New York Citi bikes

Story telling through data

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Introduction

Here is an overview of the company we will be conducting the analysis on:

Citi Bike is New York City's bike share system and the largest in the United States. Launched in May 2013, it has become an essential part of the city's transportation network. Here are some key points about Citi Bike:

- **Extensive Network**: Citi Bike has over 25,000 bikes and more than 1,500 stations across Manhattan, Brooklyn, Queens, the Bronx, Jersey City, and Hoboken.

- **Availability**: Citi Bike is available 24/7, 365 days a year.

- **How It Works**: Bikes can be unlocked from one station and returned to any other station in the system, making it ideal for one-way trips. You can use the Citi Bike or Lyft app to unlock a bike by scanning its QR code.

- **Usage**: People use Citi Bike for commuting, running errands, getting to appointments, and more. It's a fun, efficient, and affordable way to get around the city, and it's also good for the environment.
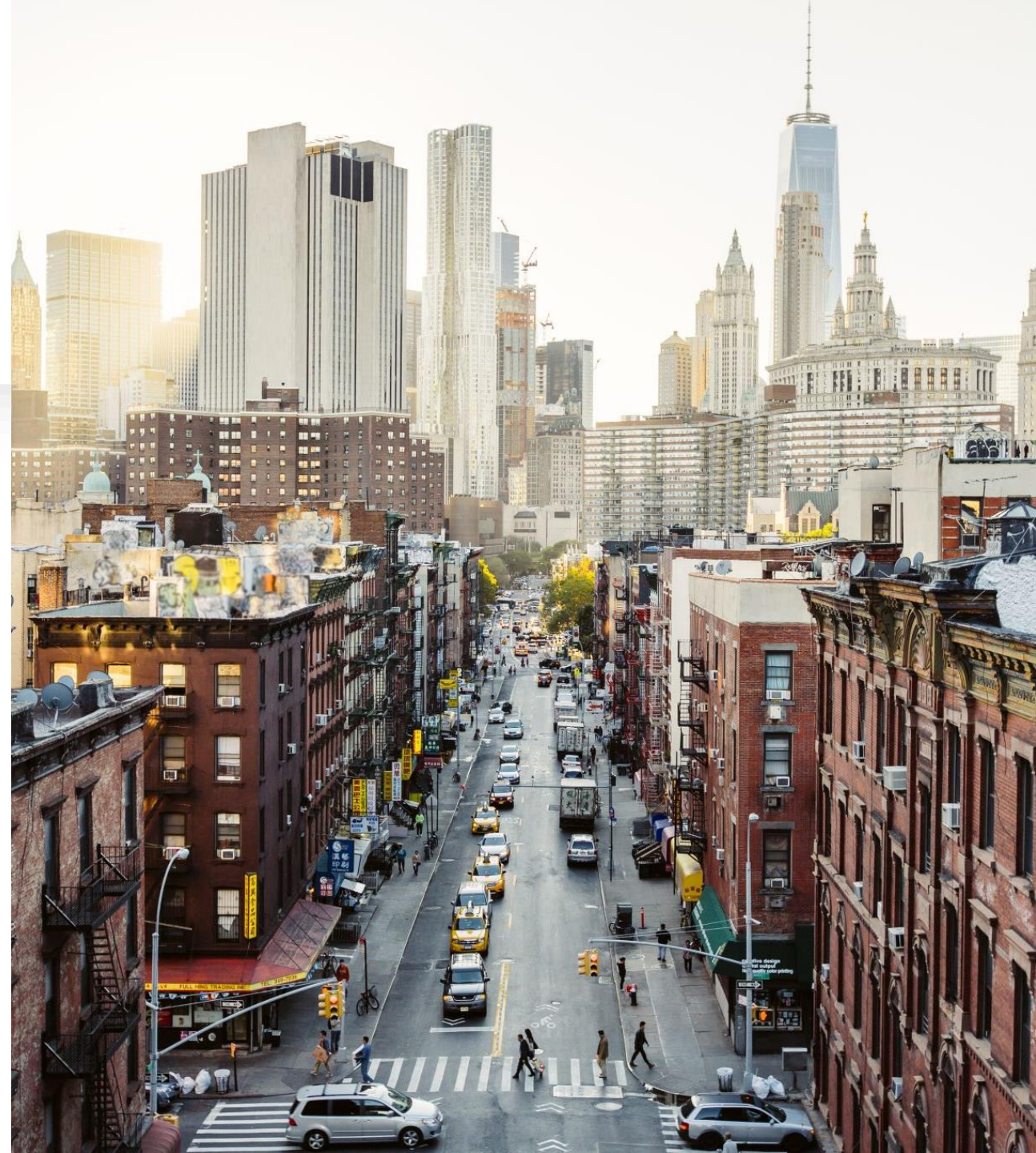
What are we trying to understand?

1. We want to explore the different pickup locations and how we can make the pickup process as quick and seamless as possible for the customers

2. We want to understand how different ages use the bikes

3. Analyse the durations of the trips per age ranges

4. Understand the relationship between one-time users versus the subscribers

After identifying trends and finding the answers to the above questions we will recommend potential solutions to increase revenue from a business perspective
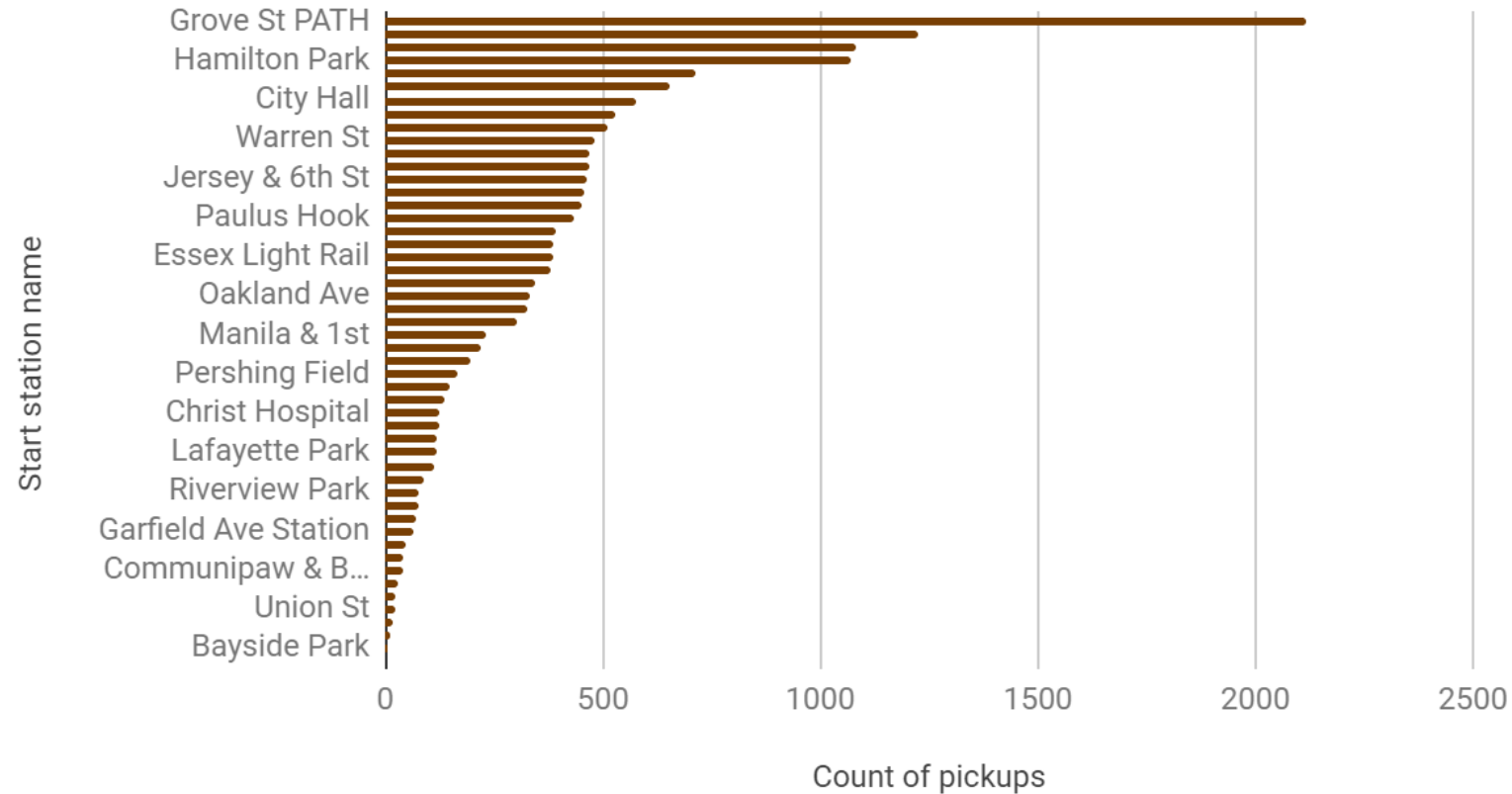
1. Pickup locations

Here you can see the top 15 locations in New York with the largest number of pickups.

Proposed actions:

- To reinforce the very popular stations with additional stations.

- Consider shutting down the unpopular stations

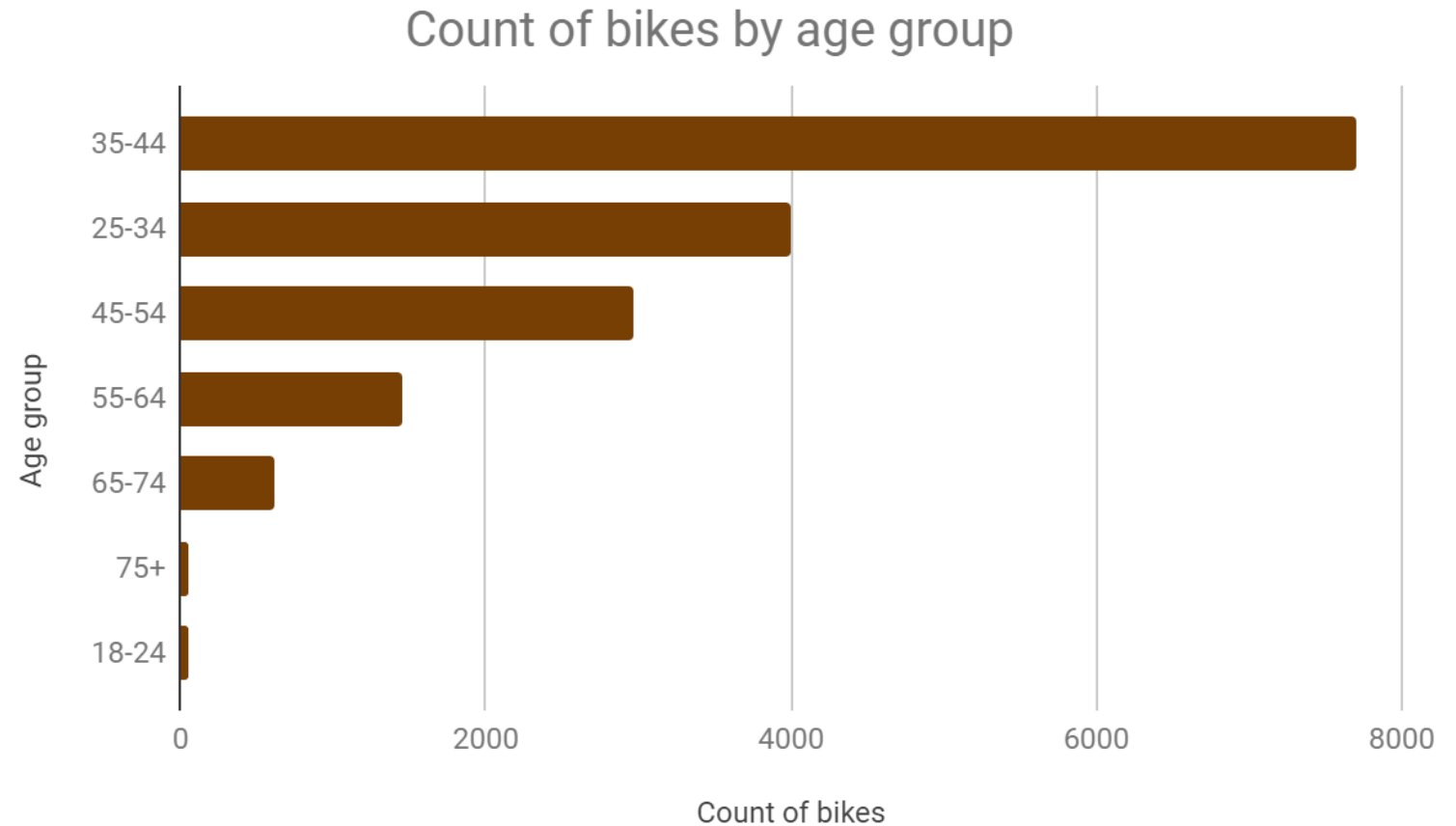The most popular pick up stations for citi bikes

2. Bike usage per age

We can now understand what age ranges tend to use the bikes the most.
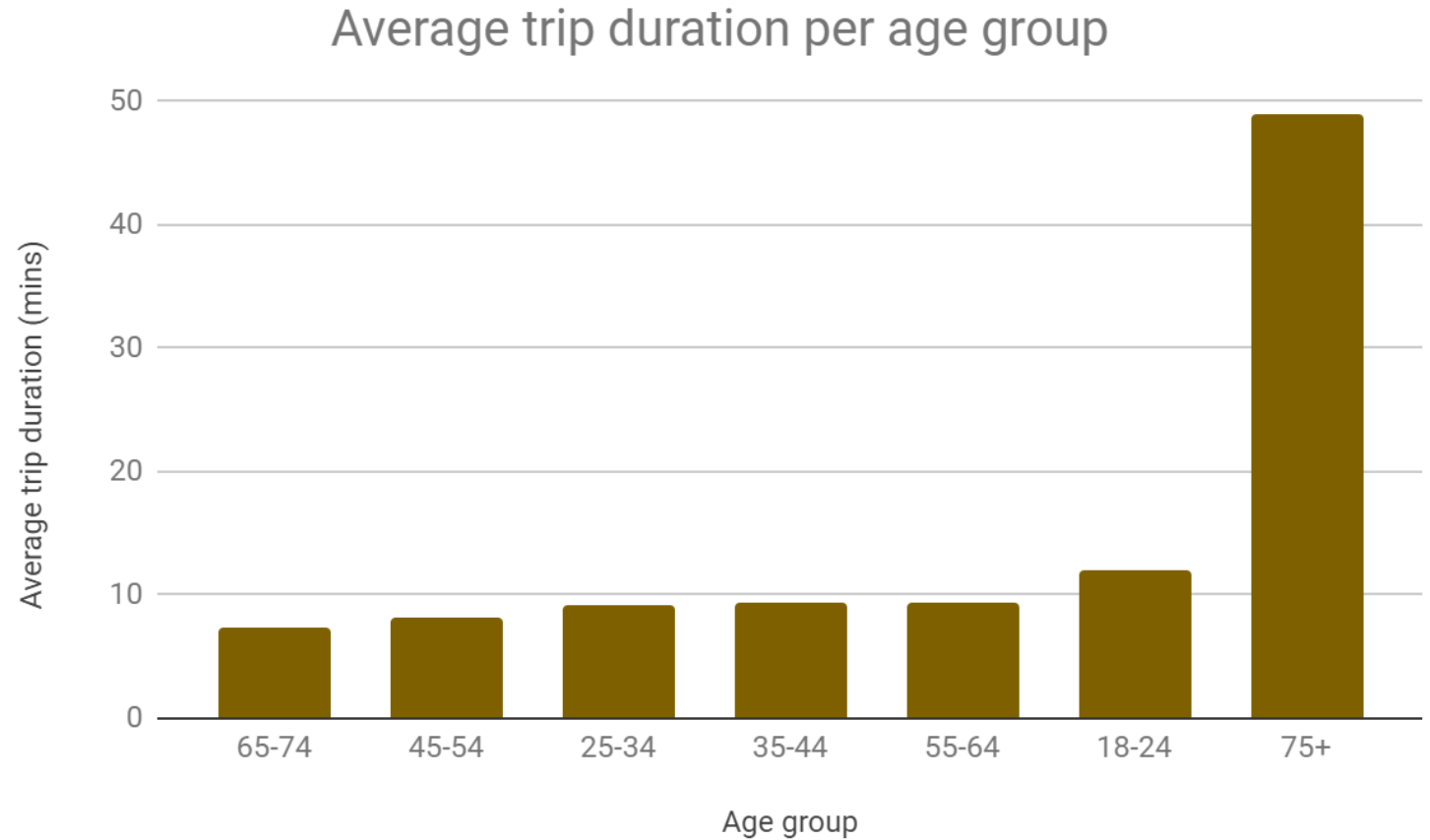
Proposed actions:

- Introduce deals specifically for elderly people over 65 as well as the younger users 18-24

Count of bikes by age group

3a. Average trip duration per age group

To understand what age group spends more time on the bikes, we calculated the average trip duration.

Groups over 75+ seem to have the highest average trip duration.

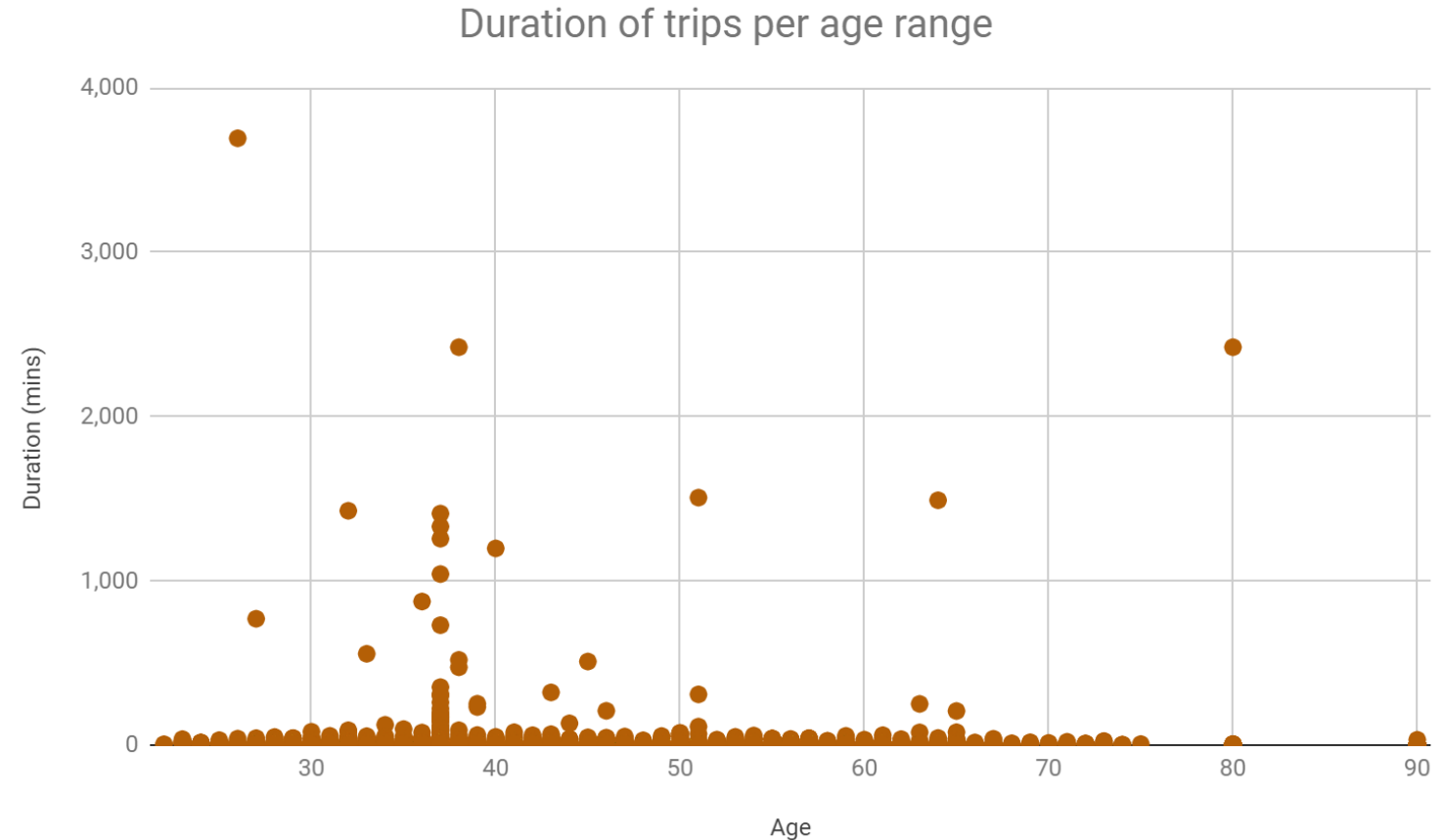

Average trip duration per age group

3b. Trip duration per age group

After calculating the average, we wanted to map out the distribution of the trip durations.

Surprisingly, ages 35-44 seem to have more cases of longer journeys than the 75 + group.

Proposed actions:

- Offer discounts for longer rentals to encourage more extended use


Duration of trips per age range

4. One time users vs subscribers

It is concluded that the subscribers use the bikes significantly more than one-time users. Additionally, weekends seems to be the least busy periods for subscribers and the busiest for one-time users.

Proposed actions:

- Promote discounts for first-time users and highlight the convenience of using the service

- Encourage subscribers to rent bikes on the weekends by providing discounts during certain hours

One time user and Subscriber per day
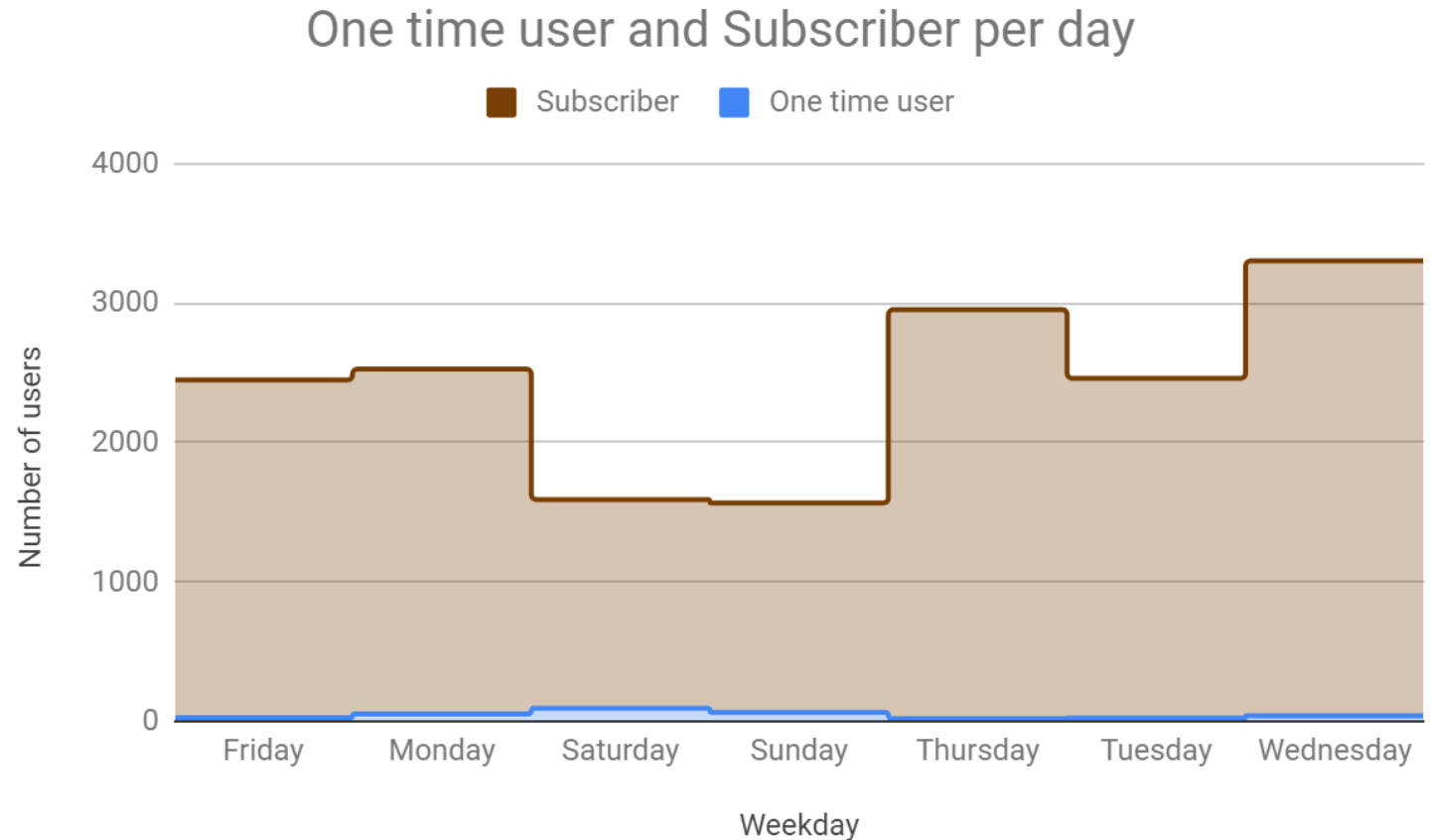
Conclusion

- Pickup Locations: The top 15 pickup locations have been identified, with a recommendation to reinforce popular stations with additional bikes and consider shutting down underutilized stations to optimize resource allocation.

- Bike Usage by Age: Different age groups exhibit varying usage patterns. Notably, elderly users (65+) and younger users (18-24) are significant demographics. Introducing targeted deals for these age groups could enhance engagement and usage.

- Trip Duration by Age Group: While the 75+ age group has the highest average trip duration, the 35-44 age group shows a higher frequency of longer trips. Offering discounts for longer rentals could encourage extended use across these age groups.

- One-Time Users vs. Subscribers: Subscribers use the bikes significantly more than one-time users. However, weekends are less busy for subscribers but busier for one-time users. Promoting discounts for first-time users and encouraging weekend rentals for subscribers through special offers could balance usage patterns.

- By implementing these strategies, Citi Bike can enhance user experience, optimize operations, and increase overall revenue.