

MBA 562: Module 3 Individual Assignment

Visuals for this assignment were generated using Divvy trip data files available on the Divvy Bikes website [1]. Specifically, trip data was compiled over a 6-month period from November 2020 through April 2021. Data manipulation and visual generation was completed in R-studio. Visual post processing (e.g., axis labeling, visual headline and description, annotation) was completed using Microsoft Powerpoint. Visuals were based on key question one and supporting facts from the Module 2 Individual Assignment.

Both visuals are data-driven in nature. The visuals were initially generated using visual discovery software (R-studio), however, after post-processing in PowerPoint the visuals may be considered declarative. The visuals are intended to express patterns of change over time as well as compare and/or correlate behaviors of different Divvy user types, i.e., Members and Casual Users. The first visual (“Ride Start Time”) displays differences in demand patterns between user types by displaying the number of rides starting in each hour of the day. Similarly, the second visual (“Rides by Weekday”) displays differences in demand patterns between user types by day of the week.

Both visuals utilize color contrast by distinguishing between user types with different colors. By using different color shades, readers can quickly identify which bars display data related to either Divvy user type.

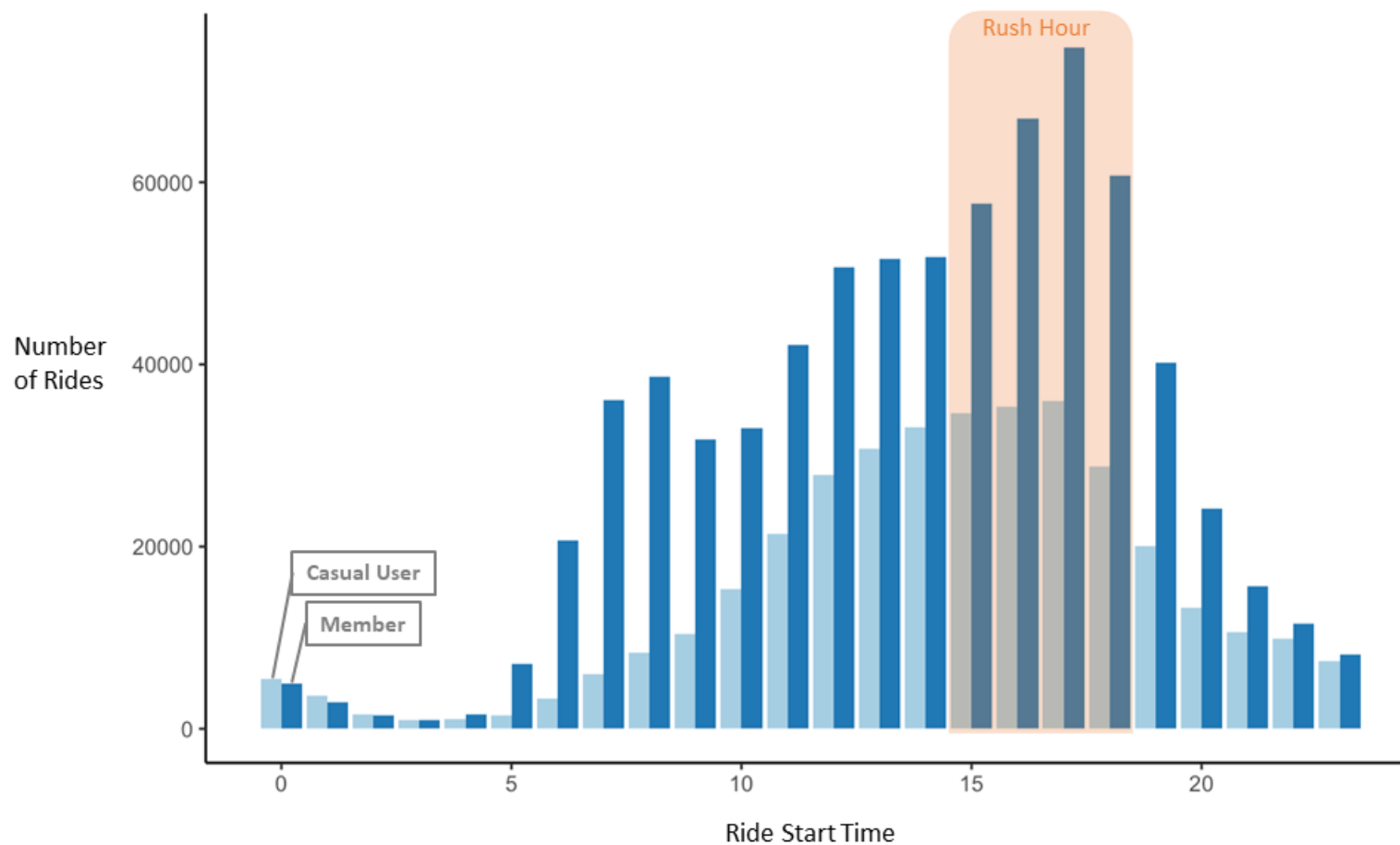
The first visual (“Ride Start Times”) uses additional color and contrived contrast in order to highlight the region of the day which would be considered “rush hour” for Divvy users (i.e., Members). The box used to draw attention to the period between 3 PM to 7 PM on the visual is a form of contrived contrast. The box also is set in a color which contrasts with the rest of the visual to draw the reader’s attention.

Both visuals could likely improve with additional post processing (or generation) in a more powerful data visualization tool. R-studio is a good tool for data-driven, exploratory visuals, but is not as well equipped for data-driven, declarative visuals. Improvements in this area will require additional time/practice in order to learn how to better export R data for use in other visualization tools, and learn how to use other visualization tools (e.g., Tableau, Raw, Power BI).

Additional improvements may be made in how user types are identified on the visuals. As noted in Coursera Module 3, legends on visuals should be avoided, however I was unable to find a “clean” method of direct labeling for these visuals.

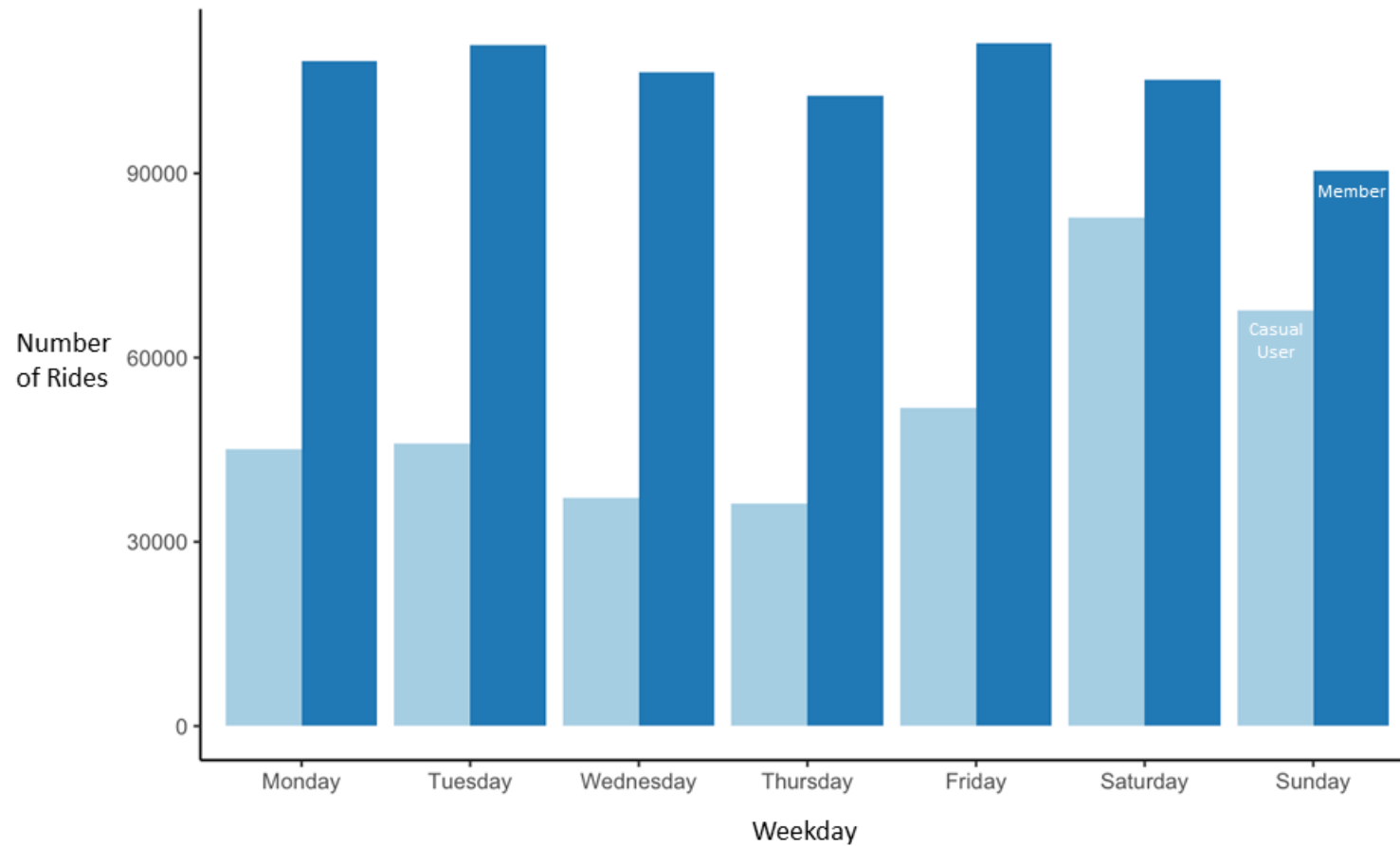
Divvy Member & Casual User Ride Start Times

Member rides peak more significantly during “rush hour” between 3 to 7 PM



Divvy Member & Casual User Rides By Weekday

Casual User rides increase more significantly on weekends



References

[1] “Divvy-Tripdata”, *DivvyBikes.com*, <https://divvy-tripdata.s3.amazonaws.com/index.html>. Files used:

- 202011-divvy-tripdata.zip
- 202012-divvy-tripdata.zip
- 202101-divvy-tripdata.zip
- 202102-divvy-tripdata.zip
- 202103-divvy-tripdata.zip
- 202104-divvy-tripdata.zip

The following tutorial was used in order to better understand plotting in R-studio using the ggplot2 library.

[2] Hansen, Karsten. “Data Visualization in R Using Ggplot2.” *Business Analytics in R*, 2020, bar.rady.ucsd.edu/Viz1.html.