

Cyclistic Bike-Share Case Study

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Cyclistic's financial analysts have concluded that annual members are more profitable than casual riders, and want to convert more casual riders to annual memberships.

To aid in achieving that goal, I was asked to look at the ridership data and determine how Cyclistic members and casual riders use Cyclistic bikes differently.

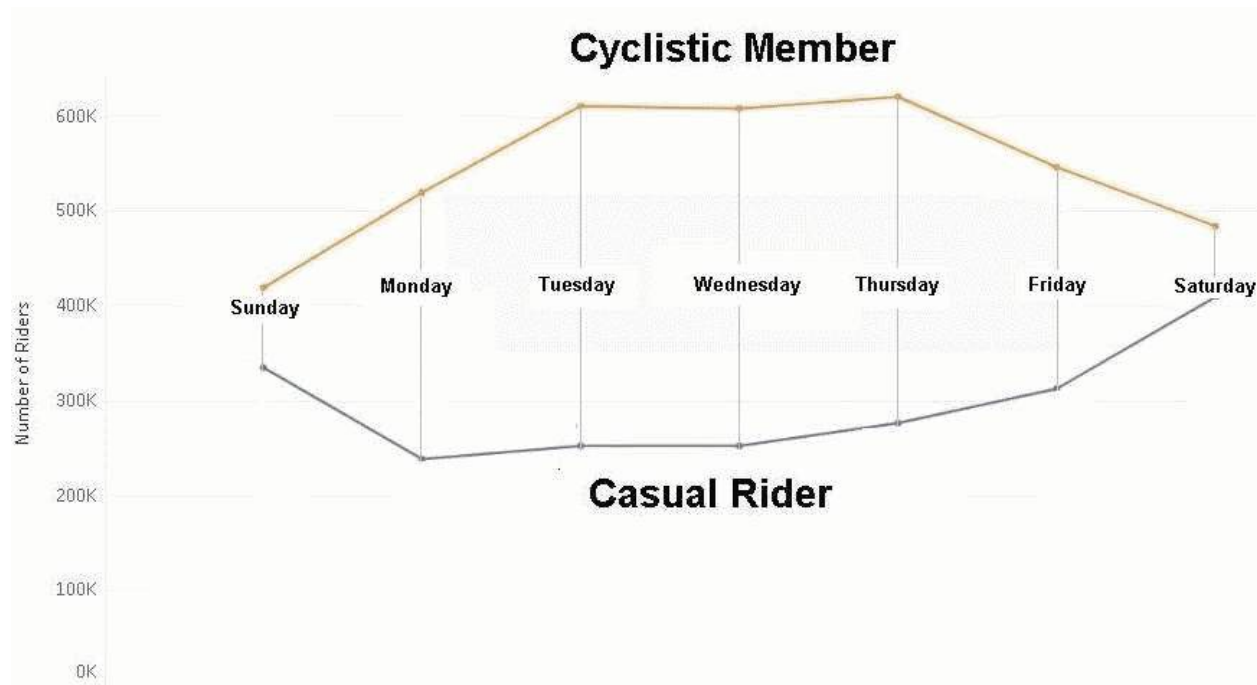
The data files used to generate this report represent December 2022 through November 2023 rides.

Since bike rides over 24 hours are prohibited, rides greater than 24 hours were removed from the file. Also, rides under one minute were removed since they were potentially false starts or users trying to re-dock a bike to ensure it was secure.

My analysis revealed three differences between the ridership habits of Cyclistic members and Casual riders.

Casual Riders are more likely to ride on weekends.

Casual riders ride more on the weekends than Monday through Friday, whereas Cyclistic members ride more Monday through Friday than they do on the weekends.

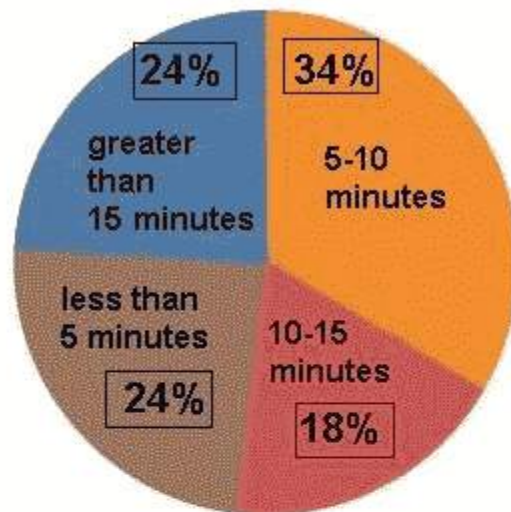


Casual Riders are more likely to take longer trips.

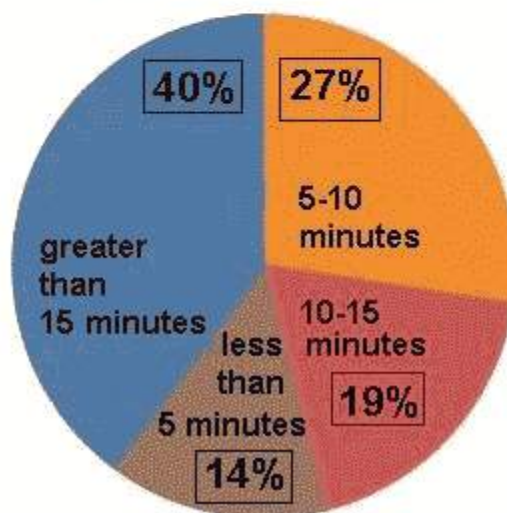
Casual riders tend to have longer trips than Cyclistic members. Cyclistic members frequently ride for less than 5 minutes at a time.

The majority (58%) of Cyclistic member rides are under 10 minutes, whereas only 41% of casual rides are under 10 minutes.

Cyclistic Member

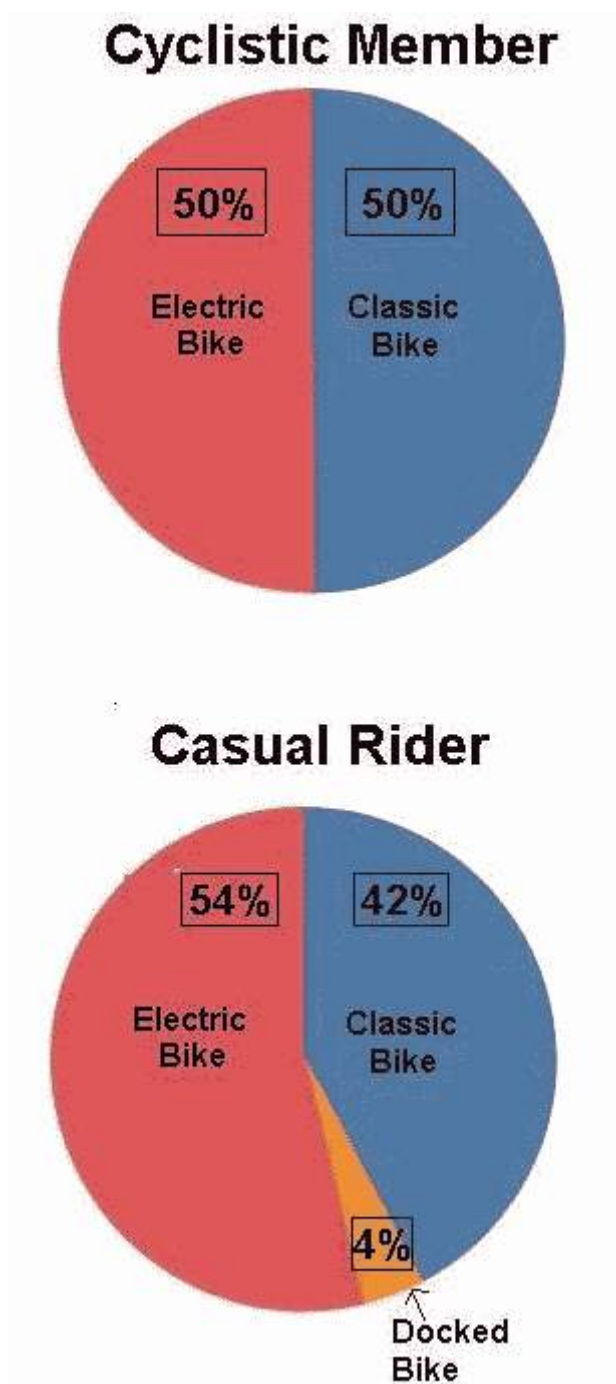


Casual Rider



Casual Riders are more likely to choose Electric Bikes

Cyclistic members are evenly split between electric bikes and classic bikes. However, casual riders appear to have a small preference for electric bikes over classic bikes. Although a small percentage of docked bikes were used by casual riders, the data did not show docked bike usage by any Cyclistic members.



My top three recommendations based on this analysis are:

1. Offer an annual "Weekend only" membership at a lower rate than the current annual membership.
2. Develop a marketing strategy to encourage casual riders to become Cyclistic members in order to take more very short rides.
3. Develop a marketing strategy to inform casual riders that Cyclistic members receive half-price off electric bike rides.

Appendix:

The data used in this study is described/linked from: <https://divvybikes-marketing-staging.lyft.net/system-data> and is subject to the license agreement posted at: <https://www.divvybikes.com/data-license-agreement>

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Limitations of the Data and Questions

The data used had been anonymized so that it was not possible to identify trends among specific users or to determine how many unique users there are.

It would be useful to know if there is a specific reason why there is no data showing members using Docked Bikes. Is this intrinsic to members, is it bad data, or is there some other reason?

Casual riders have a choice between purchasing either a Day Pass or paying per minute. However, the available data does not distinguish between the two. Having that data may lead to further insights.

Documentation of Data Manipulation

First, the data files were merged into one file covering the entire time period, and loaded into a BigQuery SQL database table. The data was reviewed for consistency and missing values.

Since bike rides over 24 hours are prohibited, rides greater than 24 hours were removed from the file. Also, rides under one minute were removed since they are potentially false starts or users trying to re-dock a bike to ensure it was secure.

The station start and end points were determined to not be useful in this analysis. So, those points were also removed.

Then, the length of each ride was calculated.

That data was then exported into a CSV file which was imported into Tableau for further analysis.

In Tableau, the ride lengths were grouped into categories (< 5 minutes, 5-10 minutes, 10-15 minutes, and greater than 15 minutes).

Relevant findings were then converted into visualizations and further edited using graphics software. Those graphics and findings were then combined into a “R Markdown” document for this presentation.