Exploratory Data Analysis

G2M(cab industry) case study

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Executive Summary –G2M(cab industry) case study

Background:
XYZ, a U.S.-based private equity firm, is considering an investment in the rapidly growing cab industry.

Objective:
To identify the most promising cab company for investment based on data-driven insights.

Approach:
The analysis focused on:

1. **Profitability & Market Share** - Identifying top-performing cab companies.
2. **Holiday Impact** - Evaluating company performance during holidays.
3. **Customer Demographics** - Understanding usage patterns across different demographic segments.
4. **Seasonal Trends** - Analyzing company performance across different seasons.
5. **Population Growth & Cab Usage** - Exploring growth opportunities in various cities.

Approach

MASTER_DATA DETAILS

Details	Description
Number of Features	32 (including 10 derived features)
Timeframe of the Data	2016-01-31 to 2018-12-31
Total Data Points	497,913

DATASETS DETAILS

Assumption	Transaction Data	Customer Data	City Data	Cab Company Data	Population Data	Weather Data	Holiday Data
1	All transactions are correctly recorded.	Customer demographic data is up-to-date and accurate.	Population figures are accurate for the analysis period.	Profit and trip data is accurately attributed to the respective cab companies.	Population growth rates are consistent across sources and years.	Weather conditions are correctly matched to travel dates in the transaction data.	All major holidays affecting cab usage are included.
2	The Profit per Trip is accurately calculated based on provided data.	Income categories are correctly classified.	Market share data reflects the true distribution of users among cities.	All trips within the period are included in the dataset.	The data covers all cities relevant to the cab companies.	Weather severity indices are accurately represented.	Holidays are correctly categorized (national, local).
3	Data represents all trips taken by both companies during the specified period.	Customer data covers all active users during the analysis period.	Data is comprehensive for all cities in which the cab companies operate.	Data accurately reflects the performance metrics of both cab companies.	Population figures are rounded to the nearest thousand for simplicity.	Data covers all relevant weather events during the analysis period.	The impact of holidays on cab usage is uniformly assumed across cities.

Master_Data Overview

Dataset Provided

- Transaction Data
- Customer Data
- City Data

External Sources

- Holiday Data
- Weather Data
- Population Data

Market Share Insights

G2M INSIGHT FOR CAB INVESTMENT FIRM (Profitability and Market Share Insights)

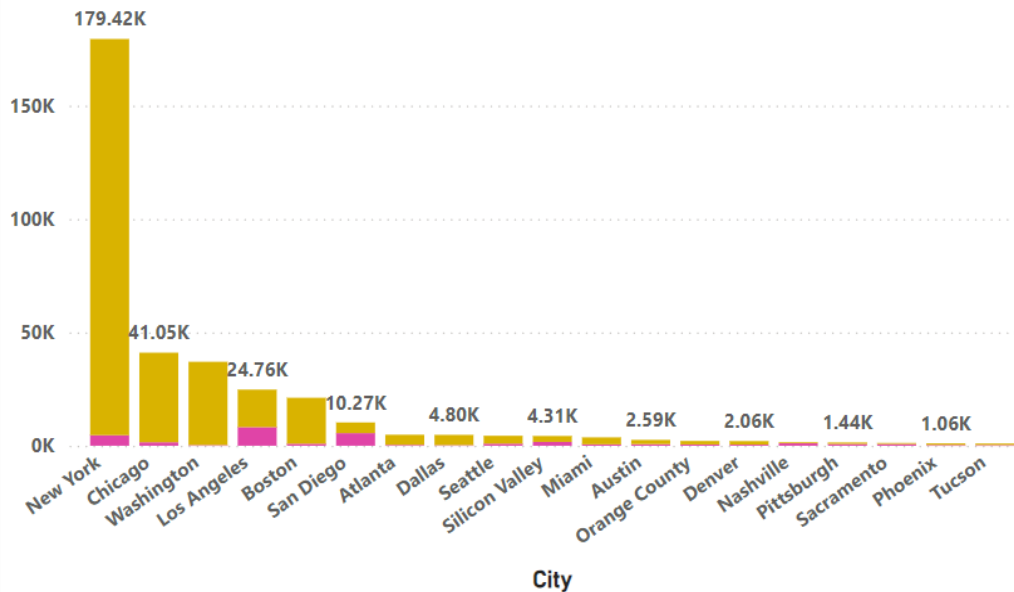| Pink Cab | Yellow Cab | 2016 | 2017 | 2018 |

88.07M
Sum of Profit per Trip
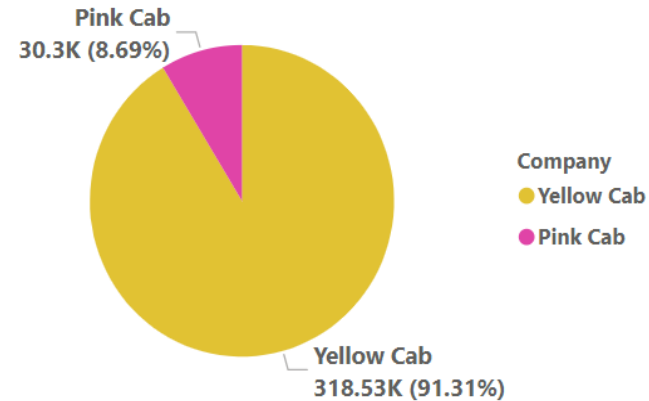
176.88
Average of Profit per Trip

11.24M
Sum of KM Travelled

Aggregated Market Share by Company (2016-2018)

Pink Cab
30.3K (8.69%)

Company
- Yellow Cab
- Pink Cab

Yellow Cab
318.53K (91.31%)

Profit per Trip by City and Company

Company ● Pink Cab ● Yellow Cab

179.42K · New York
41.05K · Chicago
· Washington
24.76K · Los Angeles
· Boston
10.27K · San Diego
· Atlanta
4.80K · Dallas
4.31K · Seattle
· Silicon Valley
2.59K · Miami
· Austin
2.06K · Orange County
· Denver
1.44K · Nashville
· Pittsburgh
1.06K · Sacramento
· Phoenix
· Tucson

City

Yearly Profit Trend by Company

Company ● Pink Cab ● Yellow Cab

27M

30M

24M

2M · 3M · 3M

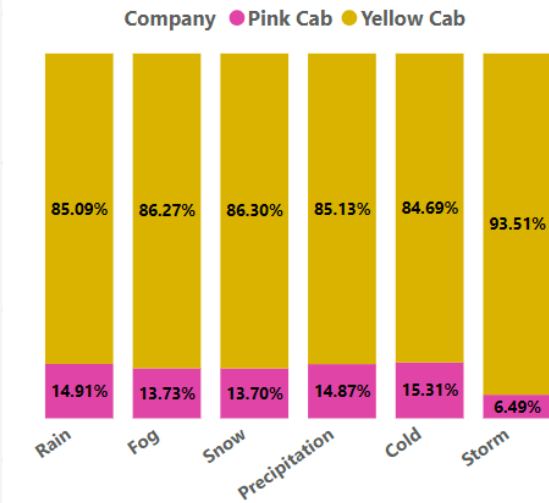2016 · 2017 · 2018

Year
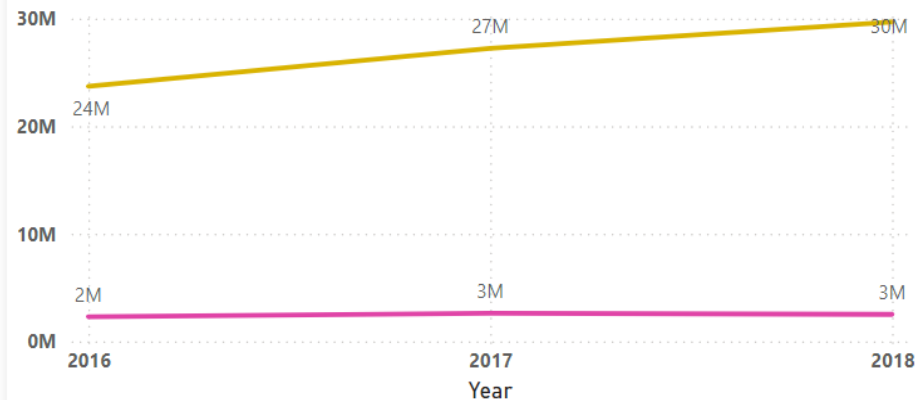
- These insights collectively point to **Yellow Cab** as the stronger and more profitable option for investment.

- The company's dominant market share, high profitability in key cities, and consistent profit growth make it an attractive choice for investors.
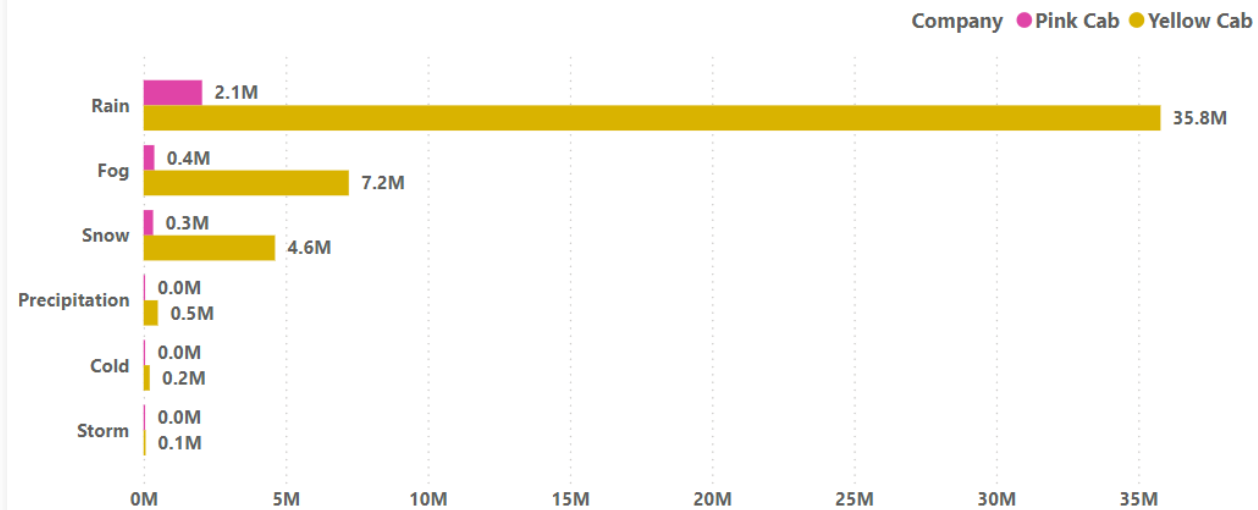
Weather Impact Insights

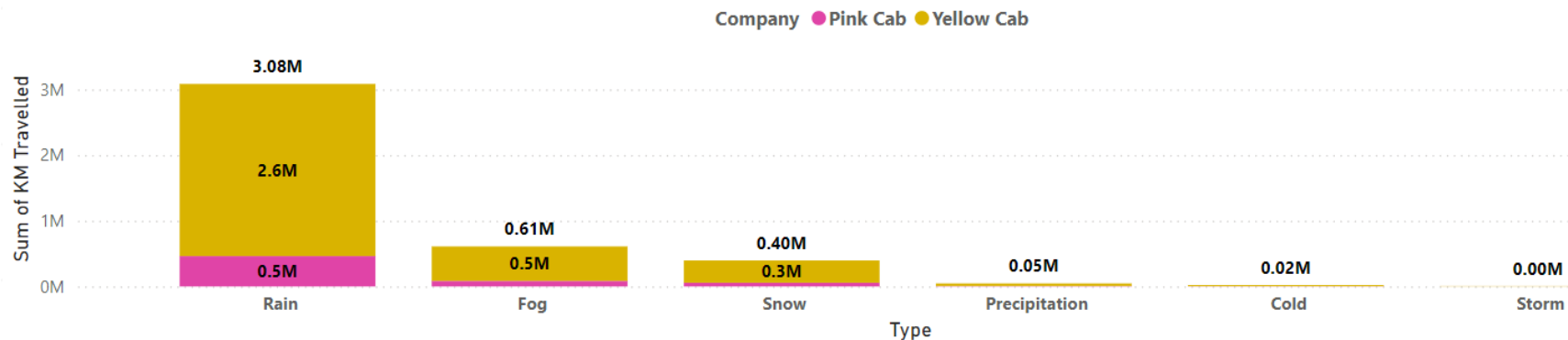## G2M INSIGHT FOR CAB INVESTMENT FIRM (Weather Impact Analysis)

Percentage of Trips by Weather Condition and Com...
Company ● Pink Cab ● Yellow Cab

Weather	Yellow Cab	Pink Cab
Rain	85.09%	14.91%
Fog	86.27%	13.73%
Snow	86.30%	13.70%
Precipitation	85.13%	14.87%
Cold	84.69%	15.31%
Storm	93.51%	6.49%

Profit per Trip by Type and Company
Company ● Pink Cab ● Yellow Cab

Type	Pink Cab	Yellow Cab
Rain	2.1M	35.8M
Fog	0.4M	7.2M
Snow	0.3M	4.6M
Precipitation	0.0M	0.5M
Cold	0.0M	0.2M
Storm	0.0M	0.1M

KM Travelled by Type and Company
Company ● Pink Cab ● Yellow Cab

Type	Yellow Cab	Pink Cab	Total
Rain	2.6M	0.5M	3.08M
Fog	0.5M		0.61M
Snow	0.3M		0.40M
Precipitation			0.05M
Cold			0.02M
Storm			0.00M

- XYZ should consider investing in Yellow Cab due to its strong performance in both profitable trips and total kilometers traveled across varying weather conditions.

- This resilience to weather variability makes Yellow Cab a safer and more profitable investment, particularly in regions prone to rain.
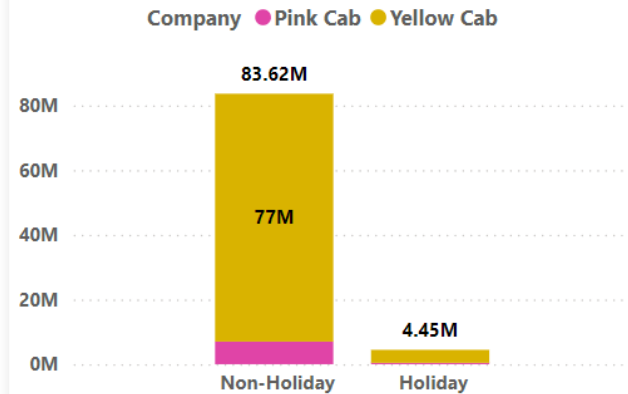
Holiday Impact Insights

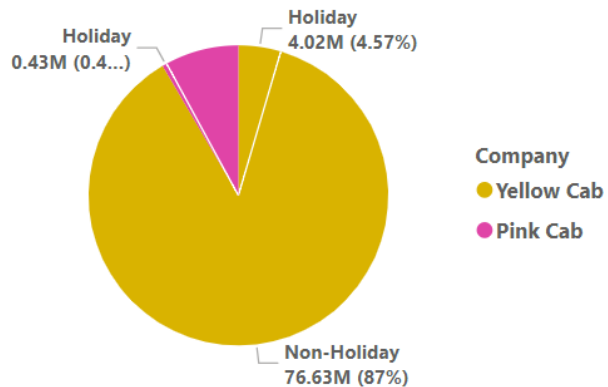## G2M INSIGHT FOR CAB INVESTMENT FIRM (Holiday Impact Analysis)

Number of Trips (Holiday vs. Non-Holiday)
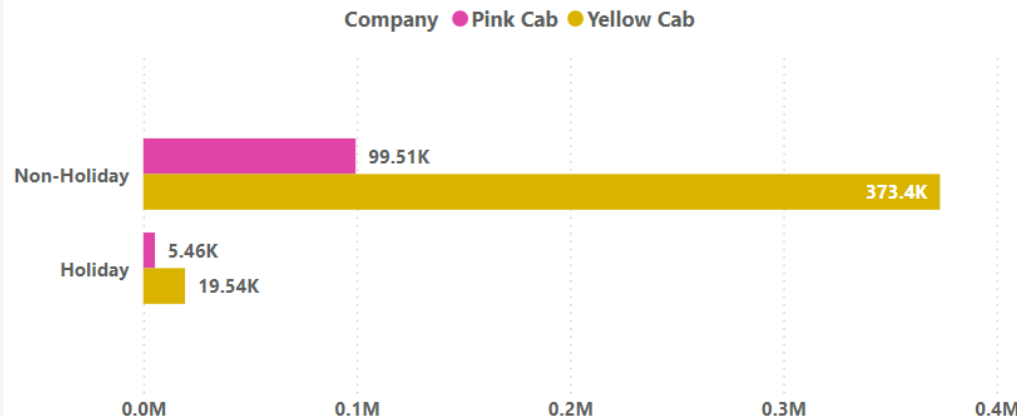Company ● Pink Cab ● Yellow Cab

Profit per Trip
Company ● Pink Cab ● Yellow Cab
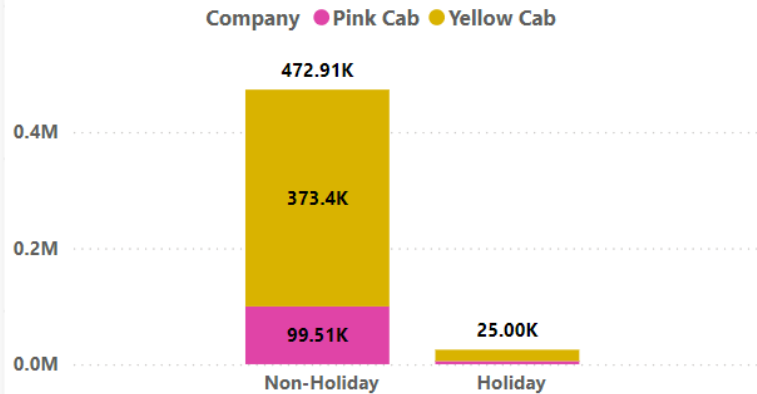
Total Profit

**Number of Trips (Holiday vs. Non-Holiday)**
Company ● Pink Cab ● Yellow Cab

- XYZ should consider investing in Yellow Cab as it shows strong performance in both holiday and non-holiday periods.

- Yellow Cab has significantly higher trip volumes and profits during both holidays and non-holidays, demonstrating its robust market presence and consistent demand.
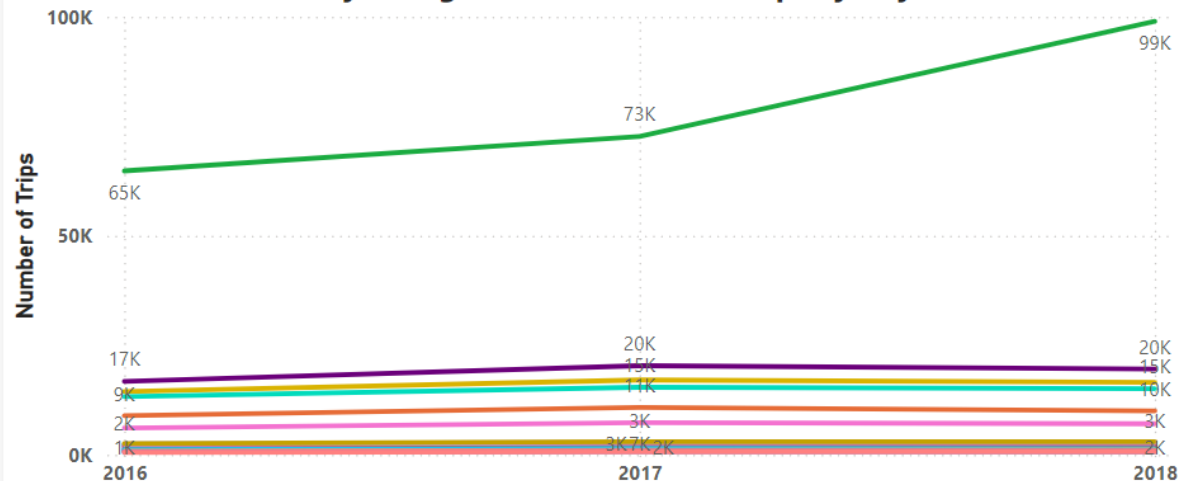
Population and Cab Usage Insights

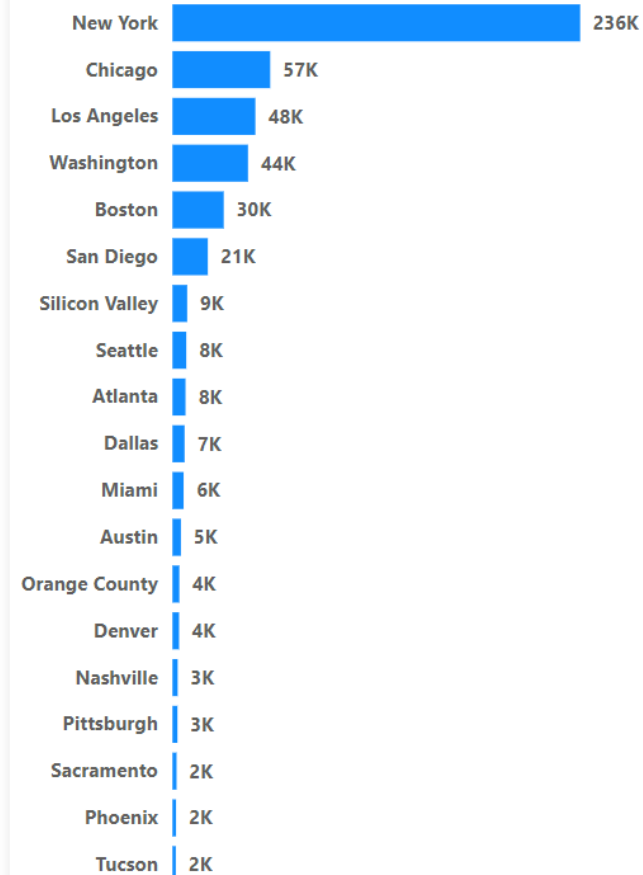**G2M INSIGHT FOR CAB INVESTMENT FIRM (Population Growth & Cab Usage)**
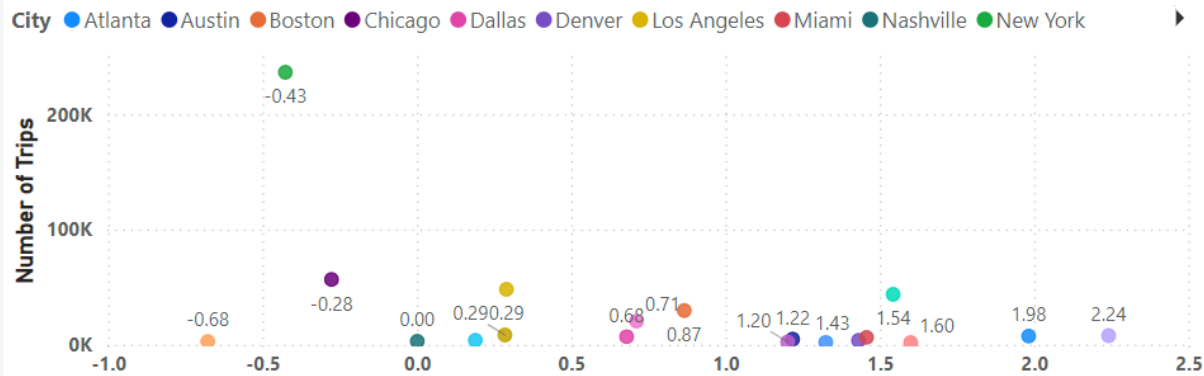
- Yellow Cab consistently leads in key metrics such as customer demographics, seasonal trends, and profitability across high-growth cities.

- Investing in Yellow Cab will likely offer the best return on investment.
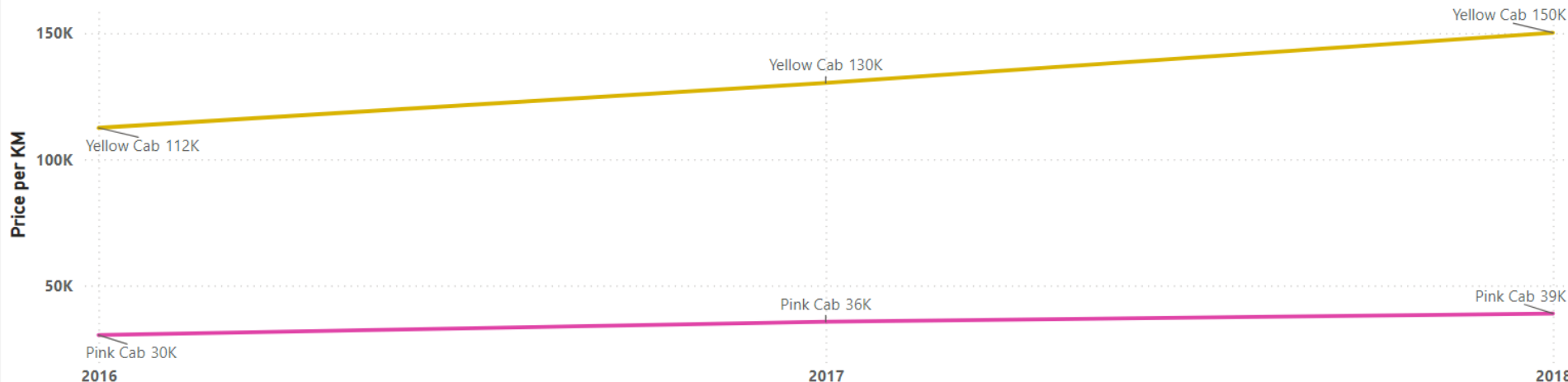
Price Sensitivity Analysis

G2M INSIGHT FOR CAB INVESTMENT FIRM (Price Sensitivity Analysis)

Price per KM vs. Number of Trips by Company

Company ● Pink Cab ● Yellow Cab
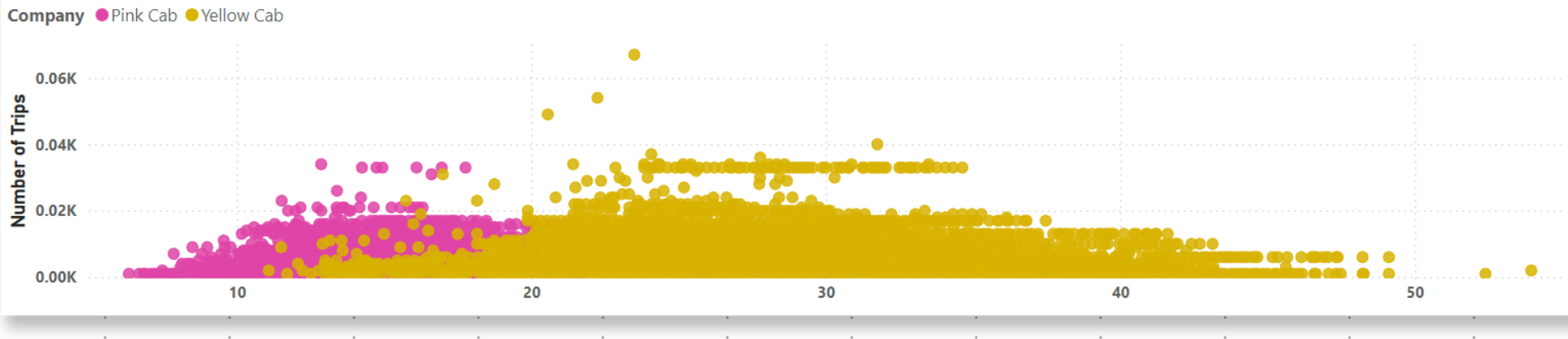
Yearly Trend of Price per KM by Company

Yellow Cab 150K

Yellow Cab 130K

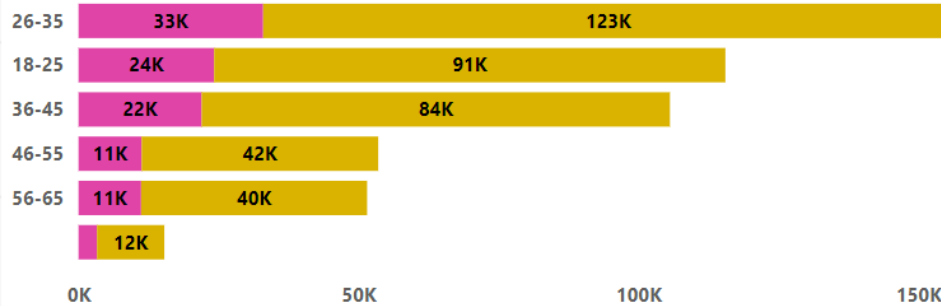Yellow Cab 112K

Pink Cab 39K

Pink Cab 36K

Pink Cab 30K

- WXY should Invest in Yellow Cab for its robust pricing power and profitability potential.

- This company aligns well with XYZ's objective to maximize returns on investment.

Customer Demographics Analysis

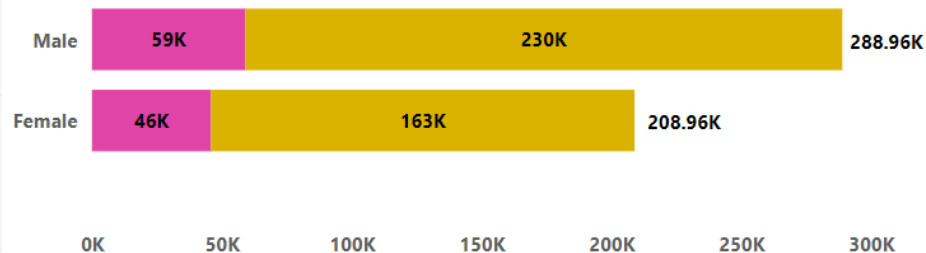## G2M INSIGHT FOR CAB INVESTMENT FIRM (Customer Demographics)

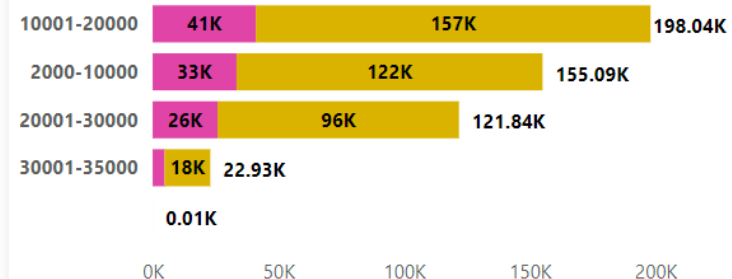### Trips by Age Group and Company

Company ● Pink Cab ● Yellow Cab

Age Group	Pink Cab	Yellow Cab
26-35	33K	123K
18-25	24K	91K
36-45	22K	84K
46-55	11K	42K
56-65	11K	40K
		12K

Trips by Gender and Company

Company ● Pink Cab ● Yellow Cab

Gender	Pink Cab	Yellow Cab	Total
Male	59K	230K	288.96K
Female	46K	163K	208.96K

Trips by Income Category and Company

Company ● Pink Cab ● Yellow Cab

| Income Category	Pink Cab	Yellow Cab	Total
10001-20000	41K	157K	198.04K
2000-10000	33K	122K	155.09K
20001-30000	26K	96K	121.84K
30001-35000	18K		22.93K
			0.01K

- Yellow Cab consistently outperforms Pink Cab across key demographic groups, including age, gender, and income categories.

- Specifically, Yellow Cab has a significantly higher number of trips in all age groups, and a strong presence across different income levels.

Seasonal trends
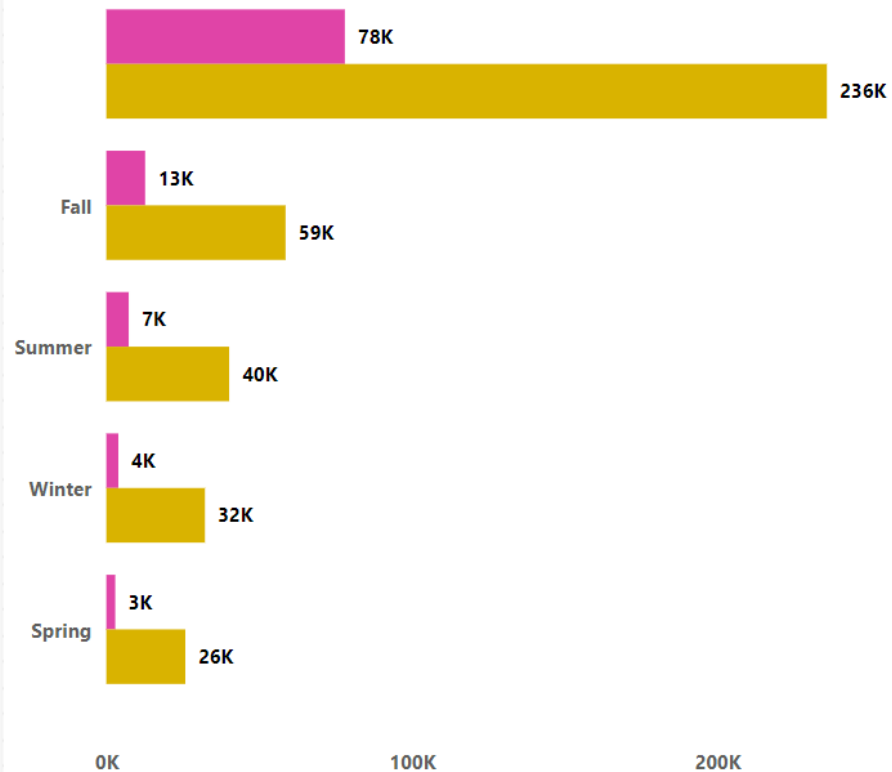

G2M INSIGHT FOR CAB INVESTMENT FIRM (Seasonal Trends)
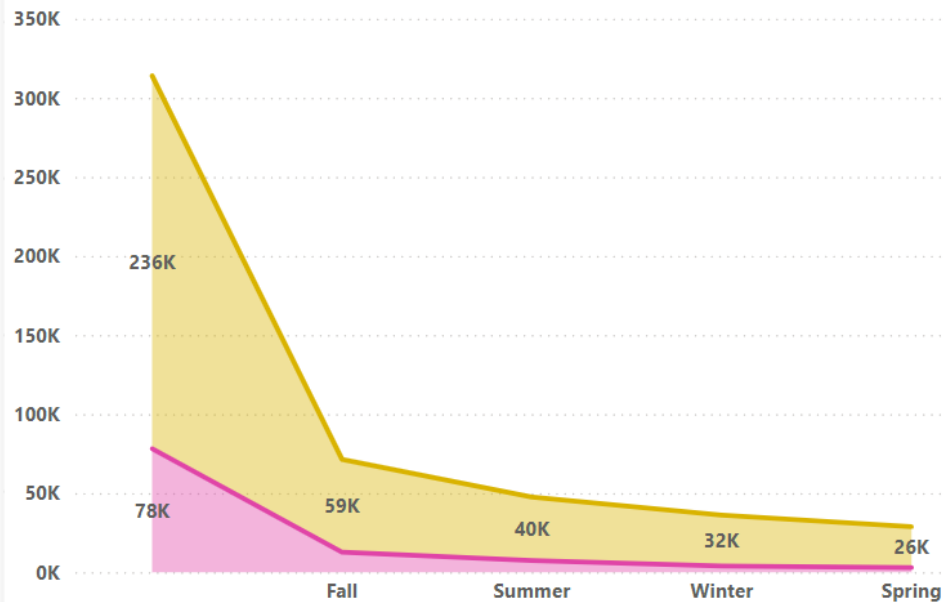
- XYZ should consider Investing in Yellow Cab for year-round consistency.

- The seasonal trends analysis shows that Yellow Cab consistently outperforms Pink Cab across all seasons, with significantly higher trip counts, particularly in the Fall and Summer.

Recommendations

Based on the outcomes of this comprehensive analysis, we recommend that XYZ invest in Yellow Cab. The company's strong market share, higher profitability, broad demographic appeal, and favorable seasonal performance make it the most promising option for maximizing returns on investment.

Thank You