Cyclistic Bike-Share

Presented by:

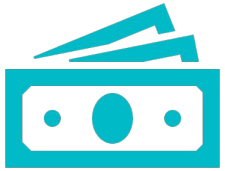
Min Jae Song

Background

Cyclistic is a growing bike-share company in Chicago

Casual Riders and Membership

Single-ride passes, full-day passes, annual membership



Annual membership is more profitable

Objectives

How do annual members and casual riders use Cyclistic bikes differently?

Why would casual riders buy Cyclistic annual memberships?

How can Cyclistic use digital media to influence casual riders to become members?

Outline of Project

01 Understanding of Objectives

02 Data Preparation

03 Data Processing

04 Analysis

05 Visualizations

06 Results and Recommendations

07 Conclusion

Goals

Collect consistent, accurate data, and accordingly process

Ensure data integrity

Perform analysis

Build profiles for casual riders and members

Identify key differences, trends, relationships

Find recommendations to help guide marketing campaign

Influence casual riders to become members

Preparation

- Cyclistic's historical data
  - Will not be using any of the rider's PII
  - Time frame: 2021-01-01 -> 2021-12-31 (All 12 months of 2021)
  - Located in AWS Bucket "divvy-tripdata" (link in report)
  - All datasets will be stored in a safe, easily accessible location
  - Will ensure credibility, licensing, privacy, and security

Processing

- Will use R as our main software
  - Aggregate datasets, inspection, data cleaning
  - Prepare data frame for analysis
  - No missing values, correct data types
  - Remove outliers (maintenance records, docking error, etc.)
- Variables: ride ID, ride type, started at, ended at, start station name and ID, end station name and ID, **member or casual**, date (**month**, day, year), **day of week**, **ride length**

Analysis

Descriptive analysis for 2021 data

- Compare average ride times
- Analyze by type and weekday
- Compare ridership data

Identify trends, relationships

- Differences between members and casual riders

Average ride times:

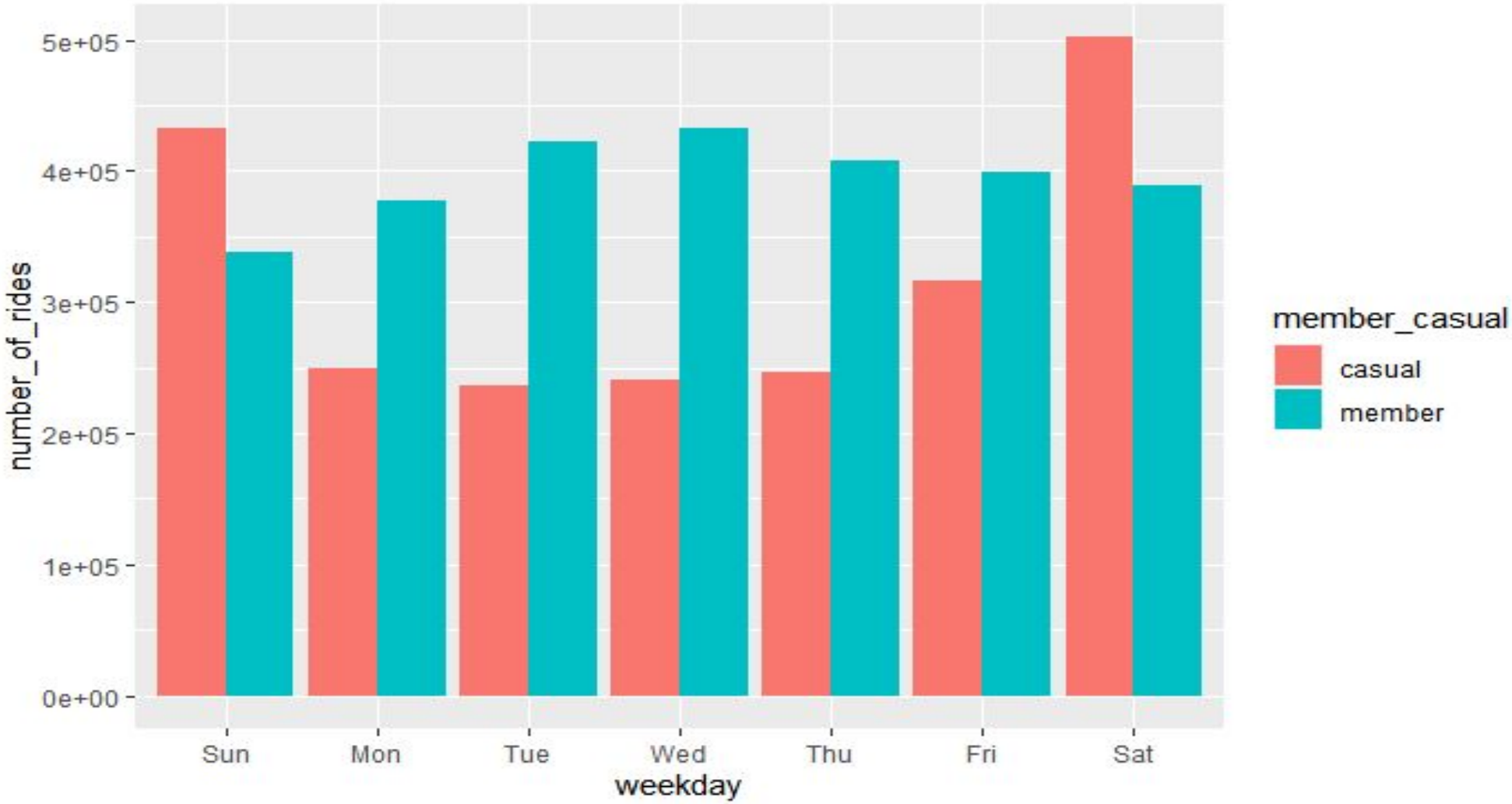
- Members: 13~14 minutes
- Casual: ~34 minutes

More rides for casuals during weekends.

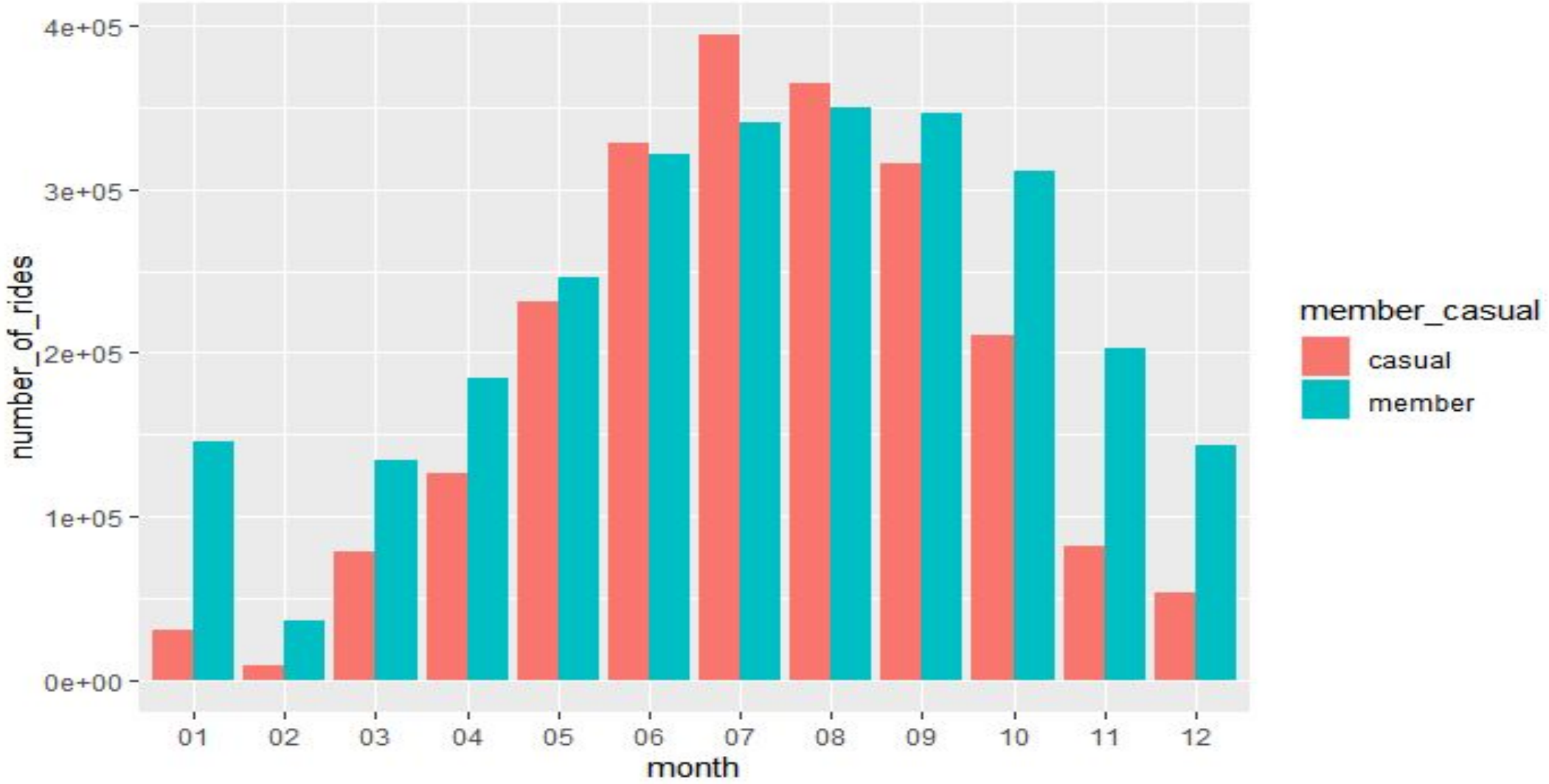
(Casuals use for recreational)

More members during weekdays (members use for transportation for work/home, on a schedule)

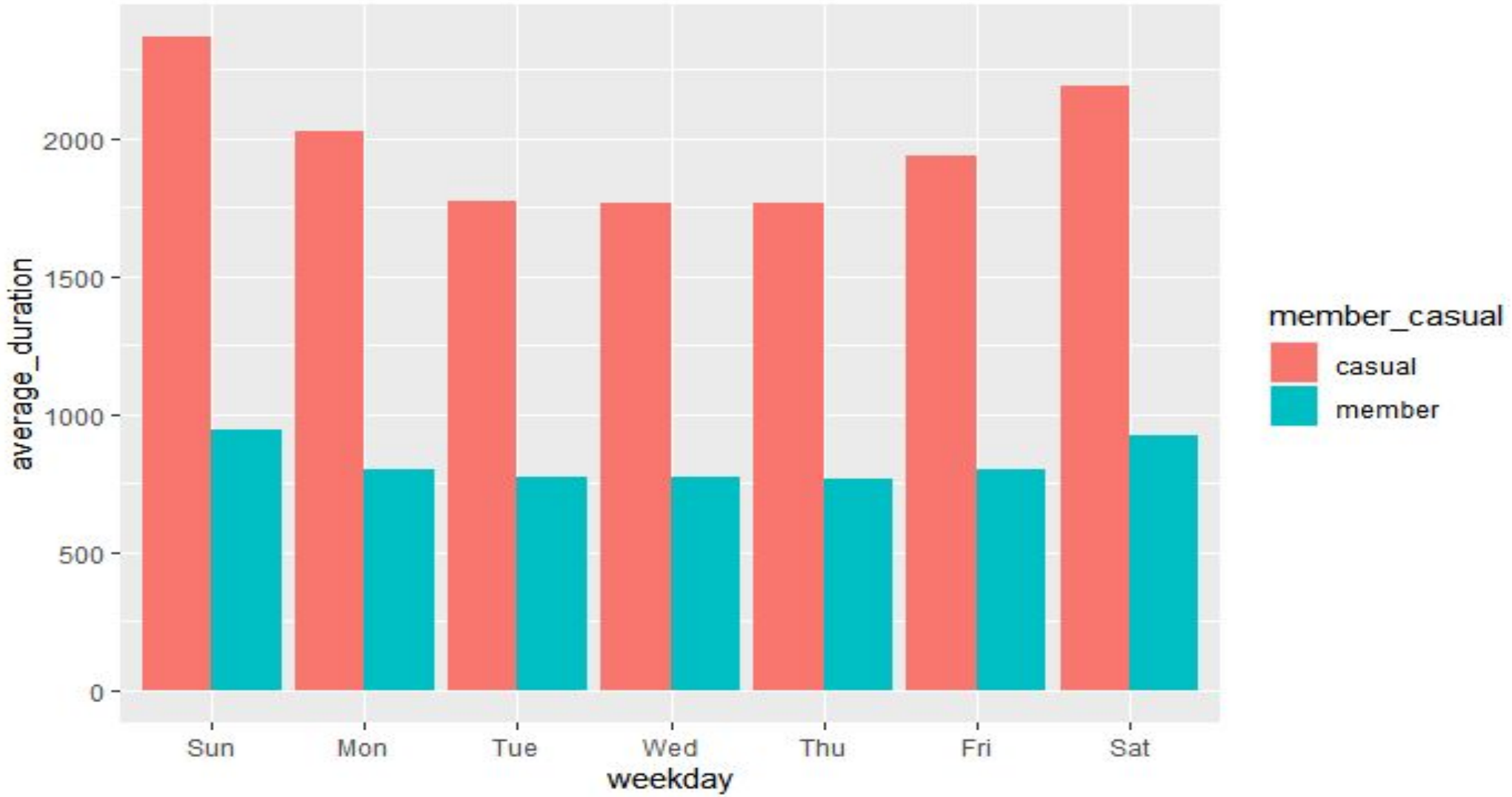
Number of Rides by Day of Week



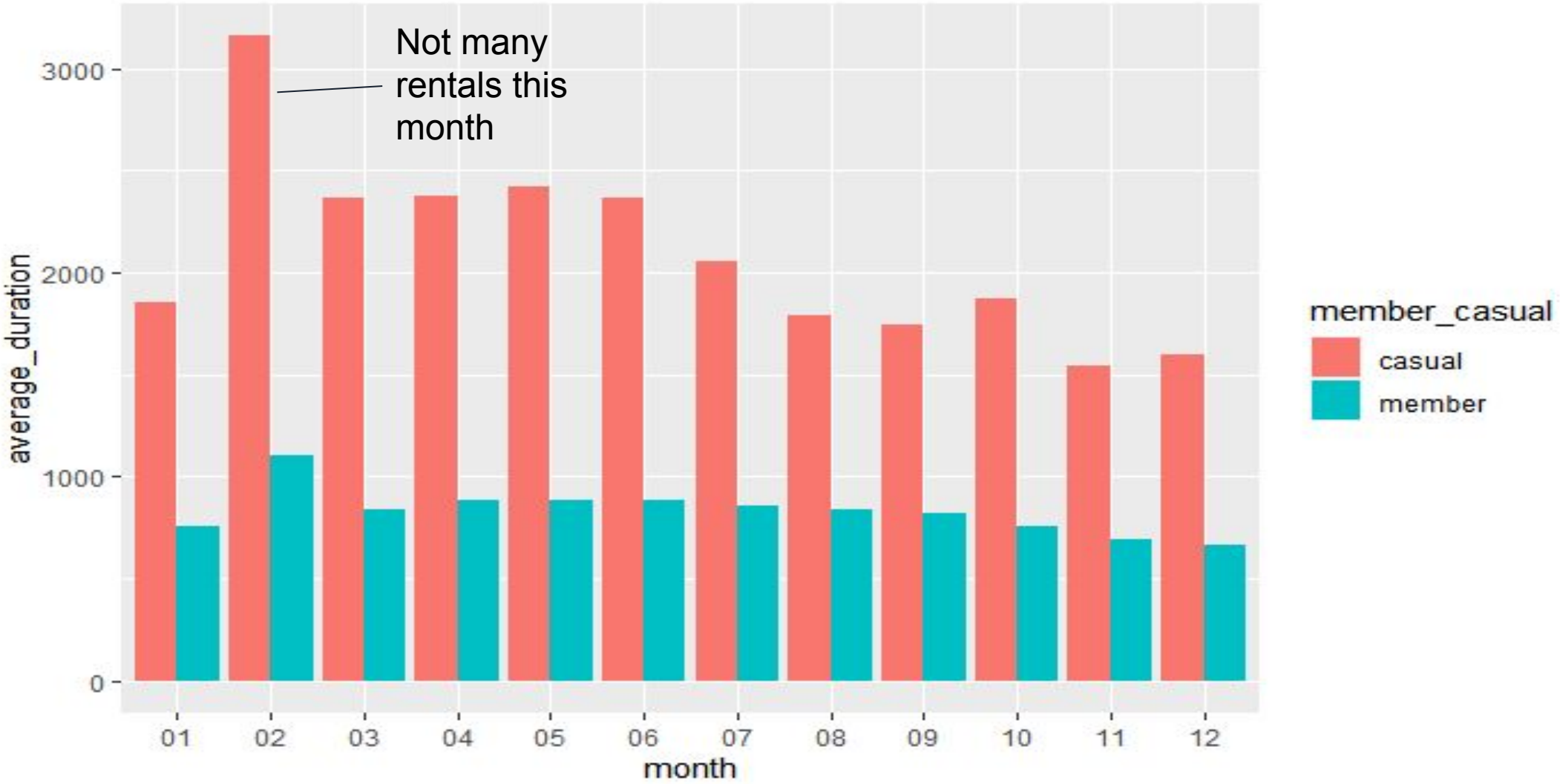
Number of Rides by Month



Average Duration by Day of Week



Average Duration by Month



Key Findings

Number of member rides are consistent throughout the week.

More casual riders during the weekend.

Less riders in the colder months

Members have a lower, consistent average ride duration throughout the week

(Use the bikes on schedule, transportation)

Casual riders have a higher average ride duration but still higher during weekends

(Use the bikes for recreational purposes)

Recommendations and Next Steps

Members and Casual Riders use our service for different purposes

- Refocus marketing campaigns based on their preferences
- Build strategies based on the analysis-built profiles

Promote benefits of bikes as transportation

- Help maintain planet green
- Daily exercise

Weekend memberships and free trials for those interested in recreational purposes

Conclusion

Historical data contains important information on users and their preferences

Through analysis, we can build profiles and understand the key differences

Now, we know how to approach casual riders with memberships

Further analysis could expand our findings

- Climate data for usage patterns in different weather
- Mobility data – more convenient docking stations, enhanced routes