Exploratory Data Analysis

G2M Case Study

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Introduction

- At this project Pink Cab and Yellow Cab company insights will be investigated;
  - Difference of the Net Profits in the companies
  - The firms' net profit in different cities
  - Seasonality of the drives
  - Both cab firms' reach for unique customers
  - Their profits in differently populated cities
  - Their profits related to customers economic status
  - Their profit trend in 3 years

Univariate Analysis

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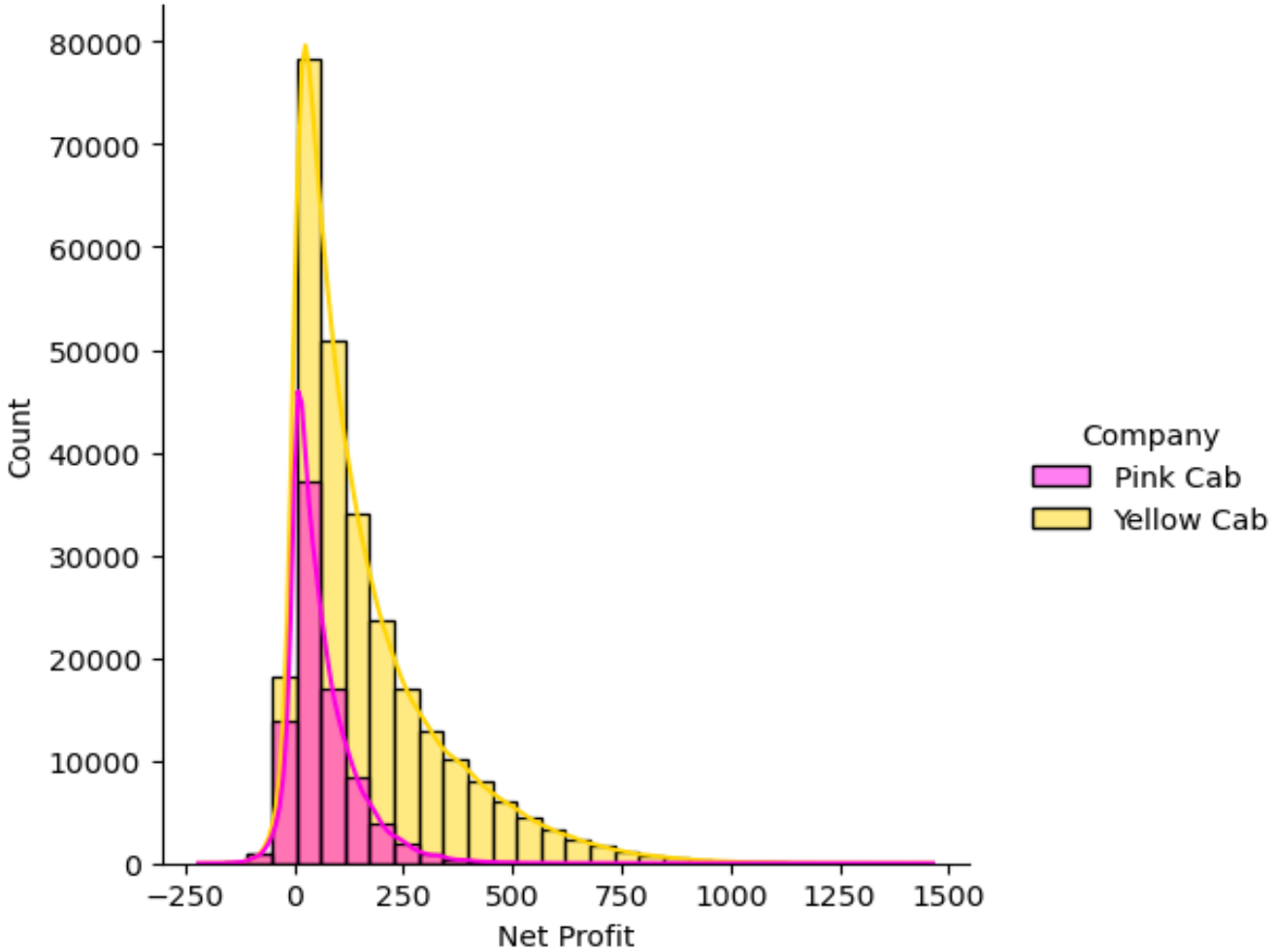
Net Profit Distribution For the 2 Cab Firms.



- Mean profit of the Yellow Cab per drive is 160.26$
- Mean profit of the Pink Cab per drive is 62,3$
- Median profit of the Yellow Cab per drive is 102.0$
- Median profit of the Pink Cab per drive is 102.0$
- Both of the Data is positively skewed, Pink Cab has lower mean profit then the Yellow Cab firm.

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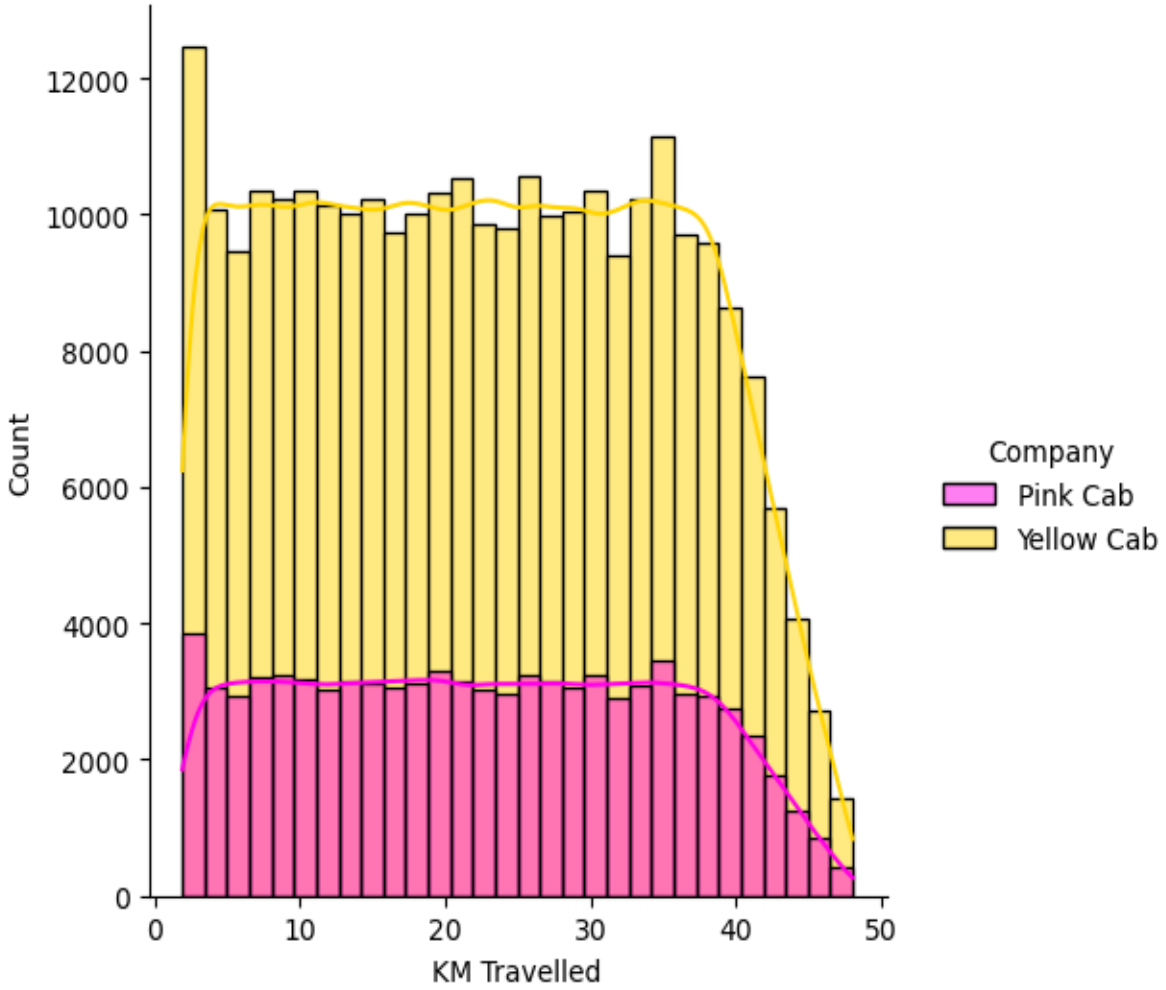
Distance Travelled Distribution For the 2 Cab Firms.



- Mean distance travelled of the Yellow Cab per drive is 22.57km
- Mean distance traveled of the Pink Cab per drive is 22.56 km.
- Median distance traveled of the Yellow Cab per drive is 22.44 km
- Median distance traveled of the Pink Cab per drive is 22.44 km
- Pink and Yellow cab has close distance travelled in average, but count of the measures is a lot more in Yellow Cav

Bivariate Analysis

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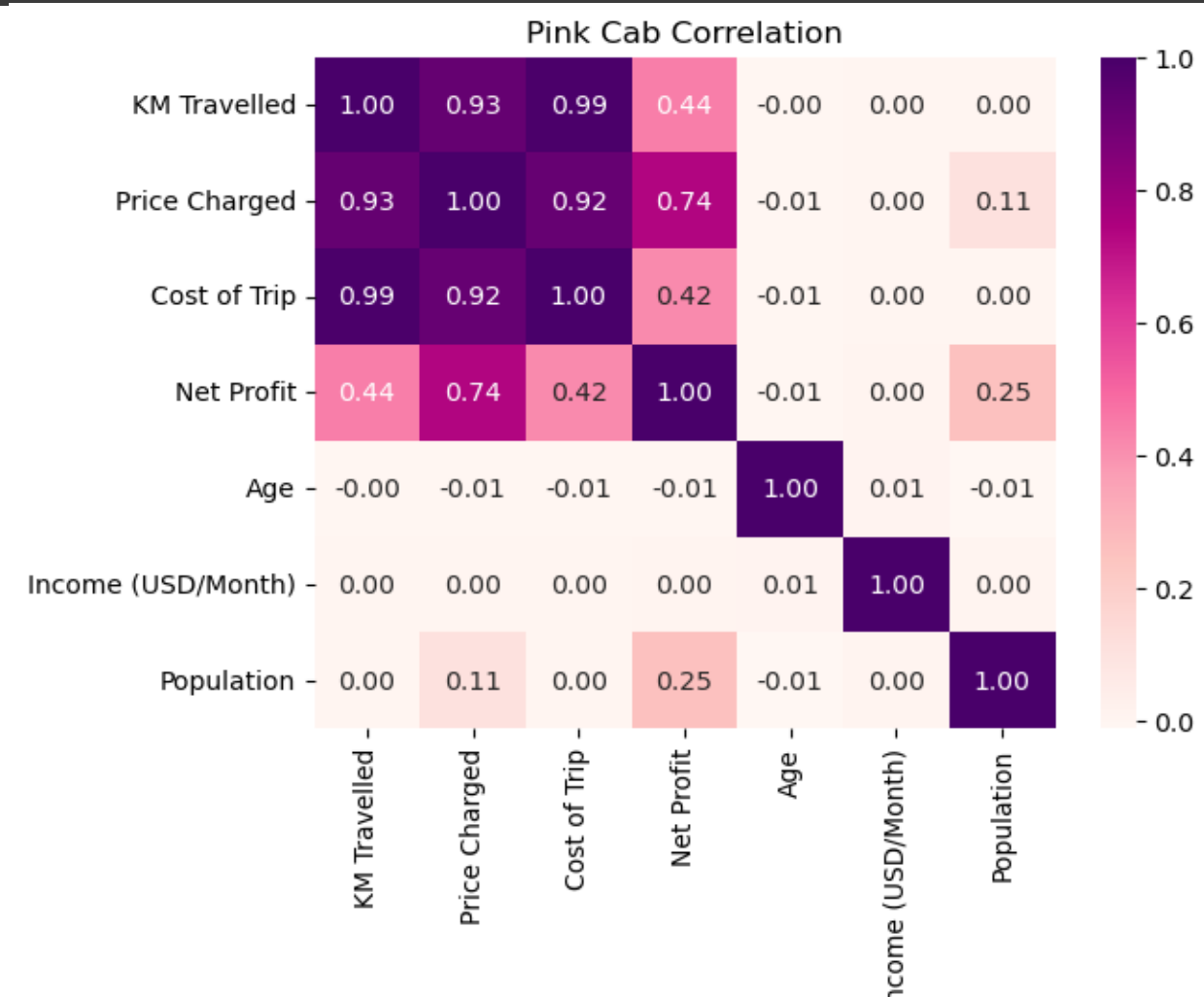
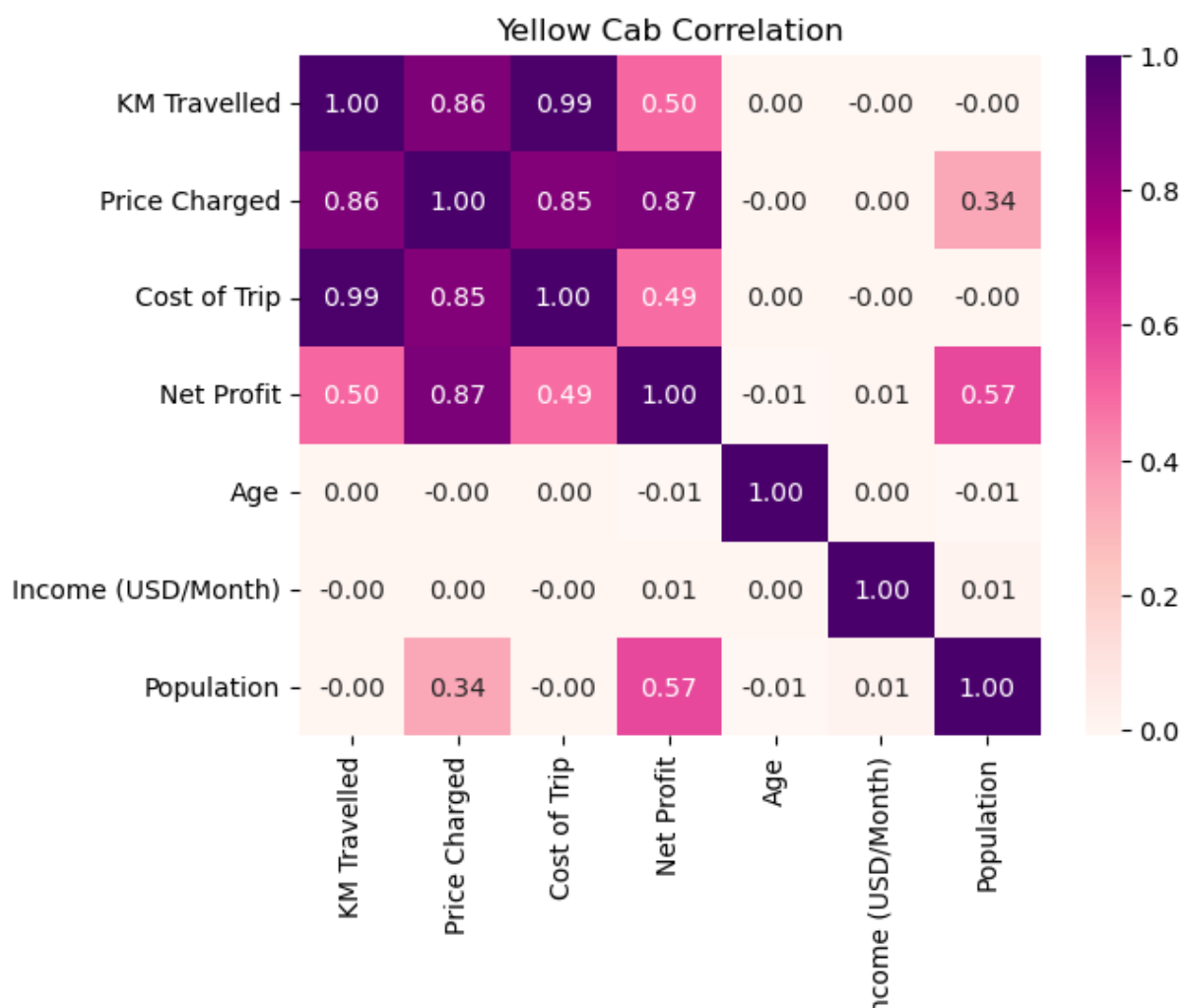
Correlation Matrices For Both of the Cab Firms.





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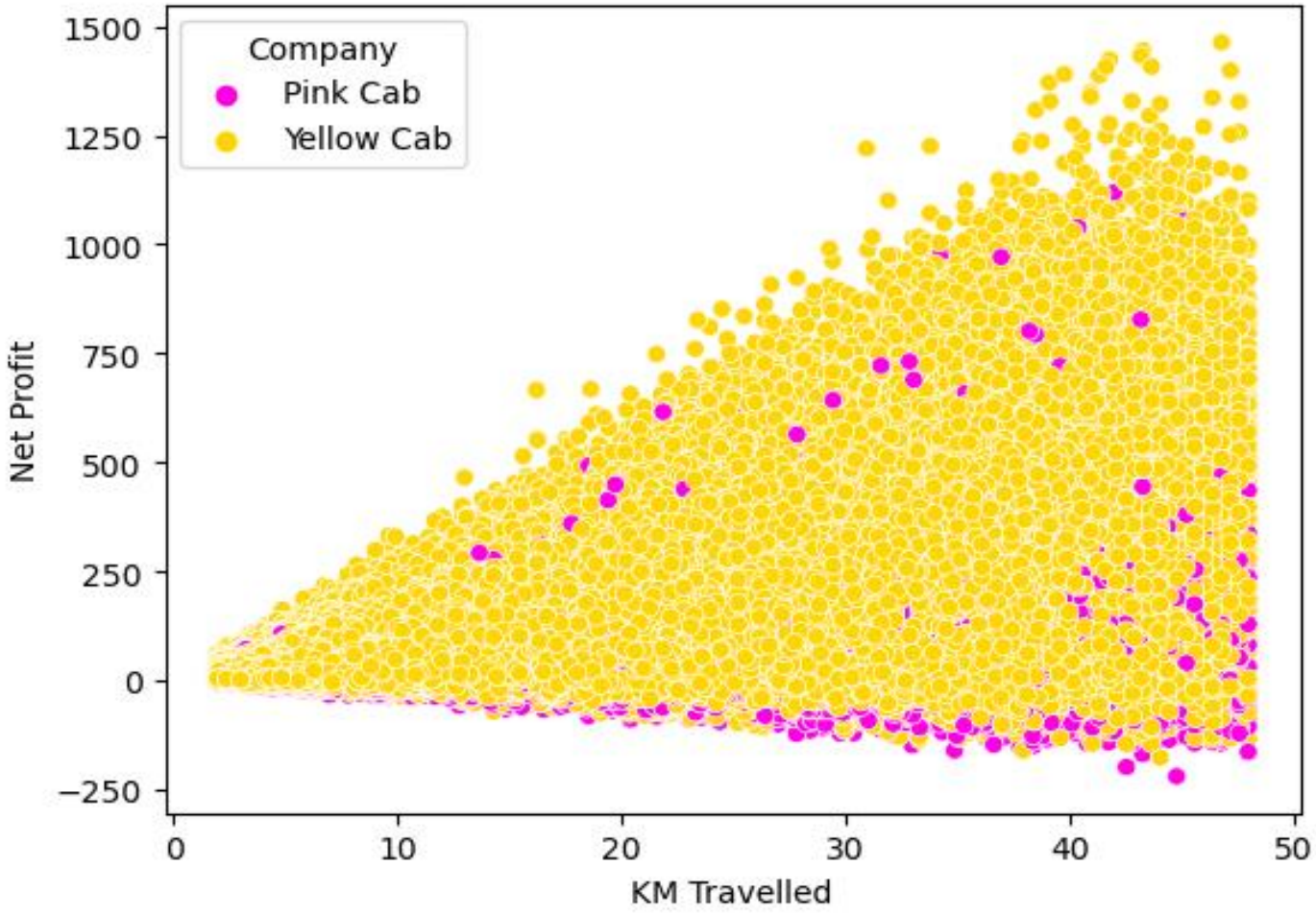
Distance Travelled and Net Profit Comparison



- Km traveled and net profit can be highly correlated.
- The correlation can be seen from this scatter graph
- Yellow cab's Net profit correlation with the KM travelled is more than the Pink Cab.

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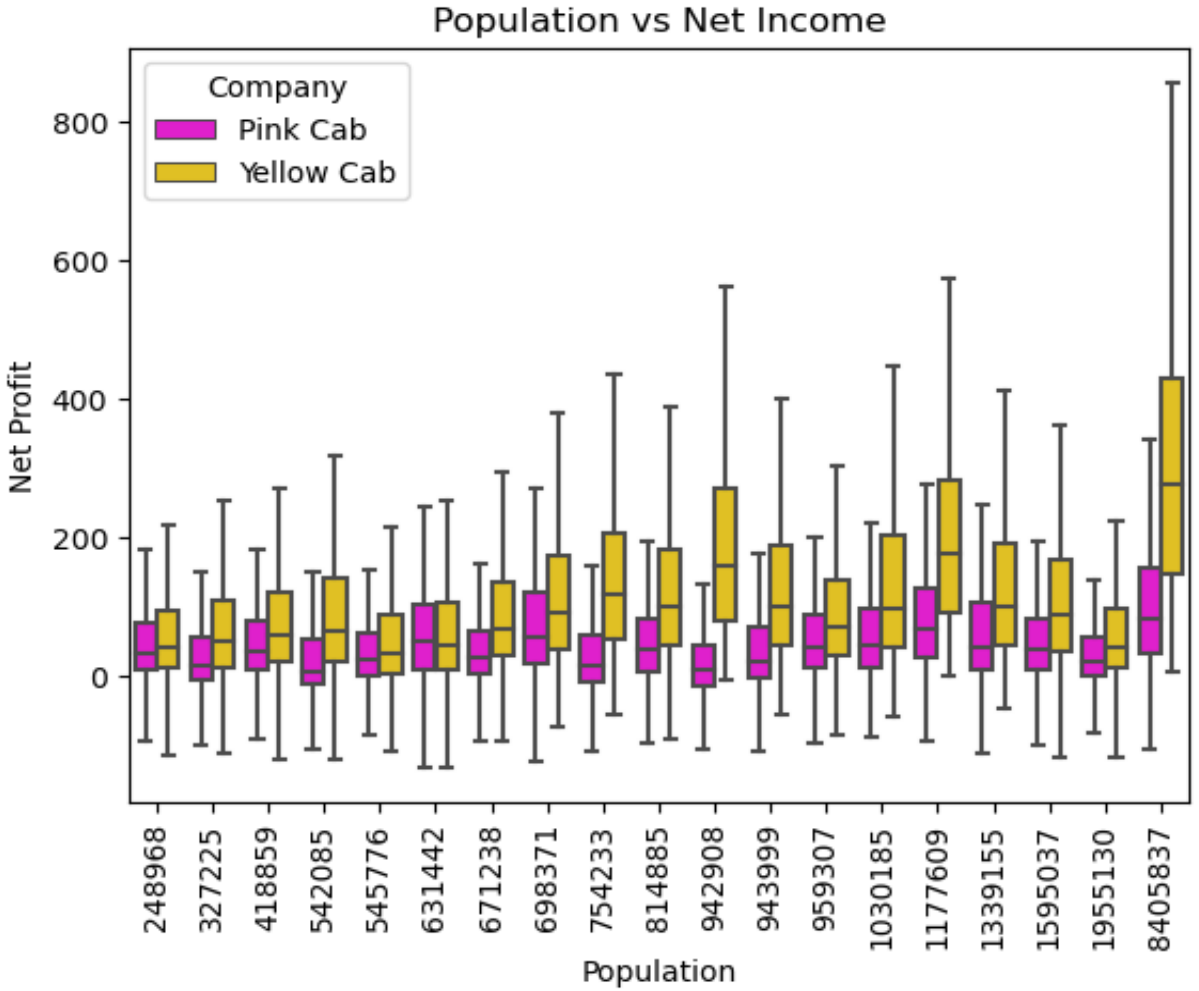
Net Profit's Dependency of Population



- Also Yellow Cab's Net profit correlation with the population is 0.57 , whereas Pink Cab's Net profit has a correlation with the population 0.25
- Boxplot shows Yellow Cab gains more net profit in the more populated cities
- Pink Cab's net profit does not increase as much as the population increases.

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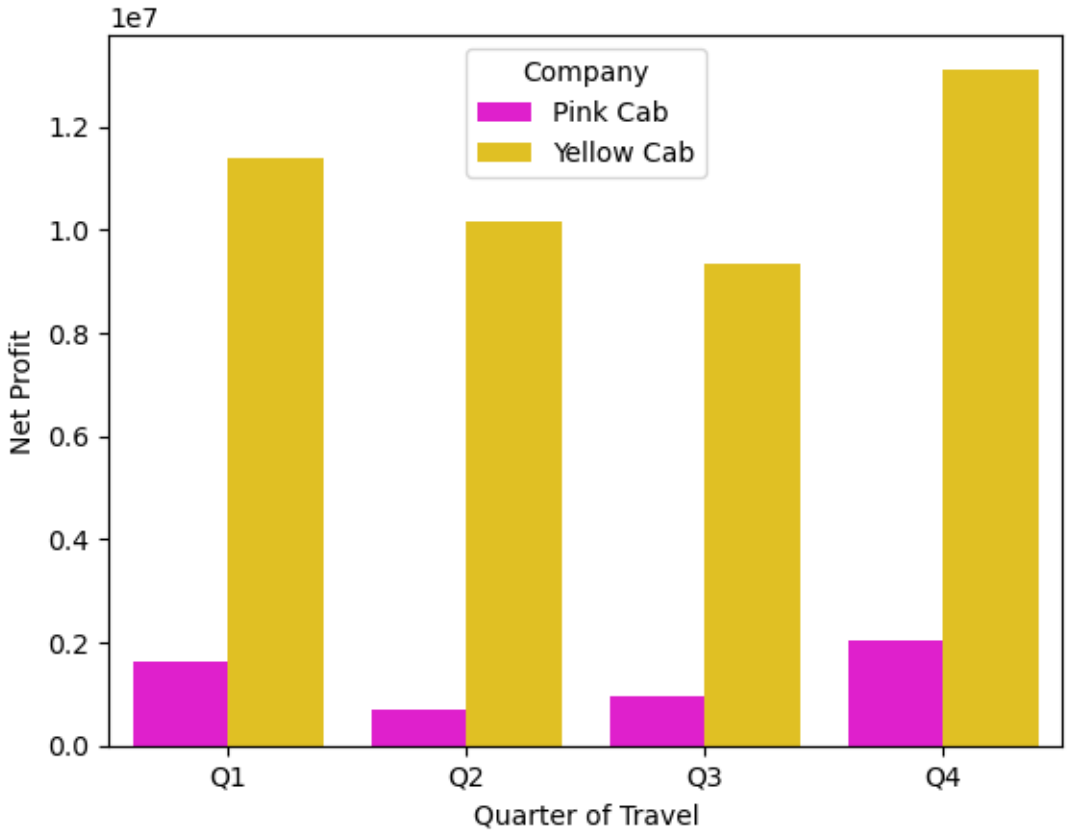
Sum of Net Profit's in Different Quarters



- Sum of the Net Profit vs quarters.
- Net Profit has seasonality.
- In winter Net Profits are rising for both Pink and Yellow Cab Company.

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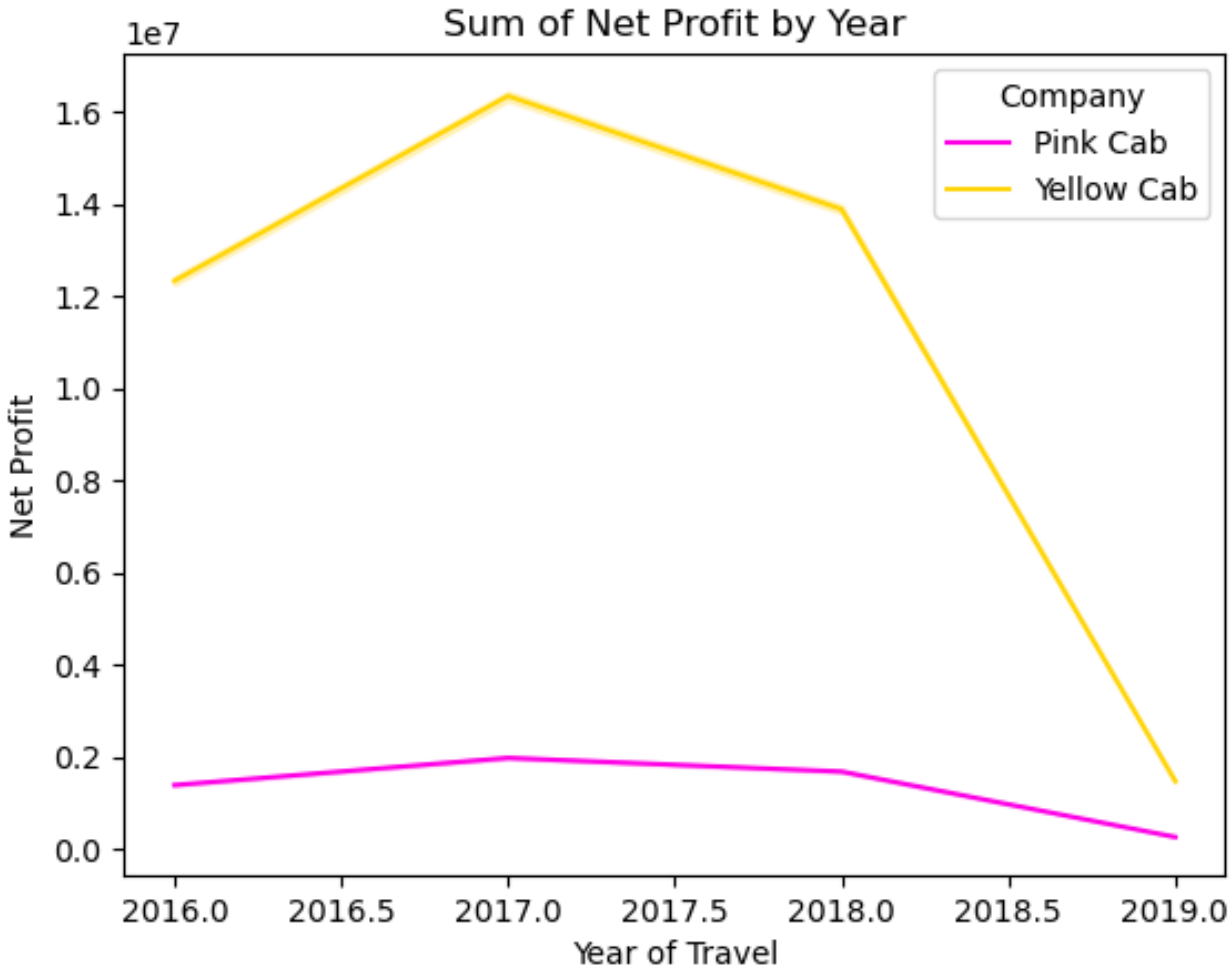
Distance Travelled Distribution For the 2 Cab Firms.



- Decrease in 2019 caused by lack of data.
- There is a decrease for the both cab firms in 2018
- Sum of Net profit is more than the pink cab firm in all years
- More Data is needed to see the trend in years.

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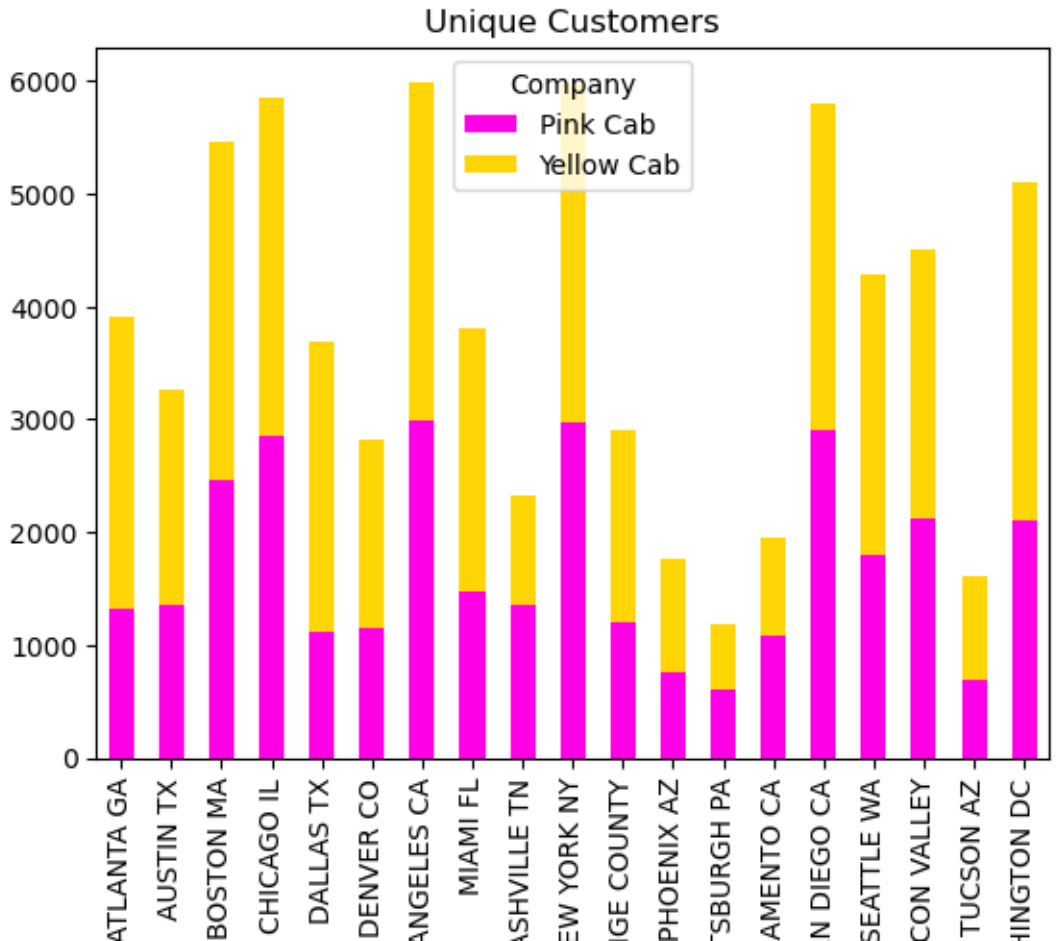
Unique Customer Reach For Both of the Cab Firms



- Both Cab firm's reach for the unique customers are close but still yellow leading in the reach for the customers
- This means that the unique users use yellow cab firm more frequently than the pink cab.

Hypothesis Testing

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Hypothesis Testing

- In hypothesis Testing it is proven that;
  - Average net profit of the company is higher than the pink cab
  - Net profit depends on the distance travelled in the cab
  - Net profit gained and the economic status of the customer is related
  - The average profits are different between quarters therefore data is seasonal

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Conclusion

- Yellow Cab is a smarter choice to invest because;
  - Average net profit of the company is higher than the pink cab
  - Has a wider customer reach, and frequency
  - Yellow cab has net more profit in more populated cities
  - The average profits are different between quarters therefore data is seasonal
  - Also for more km travelled yellow cab gains more profit

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Thank You For Your Attention!