



Data Glacier

Your Deep Learning Partner

G2M Case Study

Virtual Internship

08-Jan-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:

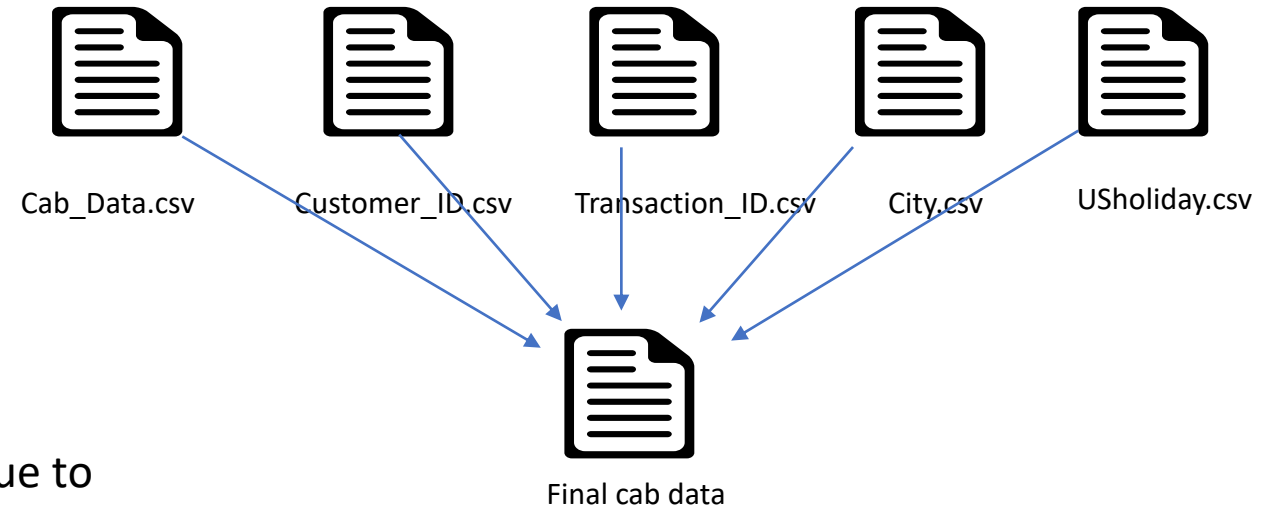
- Data Understanding
- Forecasting profit and number of rides for each cab type
- Finding the most profitable Cab company
- Recommendations for investment

Data Exploration

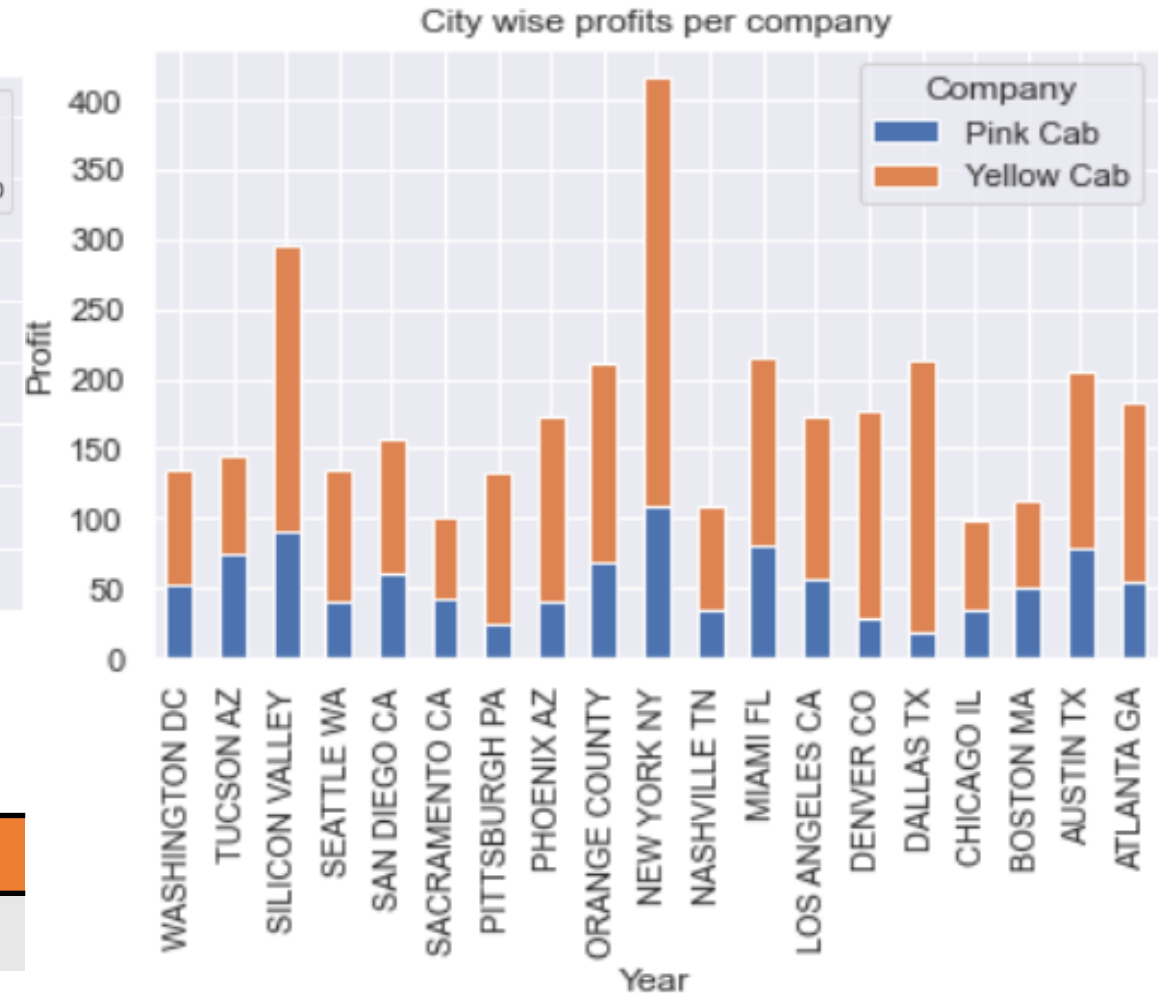
- 24 Features(including 9 derived features)
- Timeframe of the data: 2016-01-31 to 2018-12-31
- Total data points :355,032

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	5,307,328	84,711	2.769908
Yellow Cab	44,020,370	274,681	7.105508

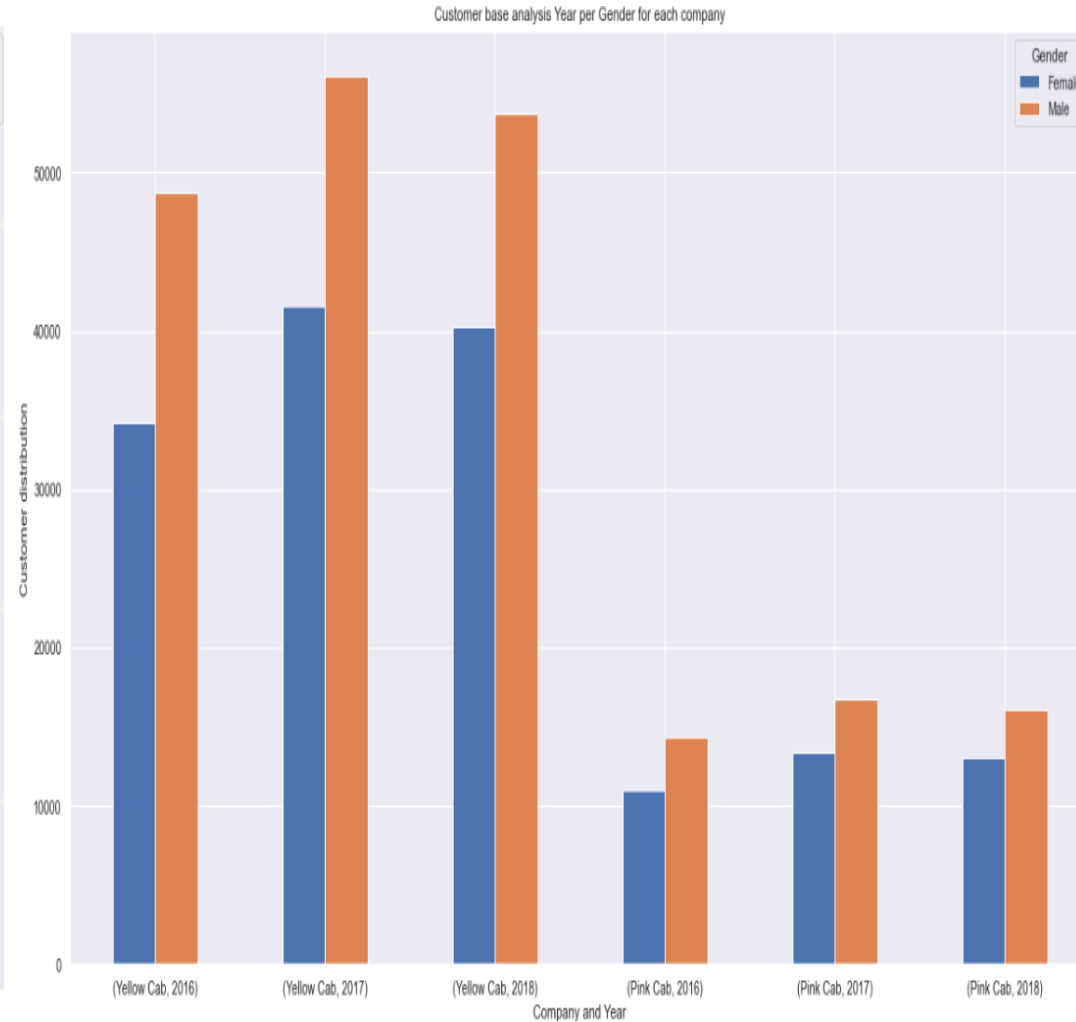
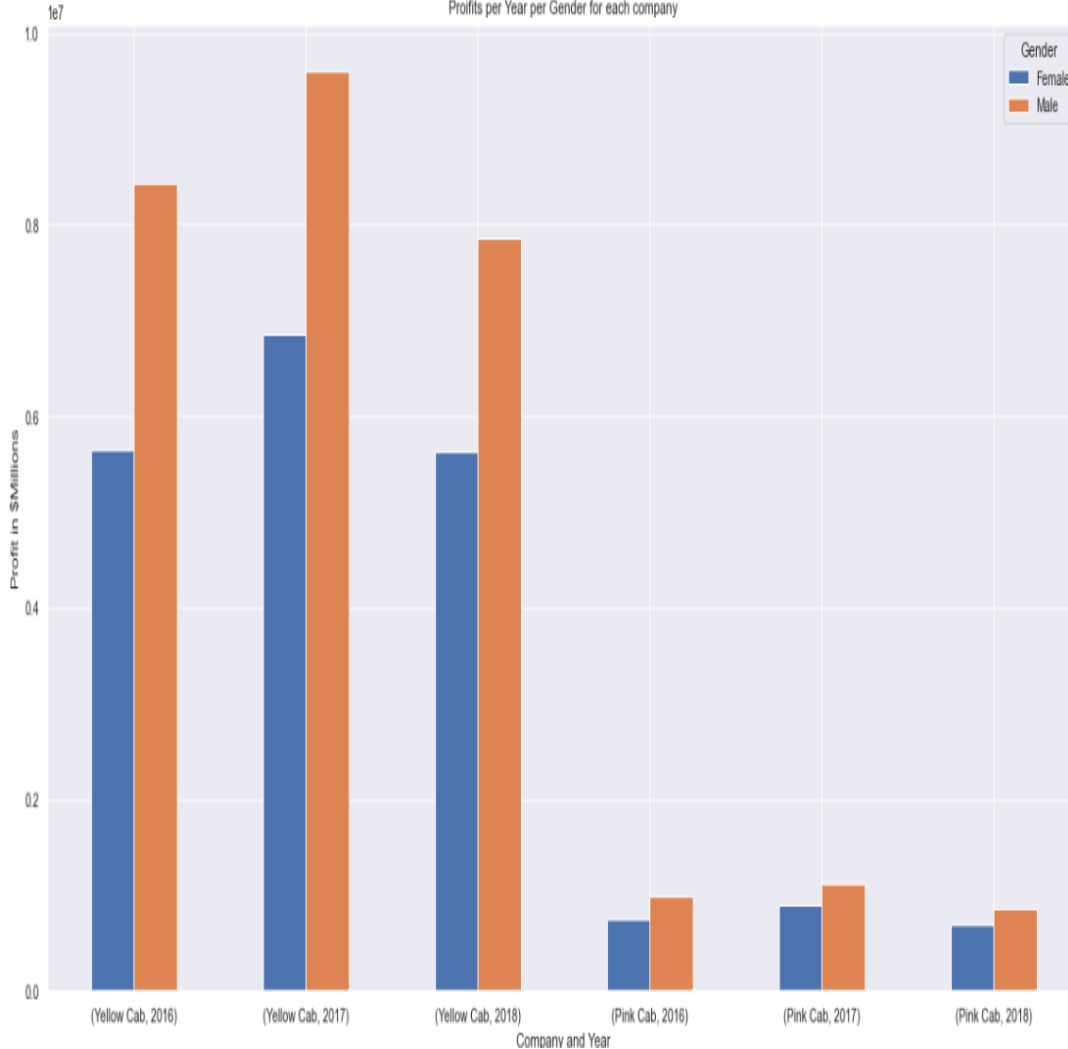
Yearly Profit Analysis



Y-axis Profit (in terms of millions)= profit*10000000

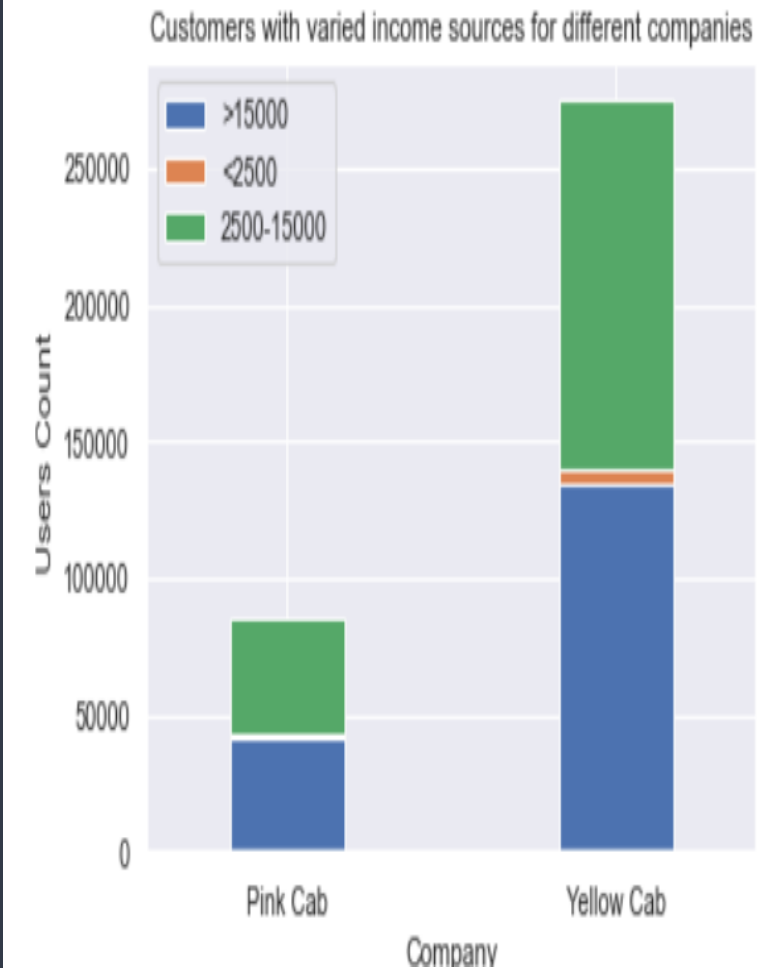
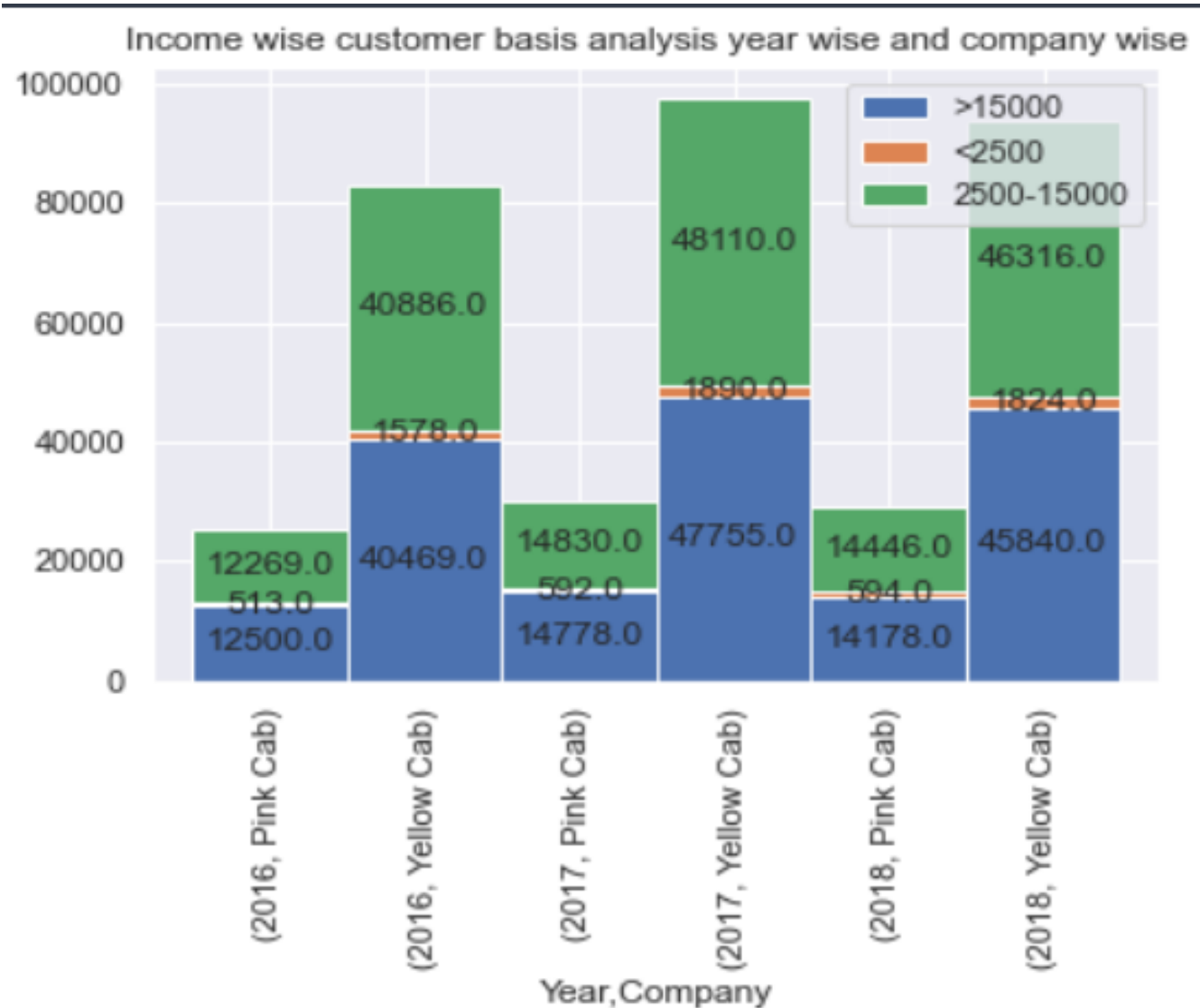
Company	Year	Profit
Pink Cab	2016	0.17
	2017	0.20
	2018	0.15
Yellow Cab	2016	1.40
	2017	2.05
	2018	1.34

Profit and customer base Analysis Gender wise



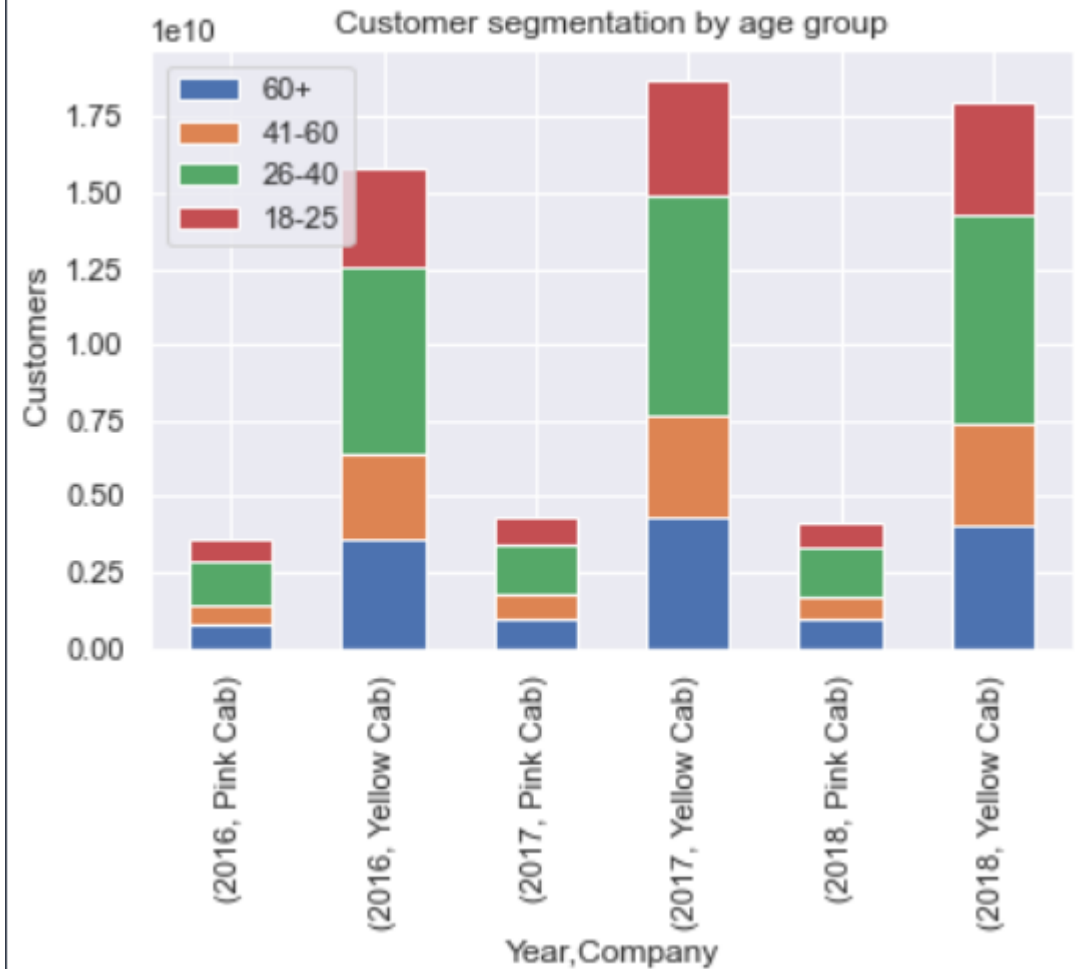
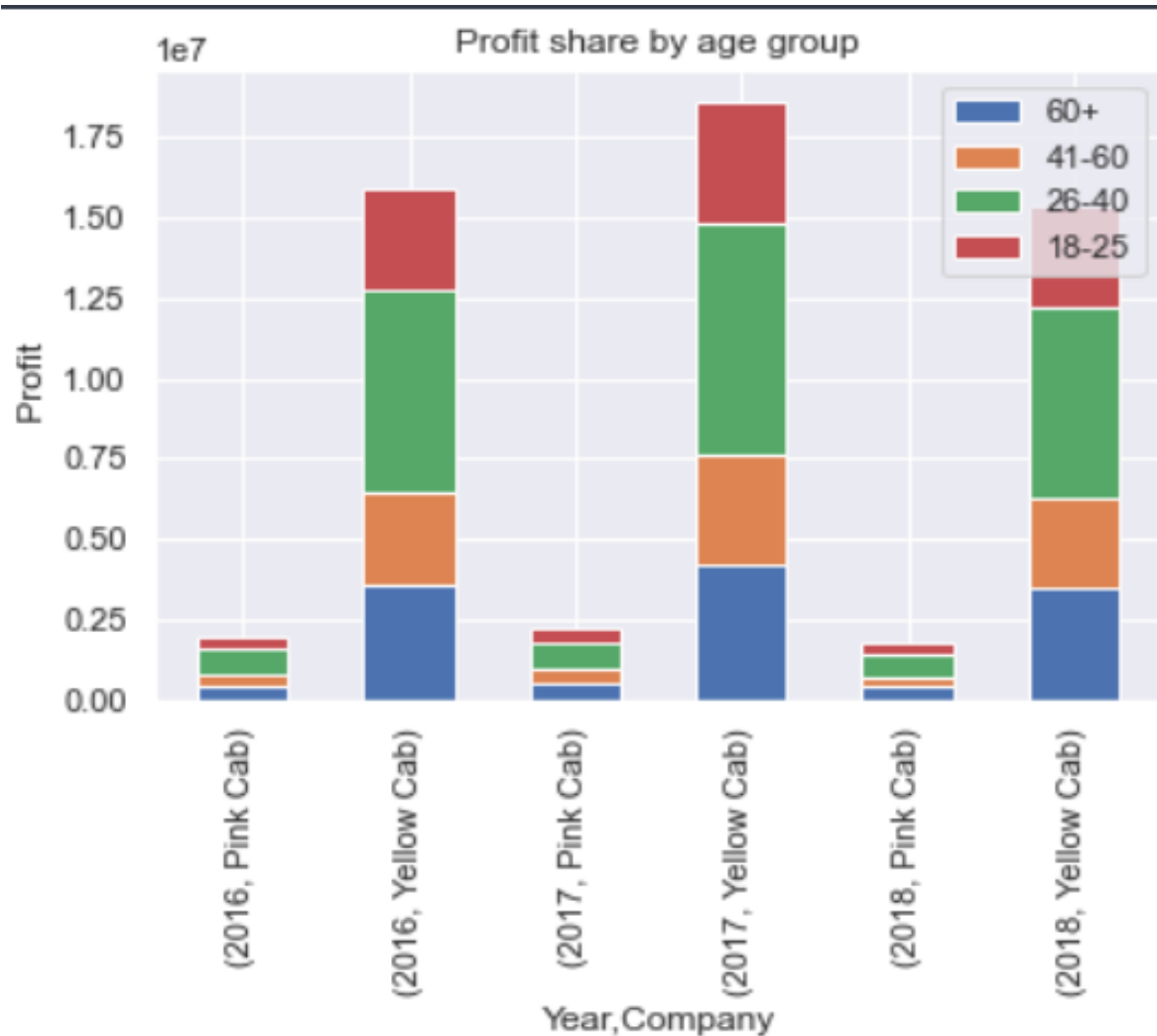
There is an almost equal distribution of gender in the Profit and customer base of both the cabs.

Income Class wise Profit and customer base Analysis



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

Age GroupWise Profit And Customer Base Analysis

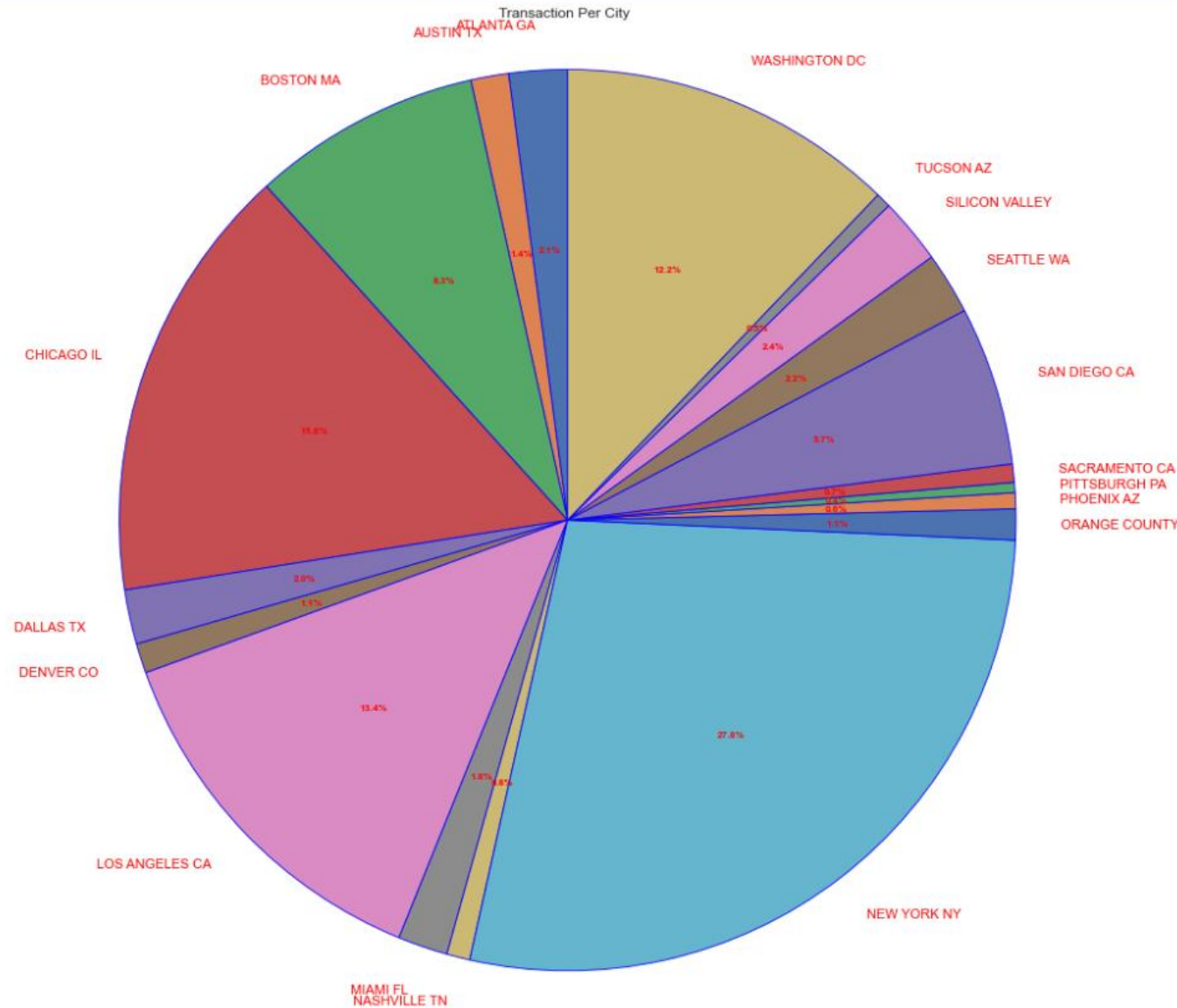


Customer Retention



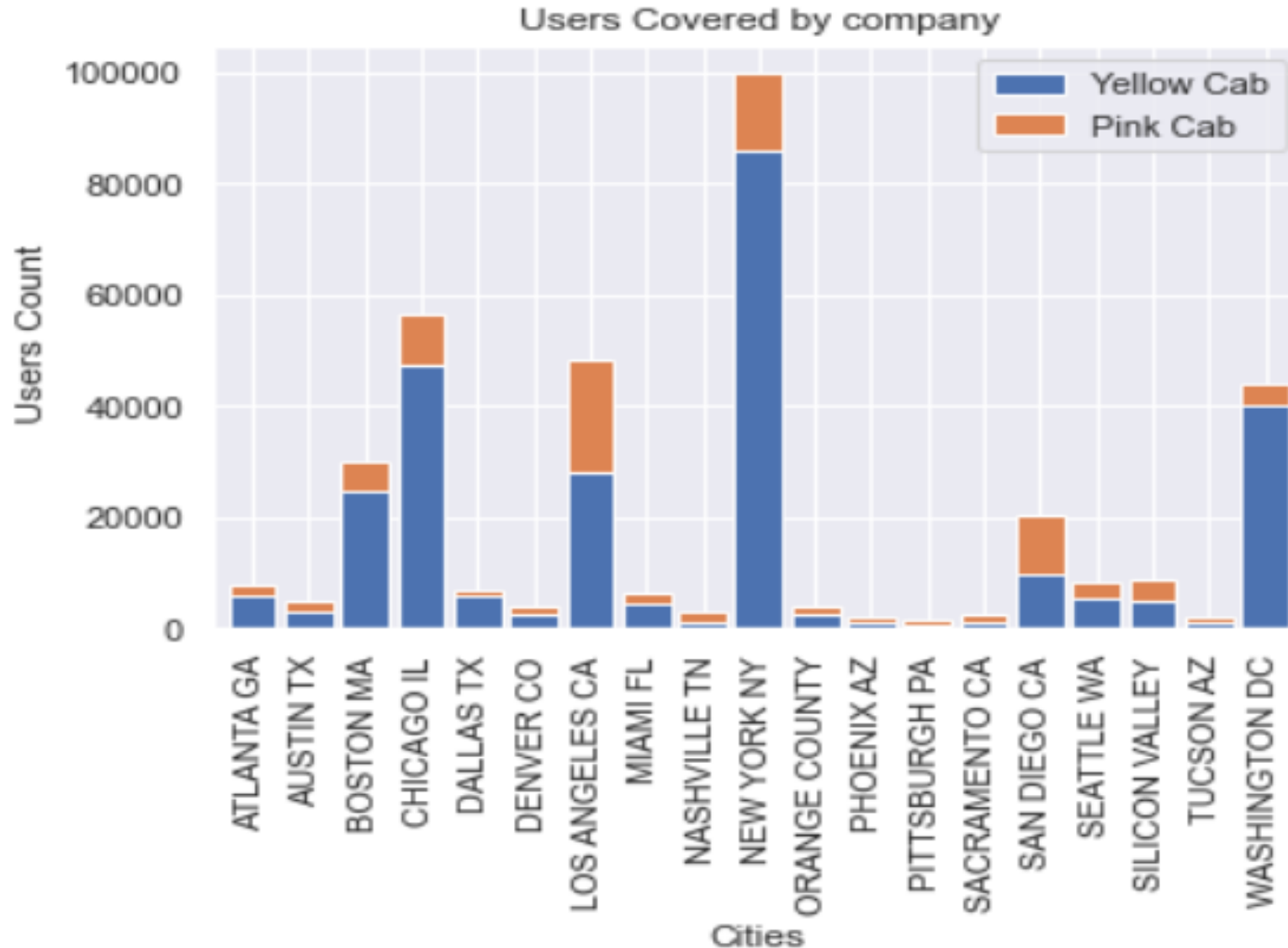
- Customer rides increased for Yellow cabs and pink cabs significantly over a year after 2016.
- Comparatively yellow cabs have more number of customers who often ride more than 5 times in a year.

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.
- From the graph it is observed that New York the city has the highest number of the yellow cab customers.
- In Los Angeles CA there are highest number of Pink Cab Customers.

Customer Presence of Yellow and Pink cab city wise



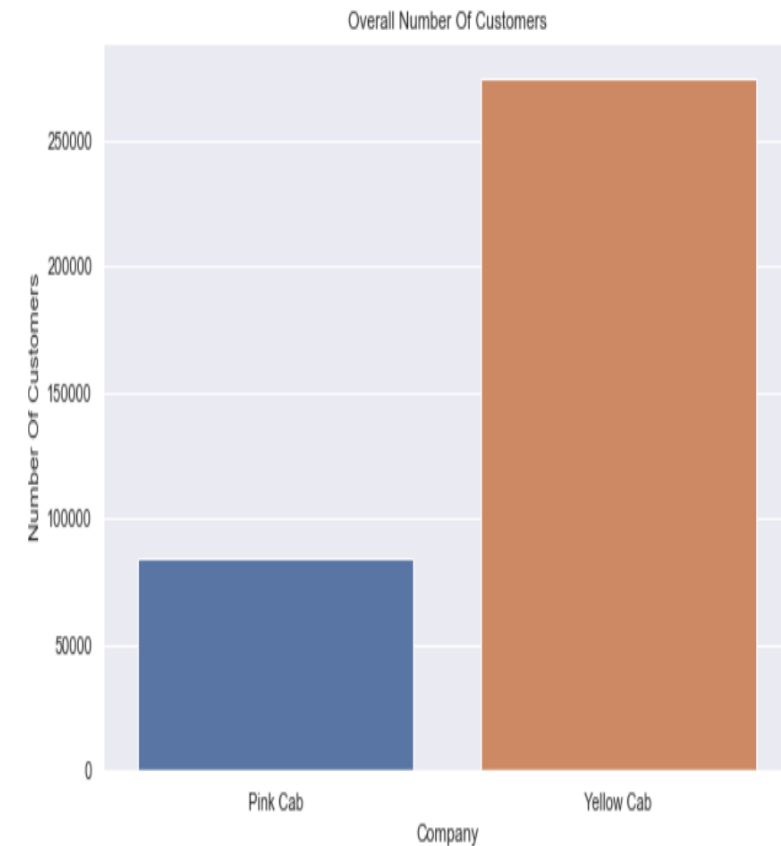
Out of 19 Cities Pink cab have higher customer reach as compared to Yellow cab ,in following 4 cities:

- SANDIEGO
- NASHVILLE
- SACRAMENTO
- PITTSBURGH

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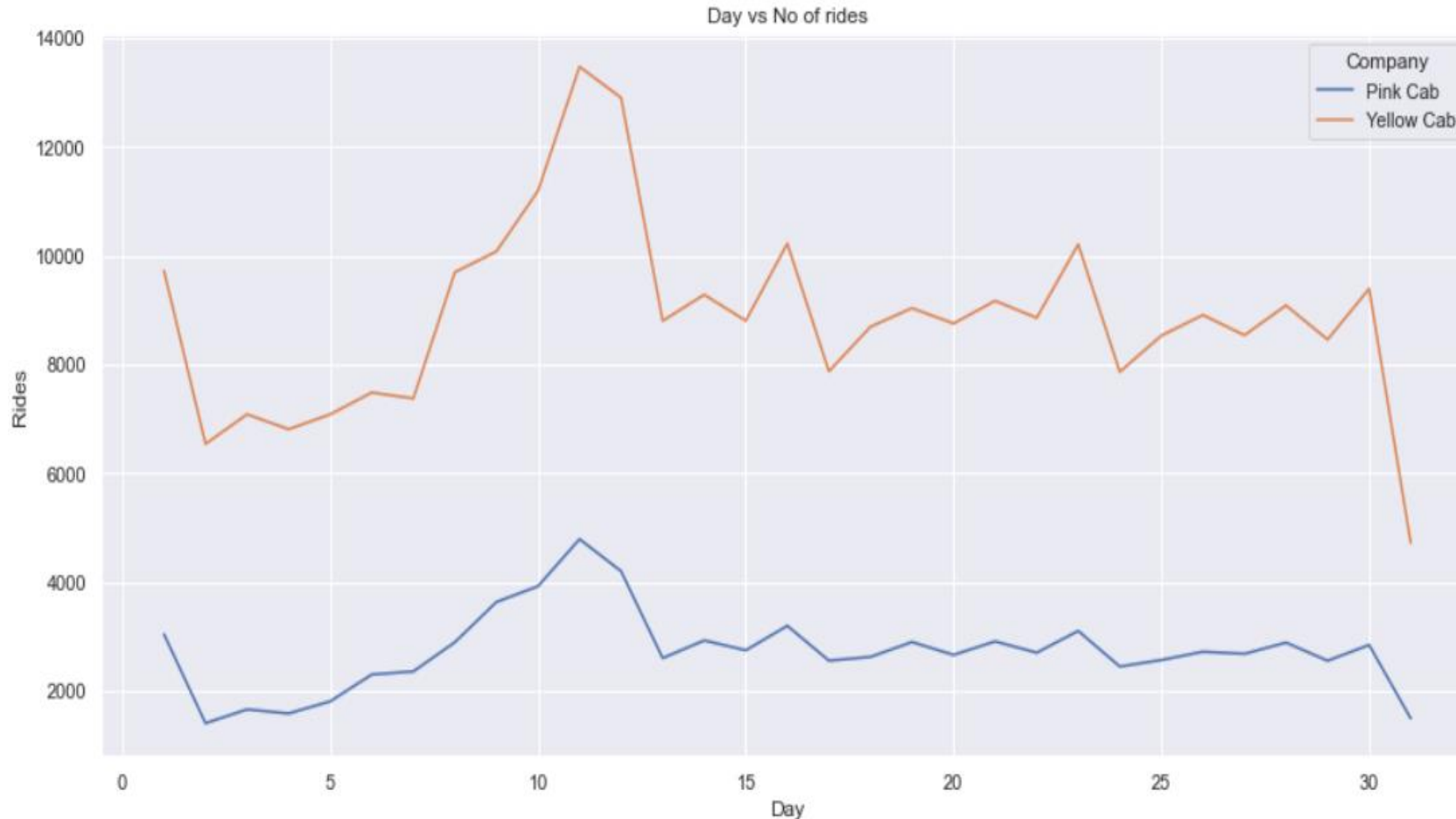
- NEW YORK CITY
- Chicago IL
- WASHINGTON DC
- LOS ANGELES

User Covered by Company and Customer base Year wise



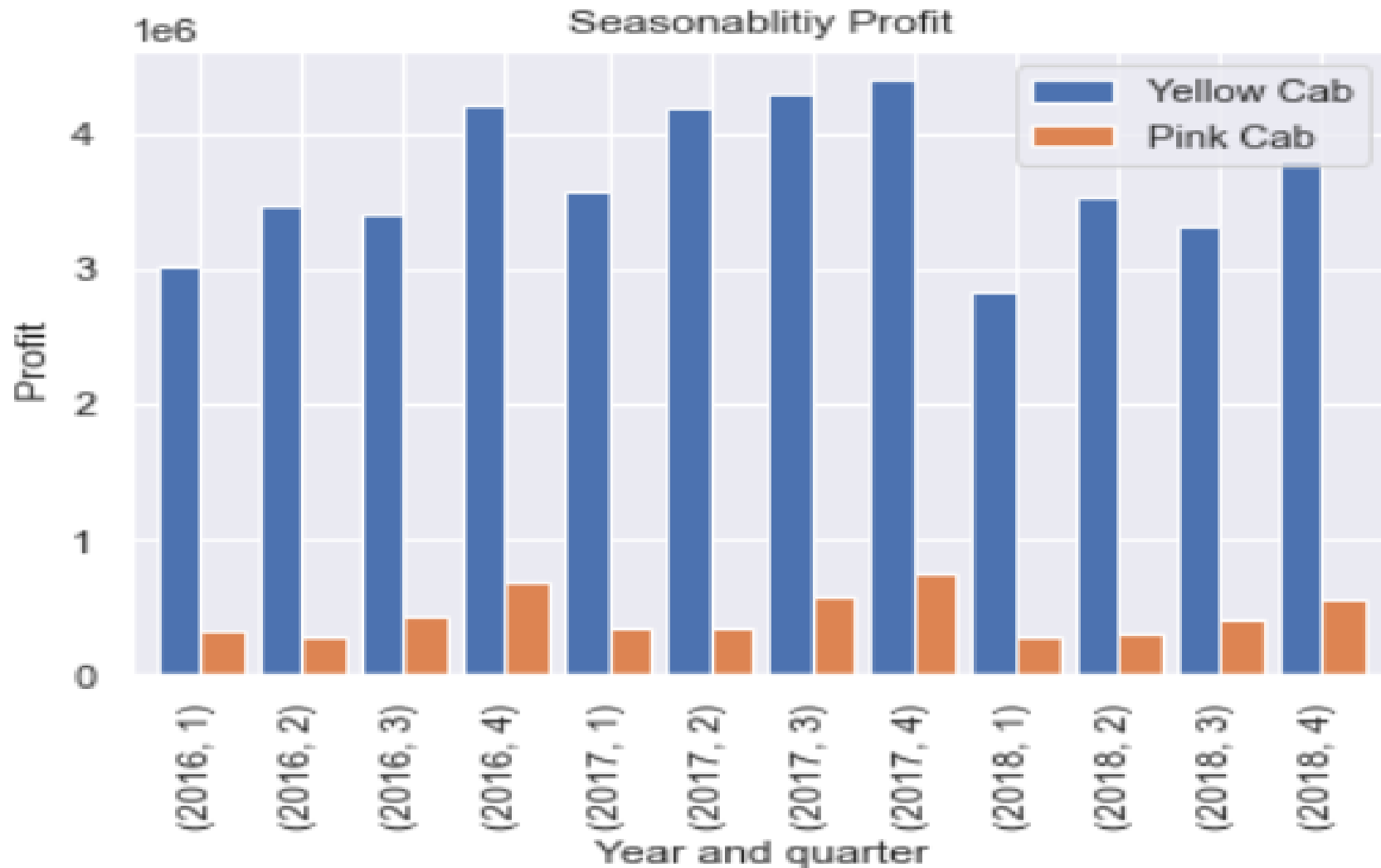
- Yellow cab has reach of around 3.7% cab users while Pink cab has 2.9% reach.
- We have considered all cab users present in 19 cities to calculate Yellow and Pink cabs coverage.
- Yellow cab higher customer base as compared to Pink cab.
- There is 1.3% loss in customer count of Pink cab from 2017-2018 and for the same period Yellow cab lost 1.14%

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

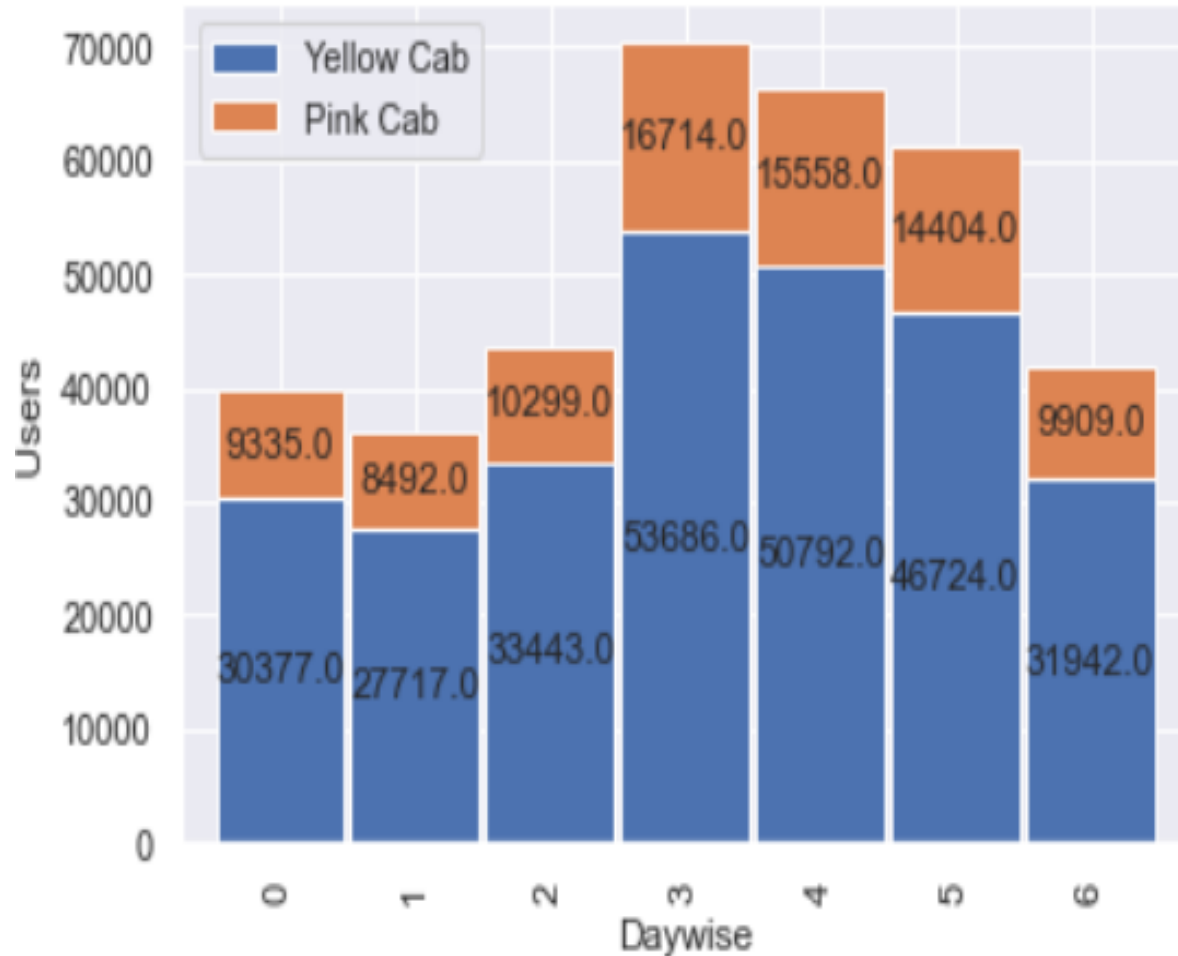
Seasonality in the Profit



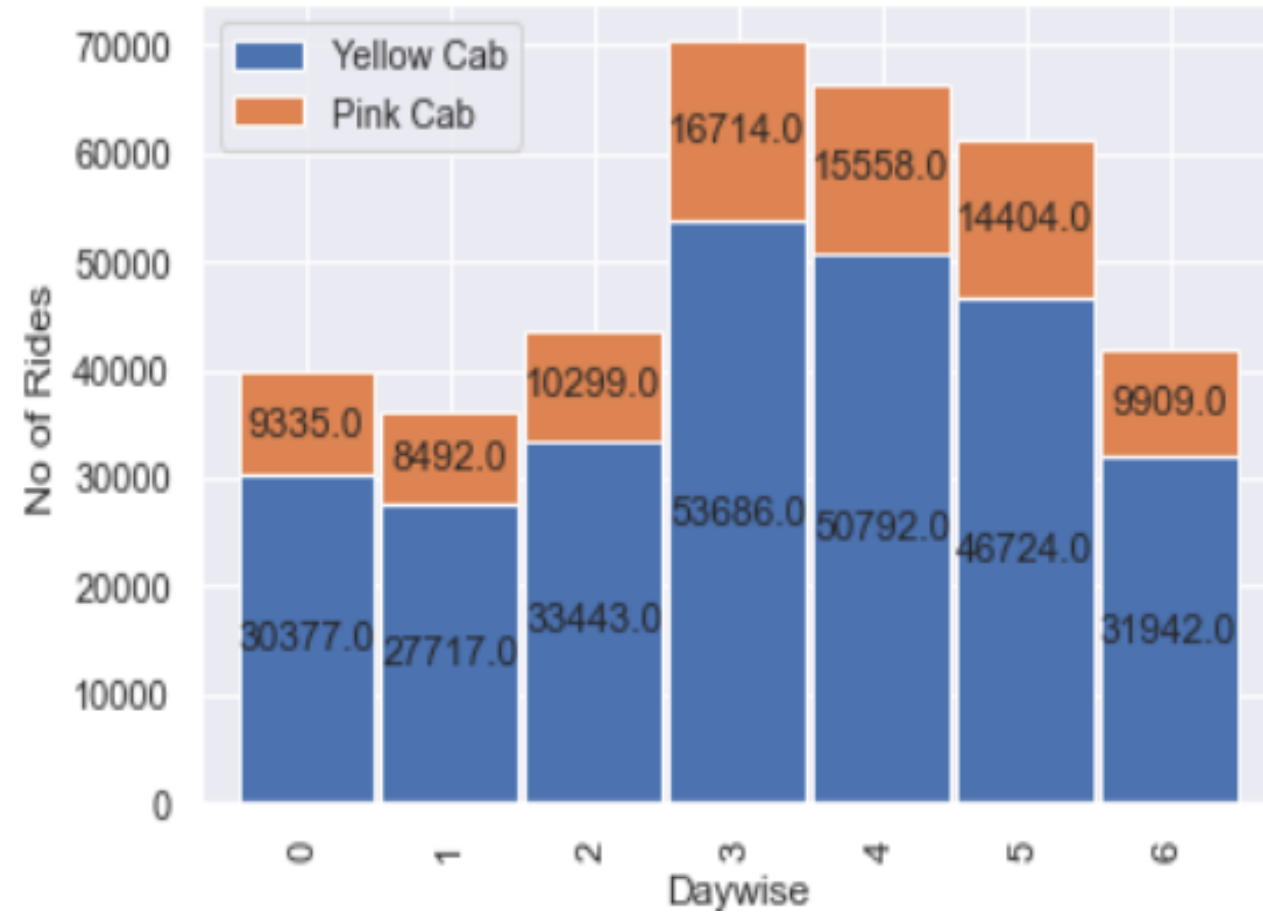
- Seasonal pattern 4 quarter cycle.
- Profit is defined according to the y-axis as percentage average.

Customer And Ride Analysis Day Wise

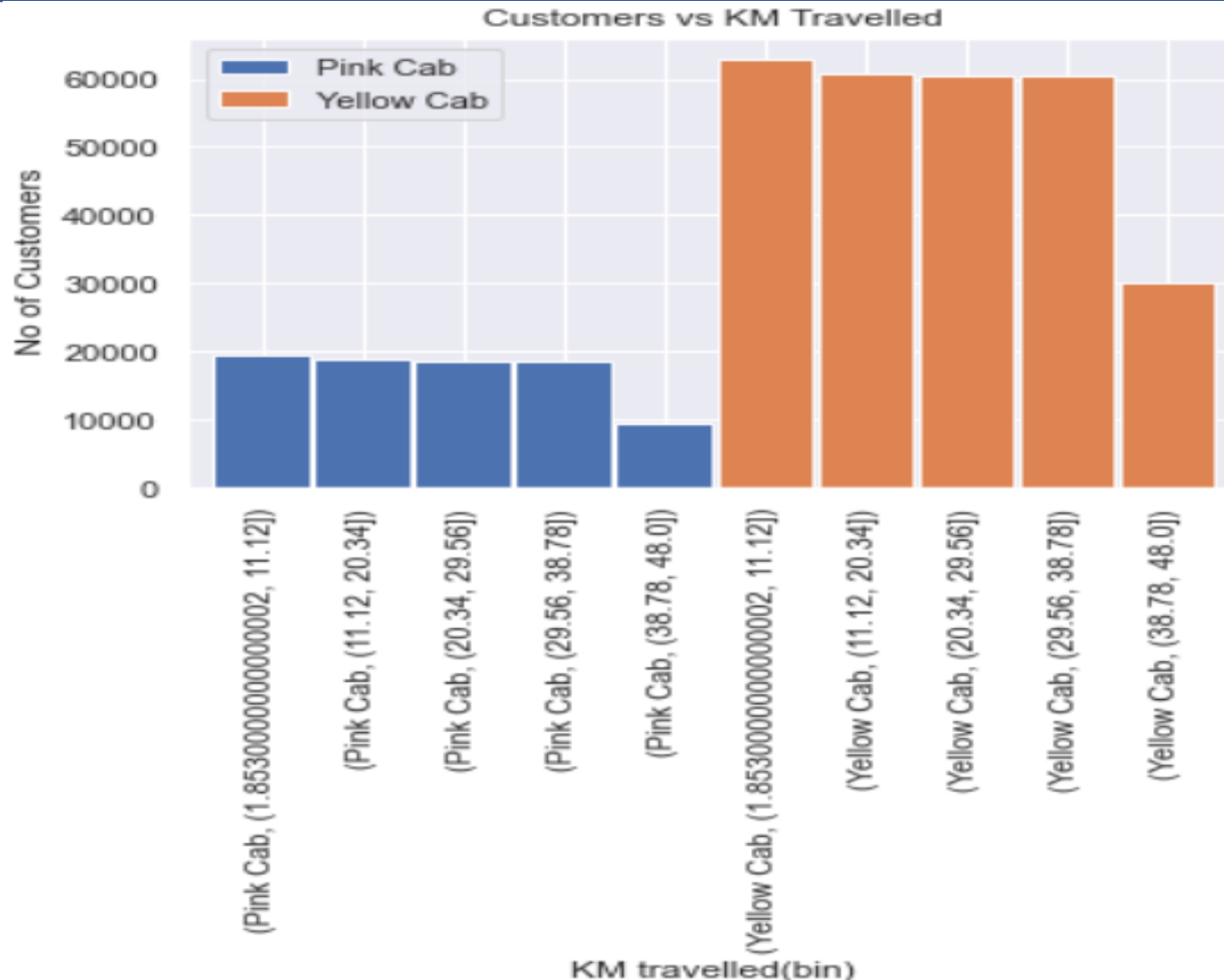
Daywise Customer analysis



Daywise Ride analysis

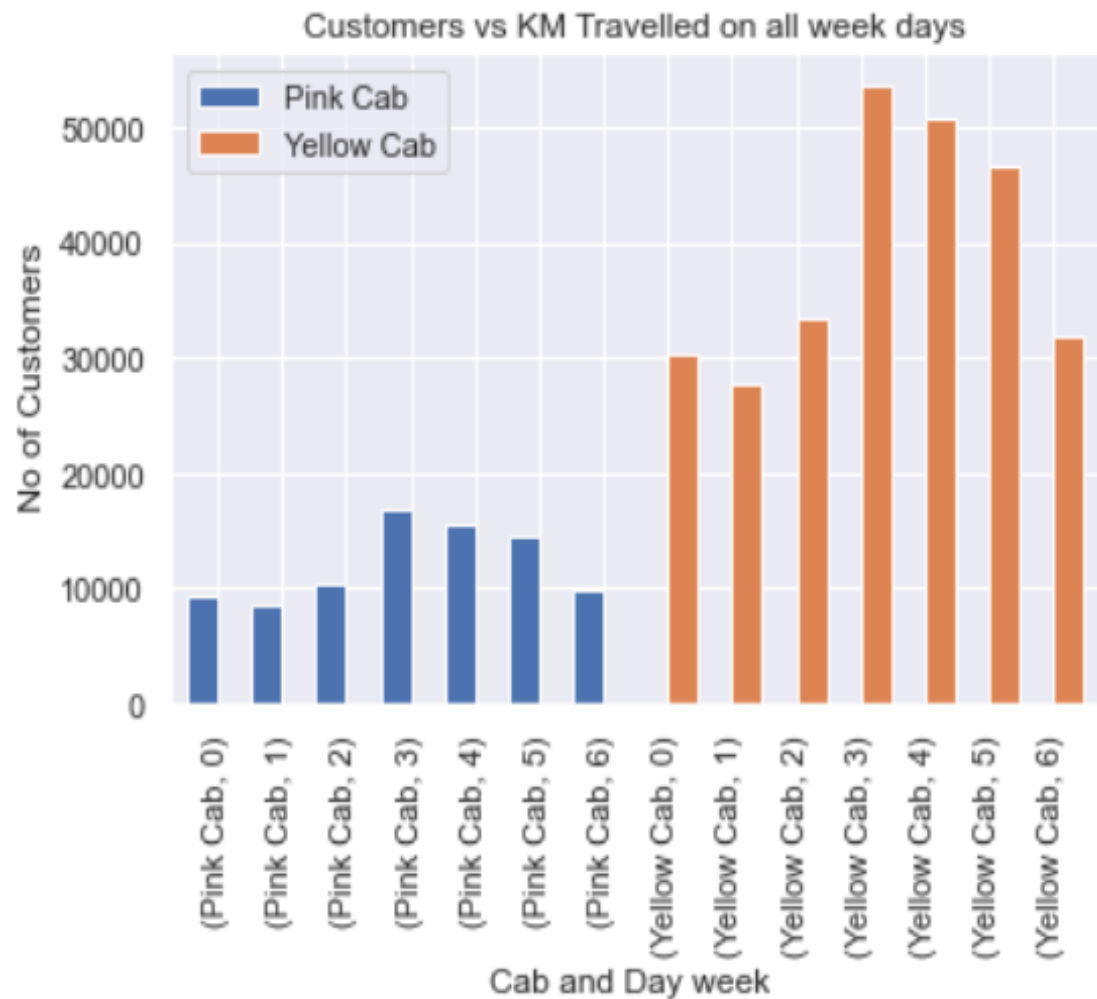


Customer analysis based on ride distance



- 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.

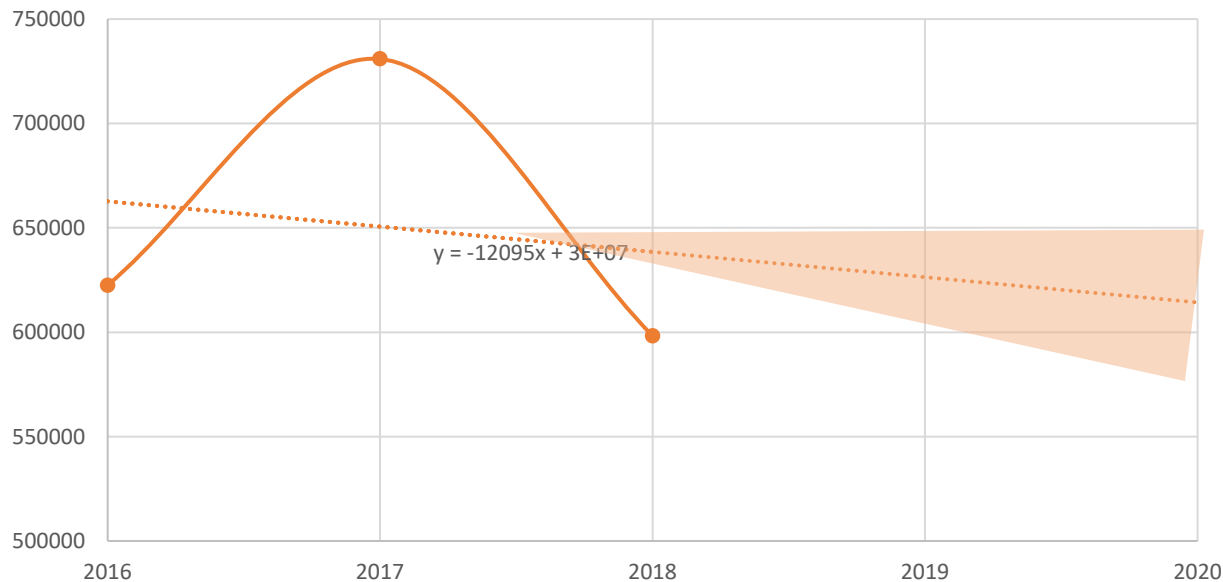
Customer Preference on Holiday



Company	Day_week	Customers
Pink Cab	Mon	9335
	Tue	8492
	Wed	10299
	Thu	16714
	Fri	15558
	Sat	14404
	Sun	9909
Yellow Cab	Mon	30377
	Tue	27717
	Wed	33443
	Thu	53686
	Fri	50792
	Sat	46724
	Sun	31942

Profit Forecasting for 2019

Profit/KM vs Year for Yellow Cab



Yellow Cabs Profit Prediction for next 2 years:

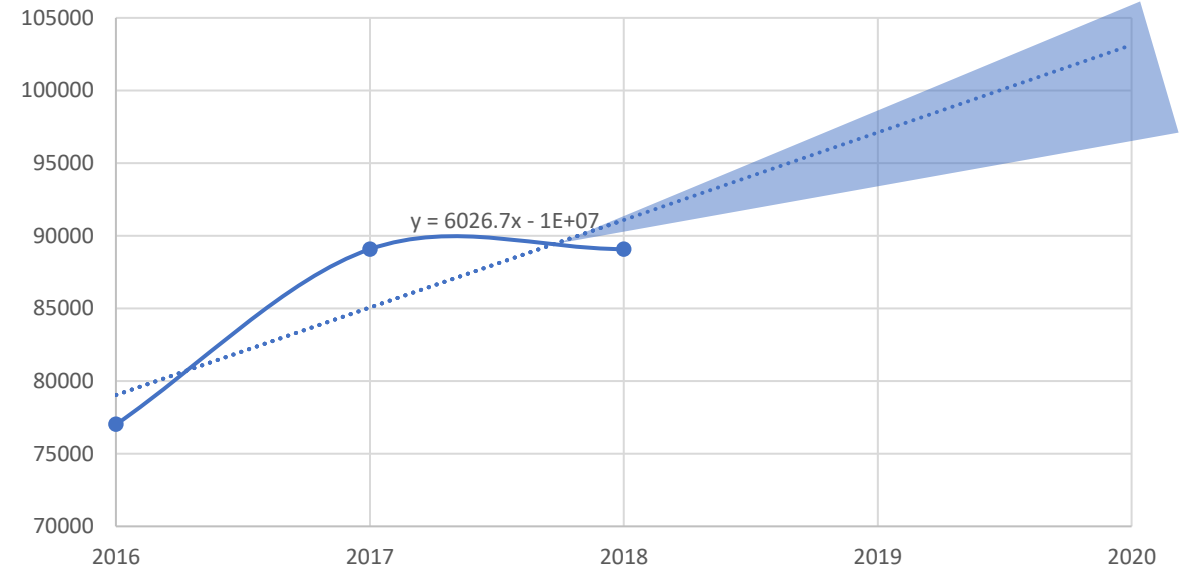
The linear equation for the profit curve is:

$$Y = -12095x + 3E+07$$

The Profit/KM for 2019 is predicted to be in the range of 620000-650000 and

The Profit/KM for 2020 is predicted to be in the range of 600000-640000.

Profit/KM vs Year for Pink Cab



Pink Cabs Profit Prediction for next 2 years:

The linear equation for the profit curve is:

$$Y = 6026.7x - 1E+07$$

The Profit/KM for 2019 is predicted to be in the range of 90000-100000 and

The Profit/KM for 2020 is predicted to be in the range of 100000-105000.

Recommendations

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

- **Customer Reach:** Yellow cab has higher customer reach in 20 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:** Yellow Cab has the highest customer retention ratio than pink cabs.
- **Age wise Reach:** Yellow cab has customers in all age groups and it's been observed that it's even popular in the 60+ age group as equally as it's in the 18-25 age group.
- **Average Profit per KM:** Yellow cab's average profit per KM is almost three times the average profit per KM of the Pink cab.
- **Income wise Reach:** Both the cabs are very popular in high and medium-income class but here also Yellow cab is performing better than Pink cab in offering their services to all the three income class group (low, medium and high)
- **Profit/KM Forecasting:** Yellow Cab and Pink Cab are facing little downfall in profit. Pink cab based on 2019 profit there is a scope to improve while yellow cabs based on average profit and loss rates among three years it is estimated to have a little loss.
- **On the basis of the above point, we will recommend Yellow cab for investment.**

Thank You



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