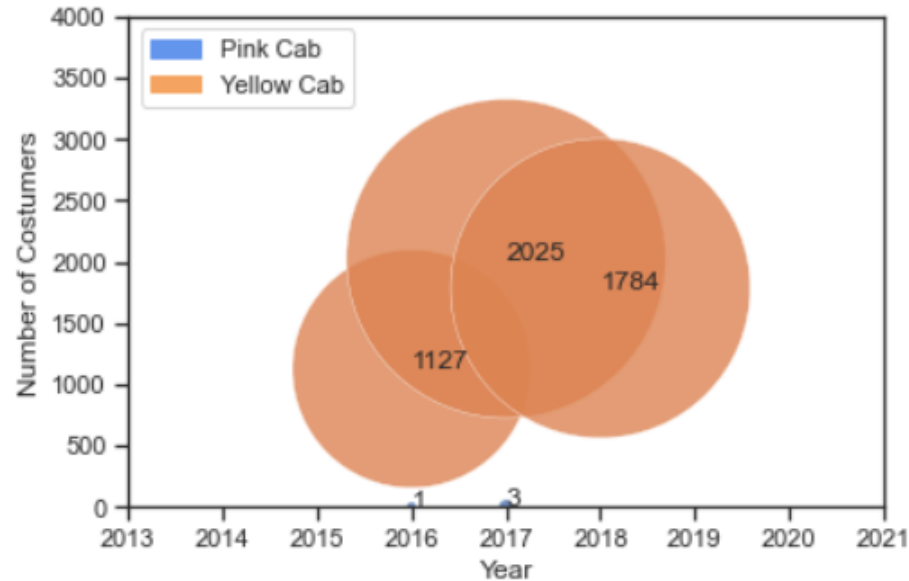
Number of trips by income

Customer Retention Analysis

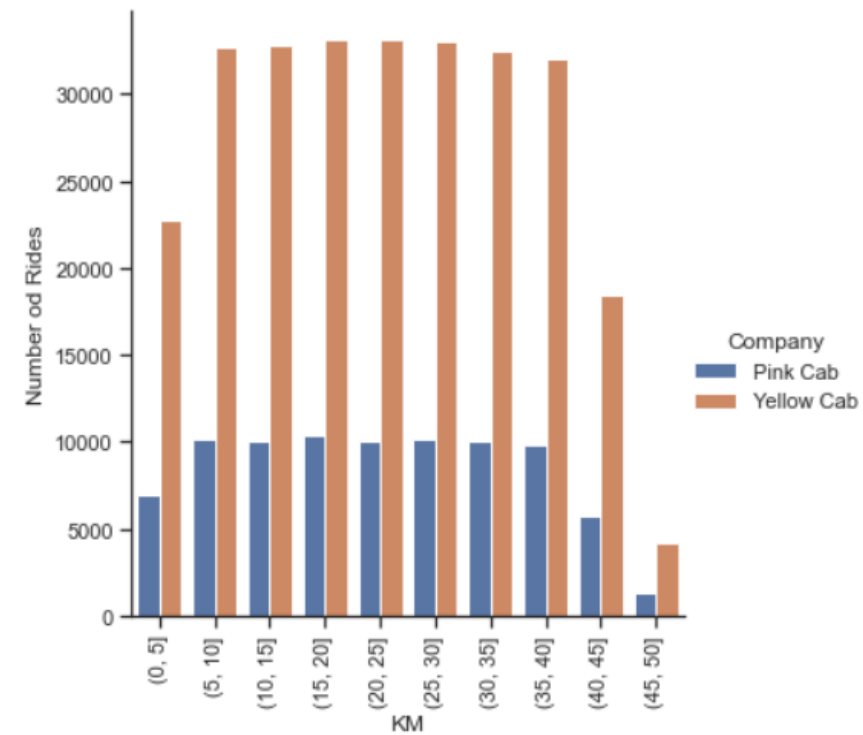Customer retention (at least 5 rides)   Customer retention (at least 10 rides)

Clearly the Yellow Cap Company has a better retention of its customers.
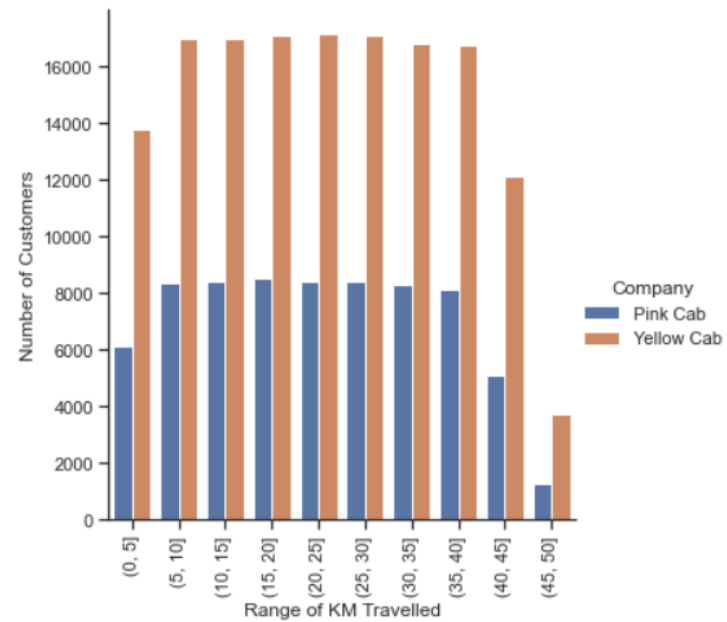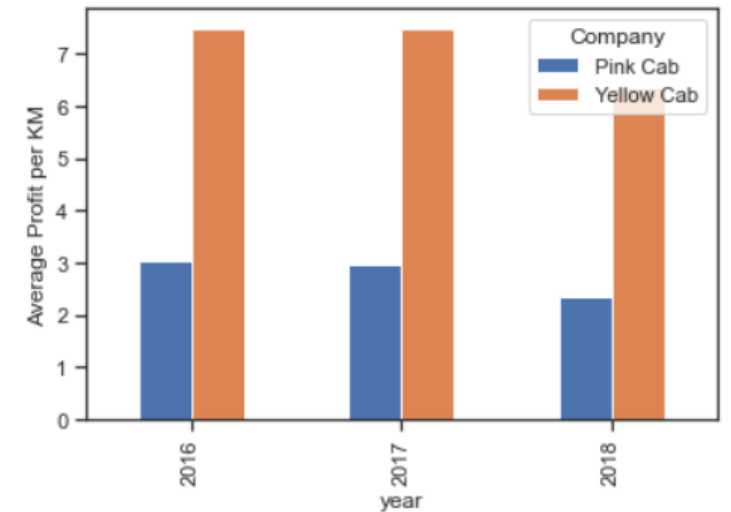
Ride distance Analysis

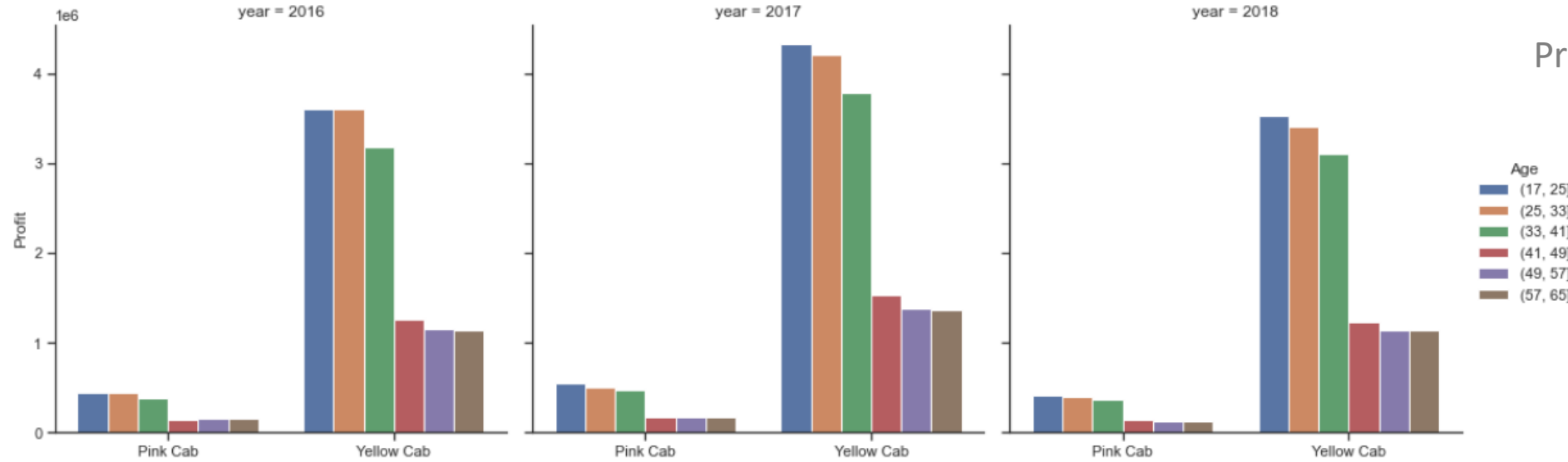Number of Rides by Range of KM

Number of Customer by Range of KM
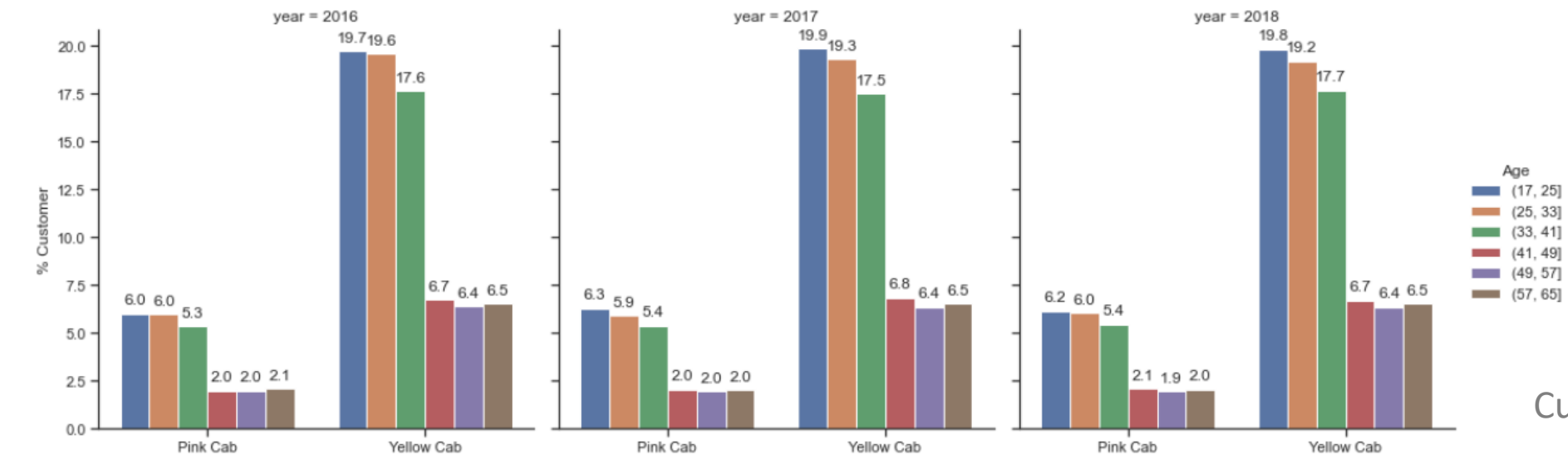
Average Profit per KM by year

Age Analysis

Profit by age

There are more customer who are between 17 and 41 years old.

Customer Percentage by Age

Recommendations

The Cab Companies have been evaluated in the following points and found that:

City reach: Yellow cap has higher trips and customers reach in each city. In addition, Pink cap only has a city where they have a better profit and that city is Tucson.

Payment method reach: Clearly Yellow Cap has higher trips and average profit is better compared with Pink Cap, but both have the same pattern, improve in the numbers of trips and loss in the profit according the payment method.

Season reach: There is a pattern on the days of the month, It's that every 7 days there is an increase in the numbers of trips and that day is the Friday day. It is in both companies.

Income reach: There is a better contribution from customer with incomes between $5000 and $25000. But it's evident that the Yellow cap has higher contributions.

Customer retention: Two groups have been analyzed: at least 5 trips and at least 10 trips in each company. The conclusion is that the Yellow Cap has more costumers in these segments.

Ride distance reach: There is more rides and customers between 6 KM and 40 KM, also the distribution in this range is uniform. This pattern is in both companies.

Age reach: There is a high profit in costumers between 17 and 41 years old, also the same trend is in the percentage of customers with the difference that there is a better contribution on Yellow Company.

Based on these conclusions, it is suggested to invest in the Yellow Cap Company.

Thank You