Data Glacier

Your Deep Learning Partner

G2M insight for Cab Investment firm - Case Study

20 November 2023

Agenda

Background

Problem Statement

EDA

Recommendations

Background

- XYZ, a US-based private company would like to make an investment in the cab industry.
- Before deciding on an investment plan, it must have a complete understanding of the industry due to its rapid growth and a lot of significant competitors.
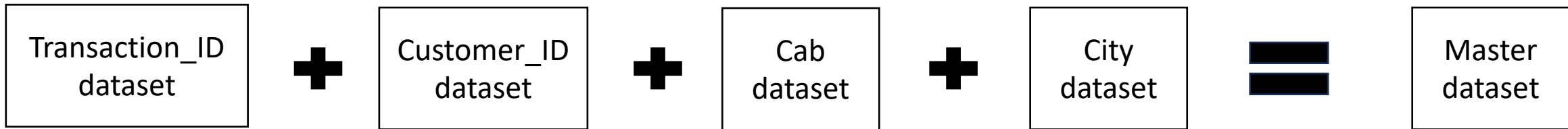
Objective

- The primary objective of this project is to provide valuable insights that will help XYZ choose the best cab company for their investment. By highlighting important elements and trends in the cab industry, the data analysis insights will guide XYZ's go-to-market (G2M) strategy and eventually aid in decision-making.

The analysis has been divided into four parts:

- Data Analysis
- Market Understanding
- Identifying Investment Opportunity
- Recommendations

Data Exploration

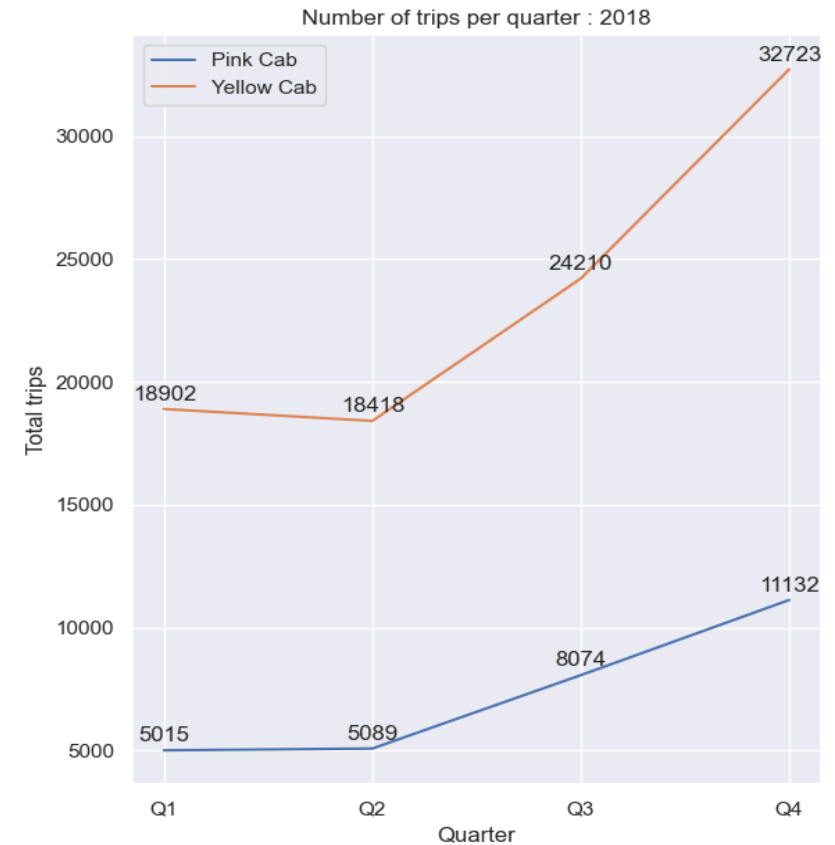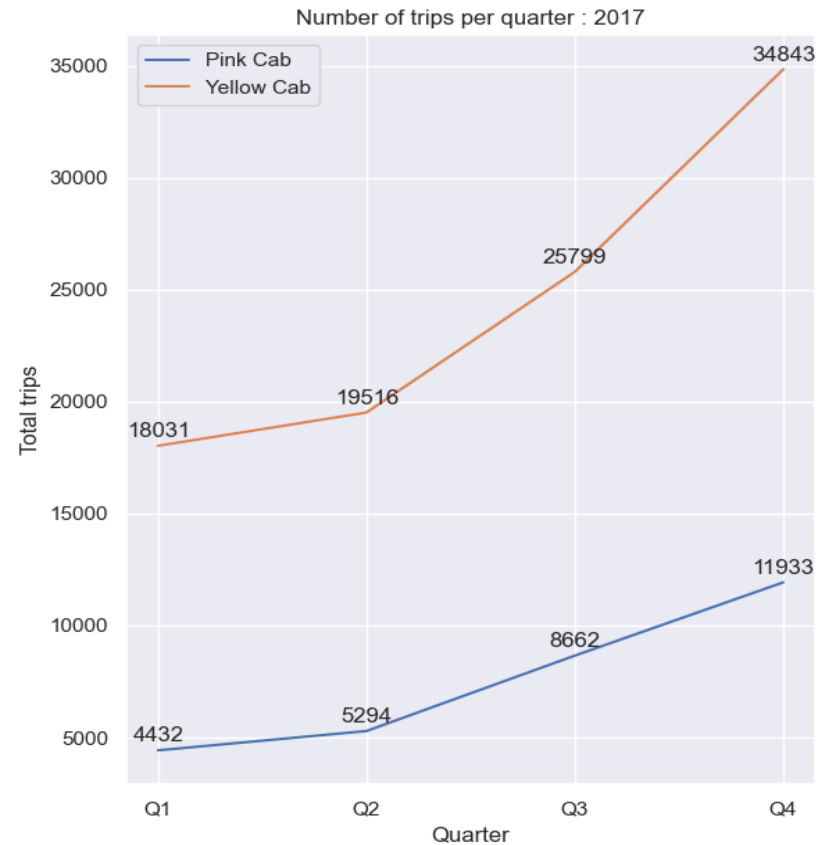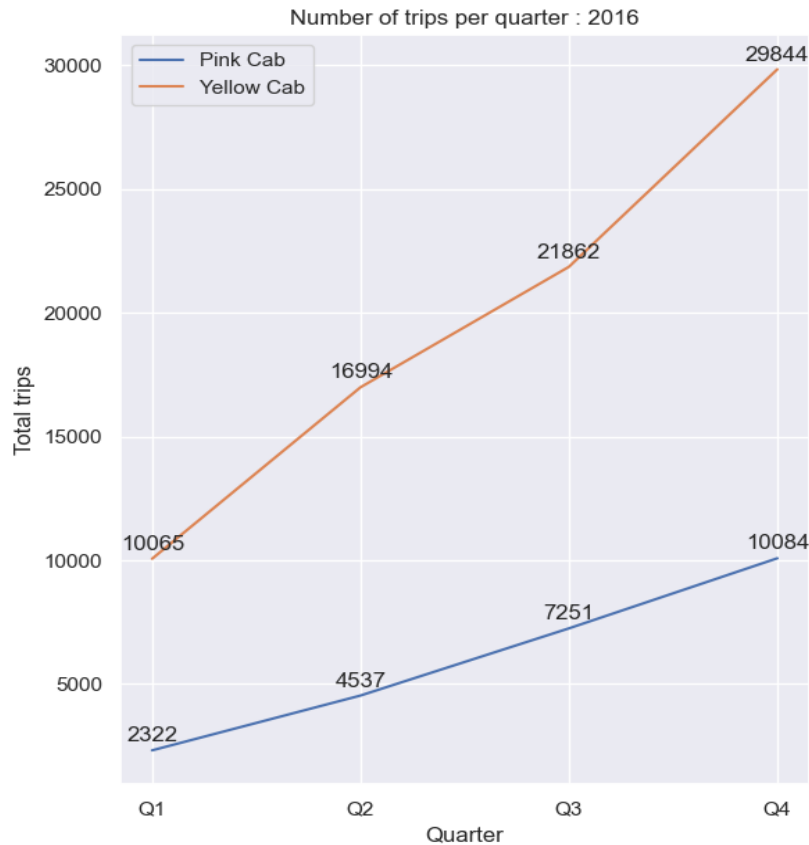| Transaction_ID dataset	**+**	Customer_ID dataset	**+**	Cab dataset	**+**	City dataset	**=**	Master dataset

- The combined dataset has 14 features and 355,032 entries.
- Time frame of the data is: 31/01/2016 to 31/12/2018
- The dataset contains no missing values

Assumptions

- The datasets contain comprehensive and representative information about the two cab companies and their customer bases.
- The quality of the data meets a certain standard, but data cleaning and pre-processing might be necessary.
- Derived insights will provide a reasonable basis for investment decision-making, but external factors might also influence the final decision.

Seasonality Analysis – Quarterly Trend

Number of trips per quarter : 2016

Number of trips per quarter : 2017

Number of trips per quarter : 2018

- The Yellow Cab Company consistently experiences the highest usage over all four quarters of the year and across all 12 months.
- Both cab companies, Yellow Cab and Pink Cab, observed increased usage between quarters 3 and 4, coinciding with the holiday season.

Seasonality Analysis – Weekly trend

Cab Usage Patterns During the Week by Company
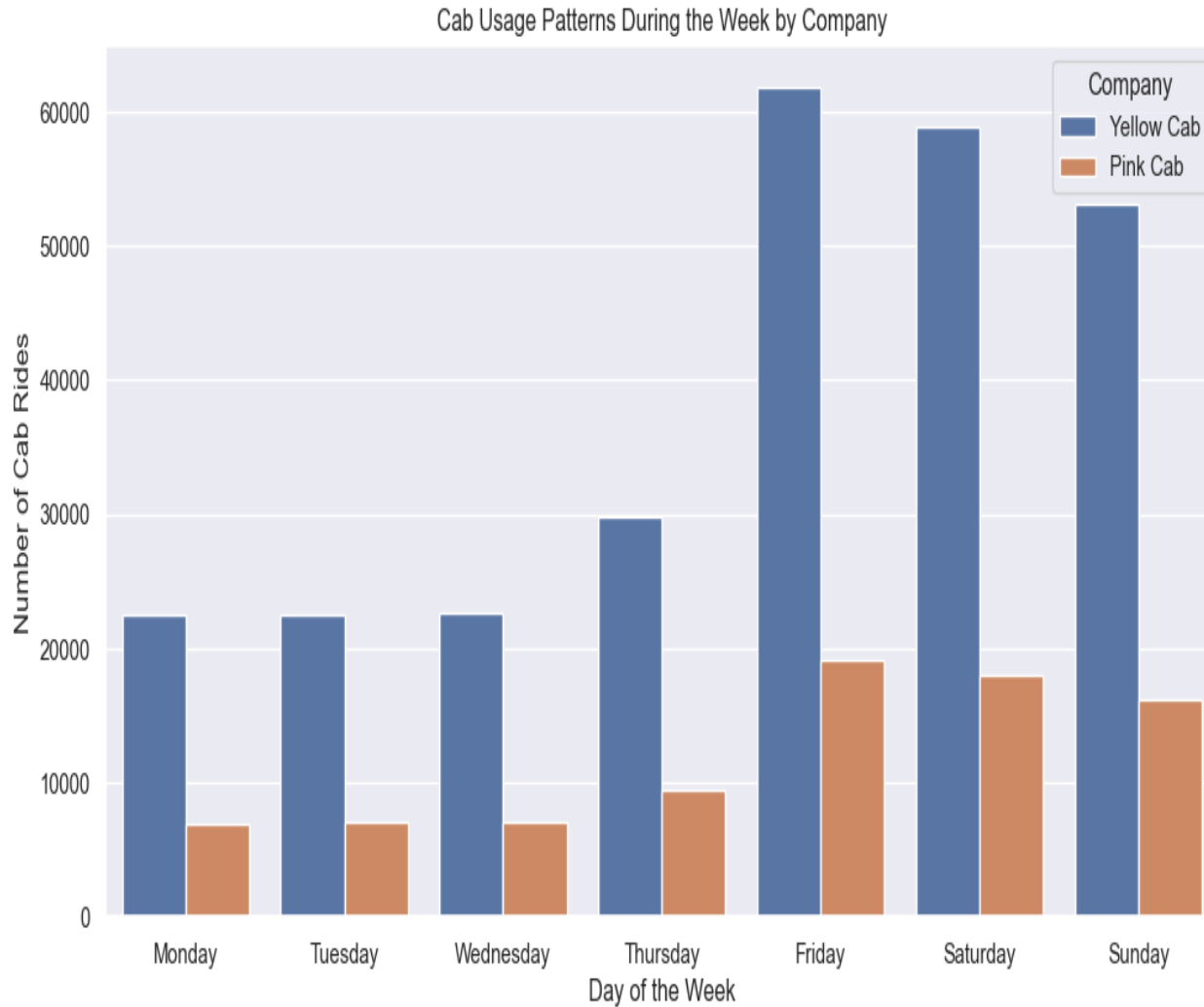
- Both companies experience higher usage over the weekend, particularly on Fridays, with Yellow Cab exhibiting higher usage overall compared to Pink Cab throughout the week.

- Yellow Cab consistently holds the highest usage rate across various time frames

Geographical Analysis
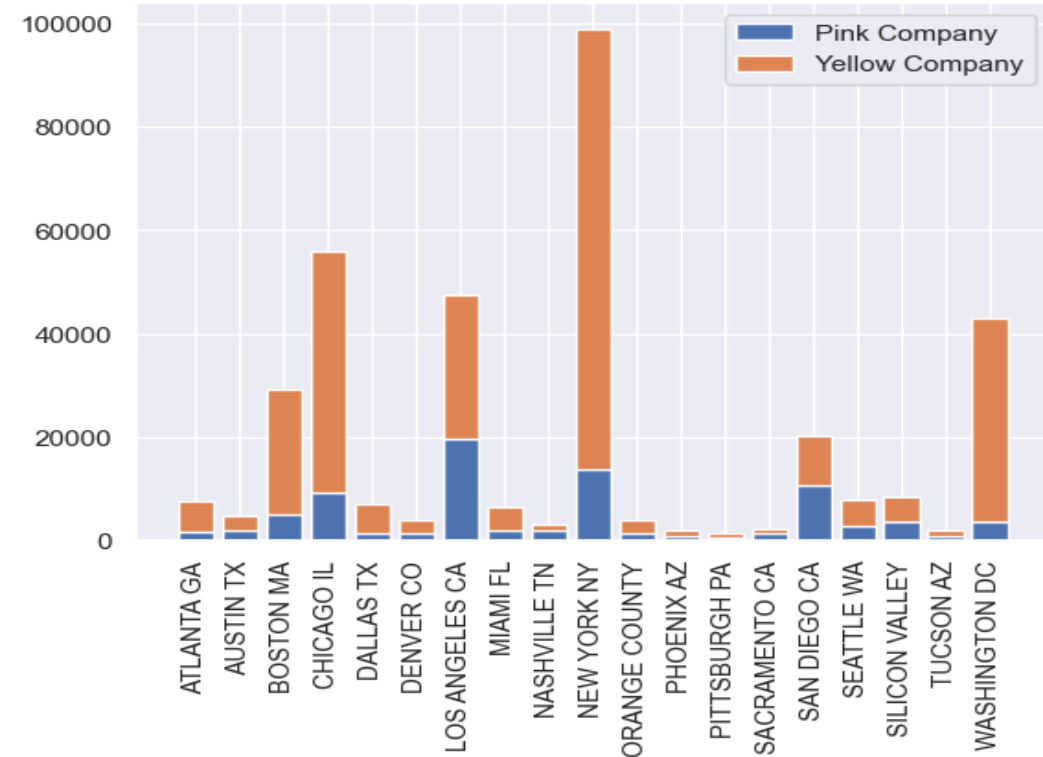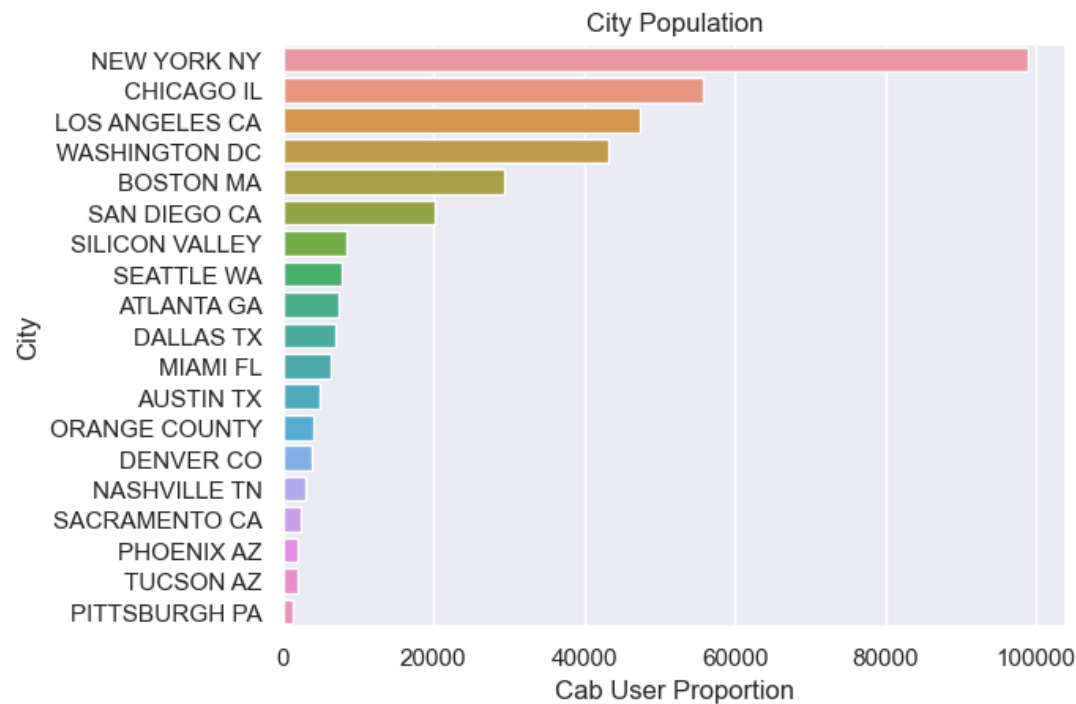
• New York, Chicago, and Los Angeles stand out as the primary geographical hotspots for both cab companies.

•The Yellow Cab has the highest usages across all 20 countries.
•The Yellow Cab company usage hotspots are New York, Chicago and Los Angeles.
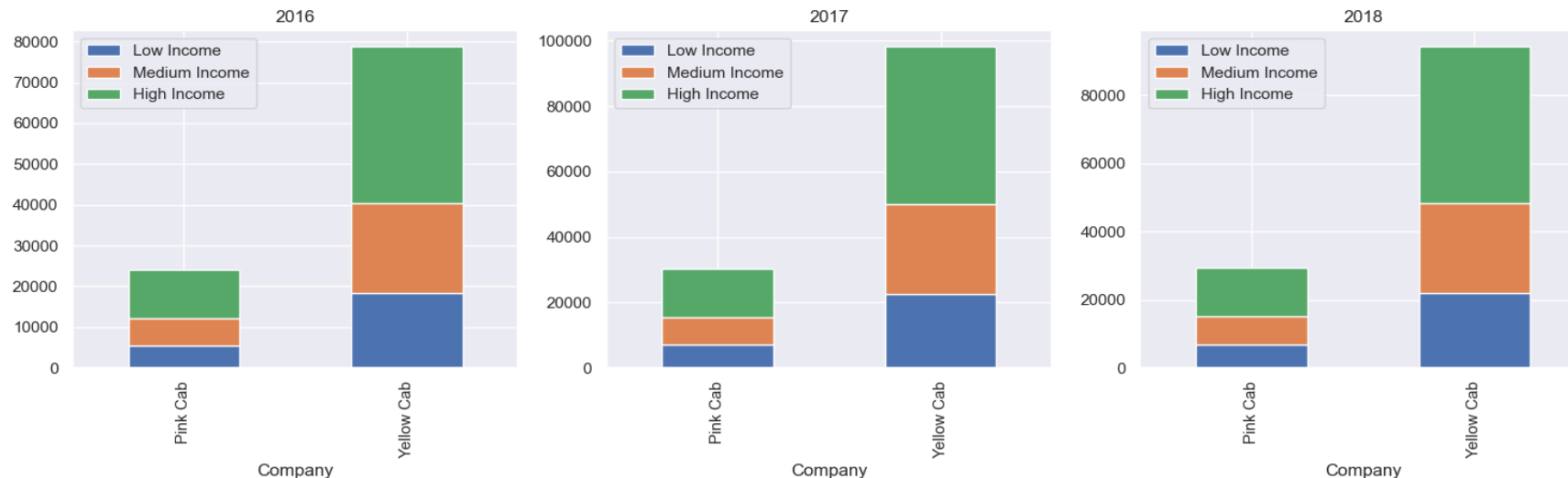•The Pink Cab company usage hotspots are Los Angeles, New York and Chicago.
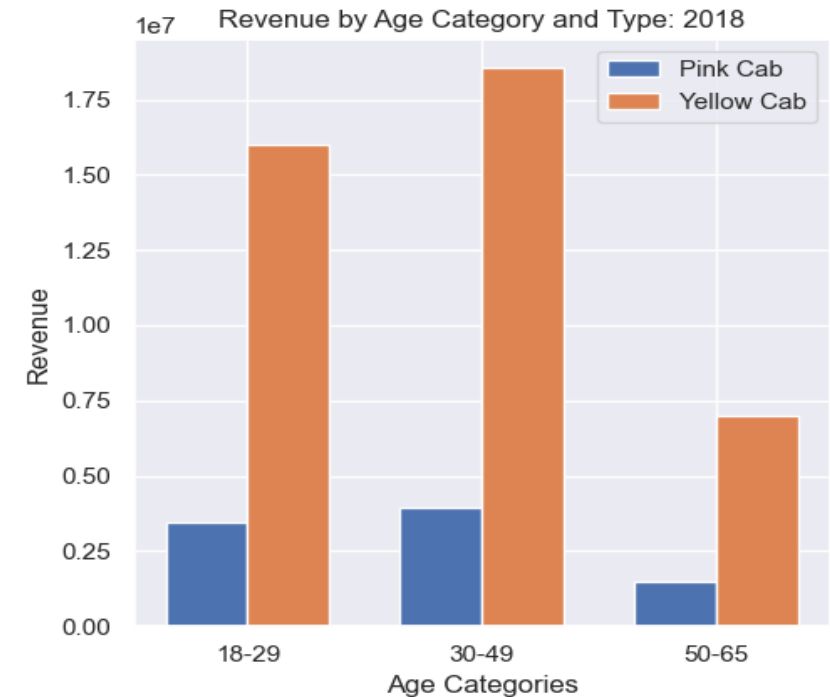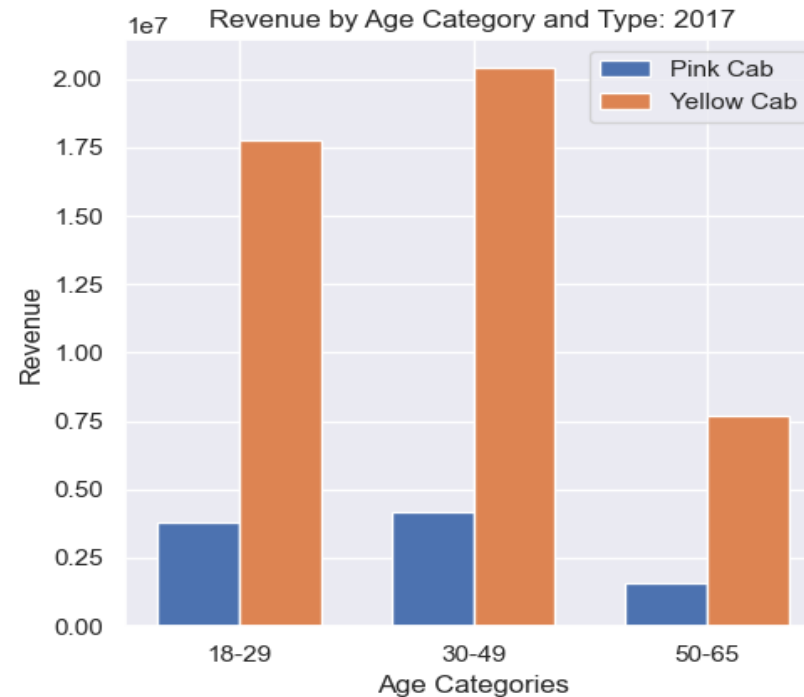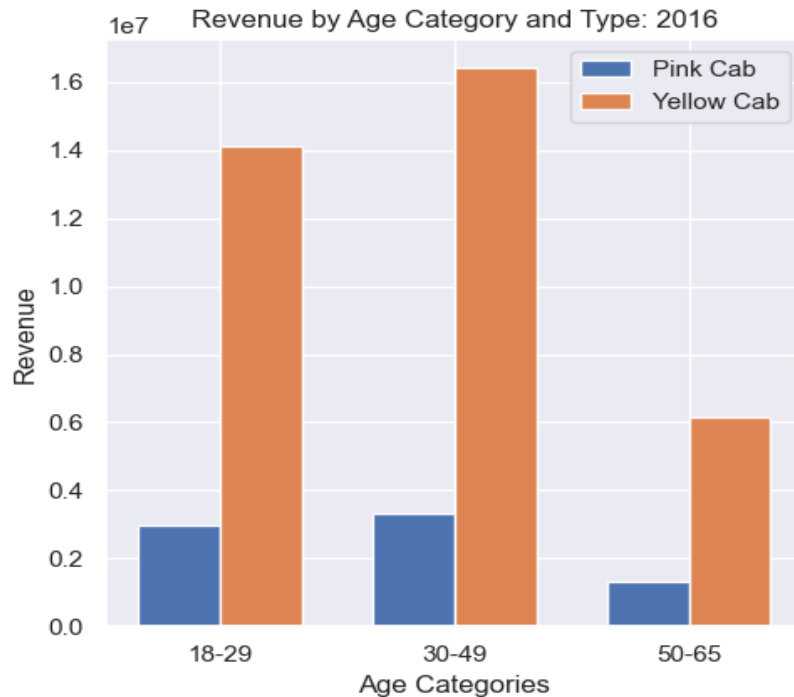
Customer Segments

Age Segments
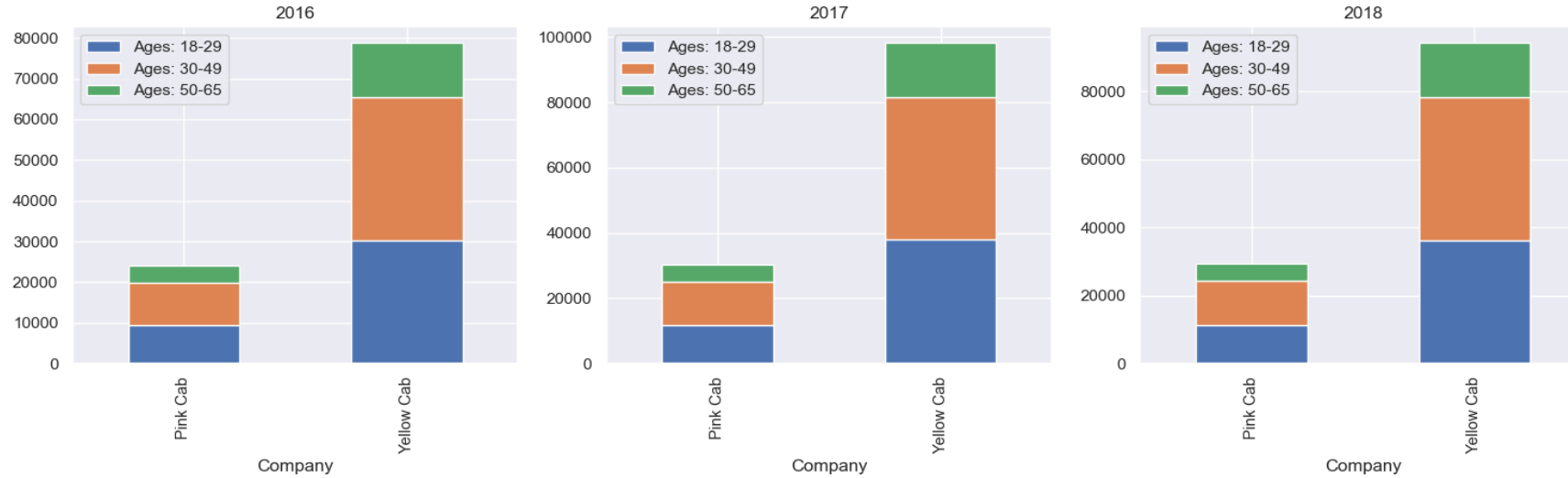
- The prevalent age group for both cab companies centers around individuals aged 30 to 49. Customers aged over 50 constitute the smallest demographic.
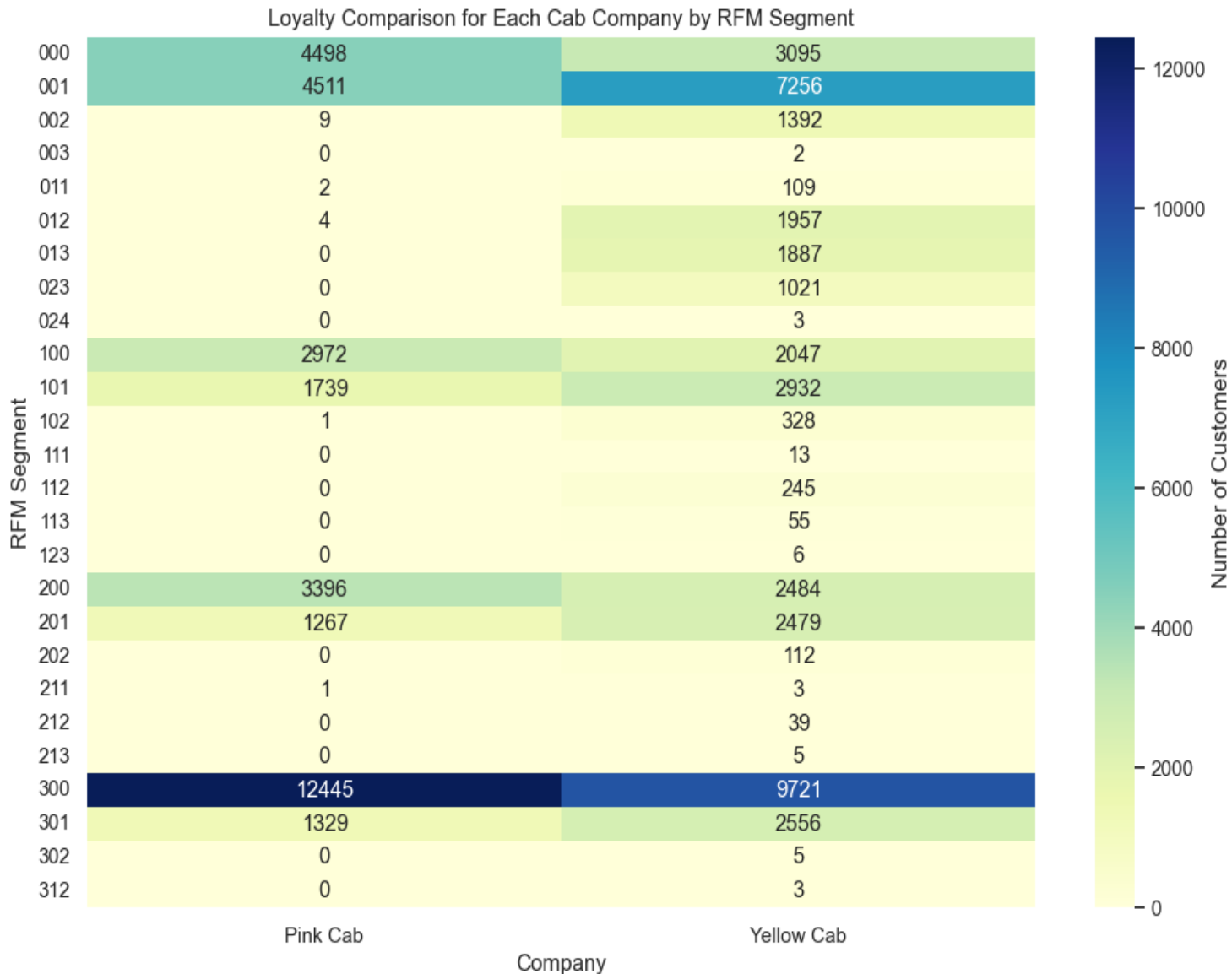
Customer Segments

- Majority of cab customers for both companies fall within high- and middle-income brackets (8000 – 15000 US Dollars).

Customer Segments

- Middle-aged customers (30-49) contribute the most towards the revenue for both cab companies. The same applies to middle-income customers.

- The Yellow Cab companies generates the most revenue across all three age groups.

Customer Loyalty and Retention

Loyalty Comparison for Each Cab Company by RFM Segment

- Both cab companies see a core customer group in segment 300 (R=3,F=0,M=0), who used cabs over a year ago, had limited trips (up to 15), and spent modestly (up to $1000 USD), hinting at waning recent engagement and reduced loyalty.

- Pink Cab's clientele uses cabs less often and spends less, despite recent travel, indicating lower frequency and spending habits.

- Yellow Cab serves a diverse customer base, including those spending more generously, using cabs more frequently, or having recent engagements.

Pricing Analysis – Price sensitivity

Average Price Charged per KM Annually
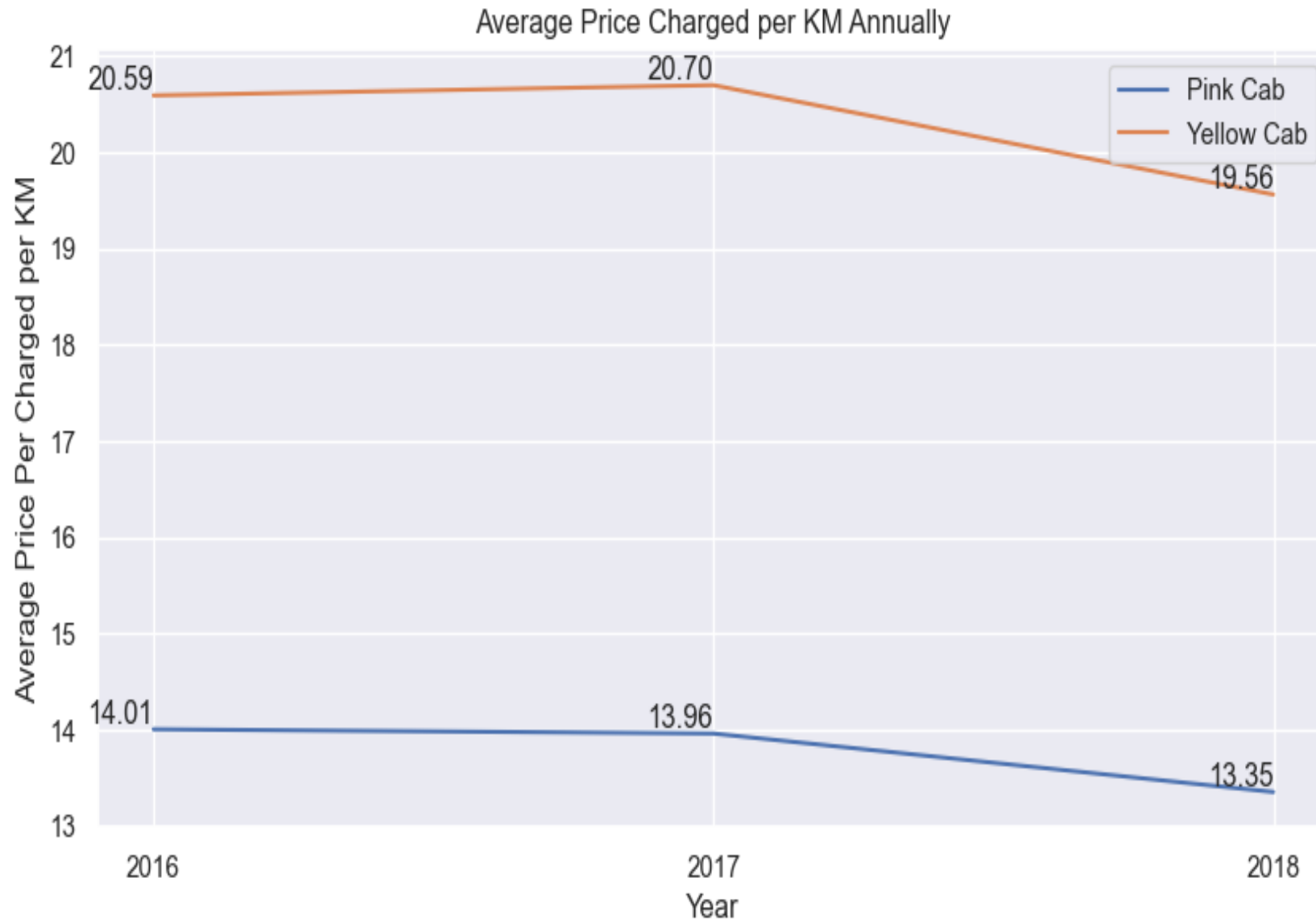
- The average price charged per KM decreased over the three year period.

- These fluctuations might imply a high sensitivity of customers to alterations in cab prices.

- Pink Cab charges customers the least amount of mean per km (under 15 US dollars) compared to Yellow Cab Company cab who charge an average of 20 US dollars per km.

Pricing Analysis – Demand vs Price
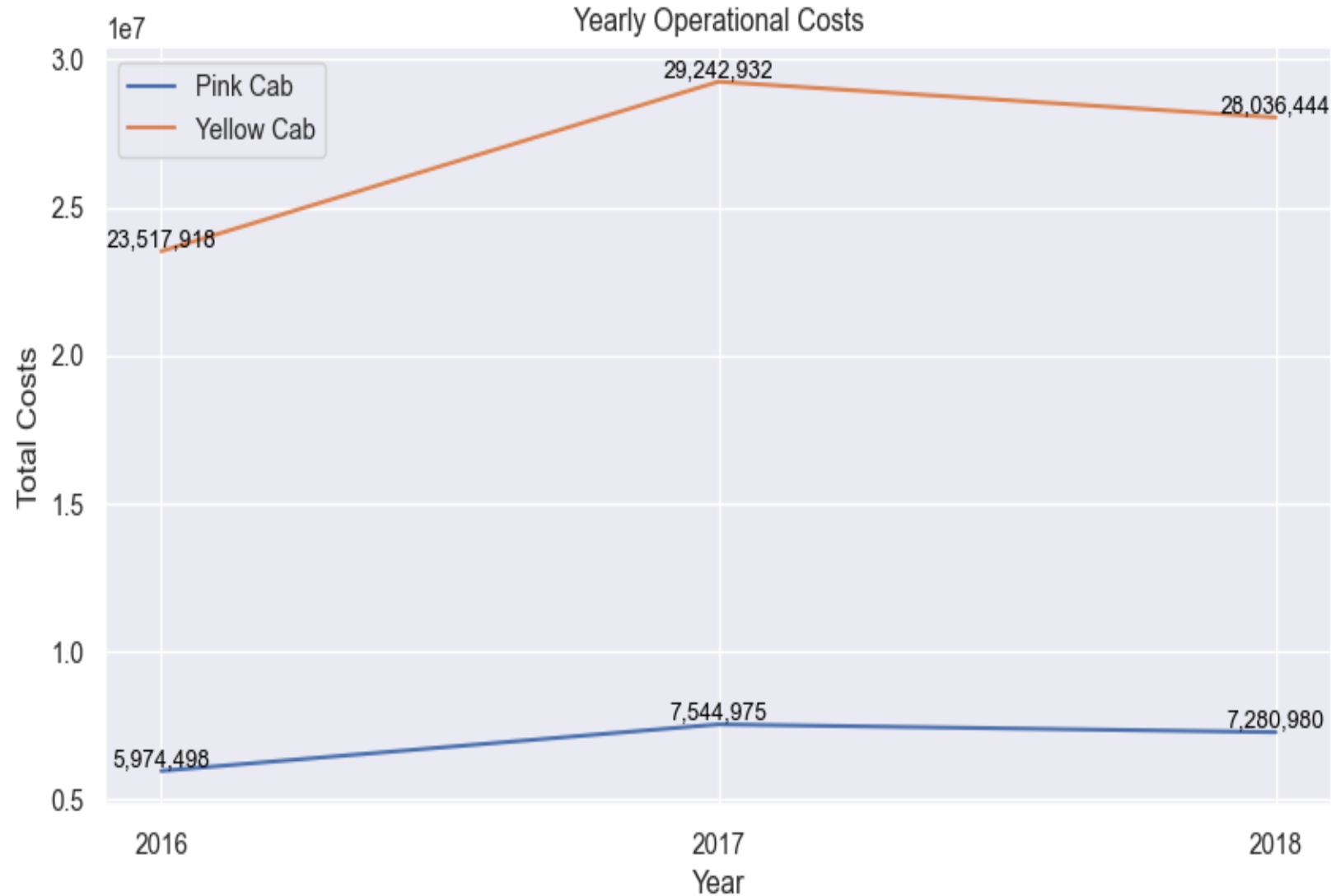

Number of users annually
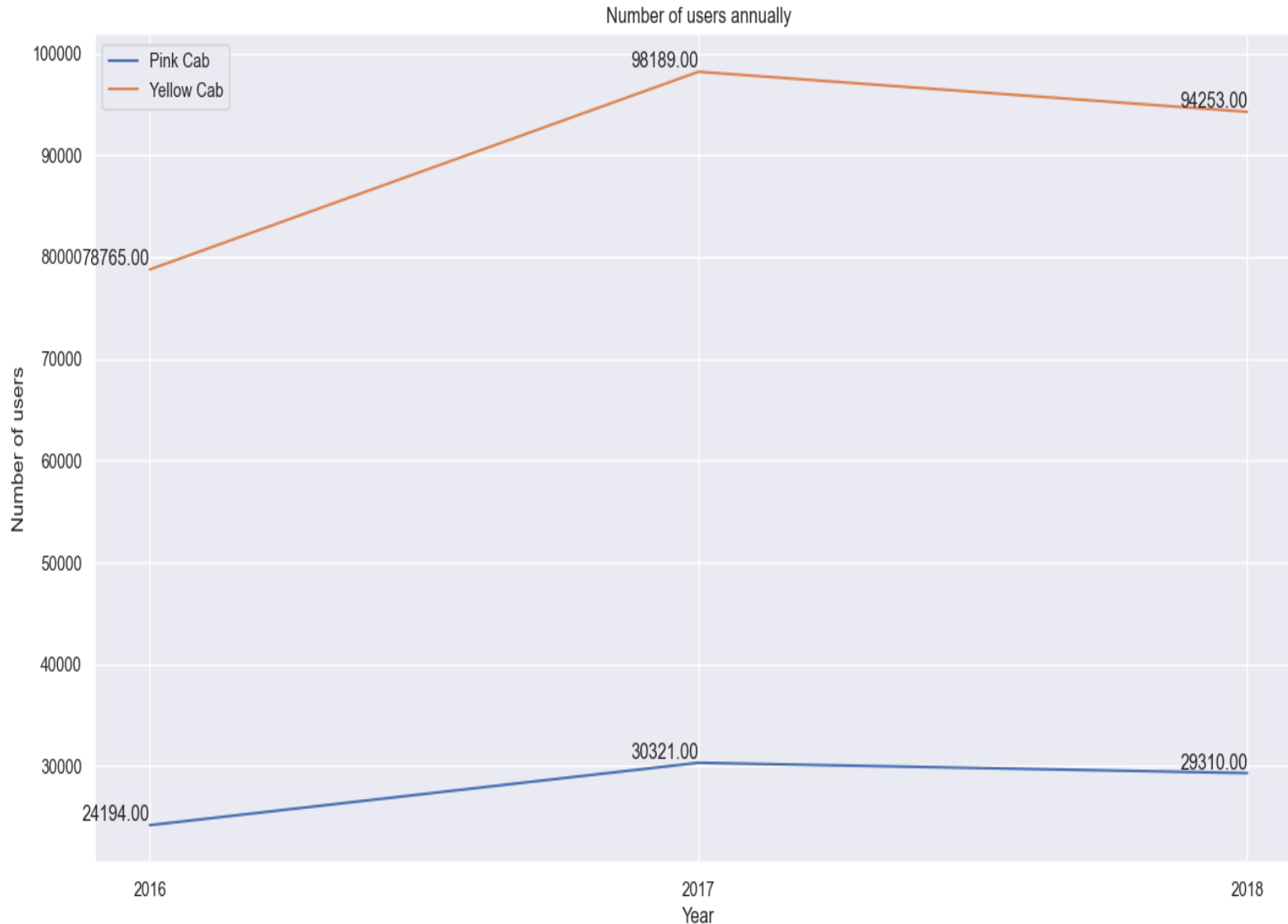
- Both companies experienced a boost in customers in 2017 following industry-wide growth but faced customer declines in 2018

- Despite different pricing strategies—Yellow Cab's trend showing a reversal from a previous surge, while Pink Cab's customer count remained relatively low throughout.
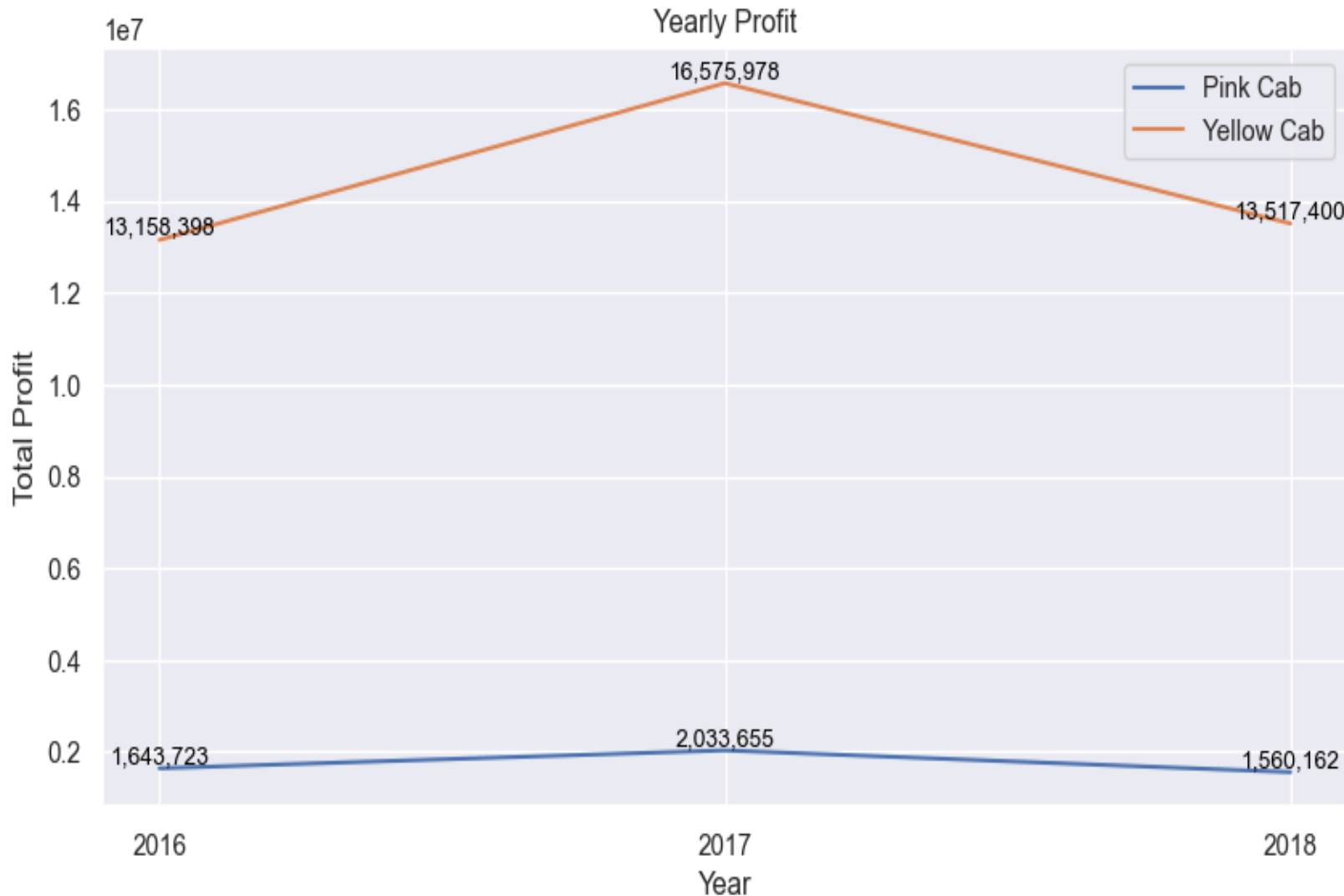
Profit Analysis - Revenue

Yearly Revenue
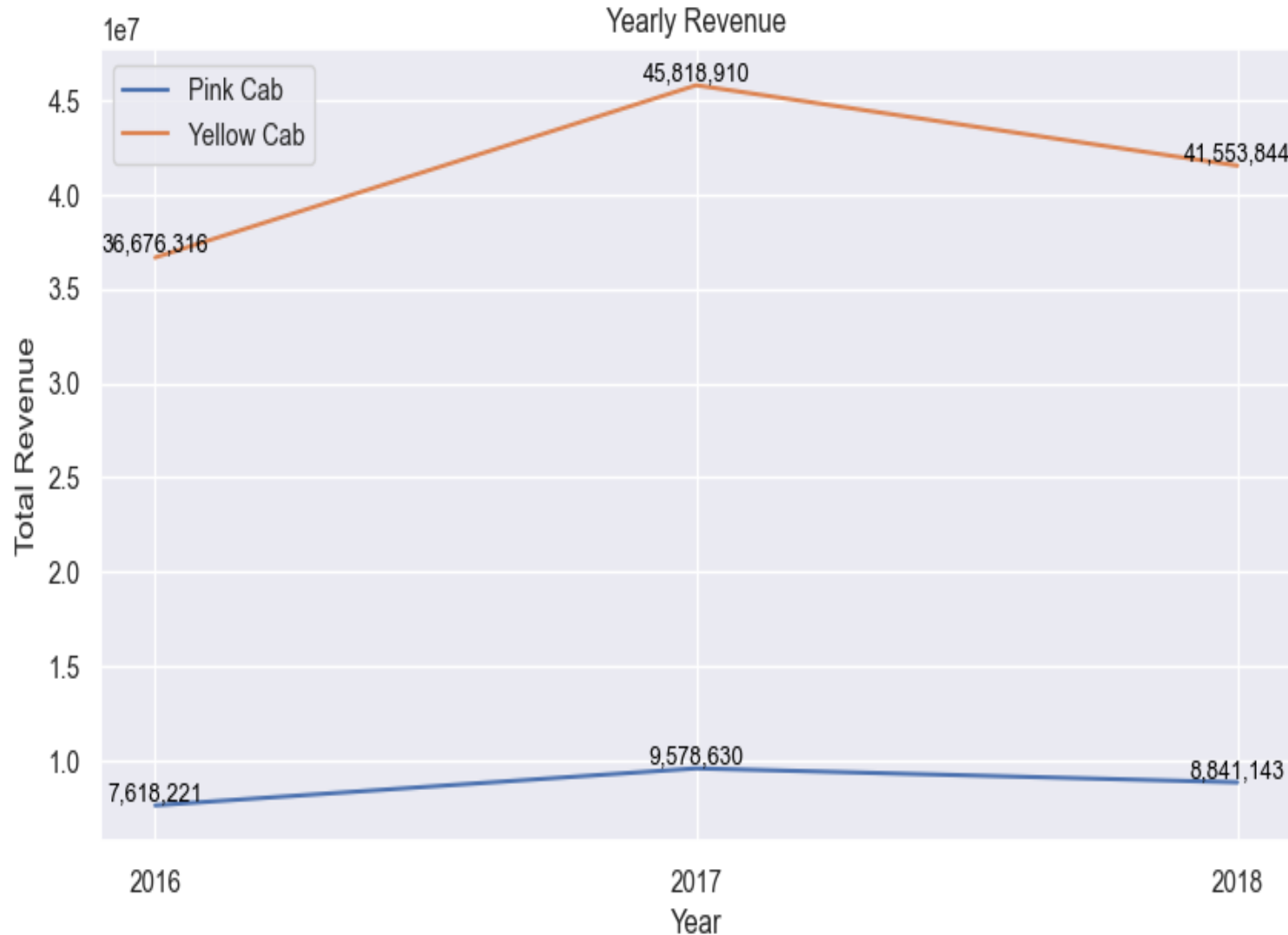
- The Yellow Cab Company generated the most revenue over the three year company, totalling a revenue over 30 million US dollars a year from 2016 to 2017.

- The Pink Cab company was able to achieve a revenue of between 7 million and 9.6 million US dollars over the three year period.

Profit Analysis - Cost

Yearly Operational Costs

- Pink Cab
- Yellow Cab

29,242,932

28,036,444

23,517,918

7,544,975

7,280,980

5,974,498

• Both companies had fairly high operational costs over the three year period.
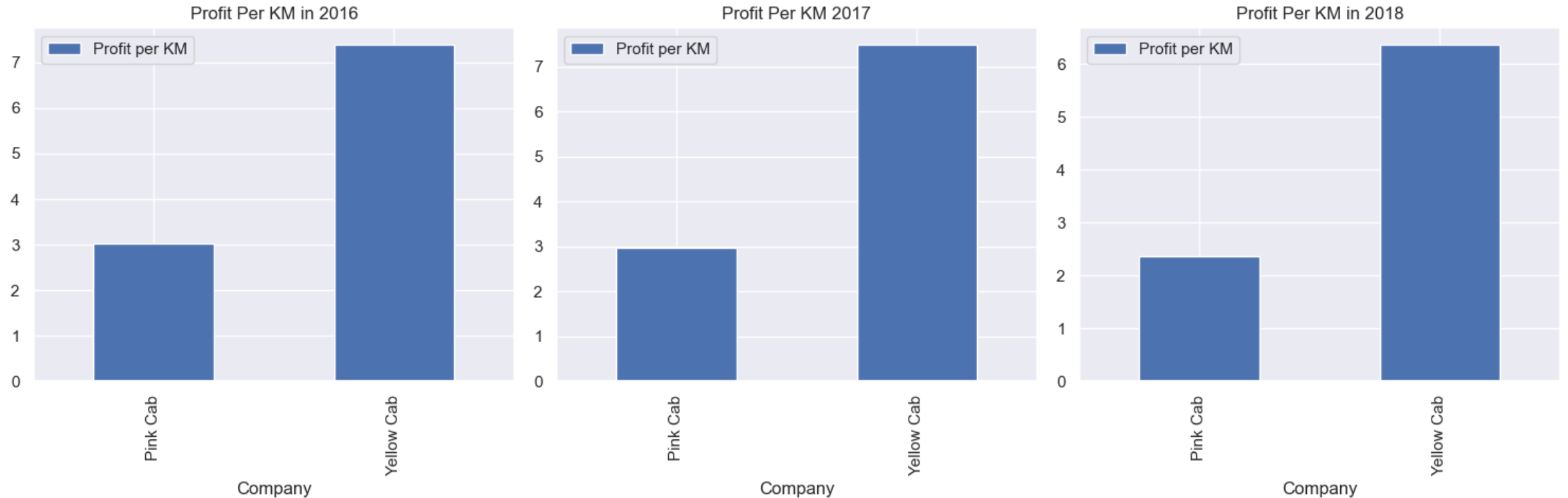
Profit Analysis - Profit

Yearly Profit

• The Yellow Cab company made the most profit over the three-year period. They totalled over 13 million US dollars in profit.
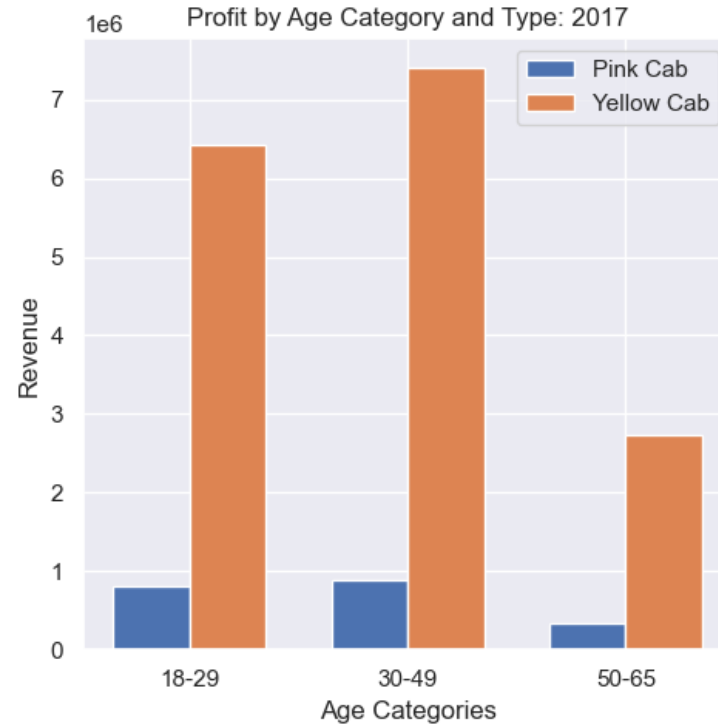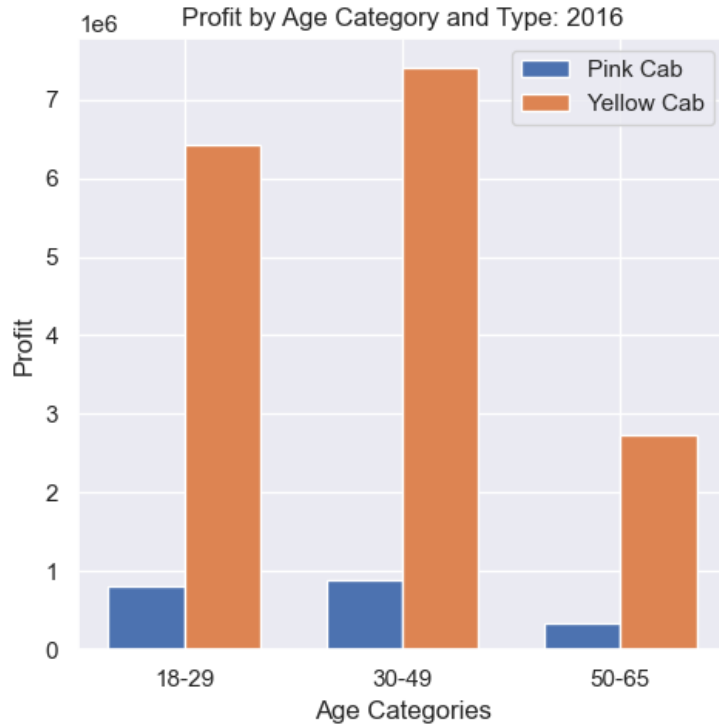
•The Pink Cab company, on the other hand, made roughly between 1.5 million and 2 million US dollars annually.

Profit Analysis – Profit per KM

- The Yellow Cab company had the highest overall profit per distance travelled (in KM) compared to the Pink Cab company over the three year period.

Profit Analysis – Profit By Age Category

- The demographic group aged between 30 and 49 emerges as the primary contributors to the profitability of both cab companies.
- Customers above the age of 50 contribute comparatively less to the overall profitability of these cab companies.

EDA Insights and Recommendation

- **Larger Market Share**: Yellow Cab exhibits a larger market share compared to Pink Cab.

- **Consistent Revenue Generation**: Yellow Cab demonstrates consistent high revenue generation, reflecting a robust customer base and market traction.

- **Demographic Impact**: Like Pink Cab, customers aged 30-50 and high-income individuals are vital contributors to profitability, emphasizing the importance of targeting this segment.

- **Profitability:** Yellow Cab generated the highest profit across different customer segments and made the most profit per km over the three year period.

- **Geographical Hotspots:** New York, Chicago, and Los Angeles are the hotspots for the two cab companies.

- **Recommendation**: Based on the insights above, we recommend investing in the Yellow Cab company.

The end

Thank You