

Cyclistic Bike-Share Case Study (2019 & 2020)

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Tools Used: Microsoft Excel, Google Sheets.

1. Introduction

The goal of this case study is to analyze how Cyclistic bike-share service is used by annual members and casual riders. The objective is to uncover usage patterns and recommend strategies to convert casual users into annual members.

2. Data Overview

2019 Dataset:

- Total Records: 365070
- Columns include: trip_id, start_time, end_time, bikeid, tripduration, from_station_name, to_station_name, usertype, gender, birthyear, ride_length, day_of_week.

2020 Dataset:

- Total Records: 426770
- Columns include: ride_id, rideable_type, started_at, ended_at, start_station_name, end_station_name, start_lat, start_lng, end_lat, end_lng, member_casual, ride_length, day_of_week.

Datasets were analyzed separately due to format and column differences.

3. Data Cleaning & Preparation

Performed the following steps in Excel and Power Query:

- Removed missing/invalid values.
- Calculated ride duration (`ride_length`) using `ended_at - started_at`.
- Filtered out negative durations.
- Created a new column for `day_of_week` based on start date.
- Segregated users as `member` or `casual`.
- Cleaned station names for consistency.

4. Descriptive Analysis

Key Metrics (2019):

- Total Rides: 365070
- Member Rides: 341906
- Casual Rides: 23163
- Avg. Ride Length (Member): 00:11:30
- Avg. Ride Length (Casual): 00:37:04

Key Metrics (2020):

- Total Rides: 426770
- Member Rides: 378407
- Casual Rides: 48363
- Avg. Ride Length (Member): 00:11:34
- Avg. Ride Length (Casual): 00:40:13

Dashboards and charts created for each year separately

5. Key Insights

- Casual riders take longer rides, especially on weekends.
- Annual members ride more frequently but for shorter durations.
- Weekends see more casual usage; weekdays see more member activity.
- For Members highest ride counts observed on Tuesday, lowest on Saturday.
- For Casuals highest ride counts observed on Sunday, lowest on Thursday.

6. Business Questions Answered

1. How do annual members and casual riders use bikes differently?

- Casuals: Longer rides, weekends.
- Members: Frequent, shorter rides, weekdays.

2. Why would casual riders buy annual memberships?

- Incentives for frequent users.
- Time-saving for regular commuters.
- Promotions on weekend rides or bundled offers.

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

- Targeted email/social media campaigns.
- Mobile app promotions.
- Highlighting member benefits with ride comparisons.

7. Conclusion

Based on analysis, we recommend targeting casual weekend riders with offers promoting annual membership benefits, emphasizing cost-saving and convenience. Consistent marketing via digital media can aid conversion.

8. Appendix

Visualizations – 2019 Dashboard

Figure 1: Total Rides by User Type (2019)

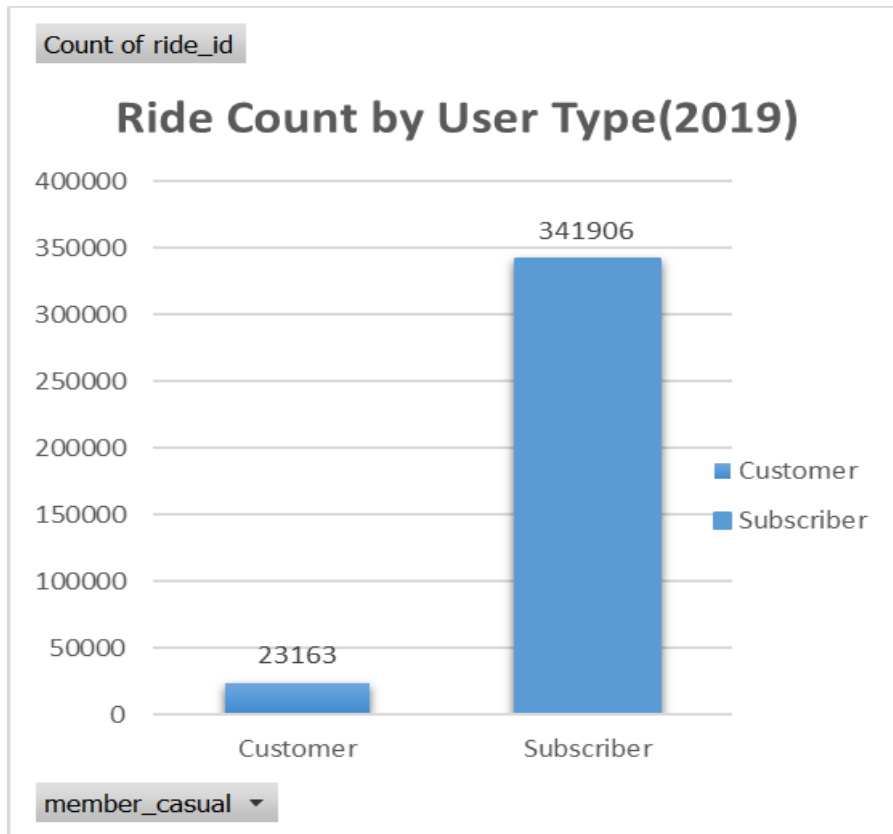


Figure 2: Average Ride Duration – Members vs Casuals (2019)

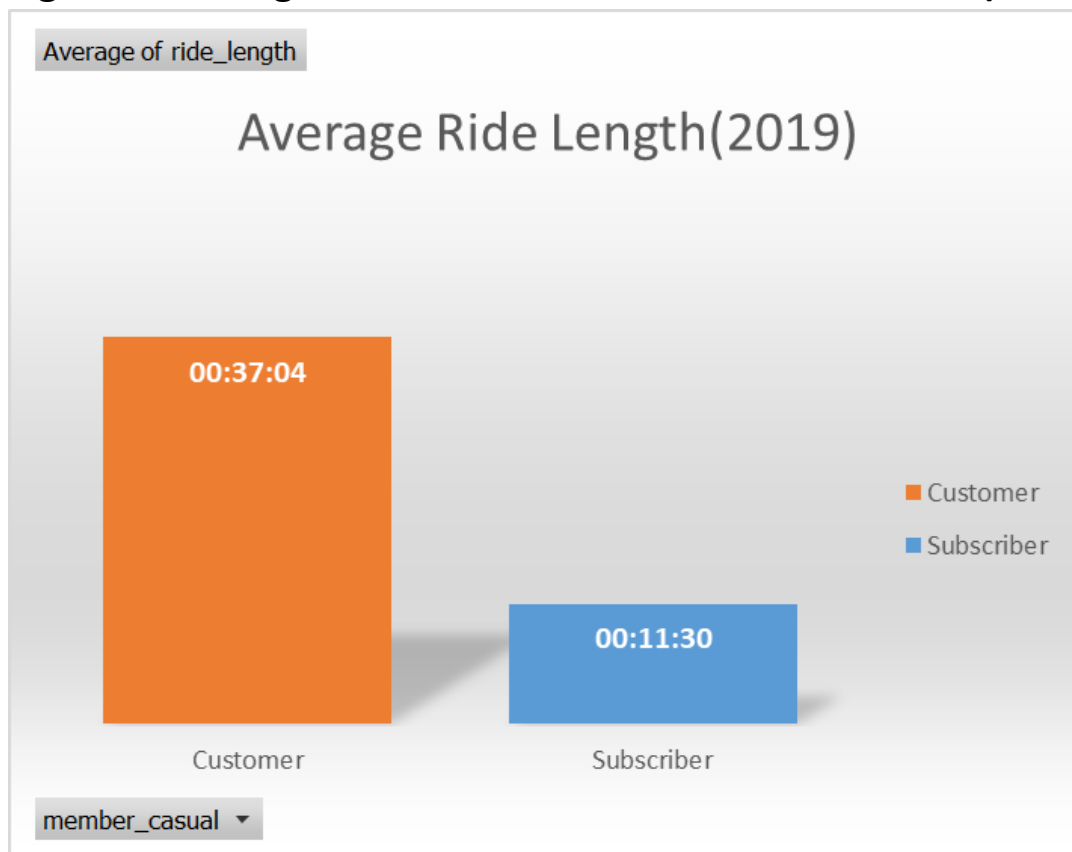


Figure 3: Weekday Ride Frequency by User Type (2019)

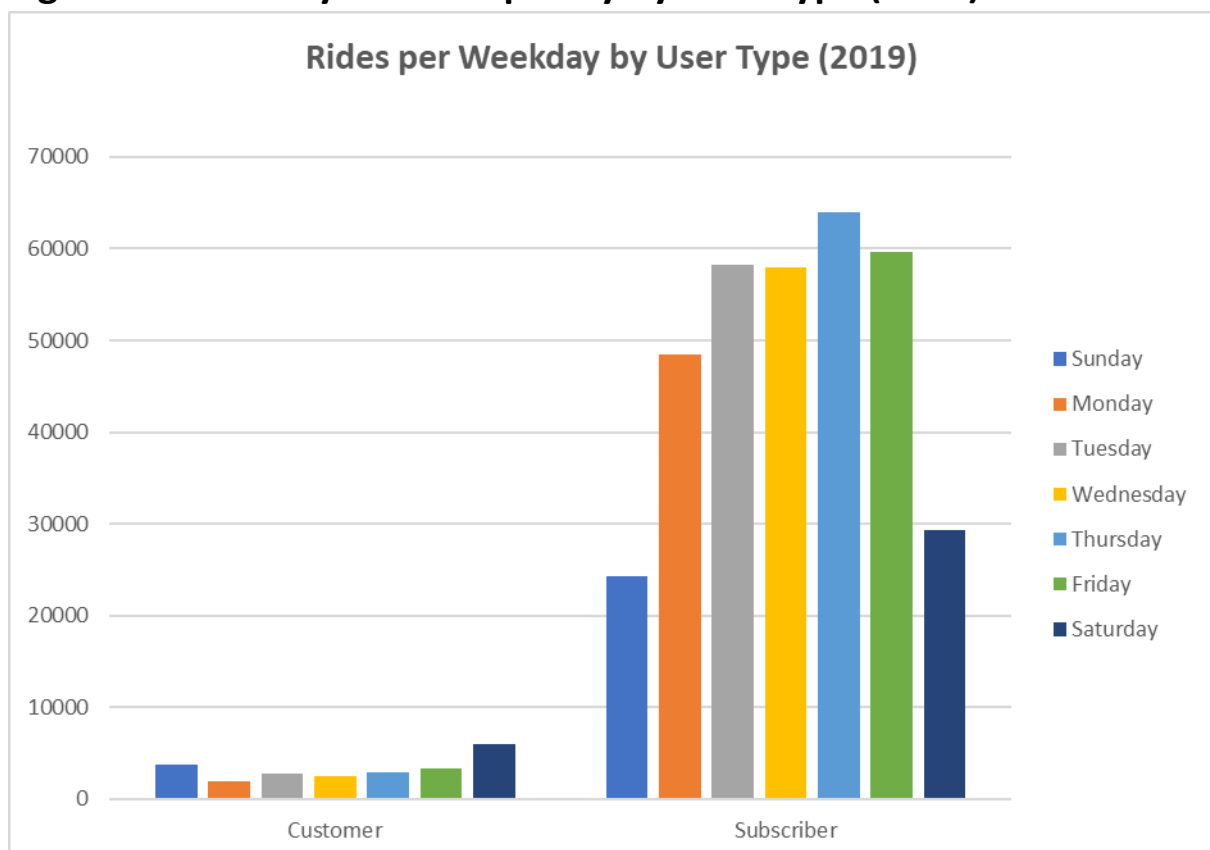


Figure 4: Total Rides by User Type (2020)

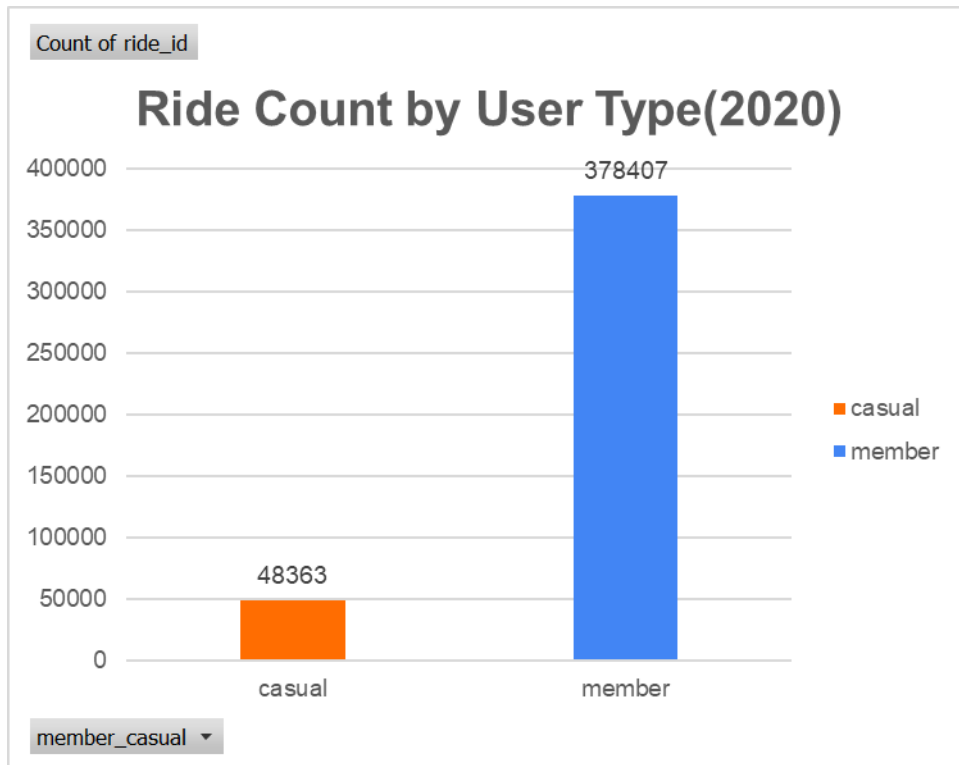


Figure 5: Average Ride Duration – Members vs Casuals (2020)

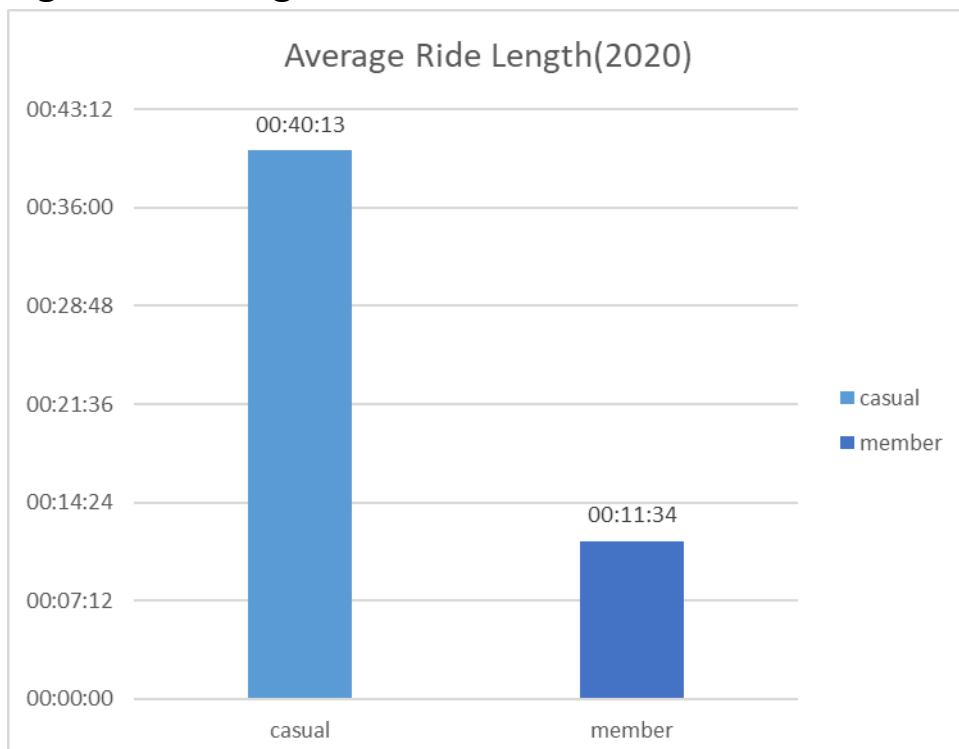


Figure 6: Weekday Ride Frequency by User Type (2020)

