Uber Driver Signup Data Analysis

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Executive Summary

Key Insights:

- Data: 54,681 rows of data with missing values and data inconsistencies
- Drivers Completing First Trip: **11%**
- Time to First Trip after Sign up: ~**12 days**
- Background Check Completion Rate: **60%** (50% within first 7 days)
- Referral Program Success: **20%** (**highest** compared to other sign up channels)

Factors Affecting Driving: Platform(OS), Sign Up Channels, Referrals and Incentives, Time taken for Background Check Completion, Regional and Demographic Factors.

Important Metrics to Optimize Performance:

- Time to First Trip and monitor successful sign-ups
- Background Check Completion Rate, Reduced Time
- Referral Program Success Rate

Opportunities for Improvement:

- Data integrity and completeness.
- Enhanced referral and incentive programs.
- Streamlined onboarding and background checks for quicker completion.
- Constant loop for driver feedback

Analyzing Data Quality and Issues

Data Integrity: With 54,681 rows in our dataset, addressing missing or null values is vital to ensure data consistency.

Our analysis provides valuable insights:

| Column	Missing Values	Unique Values	Maximum Value	Minimum Value	Percentage of Total Rows
Missing Sign Up OS	6,857	5	-	-	12.51%
Missing Sign Up Channel	0	3	-	-	0.00%
Missing Background Check Date	21,785	-	-	-	39.86%
Missing Vehicle Make	41,458	-	-	-	75.72%
Missing Vehicle Model	41,458	-	-	-	75.72%
Missing Vehicle Year	41,458	-	2023	2001	75.72%
Missing First Trip Date	48,544	-	-	-	88.66%

Driver Sign Up Analysis
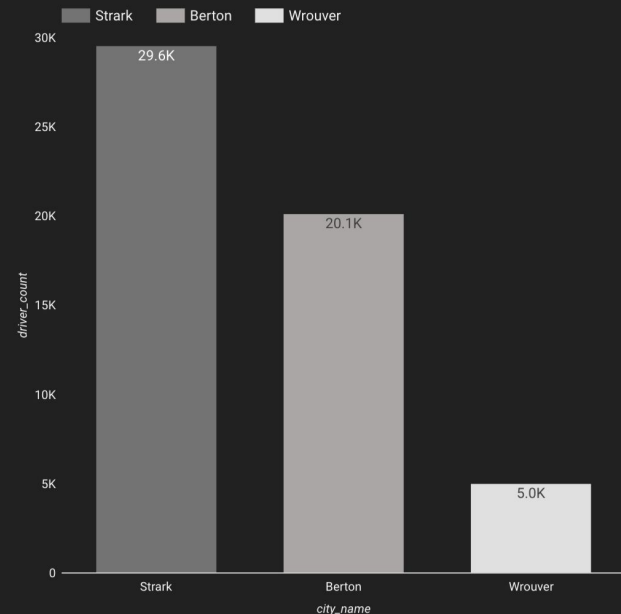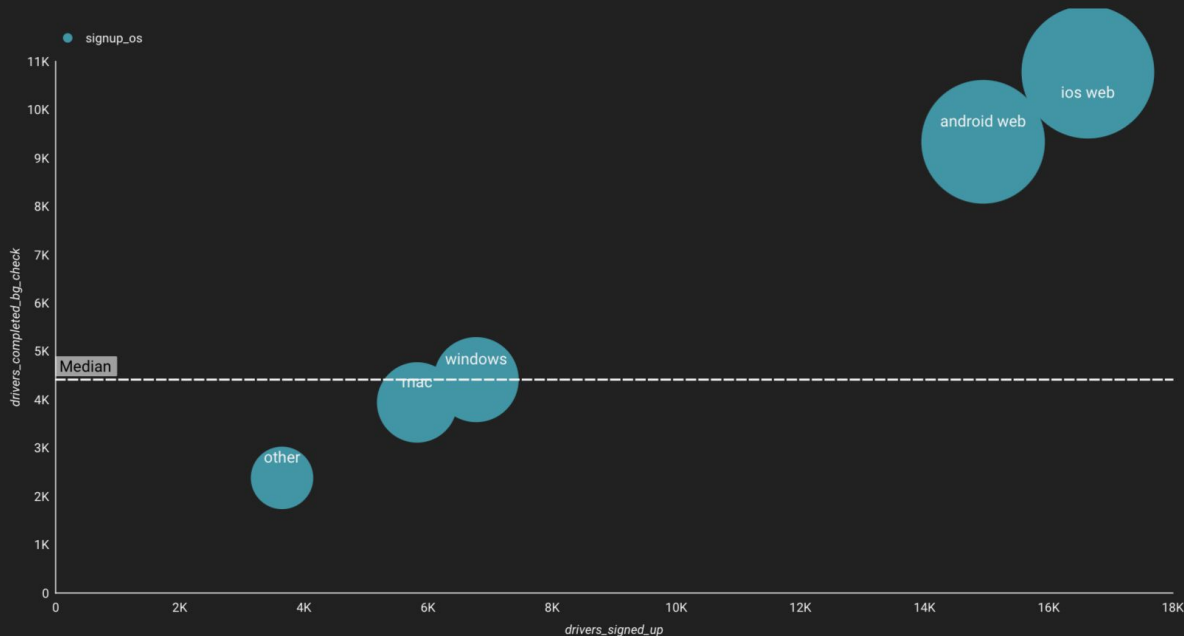
To explore the influence of technical and demographic factors on driver sign-up and background check completion, we note a preference for **mobile apps and web-based platforms** among drivers. Additionally, a higher number of sign-ups originate from the Stark region compared to Berton and Wrouver.
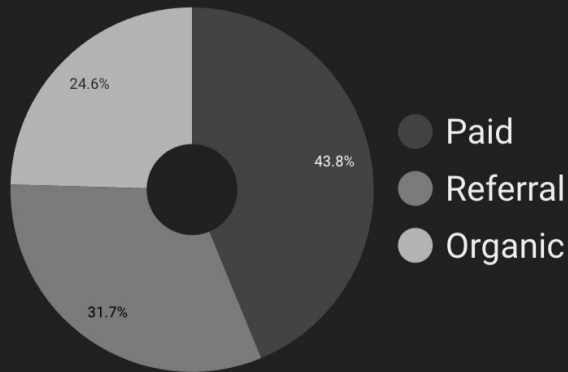
The *number of drivers* categorized by sign up *channels*.

- Paid — 43.8%
- Referral — 31.7%
- Organic — 24.6%
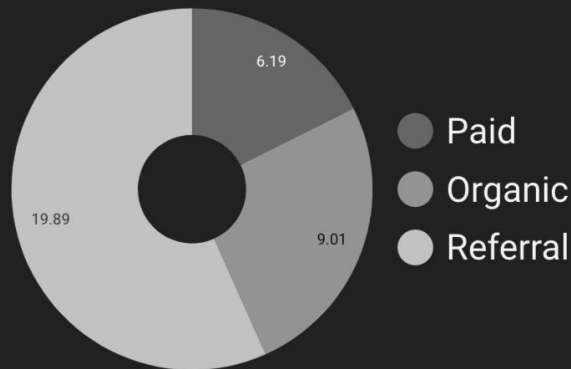
The *number of drivers* making their *first trip* categorized by sign up *channels*.

- Paid — 6.19
- Organic — 19.89
- Referral — 9.01

We observe that the majority of sign-ups occur through the paid channel (**44%**), but interestingly, the highest number of drivers (**20%**) who complete their first trips are those who initially signed up through referrals.

avg_bg_check_completion_percentage
60.2

avg_completion_percentage
71.4
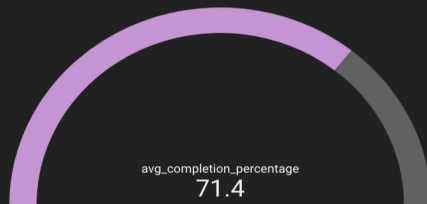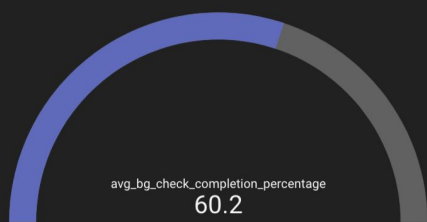
Approximately **60%** of drivers successfully complete their background checks, while around **71.4%** of drivers achieve both background check completion and successfully complete their first trips.

- No Background Check — 39.8%
- Within 7 Days — 32.5%
- After 7 Days — 27.6%
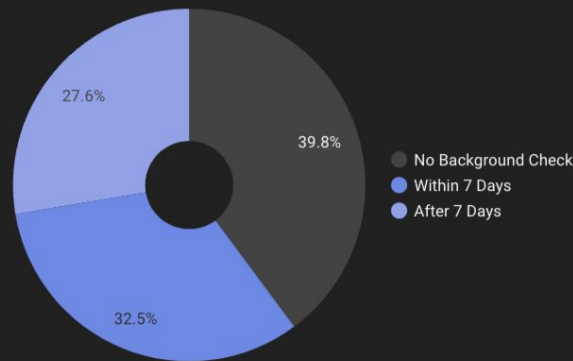
Among the 60% of drivers who complete background checks, **50%** of them successfully do so **within 7** days of signing up.

Driver Sign Up Metrics
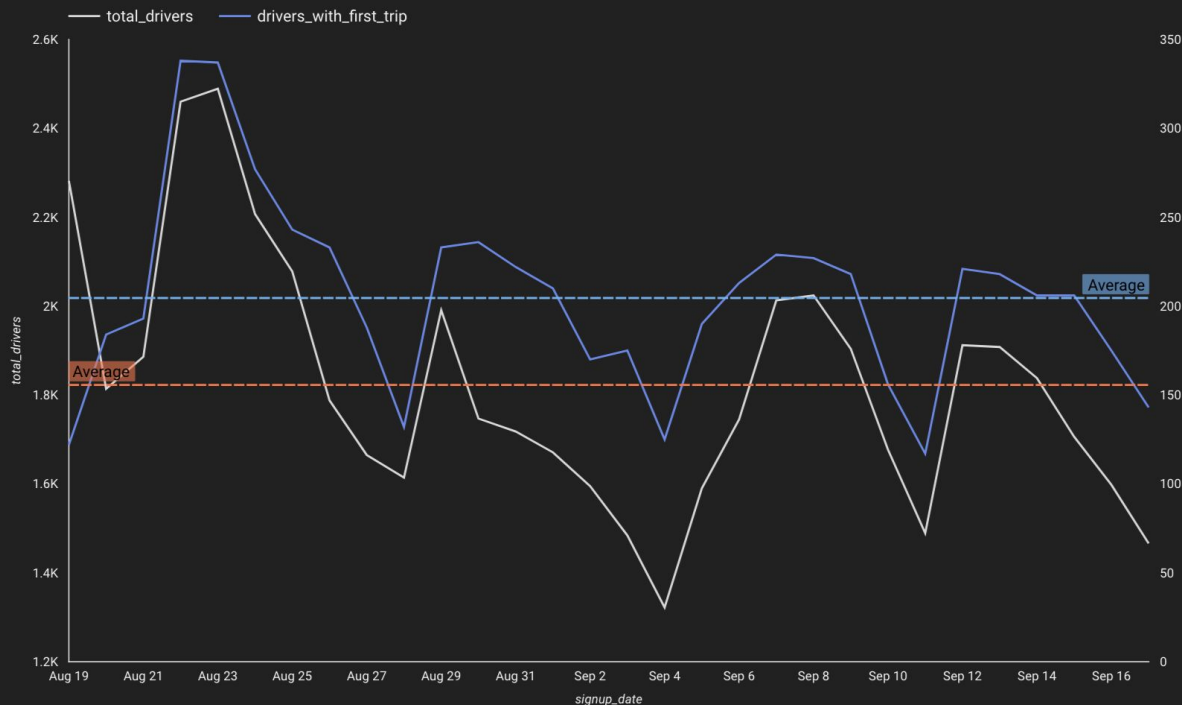
Analyzing sign-up dates, we find an average of about 1,800 new drivers registering. However, only around 200 (11%) drivers complete their first trip

Note: Consider the impact of missing first trip data.

Additionally, there are noticeable fluctuations in sign-ups.
The highest number of sign-ups occurred around **August 23rd,** while the lowest was on **September 4th.**

A similar trend is observed for first trips completed.

# Association between Vehicle Data and Background Checks
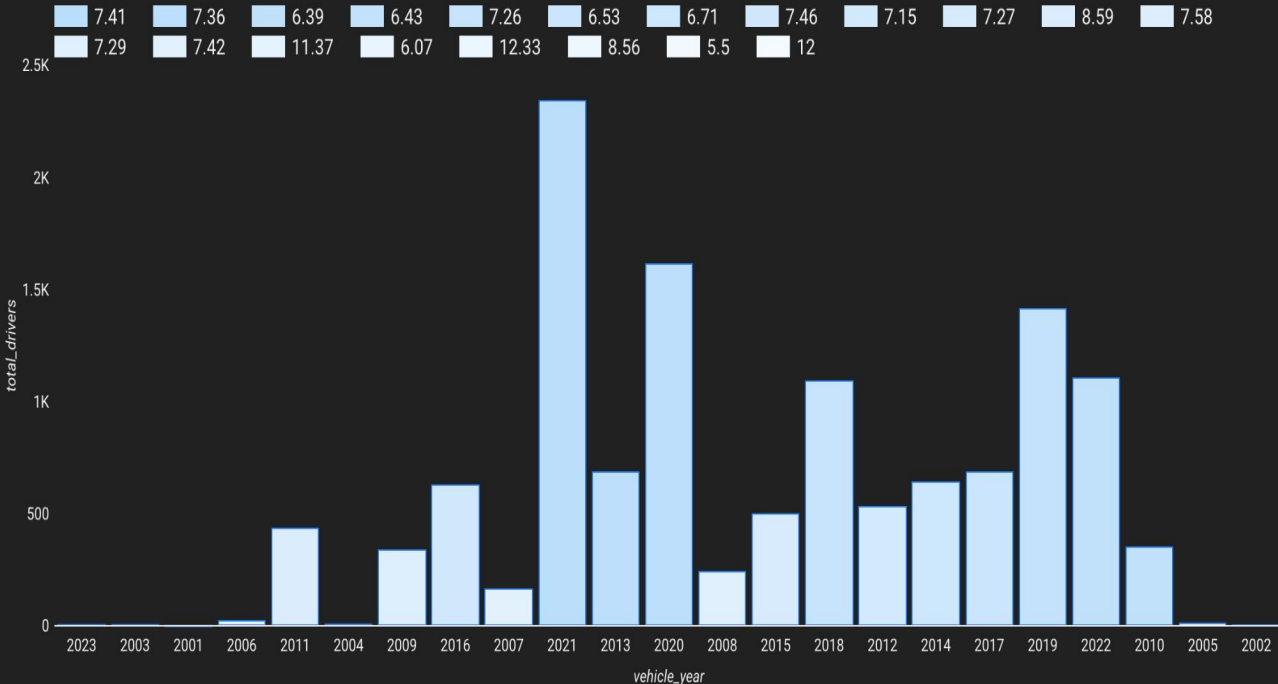
- Vehicle years: 2001 to 2023.

- Newer vehicles correlate with increased sign-ups.

- Average background check time(after adding vehicle data): 6 to 8 days.

- Outliers in 2001 and 2023 due to small sample size.
- 2017 has the lowest completion time (6.53 days).
- 2012, 2014, and 2016 show longer onboarding times.

- Newer vehicles associated with faster sign-ups but not a significant factor.

Time to First Trip from Signup Date
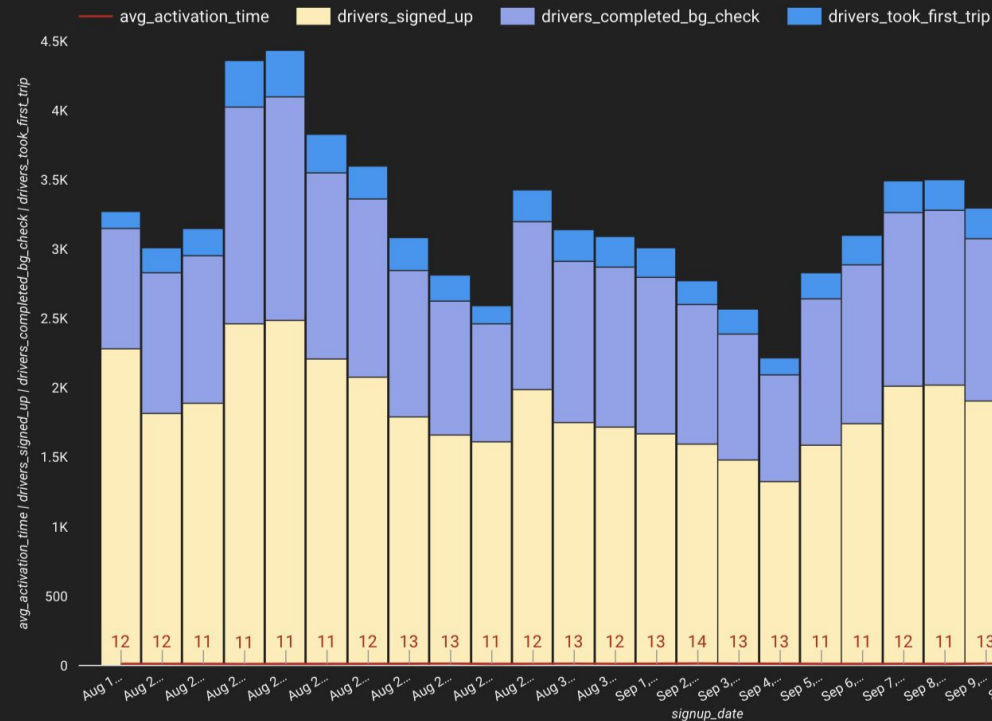
When comparing the total number of drivers who sign up to those who complete background checks and subsequently take their first trips, we observe a **significant reduction** at each stage.

On average, it takes approximately **12 days** for drivers to complete their first trips after signing up.

average_avg_activation_time
12.1
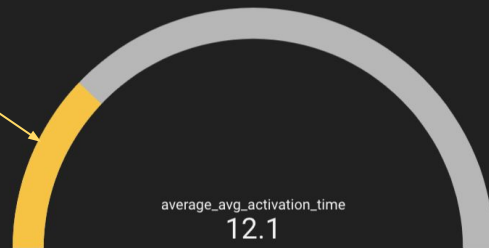
Time to First Trip from Signup Date

Further, considering the number of drivers and analyzing the time it takes for a driver to complete their first trip from the sign-up date, we find that, on average, it takes about **12-15 days.**

Factors Affecting Sign Up

Based on the analyses, these factors may contribute to making a driver more likely to start driving:

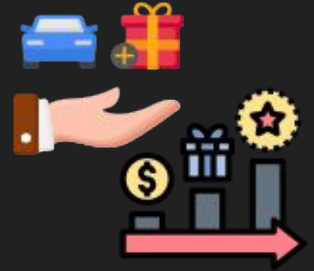**Referral sign-ups** drive first trip completions, showing program effectiveness.

Faster background checks link to prompt driver readiness for trips.

Drivers using **mobile apps or web platforms** are more ready to start driving due to convenience.
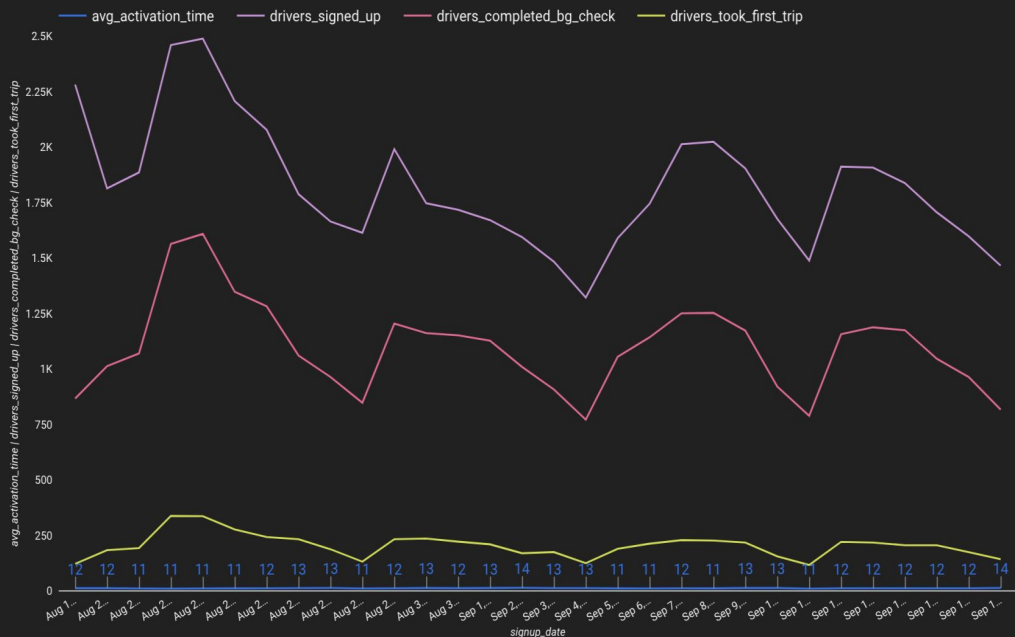

Regional variation: Stark region shows higher sign-ups, possibly due to local factors.

Incentive Program/Paid Channels impact sign-up and activation rates and yields insights.

Key Performance Metrics

Most Important:
First Trip Completion Rate:
Why does the number of drivers that actually complete a trip reduce so much even after completing the background check? Why does it take 12 days?

Other Important Metrics can be:

1. **Background Check Completion Rate:** Why does it take longer than 7 days in 50% of the cases? Is there a way to improve or make this process more convenient for the drivers

2. **Referral Program:** Evaluating the referral program's influence on sign-ups, background checks, and first trips offers valuable insights into its effectiveness in driver recruitment.

Improvement Areas

Onboarding Experience Enhancement:

- We can make the transition from background checks to first trips smoother and more motivating for our drivers
- Introducing a referral payback AFTER the completion of the first trip can help too!
- We can simplify and guide drivers through the onboarding process with step-by-step virtual training guides

Streamlining Background Checks:

- Improving the efficiency of the background check process is crucial to reduce the time to completion
- We could explore automated checks for faster results and real-time updates to keep drivers informed

Referral Program Optimization:

- Maximizing the potential of the referral program requires enhancing incentives for referring drivers.
- We can introduce a tiered reward system to motivate more referrals and personalize the program for high-performing referrers.

These actions can significantly improve our drivers' onboarding experience, expedite background checks, and capitalize on the referral program to boost driver recruitment and trip completion rates.