



Data Glacier

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Go To Market(G2M) Case Study

G2M insight for Cab Investment firm

Monisha Shree SenthilNathan

LISUM32

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Background –G2M(cab industry) case study

Problem Statement:

XYZ (US-based private firm) is considering an investment in the growing US cab industry. With multiple key players present, XYZ seeks data-driven insights to identify the company with the strongest potential for return on investment (ROI).

Cab Companies:

- Yellow Cab
- Pink Cab

Objective:

Analyse provided datasets on two cab companies to understand their customer demographics, pricing strategies, profitability, and overall market performance. Leverage these insights to recommend the most promising company for XYZ's investment, considering their G2M strategy.

Workflow:

- Data Collection and Understanding
- Exploratory Data Analysis (EDA)
- Insights Generation
- Hypothesis
- Recommendations

Data Collection and Understanding

Cab Data:

- **Transaction ID:** A unique identifier assigned to each transaction
- **Date of Travel:** The date on which the cab service was availed by the customer
- **Company:** Indicates the cab company associated with the transaction
- **City:** Specifies the city in which the cab service was utilized
- **KM Travelled:** Represents the distance covered during the cab ride
- **Price Charged:** Denotes the amount charged to the customer for availing the cab service
- **Cost of Trip:** Indicates the operational cost incurred by the cab companies for facilitating the trip

City Data

- **City:** Refers to the name of the city where the cab service is provided.
- **Population:** Indicates the total population of the city where the cab service operates.
- **Users:** Represents the number of users or customers availing cab services in the respective city.

Customer Data

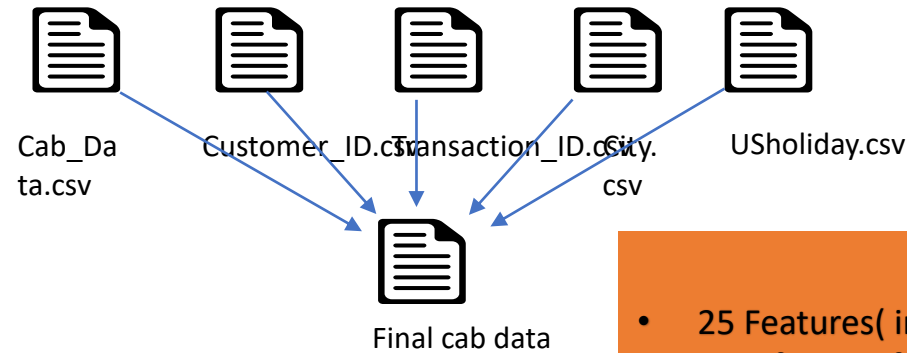
- **Customer ID:** This is a unique identifier assigned to each customer using the cab service.
- **Gender:** Indicates the gender of the customer availing the cab service.
- **Age:** Represents the age of the customer availing the cab service.
- **Income (USD/Month):** Indicates the monthly income of the customer in USD.

Transaction data

- **Transaction ID:** This is a unique identifier assigned to each transaction.
- **Customer ID:** This is a unique identifier assigned to each customer using the cab service.
- **Payment_Mode:** Indicates the mode of payment used for the transaction, such as cash or credit/debit card.

Holiday Data

- **Date:** This field represents the date of the holiday
- **Holiday:** the name or description of the holiday being observed.
- **WeekDay:** This field indicates the day of the week on which the holiday falls.
- **Month:** This field represents the month in which the holiday occurred
- **Day:** This field represents the day of the month on which the holiday occurred.
- **Year:** This field represents the year in which the holiday occurred.



- 25 Features(including 3 derived features)
- Timeframe of the data: 2016-01-31 to 2018-12-31

Assumptions:

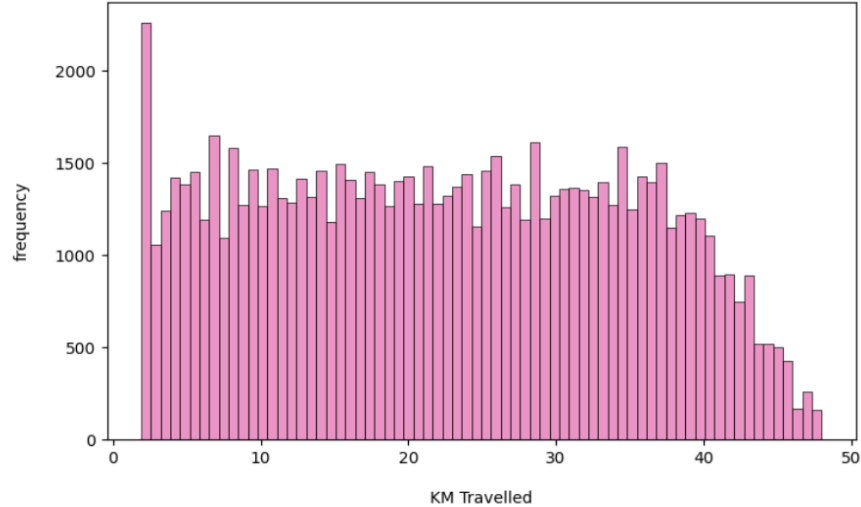
- Profit of rides are calculated keeping other factors constant and only Price_Charged and Cost_of_Trip features used to calculate profit.



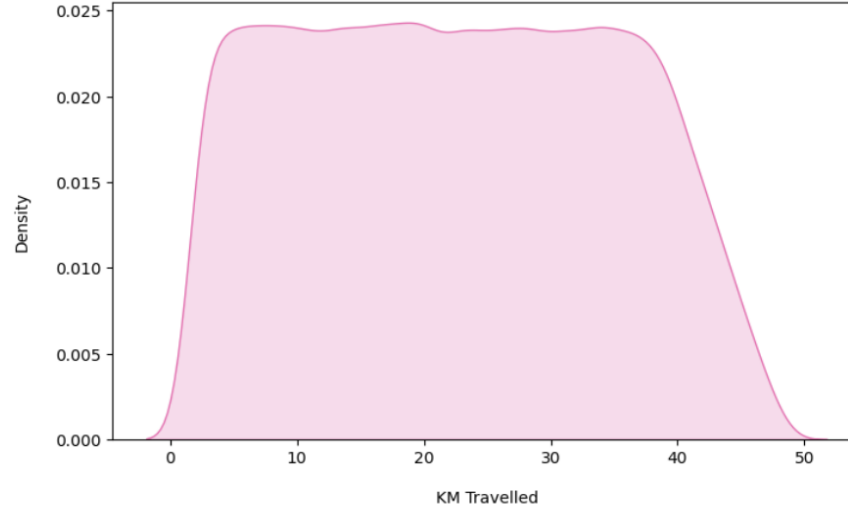
EXPLORATORY DATA ANALYSIS

Distribution of KM travelled

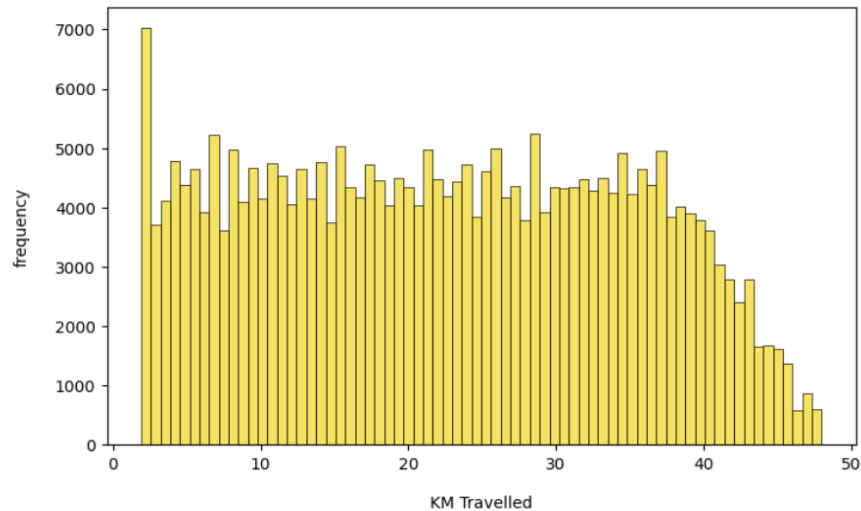
Distribution of KM Travelled (Pink Cab)



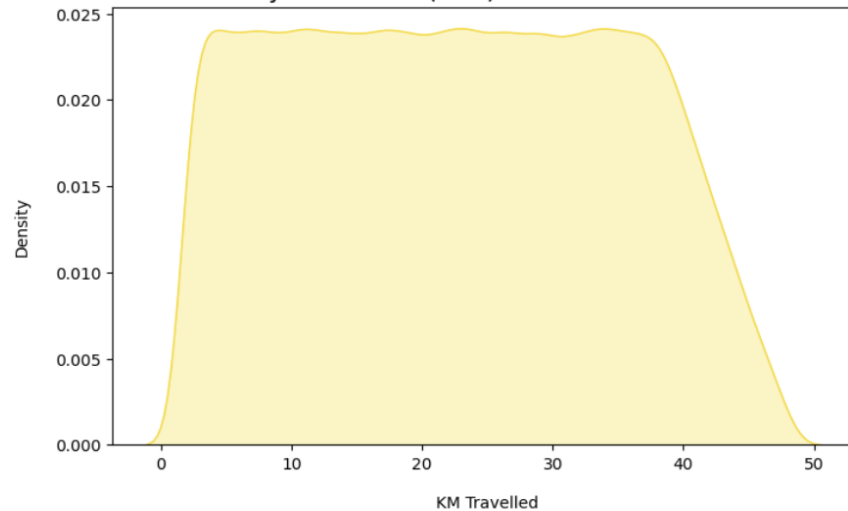
Kernel Density Estimation (KDE) of KM Travelled for Pink Cab



Distribution of KM Travelled (Yellow Cab)



Kernel Density Estimation (KDE) of KM Travelled for Yellow Cab

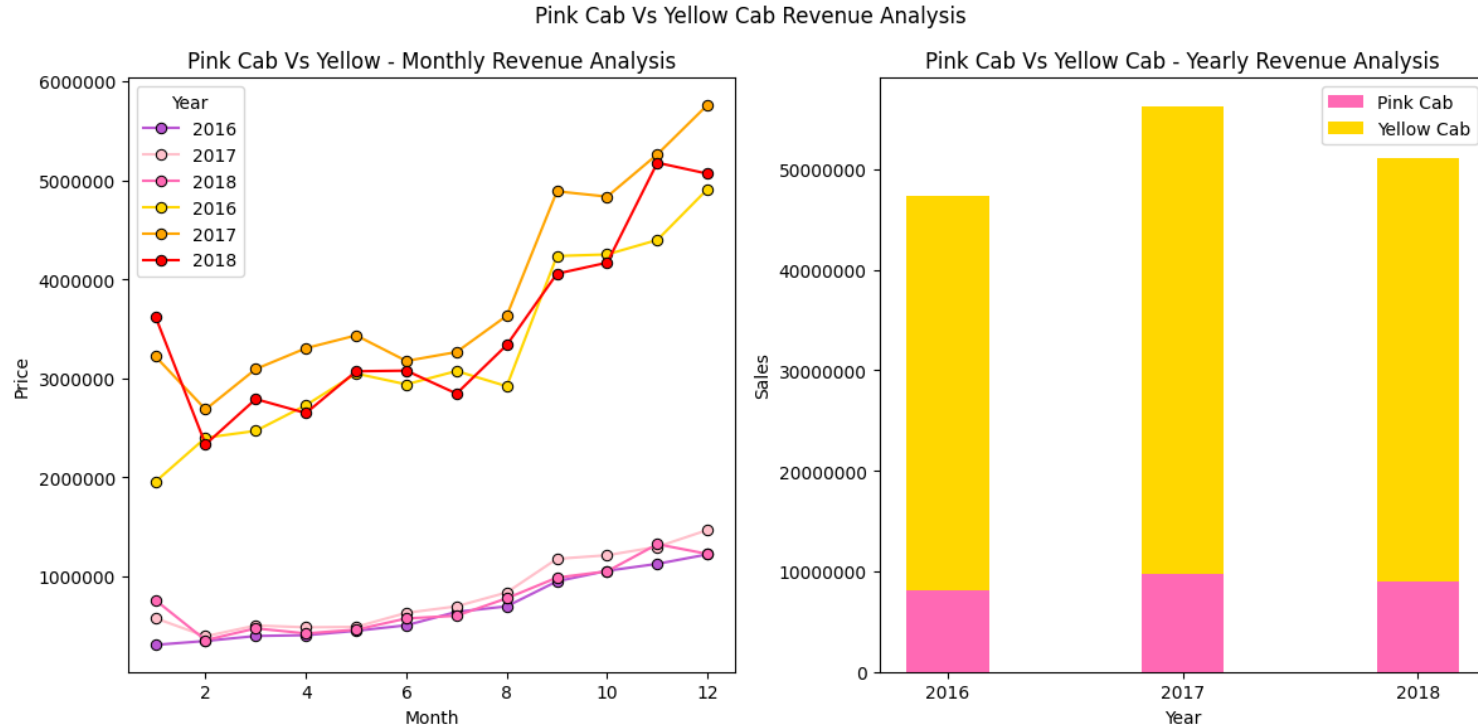


Both Pink and Yellow Cab rides Kilometer are in the range of approximately 2 to 50 KM.



Insights Generation

Overall Revenue Analysis



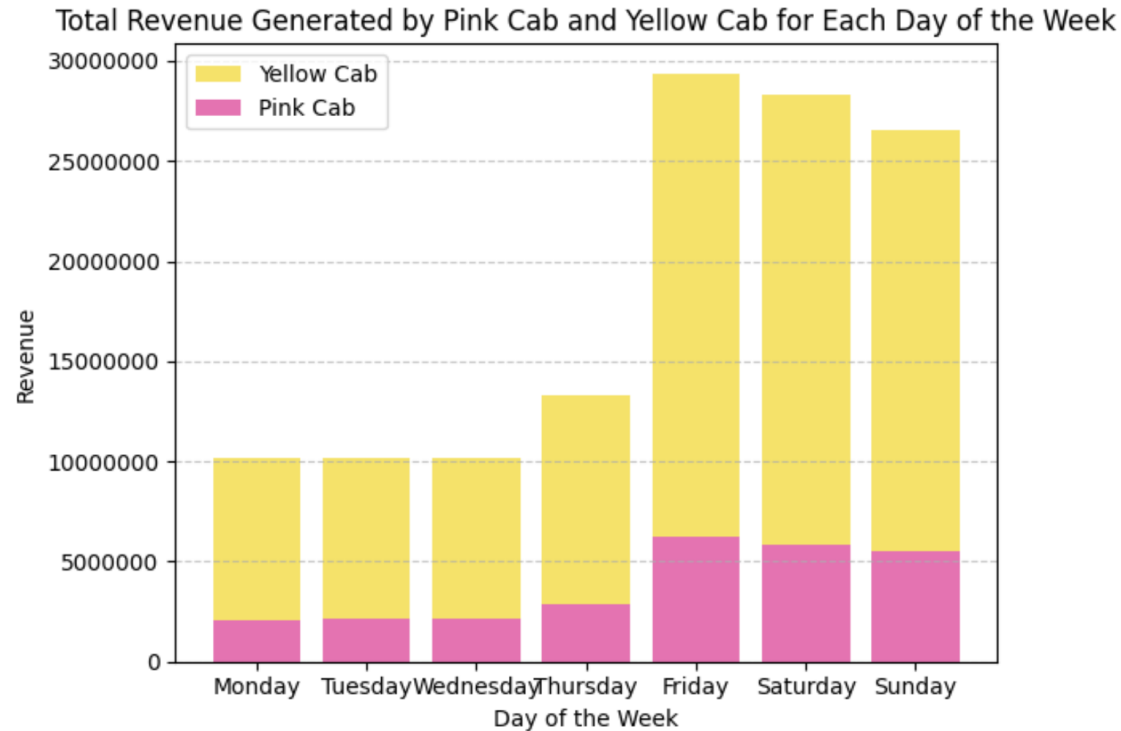
- Yellow Cab's annual revenue significantly exceeds Pink Cab's revenue for each year shown (2016, 2017, 2018).
- The proportion of Pink Cab's revenue to Yellow Cab's revenue is relatively small each year.

Overall, Yellow Cab appears to be the more dominant player in terms of revenue generation for the time periods represented in the graphs. Additionally, there seems to be seasonality in the cab business, with end-of-year peaks likely due to holidays and potentially more travel activity.

Weekday and Weekend Revenue Analysis

Weekend Revenue Comparison

Both Pink Cab and Yellow Cab demonstrate a significant increase in revenue during weekends compared to weekdays.



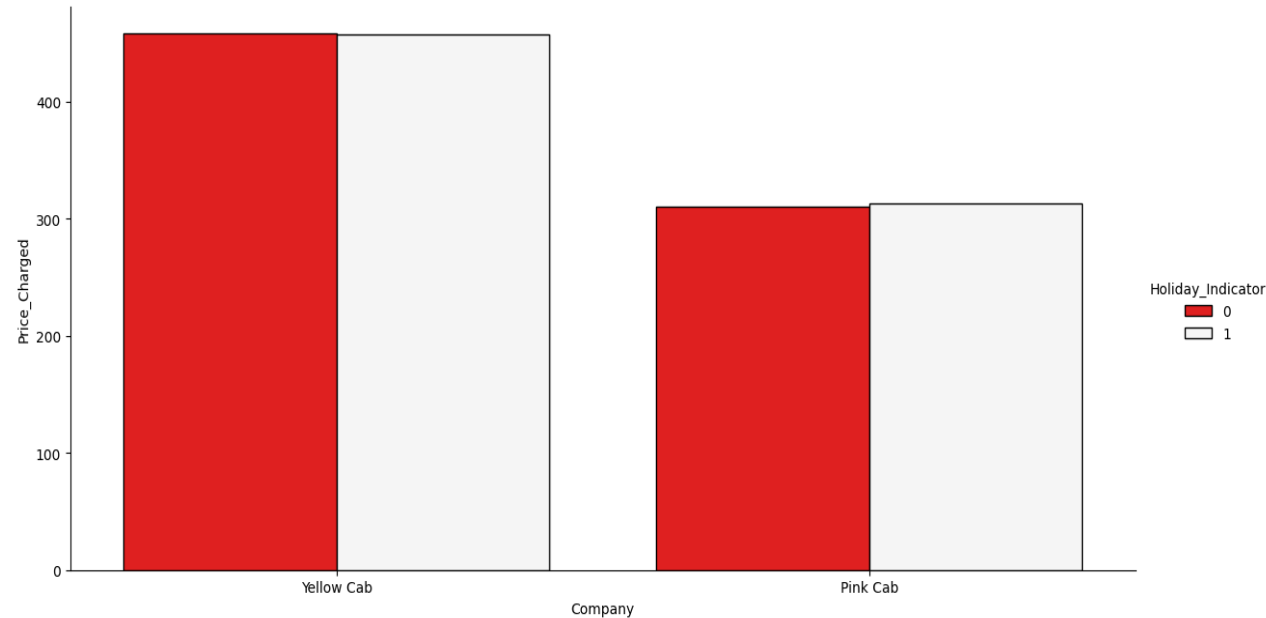
Pink Cab the average revenue surges from approximately **303.18** during weekdays to about **321.25** during weekends, representing a percentage difference of approximately **5.96%**

Yellow Cab experiences a notable increase in average revenue during weekends, rising from approximately **447.84** during weekdays to about **472.26** during weekends. This corresponds to a percentage difference of approximately **5.45%**

The data analysis shows the significance of weekends as a prime revenue-generating period for both Pink Cab and Yellow Cab, highlighting the importance of strategic planning and operational excellence to optimize revenue performance during leisure periods

Weekday and Weekend Revenue Analysis

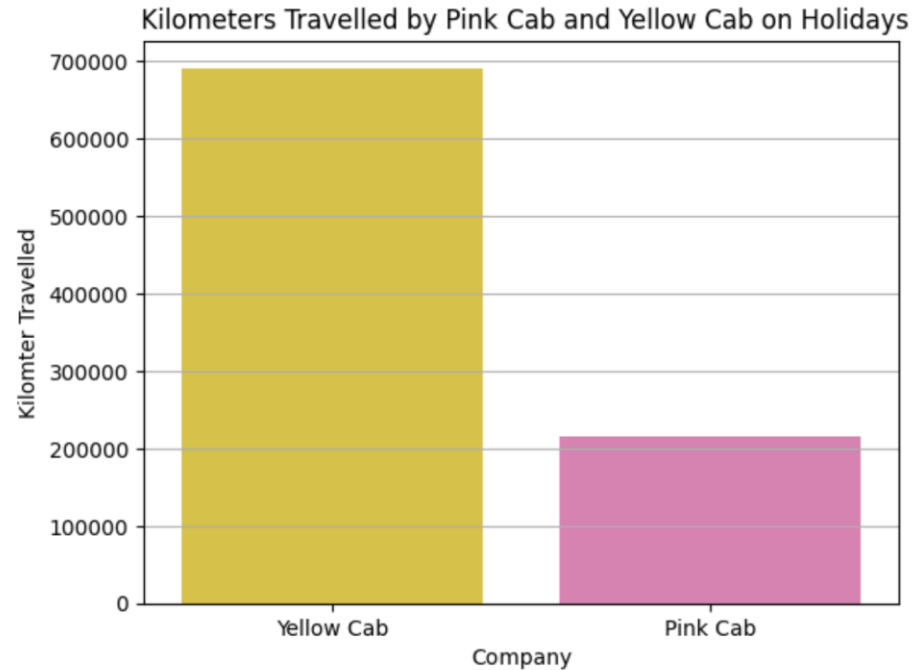
Pink Cab experiences a notable **increase** in revenue during holiday periods compared to non-holiday periods. Pink Cab's average revenue rises, and this corresponds to a percentage difference of approximately **0.98%**, signifying a slight improvement in revenue during holidays.



Yellow Cab's revenue demonstrates a marginal **decrease** during holiday periods in comparison to non-holiday periods. This translates to a percentage difference of approximately **-0.19%**, indicating a slight decline in revenue for Yellow Cab during holidays.

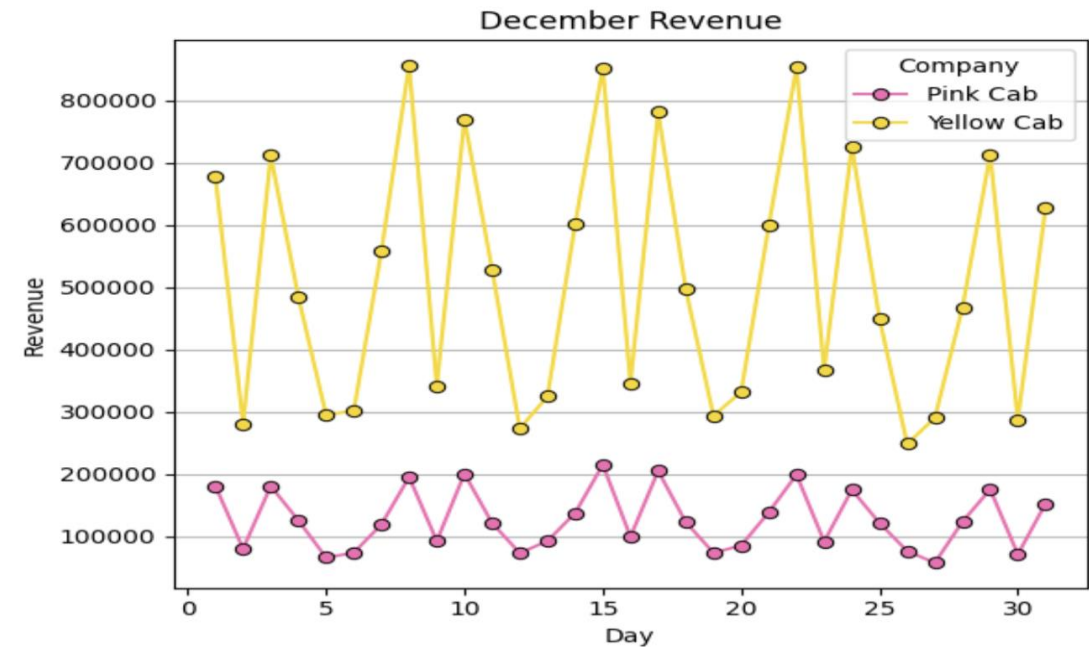
These findings suggest that **Pink Cab** experiences a **positive revenue impact during holiday periods**, while **Yellow Cab** sees a **minor reduction in revenue** during the same periods.

Impact of US Holidays on Distance Travelled and Revenue



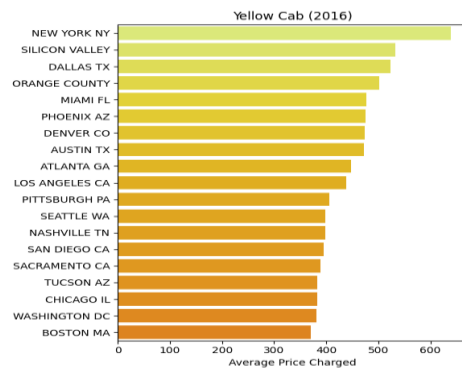
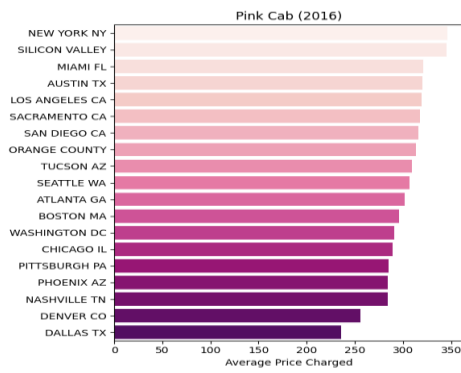
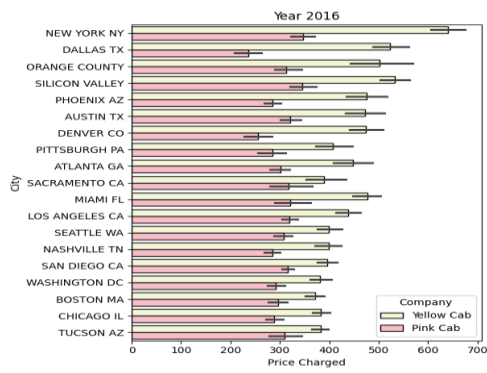
For **Pink Cab**, there is a **slight decrease** in the **average distance travelled** during holiday periods. The average distance decreases approximately around **0.25%**.

Conversely, **Yellow Cab** shows a **slight increase in the average distance** travelled during holiday periods compared to non-holiday periods. The average distance travelled has increased approximately **0.04%**.



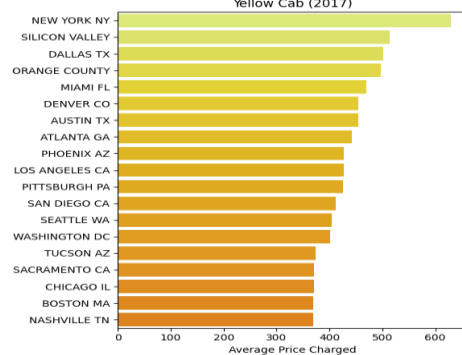
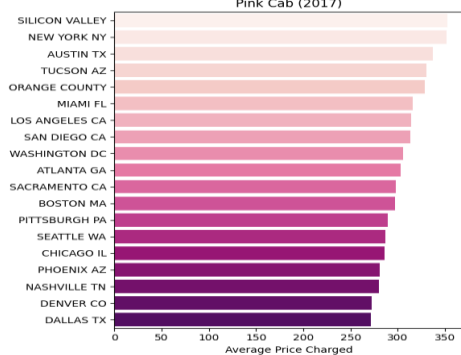
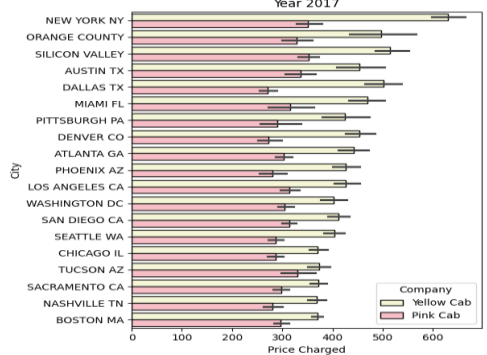
The analysis reveals that **December** stands out as the top revenue-generating month for both Pink Cab and Yellow Cab. This observation aligns with broader **seasonal** trends, as December typically witnesses heightened consumer activity and increased travel demand associated with holiday festivities.

Analysis of Revenue generated in each City

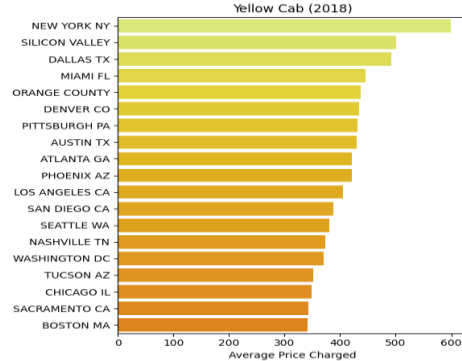
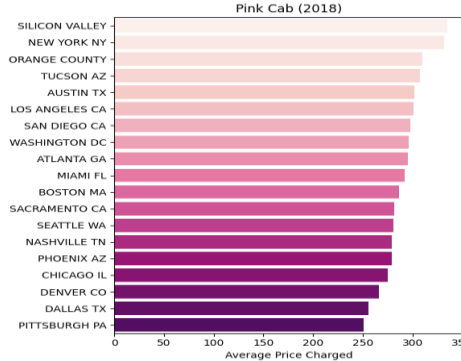
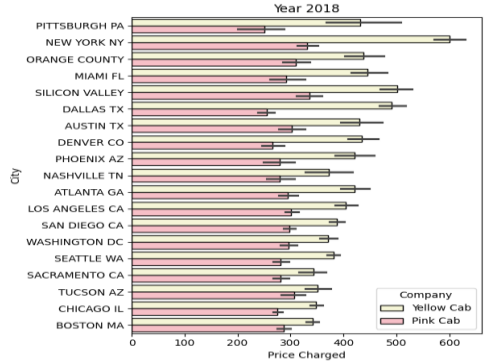


Upon examining revenue data, it becomes evident that **Yellow Cab** has **consistently generated higher revenue** overall compared to **Pink Cab**.

In specific instances, Pink Cab achieved its **highest** revenue in **New York** during the year **2016**. However, in subsequent years, namely 2017 and 2018, **Silicon Valley** emerged as the leading revenue-generating city for Pink Cab. Notably, there were variations in the third-ranking city each year, **with Miami, Austin, and Orange County** occupying the position in 2016, 2017, and 2018, respectively.

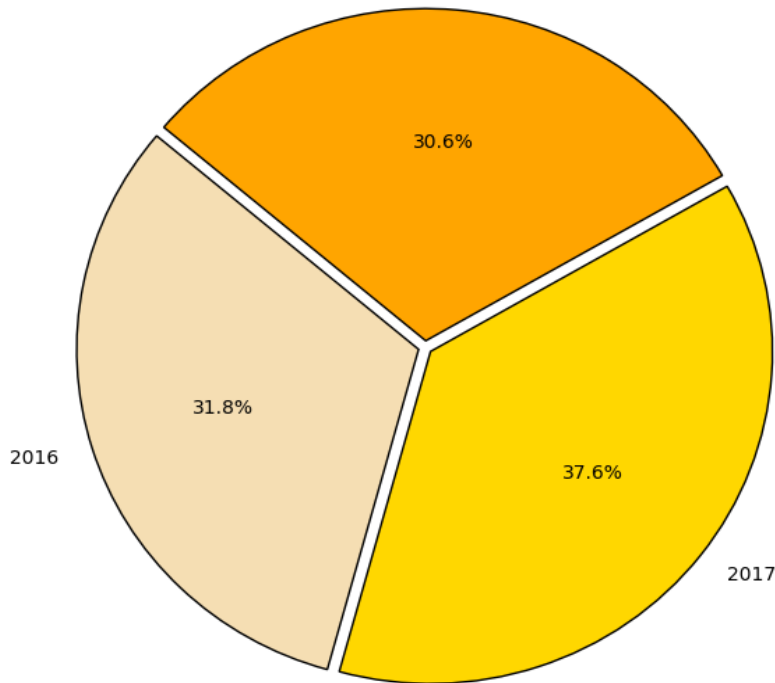


Conversely, **Yellow Cab** maintained its revenue dominance in **New York** across all three years. Additionally, **Silicon Valley** and **Dallas** consistently secured the second and third positions, respectively, in revenue generation for Yellow Cab throughout the same period.

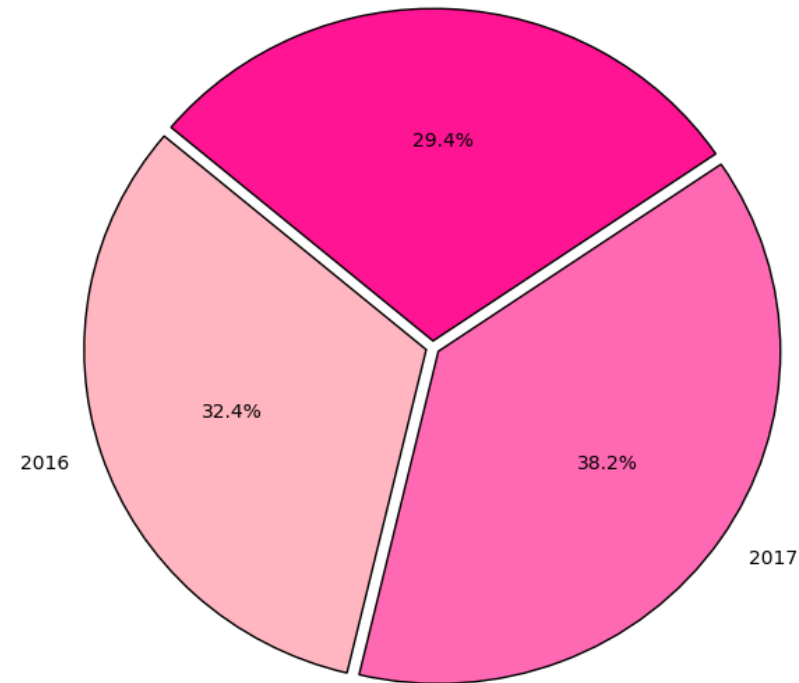


Analysis of Revenue generated in each City

Profit Percentage of Yellow Cab for 2016, 2017, and 2018



Profit Percentage of Pink Cab for 2016, 2017, and 2018

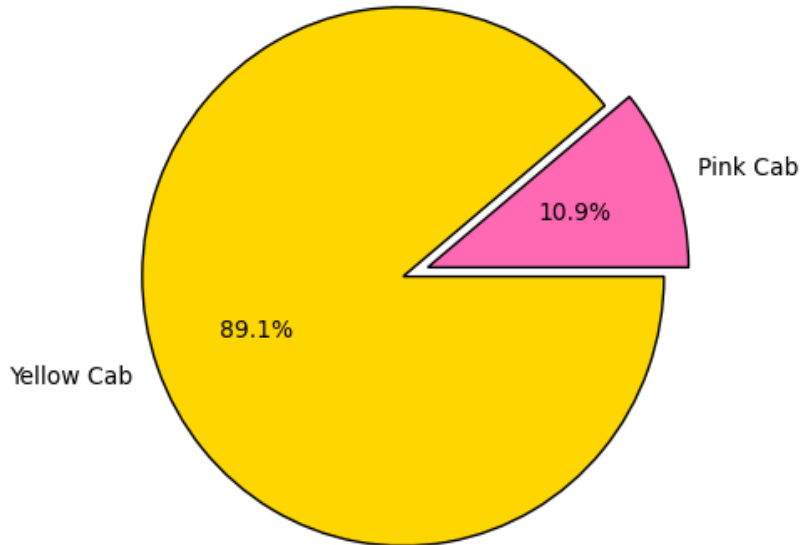


The analysis of profitability trends over a three-year period reveals that **Pink Cab** exhibited a **consistent growth** trajectory in profitability from 2016 to 2017, followed by a slight decline in 2018.

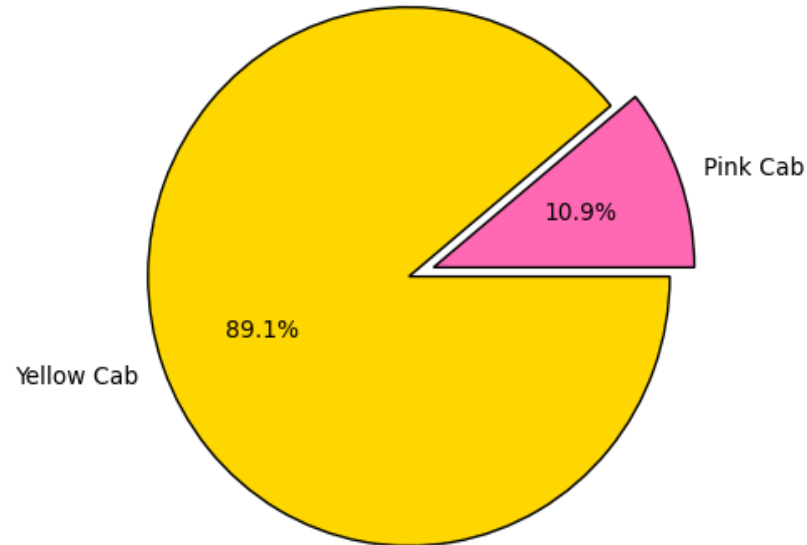
Conversely, **Yellow Cab** demonstrated **robust profitability** throughout the same period. Despite fluctuations, both companies maintained relatively stable profit margins. These findings shows that Yellow Cab has **sustained profitability** and **market dominance** compared to Pink Cab.

Analysis of Revenue generated in each City

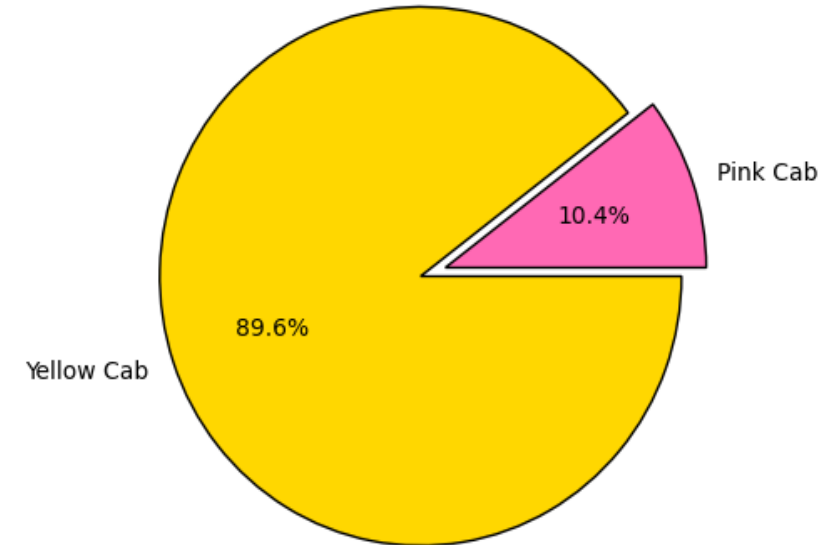
Profit Percentage for 2016



Profit Percentage for 2017

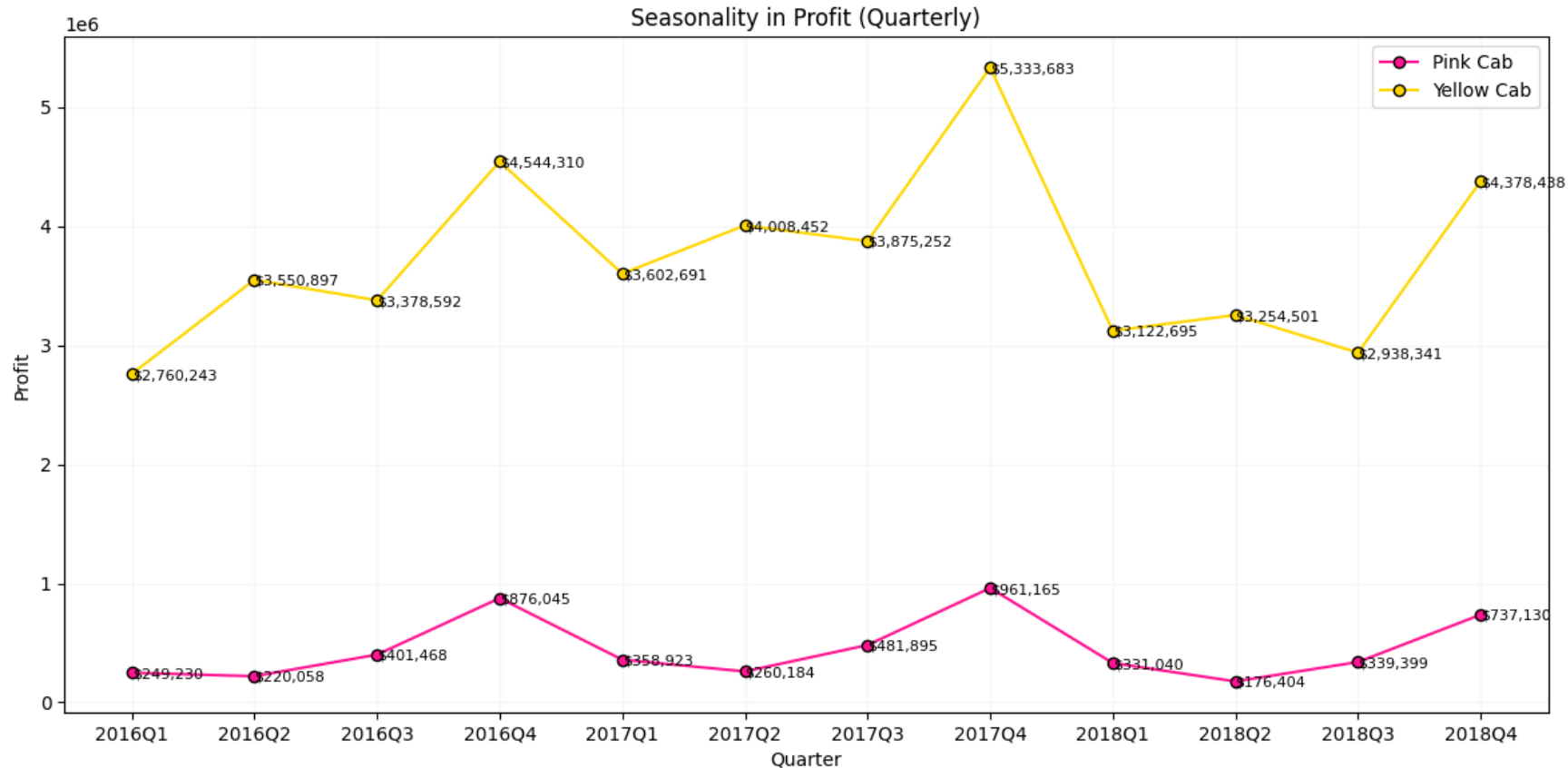


Profit Percentage for 2018



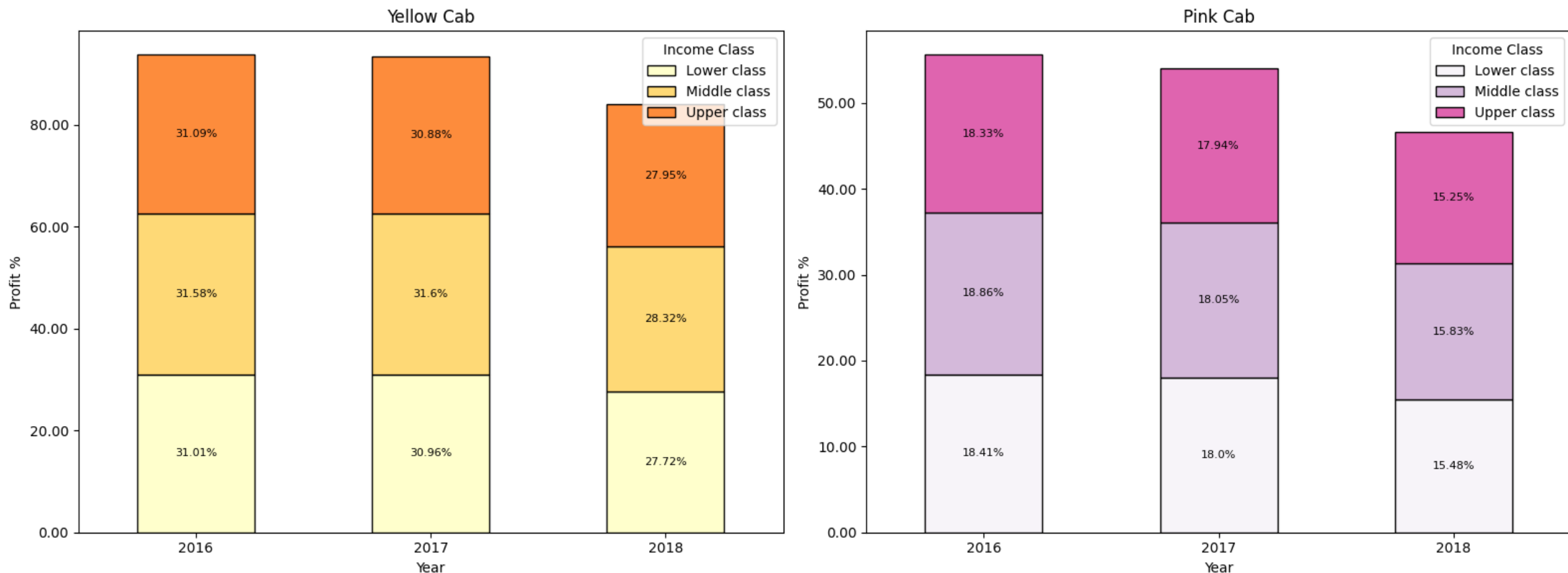
While **Yellow Cab** maintains a significantly **higher average profit** due to its larger revenue base, **Pink Cab** exhibits a **more consistent profit margin** around 10.3% to 10.9%. Pink Cab operates with a potentially leaner cost but they **extract a larger portion of their revenue as profit** despite a lower overall income.

Analysis of Quarterly Profit



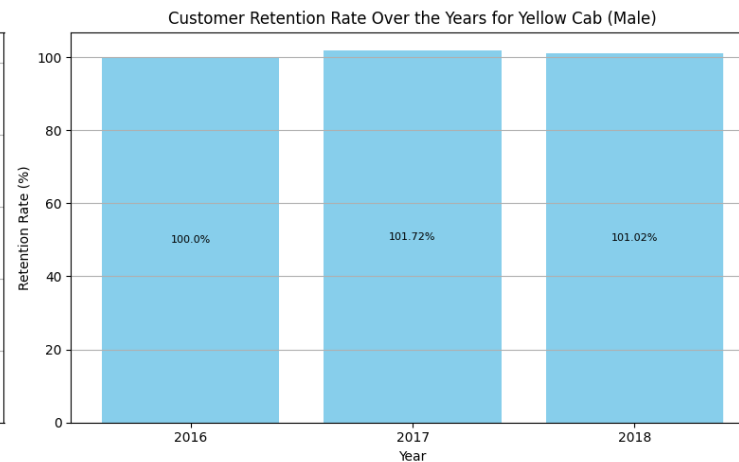
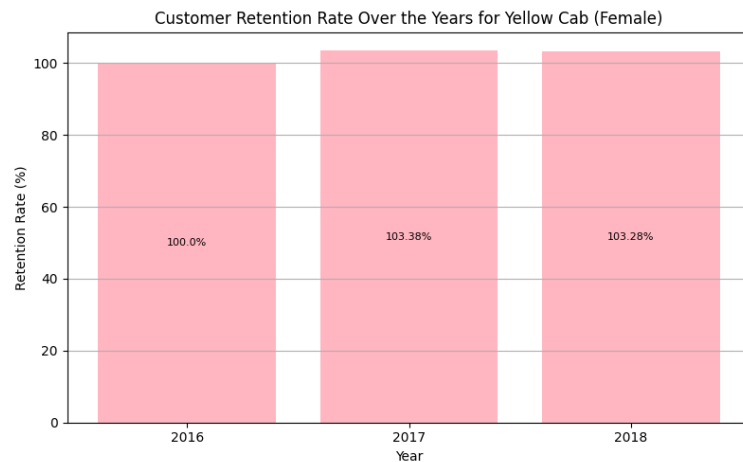
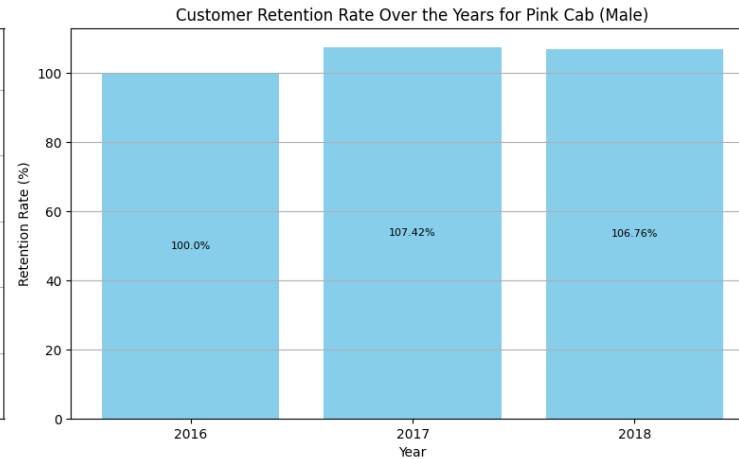
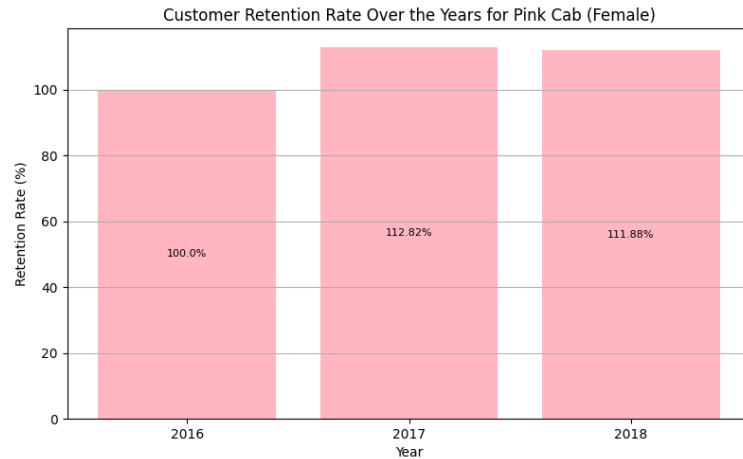
The analysis of **quarterly profit** data highlights the financial performance of Pink Cab and Yellow Cab services from 2016 to 2018. While **Yellow Cab** maintains its position as the **market leader** with **higher profitability**, Pink Cab faces challenges in achieving comparable levels of financial success.

Profitability Across Income Classes



Yellow Cab has a **larger** customer base and/or charges higher prices than Pink Cab. It is also seen that both companies earn the **most revenue** from customers in the **upper income class**.

Customer Retention



Surprisingly, **Pink Cab** has reattained its customers (at least 10 rides over 3 years) in **both genders** when compared to **Yellow Cab**



Hypothesis

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Hypothesis 1: Company with Maximum Cab Users

H0: There is a significant difference in the average price charged between Pink Cab and Yellow Cab.

H1: There is no significant difference in the average price charged between Pink Cab and Yellow Cab.

There is a **significant** difference in the average price charged between Pink Cab and Yellow Cab.

Hypothesis 2: Effect of Holidays on Cab Usage

H0: There is a significant difference in cab usage between holidays and non-holidays.")

H1: There is no significant difference in cab usage between holidays and non-holidays.")

There is **no significant** difference in cab usage between holidays and non-holidays.

Hypothesis 3: Seasonality in Cab Usage

H0: There is a significant difference in cab usage across different seasons.")

H1: : There is no significant difference in cab usage across different seasons.")

There is a **significant** difference in cab usage across different seasons

Hypothesis 4: Impact of Payment Mode on Cab Usage

H0: There is a significant association between payment mode and cab usage.")

H1: There is no significant association between payment mode and cab usage.")

There is a **significant** association between payment mode and cab usage

Hypothesis 5: Impact of City Population on Cab Usage

H0: There is a significant impact of city population on cab usage.

H1: There is no significant impact of city population on cab usage.

There is a **significant** impact of city population on cab usage.

Hypothesis 6: Impact of Distance Travelled on Profit

H0: there is a significant impact of KM_Travelled and Profit are related.")

H1: there is no significant impact of KM_Travelled and Profit are related.")

There is a **significant** impact of KM_Travelled and Profit are related.

Hypothesis 7: Profit is proportional to increase in customers

H0: There is a significant relationship between the number of customers and profit margins

H1: There is no significant relationship between the number of customers and profit margins

There is a **significant** relationship between the number of customers and profit margins.



Recommendations

Recommendations

We have analyzed both the cab companies on following points

Revenue and Profit

- **Higher Revenue:** Yellow Cab consistently generates significantly higher overall revenue than Pink Cab.
- **Stronger Profitability:** Yellow Cab demonstrates robust and stable profitability throughout the period analyzed. While Pink Cab's profit margin is more consistent, its overall profit is lower due to lower revenue.
- **Market Dominance:** Yellow Cab maintains a dominant position in the market across most cities and years analyzed.

Customer Base

- **Larger Customer Base:** Yellow Cab likely has a larger customer base, suggesting a wider market reach.

Holiday Performance

- **Minimal Impact:** Yellow Cab experiences only a slight decrease in revenue during holidays, suggesting better resilience during market fluctuations.
- **Weekend Performance:** Both companies see a similar increase in revenue during weekends, but Yellow Cab's higher base revenue translates to a larger absolute increase.

Retention Rate

- **Pink Cab Advantage:** While Pink Cab shows a higher customer retention rate for high-value customers (those who take at least 10 rides in 3 years), this needs to be considered in the context of its overall smaller customer base.

Recommendations

However, there are some considerations for Pink Cab:

- **Profit Margin:** Pink Cab maintains a consistent profit margin, suggesting efficient cost management.
- **Holiday Strategy:** Pink Cab seems to have a strategy that maintains or even increases revenue during holidays despite shorter travel distances, possibly due to surge pricing or targeted promotions.

Overall Investment Recommendation:

Considering the factors above, **Yellow Cab** appears to be the more attractive investment opportunity due to its dominant market position, higher revenue and profitability, and larger customer base. However, it's important to conduct further research to understand:

Thank You



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