



Data Glacier

Your Deep Learning Partner

Exploratory Data Analysis

G2M Insight for Cab Investment

October 16, 2022

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Approach

EDA

EDA Summary

Recommendations

Executive Summary

- **Purpose:** Determine which cab company to invest in
- **Methods:** Compare Yellow Cab and Pink Cab profits, losses, customer demographics, and transactions over time
- **Timeline:** XYZ Company has resources to invest in Yellow or Pink Cab immediately
- **Results:** Significant differences between Yellow and Pink Cab

Problem Statement

- XYZ is a private American company
- Cab industry has grown in the US over the last few years
- XYZ ready to invest in a cab company
- **Which company is a better investment?**

Approach

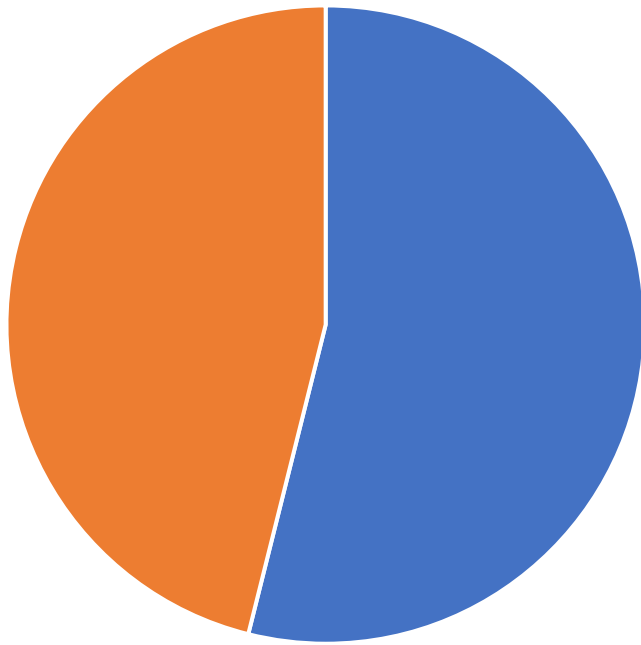
- 4 data files used:
 - Cab (359,392 transactions)
 - City (20 US cities with population and total number of cab users)
 - Customer (49,171 customers with demographic information)
 - Transaction (440,098 rows linking each transaction to customer data)

Approach

- 3 years time frame (January 31, 2016 to December 31, 2018)
- No duplicates or missing values present
- Compare profit (price charged minus cost of trip)
- Compare user demographics of both companies
- Compare transactions and seasonality

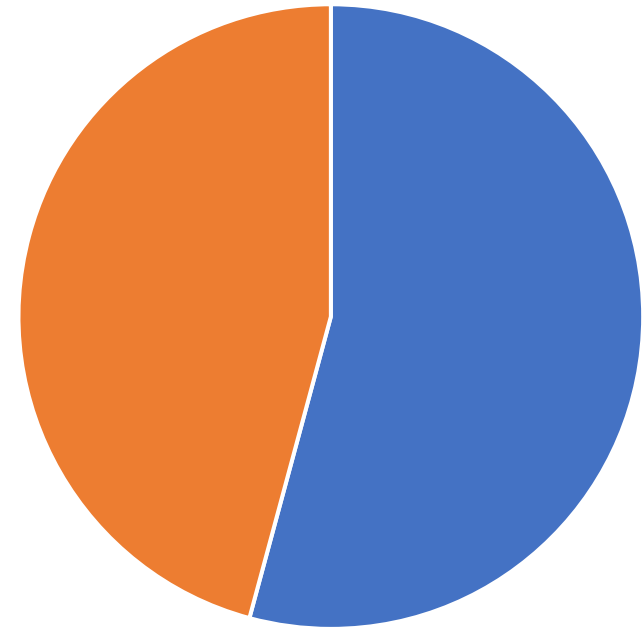
The 2 companies have similar gender distributions among customers...

Yellow Cab



■ Male ■ Female

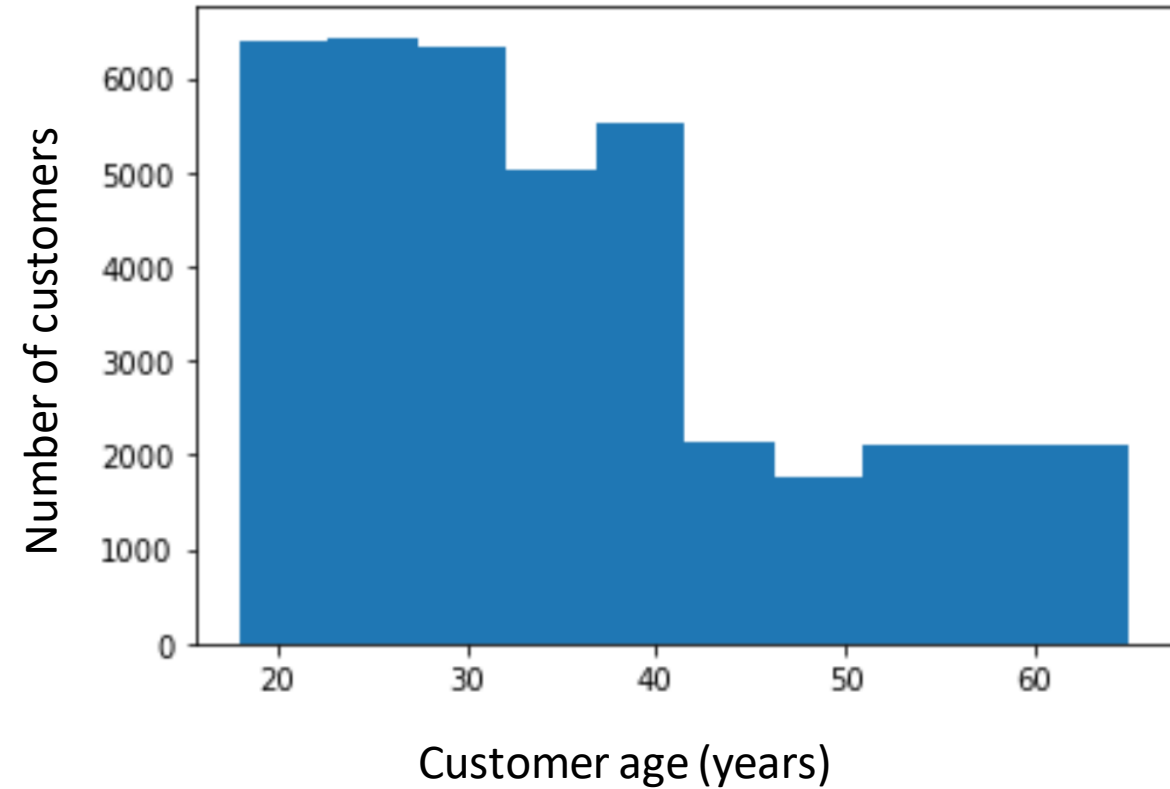
Pink Cab



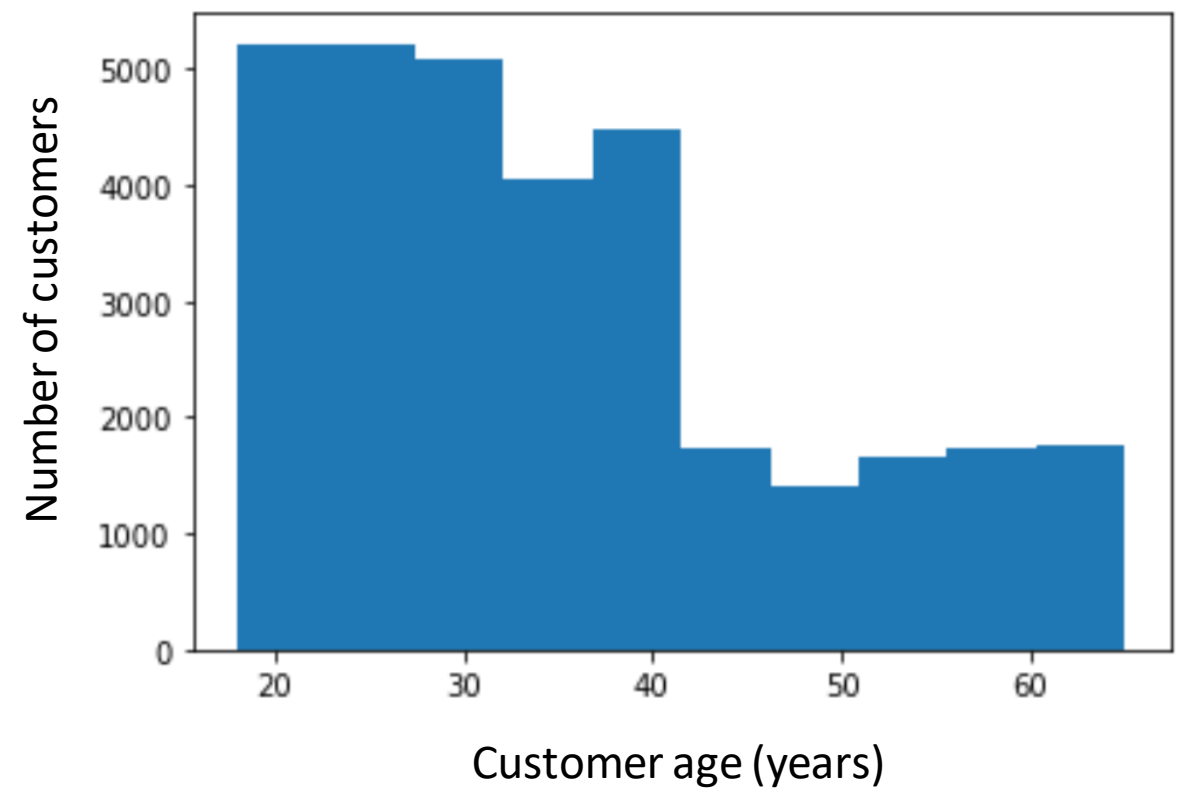
■ Male ■ Female

... and similar age distributions among customers, with both skewing young (average age = 35 years for both).

Yellow Cab customer age distribution

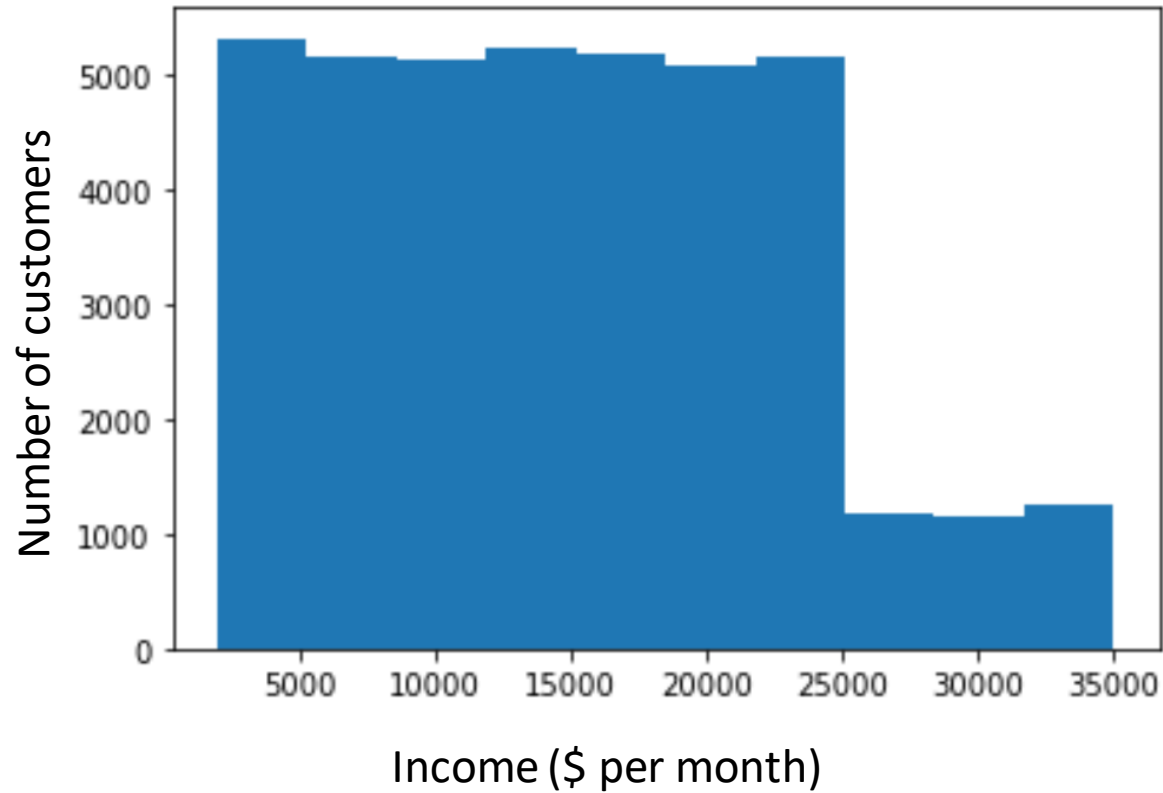


Pink Cab customer age distribution

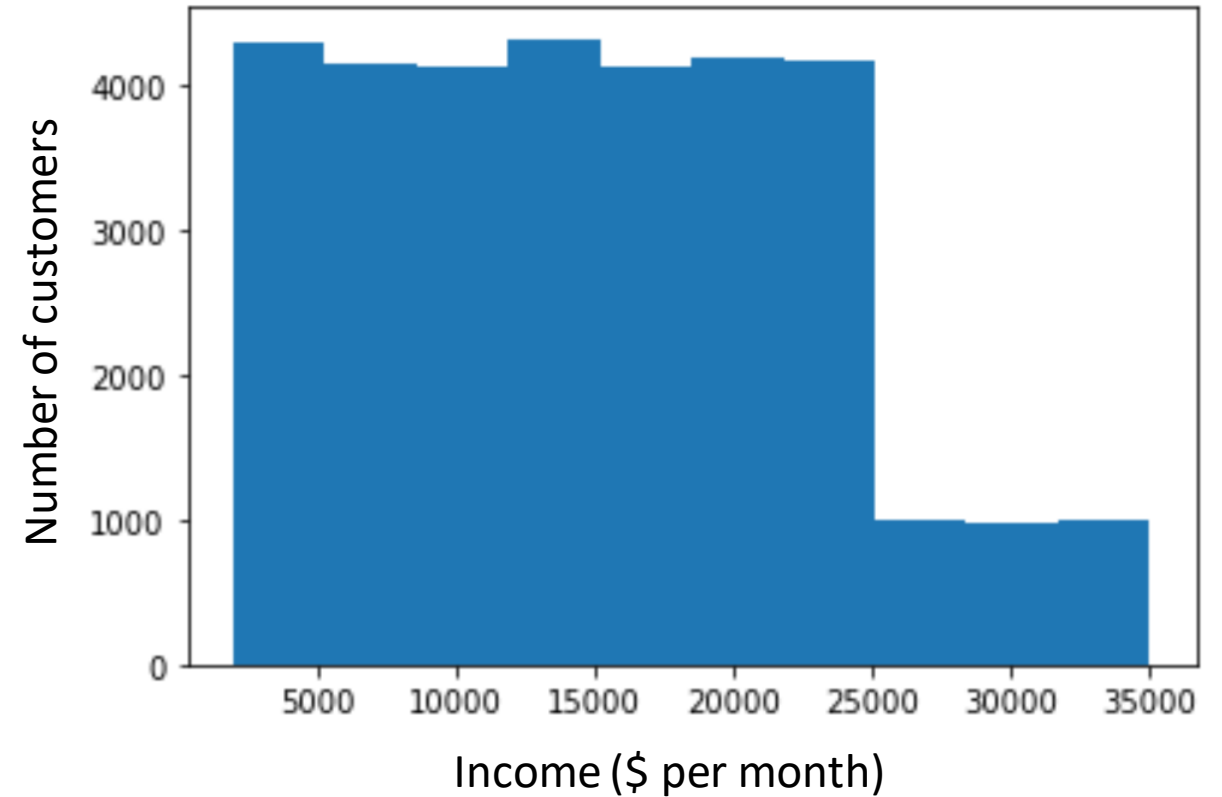


Customer income distribution is also similar between the two companies. Median income is very high (\$14,600 per month).

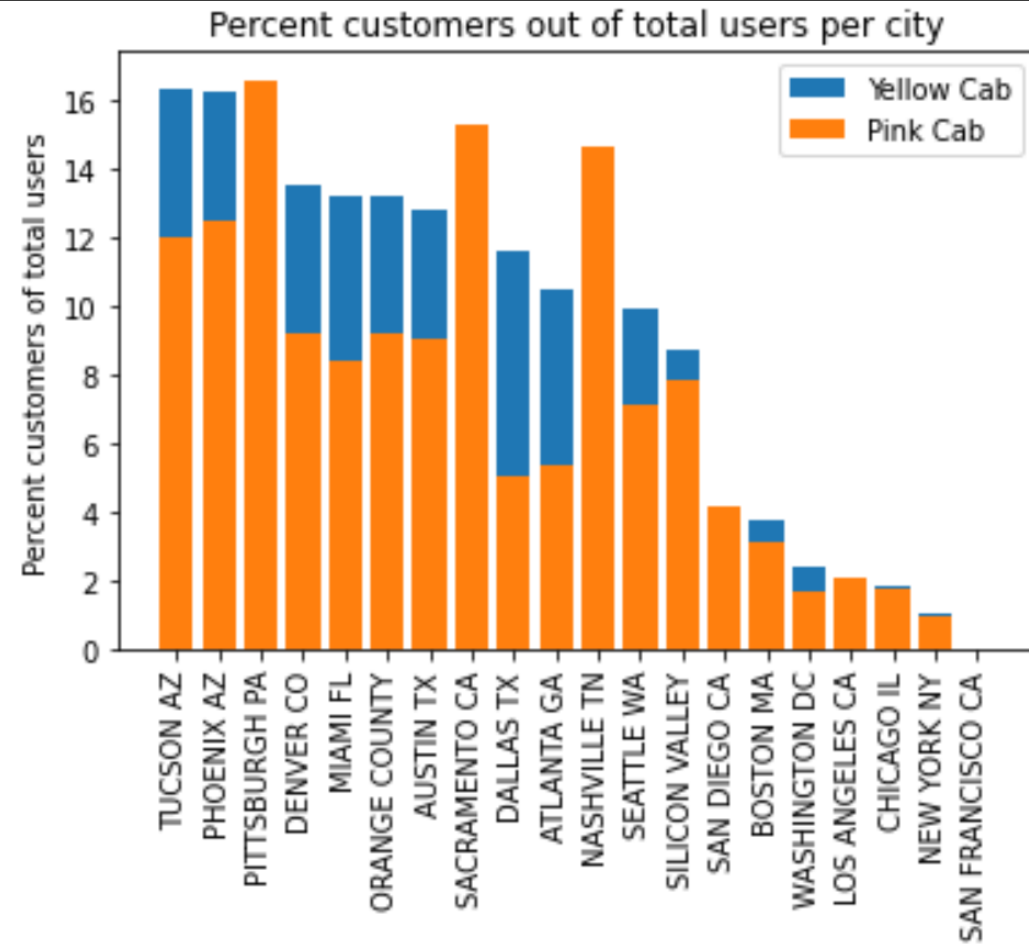
Yellow Cab customer income distribution



Pink Cab customer income distribution



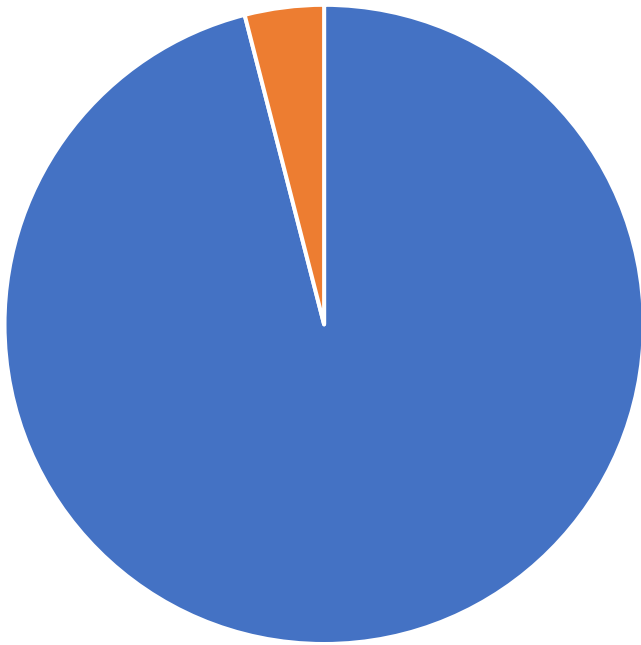
Despite similar customer demographics, Yellow Cab has better market penetration in almost all markets.



- Yellow Cab leads in 14 of 19 markets, including 6 of the 10 top cab markets in the US.
- Pink Cab leads in Pittsburgh, Sacramento, Nashville, San Diego, and Los Angeles.
- Both companies have room to expand. Top market penetration is around 16% of total users.
- Neither company is yet in San Francisco, one of the top two cab markets in the US.

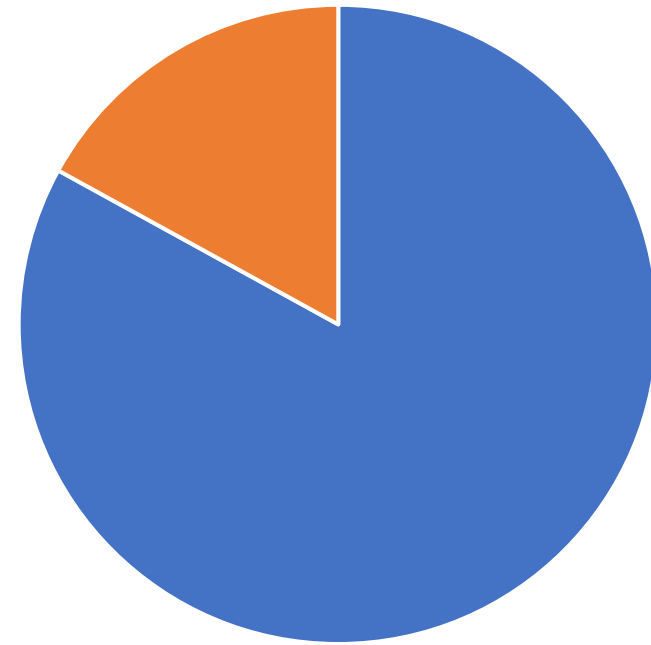
96% of Yellow Cab's customers repeat. Only 83% of Pink Cab's customers repeat.

Yellow Cab



■ Repeat customers ■ One-time customers

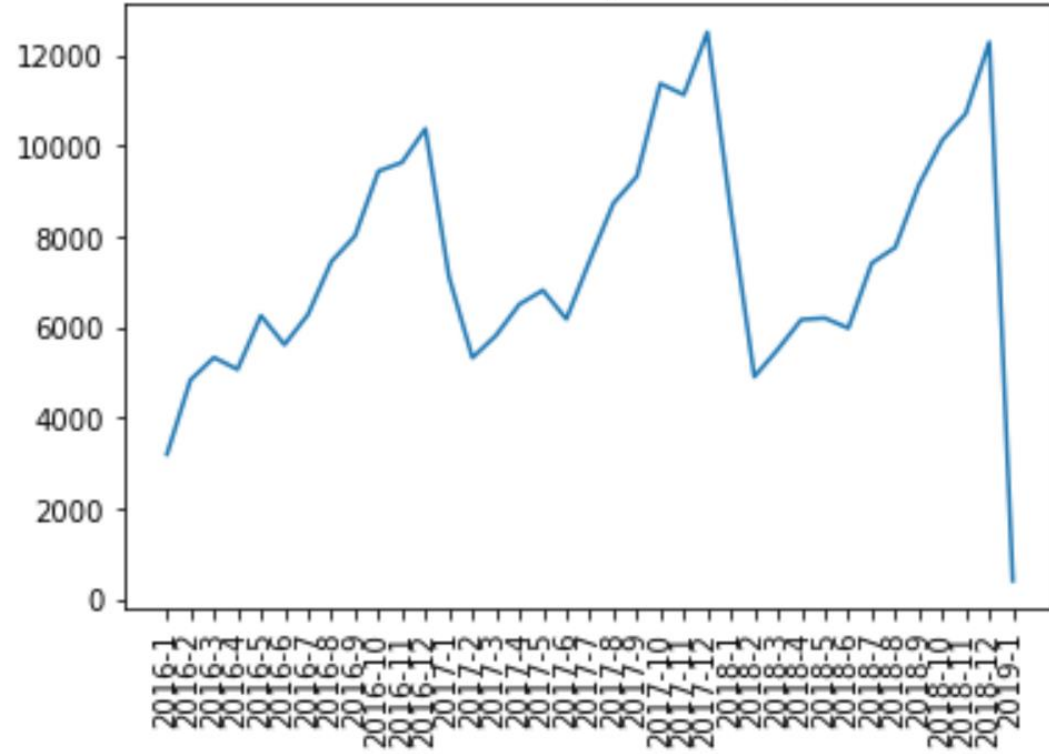
Pink Cab



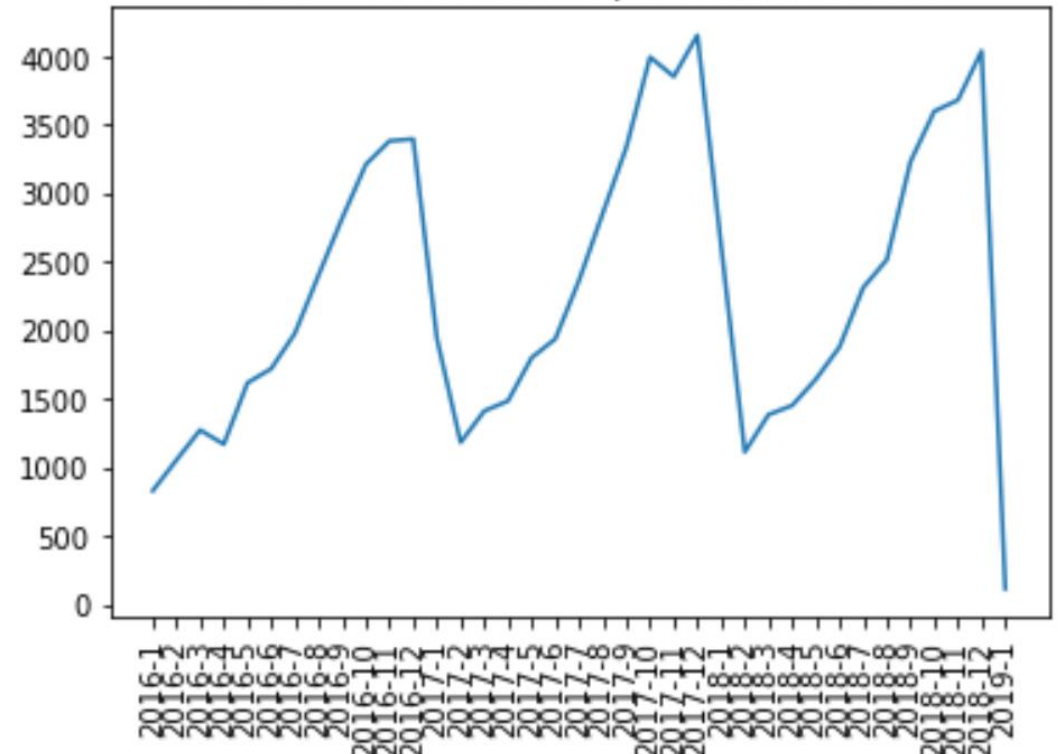
■ Repeat customers ■ One-time customers

Both companies exhibit a seasonal cycle...

Number of transactions per month, Yellow Cab



Number of transactions per month, Pink Cab

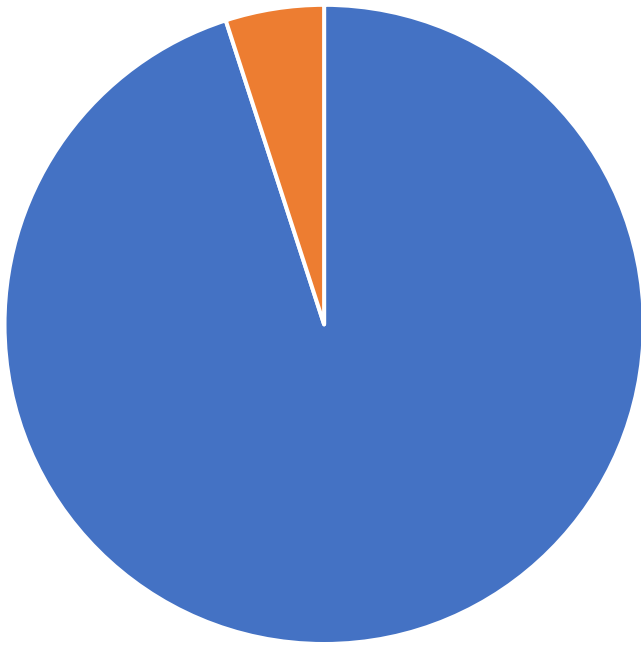


... but Yellow Cab takes more trips and is more profitable per trip.

COMPANY	TOTAL NUMBER OF TRIPS	AVERAGE DISTANCE (KM) PER TRIP	AVERAGE PRICE CHARGED PER TRIP	AVERAGE COST PER TRIP	AVERAGE PROFIT PER TRIP
Yellow Cab	274,681	22.6	\$ 458.18	\$ 297.29	\$ 160.26
Pink Cab	84,711	22.6	\$ 310.80	\$ 248.15	\$ 62.65

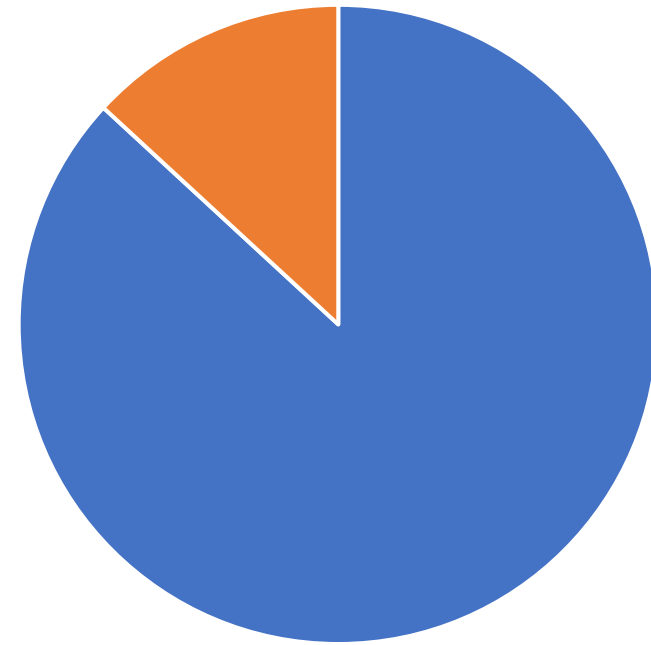
95% of Yellow Cab's trips are profitable. Only 87% of Pink Cab's are profitable.

Yellow Cab



■ Profitable ■ Money-losing

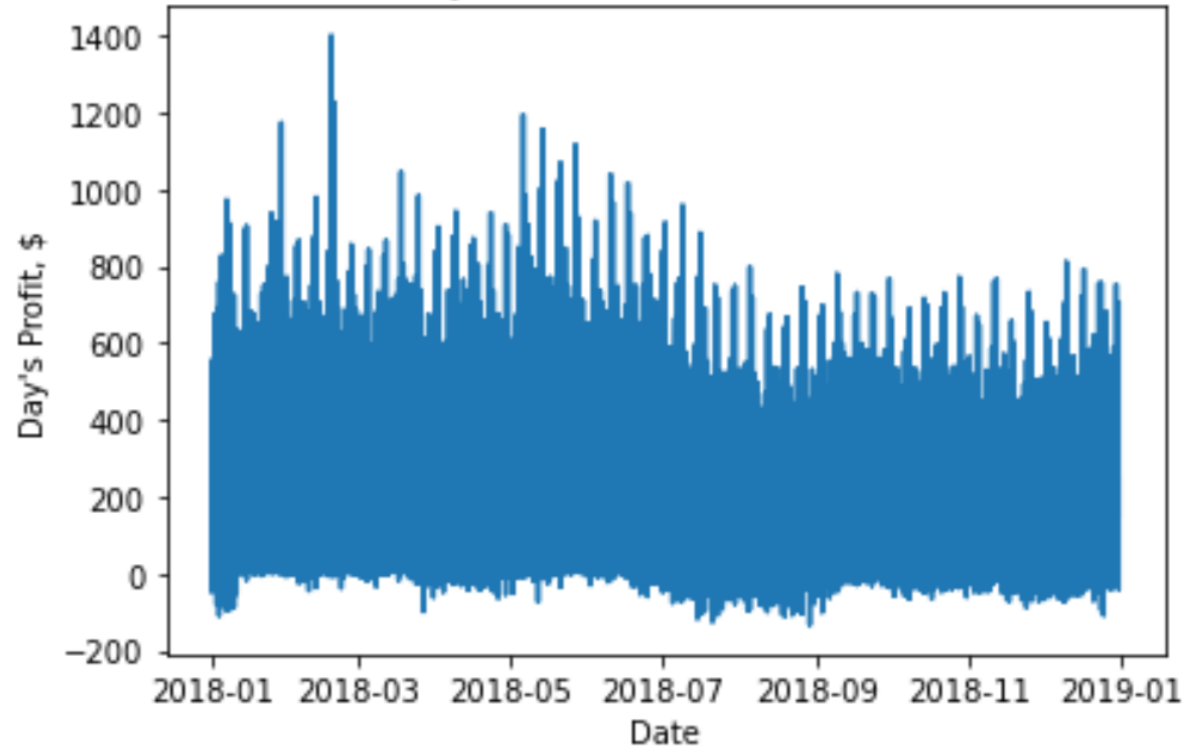
Pink Cab



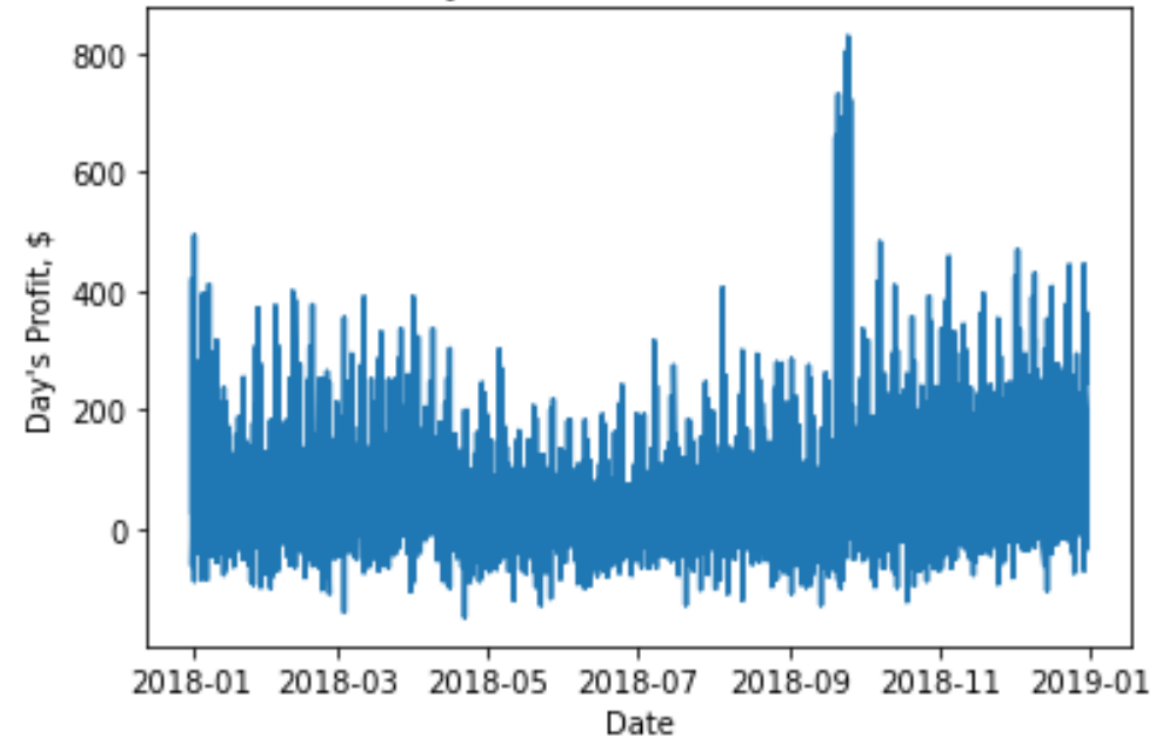
■ Profitable ■ Money-losing

Yellow Cab consistently earns high profit all year. Pink Cab has a profit peak in the fall and lower profit the rest of the year. (Sample year 2018 shown.)

Daily Profit for Yellow Cab, 2018

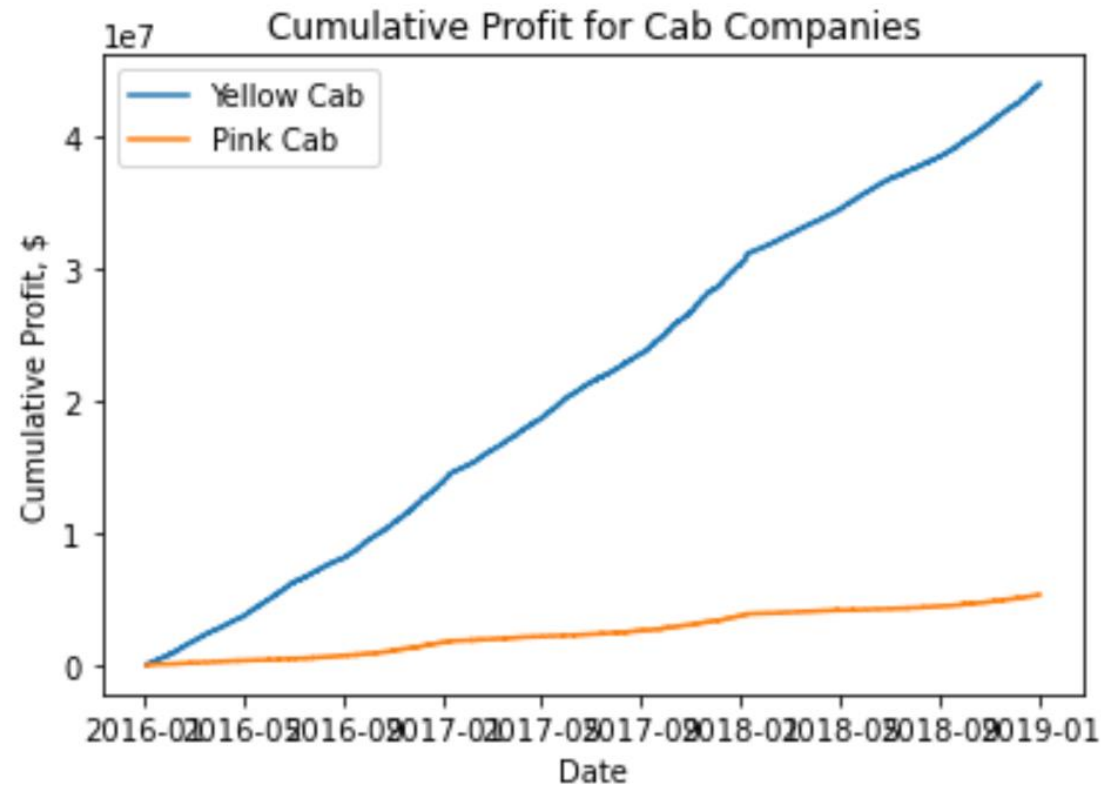


Daily Profit for Pink Cab, 2018



Yellow Cab total profit (3 years): \$44M

Pink Cab total profit (3 years): \$5M



Yellow total profit: \$44020373.17

Pink total profit: \$5307328.32

Summary

- 2 companies have similar customer demographics
- Yellow Cab has stronger market penetration in most major US cities
- Both have room to expand, especially into San Francisco
- Yellow Cab has better customer retention
- Despite similar average trip length, Yellow Cab's trips are more profitable
- Yellow Cab has earned nearly 9 times the total profit over 3 years as Pink Cab

Recommendations

1. Invest in Yellow Cab:

- Better market penetration
- Better customer retention
- More profitable

2. Look to expand Yellow Cab into San Francisco, Houston, and other top markets

Thank You