



Data Glacier

Your Deep Learning Partner

Exploratory Data Analysis

G2M Insight For Cab Investment

11/18/2024

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Executive Summary

Client Overview:

XYZ is a private firm based in the U.S. Observing significant growth in the cab industry over recent years, along with the presence of numerous major market players, XYZ is considering investing in the sector. To support their Go-to-Market (G2M) strategy, the company seeks to thoroughly analyze and understand the market landscape before making a final investment decision.

Objective:

XYZ aims to leverage your actionable insights to identify the most suitable company for their investment.

Key Category areas Analyzed:

Net Profit Margins

Customer retention rates

Call frequency rate for each Company

Payment preferences

Geographic distribution of profits

Problem Statement

XYZ, a private firm in the United States, is facing the challenge of identifying the right investment opportunity in the rapidly growing and competitive cab industry. Without a comprehensive understanding of market trends and key players, there is a risk of suboptimal investment decisions, which could impact the firm's strategic growth and profitability. The goal is to conduct thorough market analysis and provide actionable insights that will guide XYZ in selecting the best company for investment, aligning with their Go-to-Market (G2M) strategy and long-term objectives.

Approach

Data Exploration:

The dataset initially contained 17 attributes which expanded to 20 attributes after merging to form master data.

The dataset encompasses 359,392 rows and covers data from 2016 to 2018.

Assumptions:

The data was restricted to the period between 2016 and 2018.

Only cash and card payment methods were analyzed.

Net Profit calculations were based solely on the difference between the *Price Charged* and the *Cost of Trip*.

The datasets were assumed to be selected through random sampling.

All customer and transaction data were assumed to be accurate and complete for the period analyzed.

Net Profit Margins

Purpose:

The key focus of this analysis was to compare the Net profit margins of the two companies (Yellow Cab and the Pink cab). The company with the highest Net profit margin is presumed to have greater overall value.

Analysis:

The first analysis examines the total Net profits earned by both companies across all four quarters between 2016 and 2018.

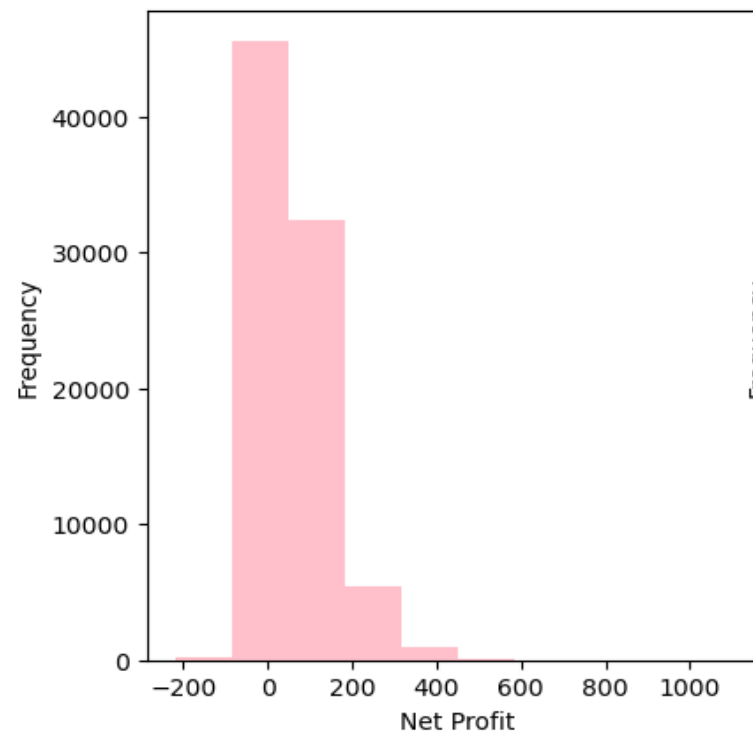
The second analysis investigates the distribution of Net profit margins for the individual companies (Yellow Cab and pink Cab).

The Analysis Outcomes

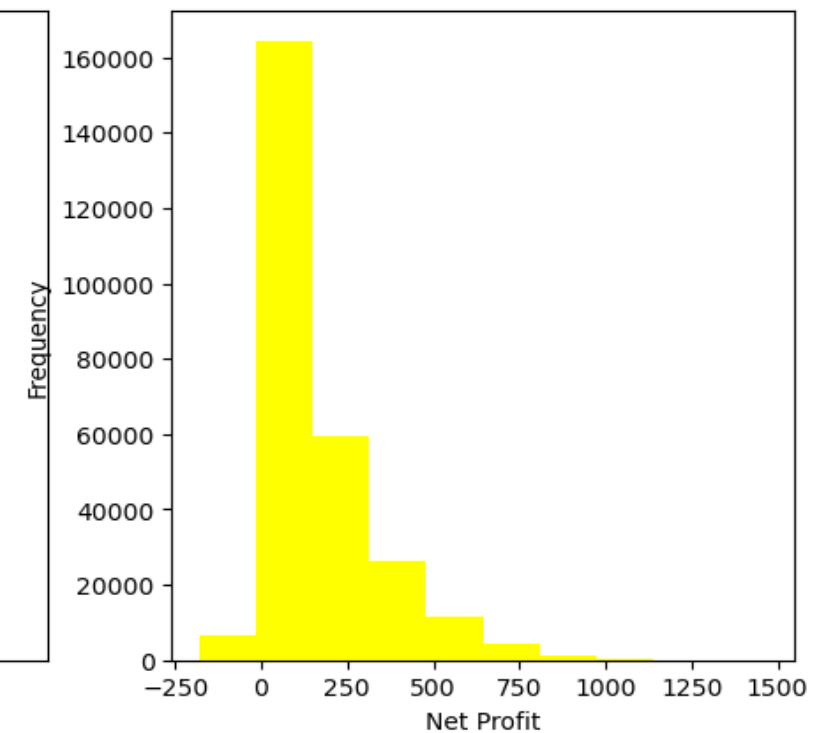
Average Net Profit per Transaction for Pink Cab and Yellow Cab (2016-2018)



Net Profit Distribution for Pink Cab



Net Profit Distribution for Yellow Cab



- The first graph reveals that Yellow Cab consistently achieved higher total profits across all four quarters from 2016 to 2018. However, this observation is not particularly insightful, as Yellow Cab has a larger dataset available. The findings from the second analysis indicate that Pink Cab's profit margins per transaction generally cluster around zero, while Yellow Cab's profit margins per transaction predominantly fall within the range of 0 to -250. Consequently, Yellow Cab is deemed more valuable due to its higher profit margins on a frequency basis.

Customer Retention Rates

Purpose:

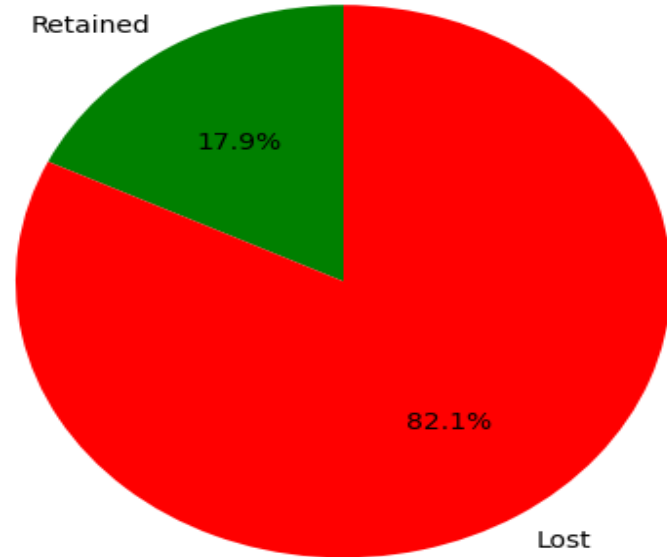
The objective of this analysis focused on which company retained its customer a lot for the period of 2016 to 2018. The analysis focused on the proportion of customers who utilized the cab service in both 2016 and 2018. These insights help measure each company's ability to retain customers, which is a strong indicator of its overall value.

Analysis:

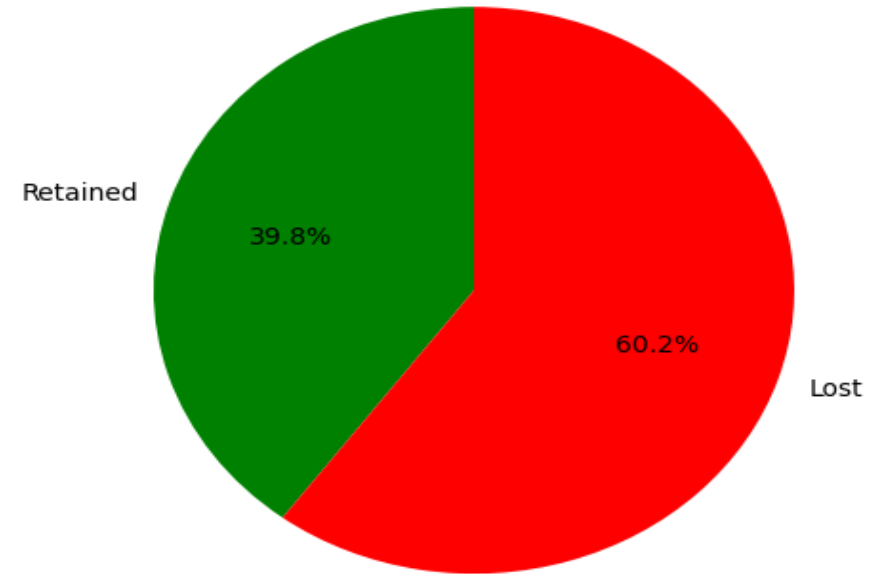
The test involved creating pie charts to illustrate the percentage of customers retained between 2016 and 2018.

The Analysis Outcomes

Pink Cab: Customer Retention and Loss (2016-2018)



Yellow Cab: Customer Retention and Loss (2016-2018)



The analysis shows that Pink Cab managed to retain only 17.9% of its customers between 2016 and 2018, whereas Yellow Cab retained 39.8%. This highlights that Yellow Cab successfully delivered a service that retained a greater proportion of its customers. Overall, this demonstrates that Yellow Cab provided a superior customer experience that was more appealing and rewarding for its users.

Call frequency rate for each customer

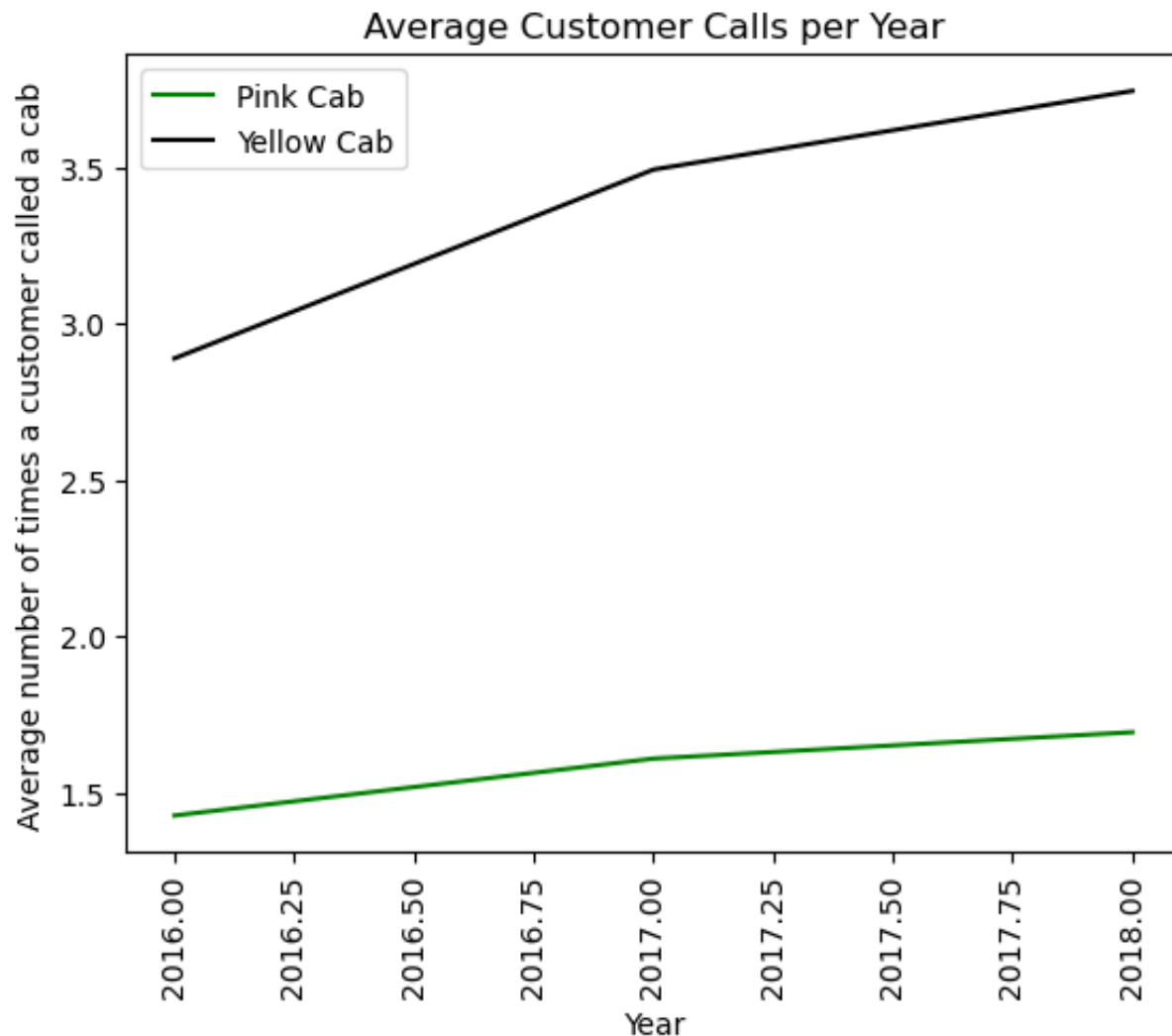
Purpose:

The main objective of this analysis was to evaluate how often customers repeatedly used the cab services of each company. The analysis focused on the average frequency of cab service calls made by the same customers over the years 2016 to 2018.

Analysis:

The test involved creating a line graph showing how the average number of cab service calls per customer evolved during the period from 2016 to 2018.

The Analysis Outcomes



The analysis indicates that the average number of transactions made annually by a single customer between 2016 and 2018 increased by approximately 18.7% for Pink Cab and by around 29.6% for Yellow Cab. This suggests that Yellow Cab offered a service that encouraged customers to increase their usage during this period, reflecting a higher quality of service.

Payment Preferences

Purpose:

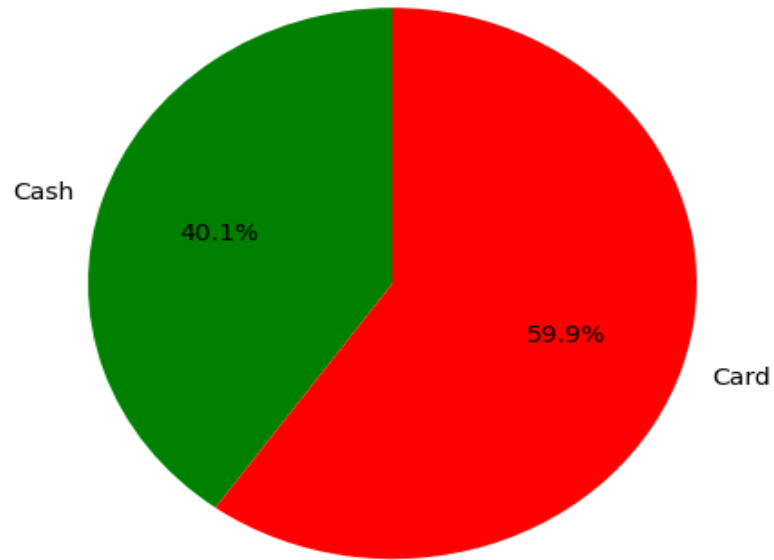
The goal of this section was to examine the difference in usage between cash and card payments across the two companies. A higher number of card transactions would indicate that a company has embraced technological advancements, positioning itself to adopt what is likely to become the dominant payment method in the future.

Tests:

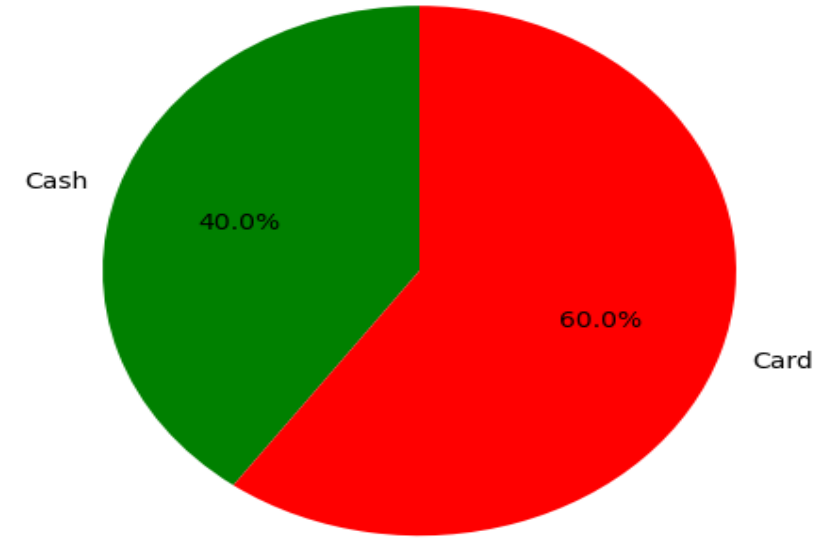
The experiment involved creating a pie chart to compare the proportion of cash and card users for both companies.

The Analysis Outcomes

Distribution of Payment Method for Pink Cab



Distribution of Payment Method for Yellow Cab



The findings indicate that both companies exhibit remarkably similar trends, with approximately 40% of users opting for cash and around 60% choosing cards. This implies that there is no significant difference between the two companies.

Geographic Distribution of Profits

Purpose:

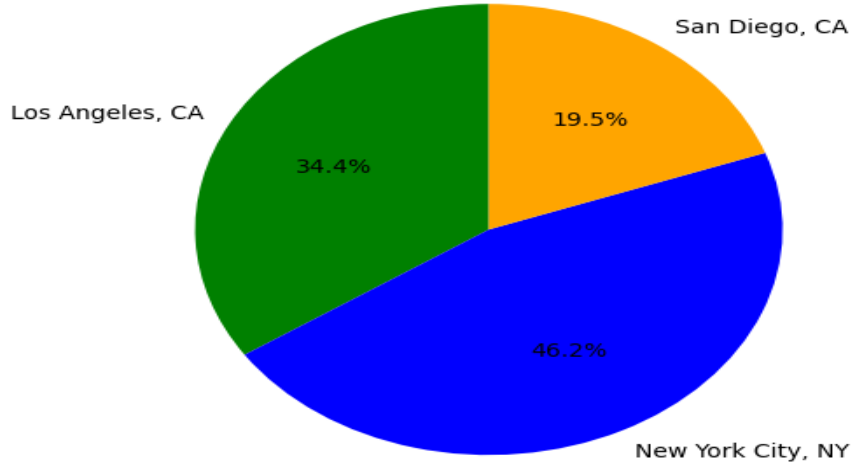
This section aimed to analyze how profits were distributed among the top three cities contributing the most revenue for each company. A more balanced distribution of profits across various locations can provide stability during local economic downturns, reducing the likelihood of significant profit losses.

Analysis:

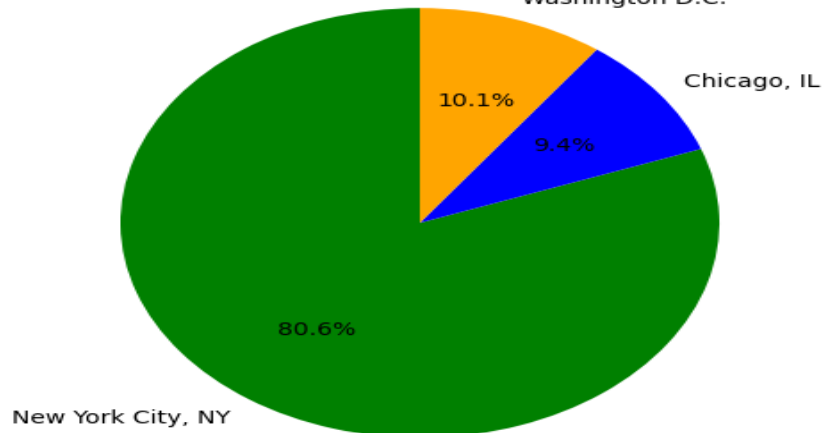
The first analysis involved creating a histogram to display the number of transactions in each city. The second analysis utilized a pie chart to illustrate how profits were distributed across the top three cities for each company.

The Analysis Outcomes

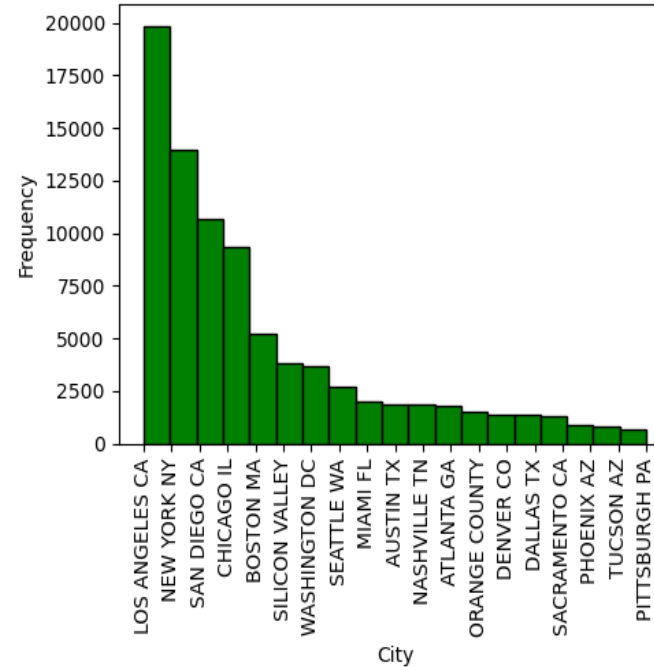
Distribution of Profits per City for Pink Cab



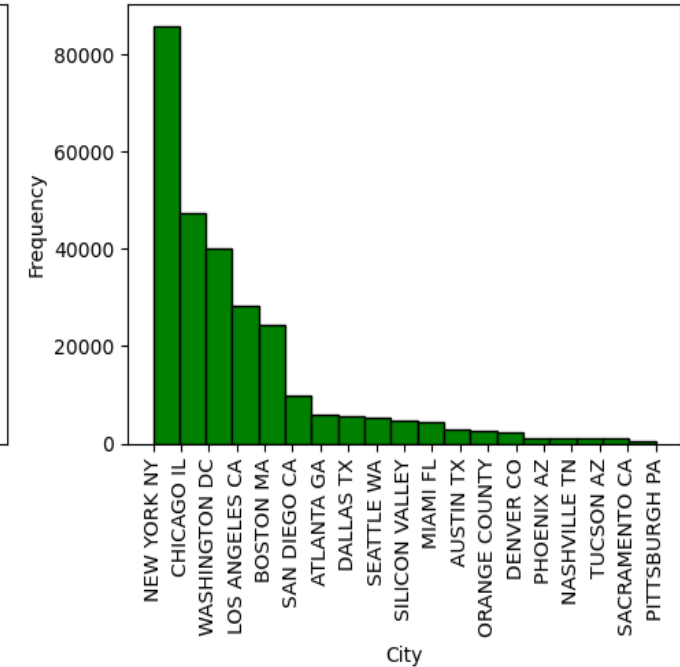
Distribution of Profits per City for Yellow Cab



City Frequencies for Pink Cab



City Frequencies for Yellow Cab



Yellow Cab relies heavily on New York City, with 80% of its profits coming from this single location. In contrast, Pink Cab demonstrates a more balanced profit distribution across its top three cities. As a result, this analysis slightly favors Pink Cab, as it is less vulnerable to potential losses caused by economic downturns in its key cities.

Recommendations

The Key Categories I Analyzed were:

- Profit margins.
- Customer retention rates.
- Call frequency for each company.
- Payment preferences.
- Geographic distribution of profits.

General Insights:

While the age demographics and payment methods for both companies were notably similar, there were significant differences in profits, customer retention, and geographic profit distribution.

Profit Analysis:

Yellow Cab demonstrated clear superiority in this category. It reported higher total profits over the three-year period, greater annual profits, higher profits per kilometer, and stronger profit margins per transaction. These metrics indicate a straightforward conclusion that this aspect decisively favors Yellow Cab.

Recommendations (Cont.d)

Analysis of Geographic Distribution:

The evaluation of profit distribution among the top three revenue-generating cities revealed that Yellow Cab was heavily reliant on New York City, which contributed nearly 80% of its total profits. On the other hand, Pink Cab displayed a more balanced distribution of profits across its top cities.

A diversified profit source is typically considered more stable during regional economic downturns, thus giving Pink Cab an advantage in this area.

However, it should be noted that this metric may be a less critical determinant compared to the other categories.

Customer Retention Evaluation:

This analysis required a deeper look to assess how often customers returned to use each company's services over time. Key factors included the percentage of customers who used the service in 2016 and continued through to 2018, as well as the average increase in the number of rides per customer over that period.

Both indicators pointed to Yellow Cab excelling in customer retention.

Recommendations (Cont.d)

Overall Assessment:

While Pink Cab's even distribution of profits across locations is advantageous, Yellow Cab's stronger performance in profit generation and customer retention makes it the superior investment choice. Given that profit and customer retention are more predictive of long-term success, Yellow Cab stands out as the better investment option.

Final Recommendation based on the data from the Analysis:

Invest in Yellow Cab.

Thank You