Divvy Bike Trips Case Study

Last Updated April 2022 by Nabil Alam

Scenario

You are a junior data analyst working in the marketing analyst team at Cyclistic, a bike-share company in Chicago. The director of marketing believes the company's future success depends on maximizing the number of annual memberships. Therefore, your team wants to understand how casual riders and annual members use Cyclistic bikes differently. From these insights, your team will design a new marketing strategy to convert casual riders into annual members. But first, Cyclistic executives must approve your recommendations, so they must be backed up with compelling data insights and professional data visualizations.

Business Task

- Cyclistic finance analyst have made it clear that annual members are much more profitable than casual riders.
- Casual riders refer to customers who purchase single-ride or full-day passes. While regular members refer to customers who pay annually.
- Rather than creating a marketing campaign that targets all-new customers, your manager believes there is a better chance converting casual customers into members, as they already are aware of their brand and have used their bikes before
- How do annual members and casual riders use Cyclistic bikes differently?
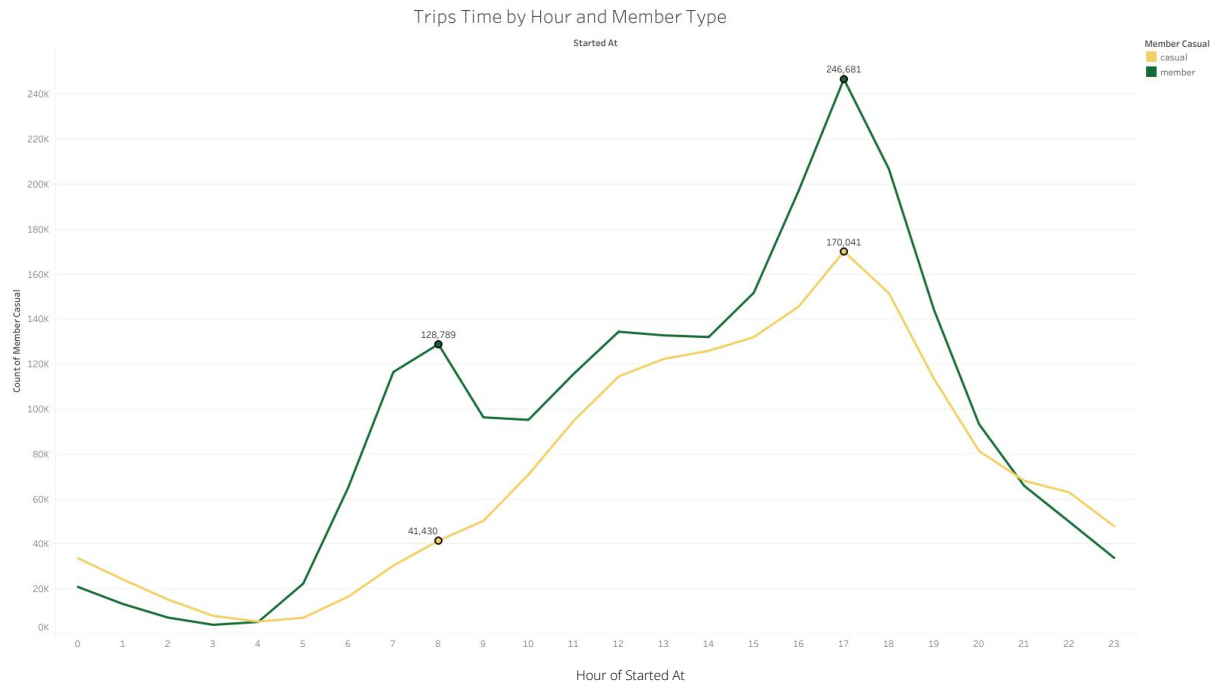
Data Sources

- Data is provided by Motivate International Inc.
- CSV file from the months October 2020 - September 2021
- Chicago, Illinois, USA bike sharing by casual and member riders
- No personally identifying information
- Fictional company

Data Cleaning

- Started with 5,136,261 rows and 13 columns
- Removed trips with duplicate ride_ids or station names
- Removed trips with a negative time rode (difference between started_at and ended_at)
- Removed start_station_id, end_station_id, end_station_name, start_station_name before exporting to a new csv file
- Made new column ride_length_secs with the difference between started_at and ended_at
- Ended with 4,011,232 rows and 10 columns
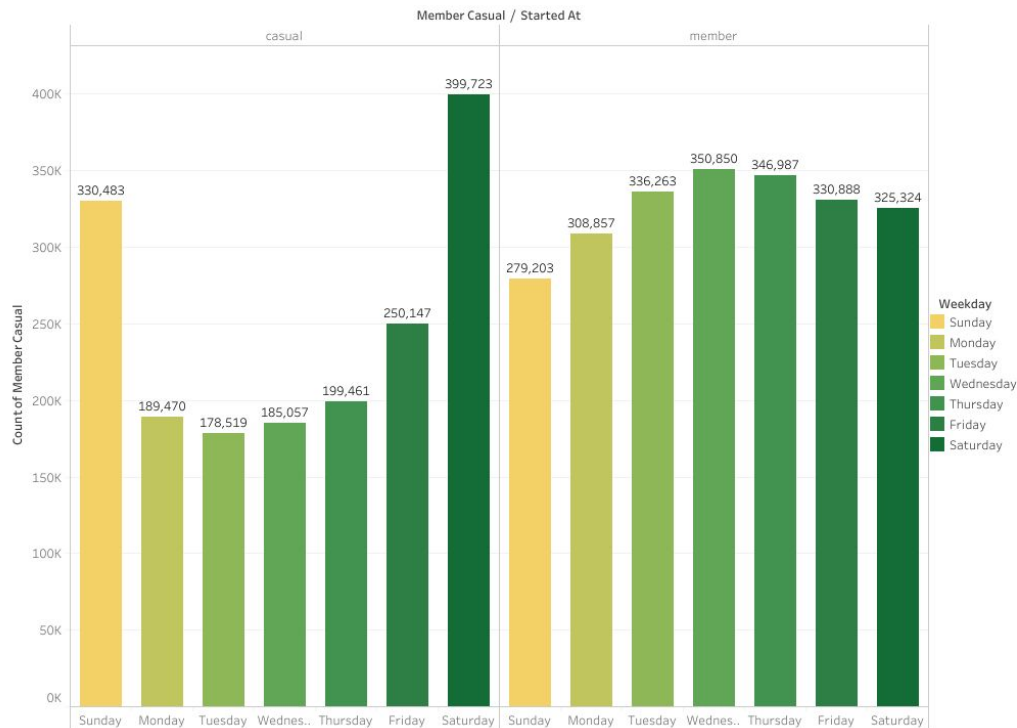
Casual vs Member Trips

- Annual members are using the bikes more during commuting hours before and after work
- The peak ridership in both member types happens at 5 pm

Trips Time by Hour and Member Type

Started At

Member Casual
- casual
- member

246,681

170,041

128,789

41,430

Count of Member Casual

Hour of Started At

Casual vs Member Trips

- Members ride more frequently throughout the week and ride more on weekdays
- Casual riders bike more on the weekend
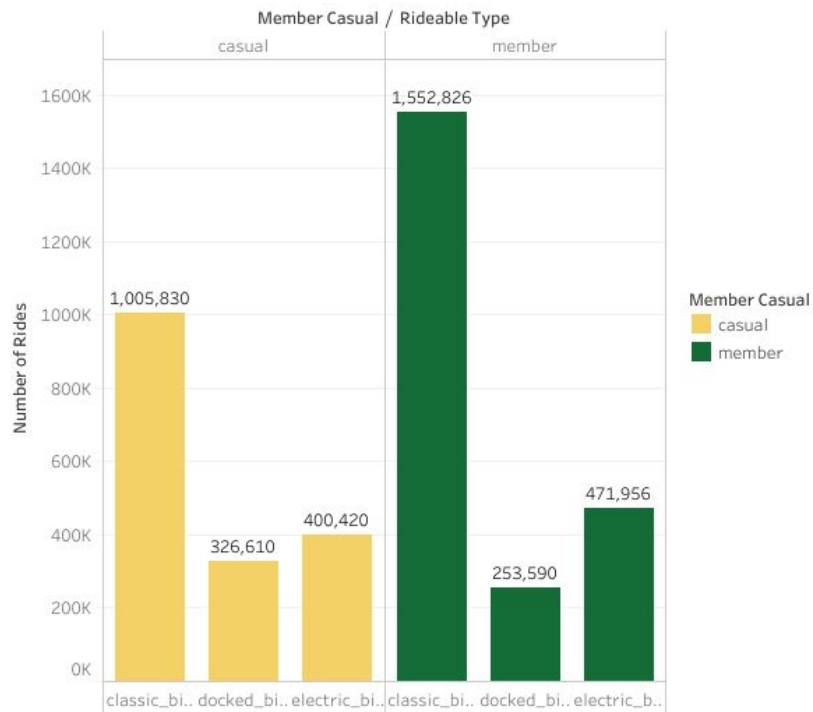
Casual VS Member Rides per day

Casual vs Member trips

- The classic bike is the most used by both member types
- Casual member are taking longer rides

Total Length of Rides by Bike Type and Membership

Number of Rides Per Bike And Member Type

Casual vs Member Trips

- Casual riders take longer rides especially on docked bikes
- Members take about the same length ride regardless of bike type
- An average trip for a casual rider on a docked bike would be 1 hour 5 minutes!
- Annual members are taking nearly the same average length time in all three bike types

Average Ride Time By Bike Type and Membership Type
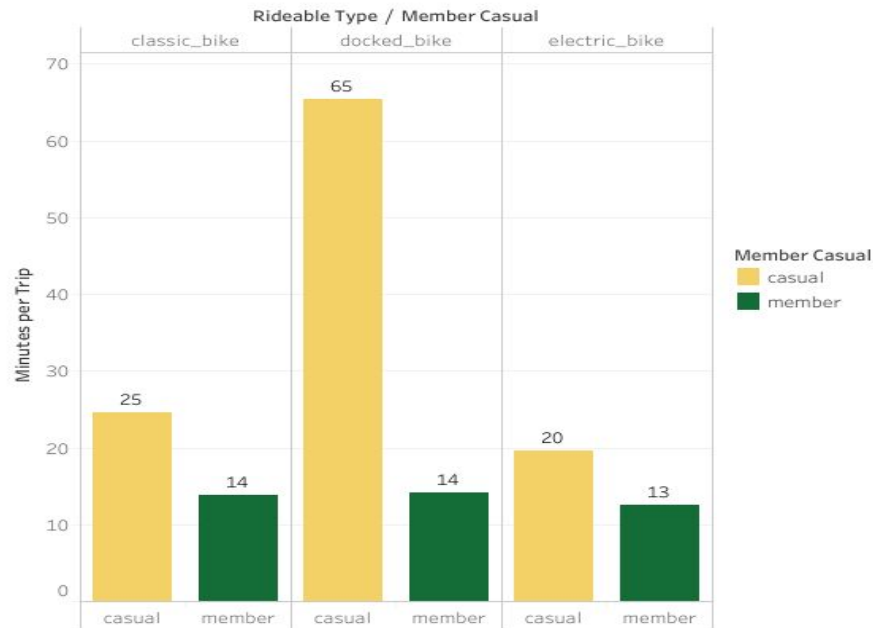
Recommendations

- Market annual membership to casual members who ride during the commuting hours
  - These members are riding multiple times a week, it can be assumed to and back from work.
  - Assure the customers it will be more cost-effective if they switch to annual membership rather than constantly purchasing single ride or day passes.
- Make trips more expensive on the weekend to make up for the majority of trips being from a less profitable membership type, which in turn can incline riders to switch membership types
- Charge more per minute for bike rides longer than 40 minutes
  - Casual riders are more likely to take a longer ride (especially docked) and they are less bikes available with longer rides being taken hence implementing the surcharge
  - Consider adding perks for annual members such as discount/removal of this surcharge if membership is upgraded.