Ride Share Case Study

For Google Data Analytics course

Matthew Blosser, April 11, 2023

Background

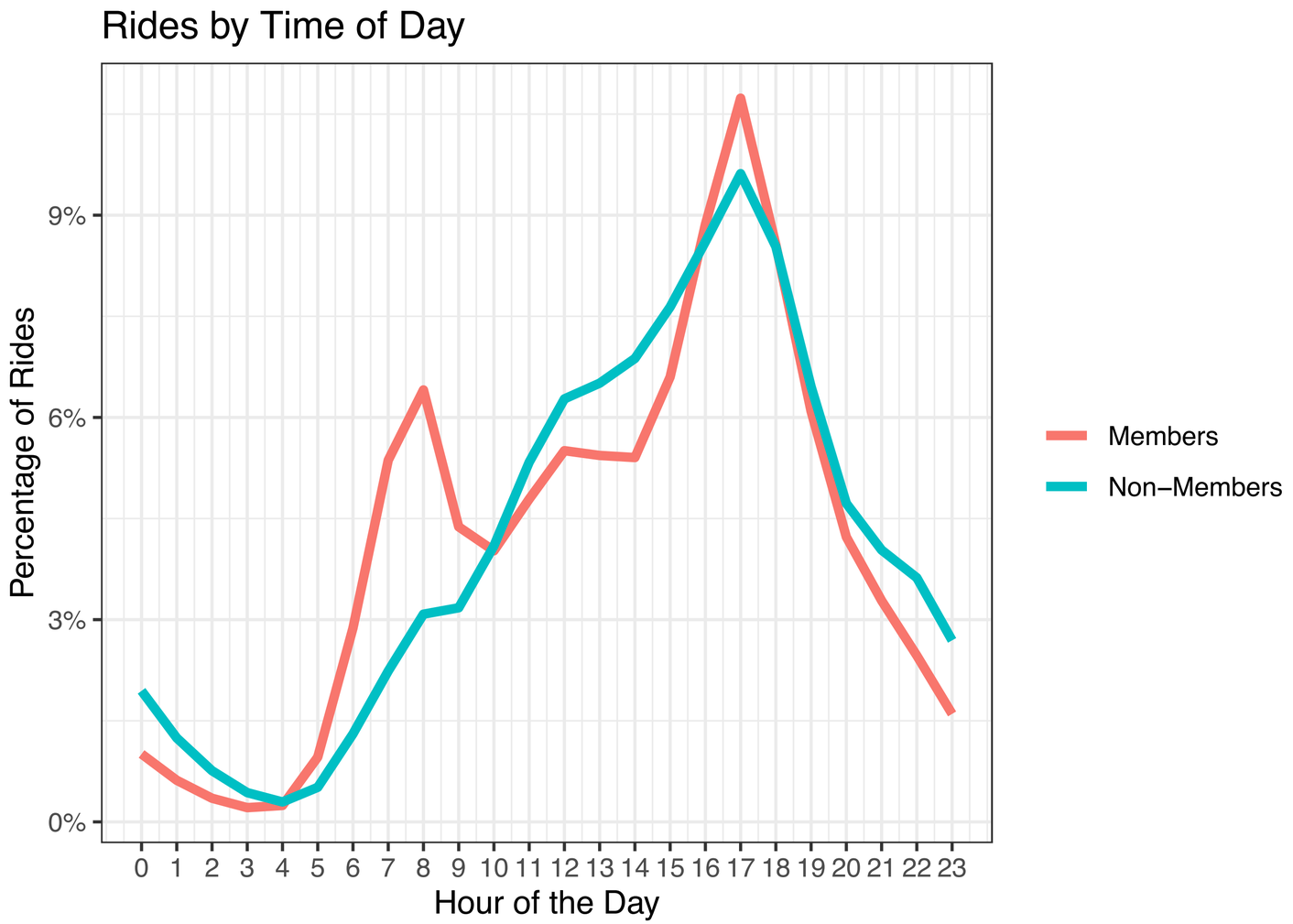
Members vs. non-members in bike sharing

- Data is taken from a fictional bike share company located in Chicago (actual data from Divvy Bikes)
- Dataset included 5+ million rides, and did not include individual identifying information (i.e. different rides from the same riders could not be linked)
- Analysis window was February 2022 - March 2023
- Goal was to find differences in usage patterns between members (people who subscribe to the service) and non-members (who pay as they go)

Time of day

Member rush hour

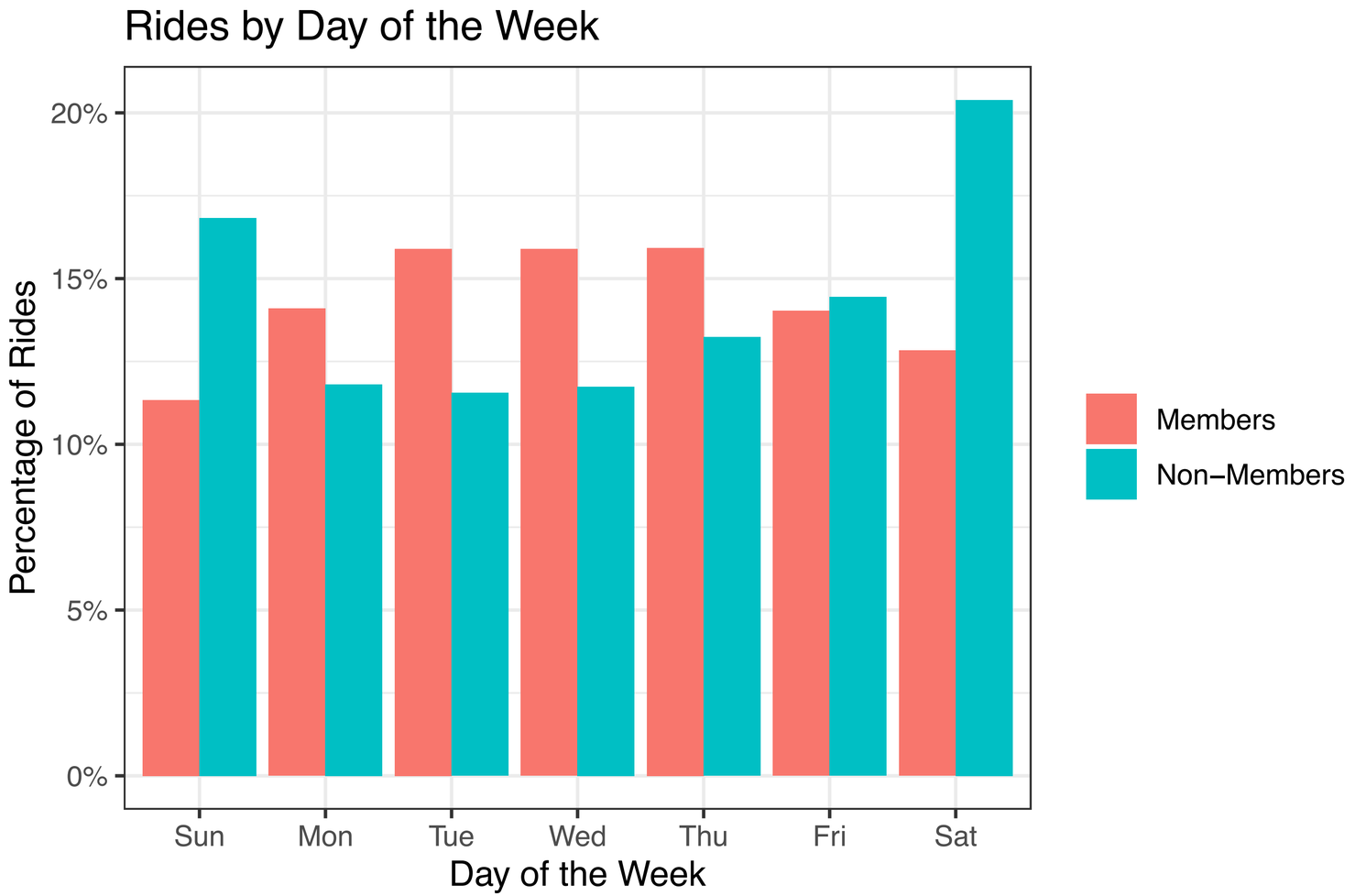
- Member have big spikes around 8 am and 5 pm, at commuting rush hour
- Non-members are much less likely to ride in the morning, and are more likely ride in the afternoon during core work hours



Day of the week

Members are weekday warriors

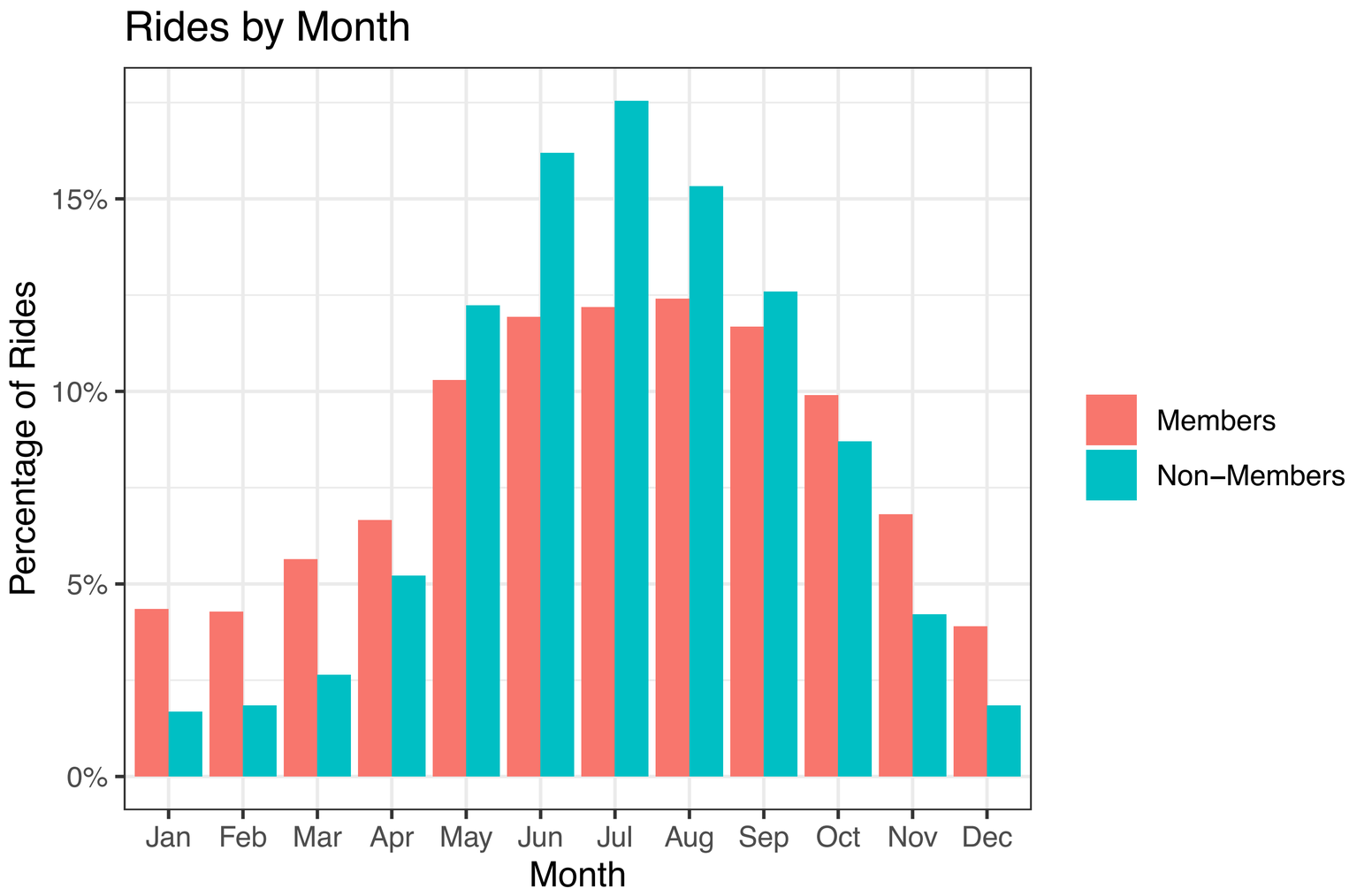
- Members are more likely to ride one weekdays
- Non-members see a big spike on the weekend
- Consistent with member rides being more work related



Month of the Year

Members ride more consistently

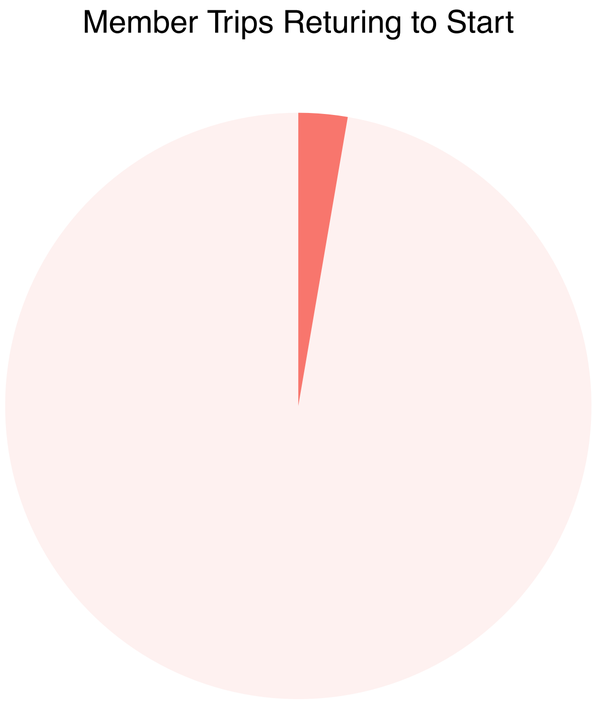
- Both members and non-members ride more during summer months
- The variations is much less for members
- Consistent with non-members being summer tourists and/or members using rides for essential trips

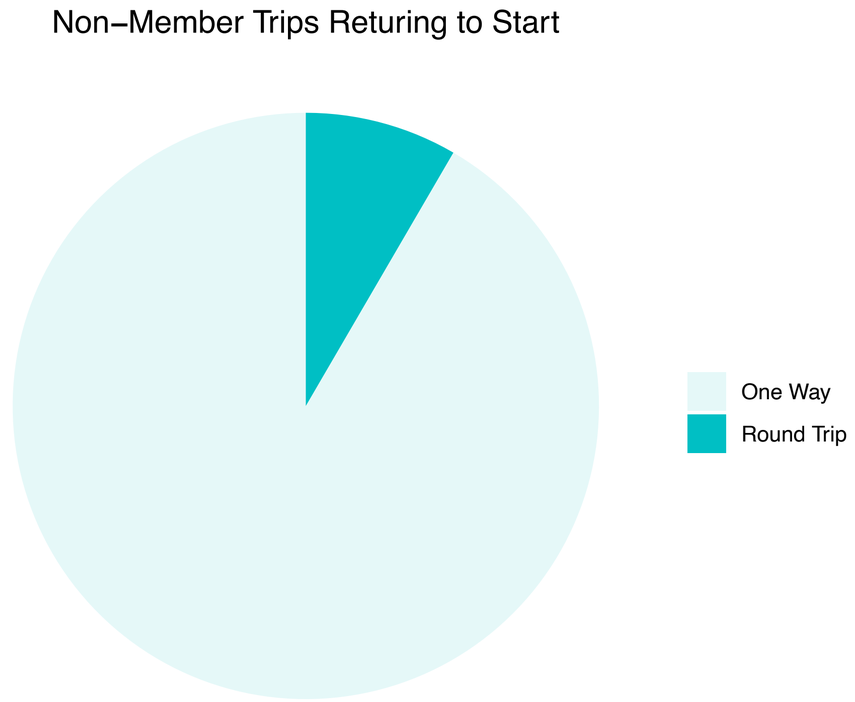


Rides that end where they begin

Members make more oneway rides

- Only 2.7% of trips by members start and stop at the same place
- 8.4% of trips by non-members do so
- Member roundtrip drops to 1.1% for weekdays at 8 AM, rises to 3.8% Sundays at 4 pm
- Consistent with a proxy for leisure rides (though undercounts)

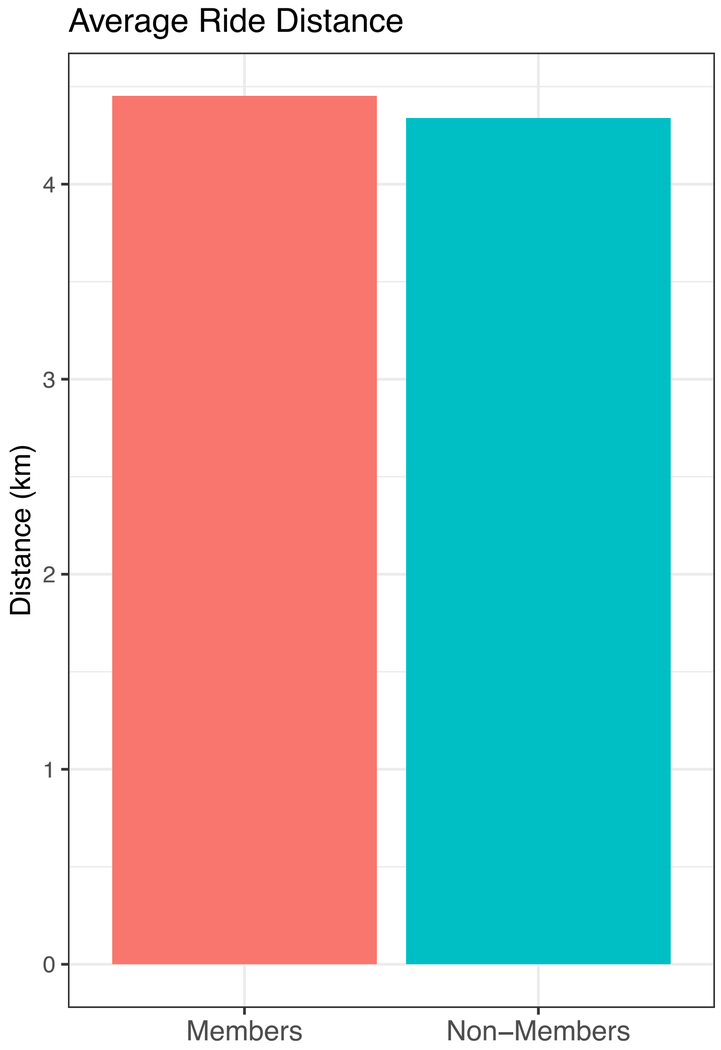


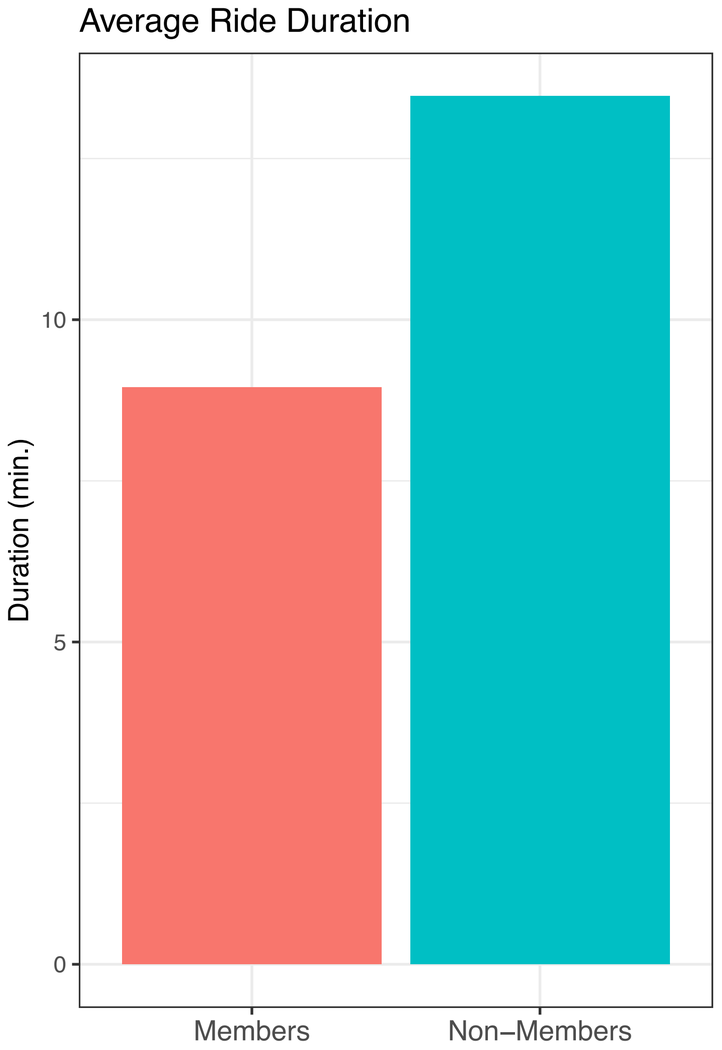


Duration and Distance

Members go the same distance in less time

- Both members and non-members end rides around 4.5 km from where they start
- This only includes oneway rides
- The path of the ride is not measured, just the end-to-end distance
- Members get there in significantly less time, either riding more quickly or more directly

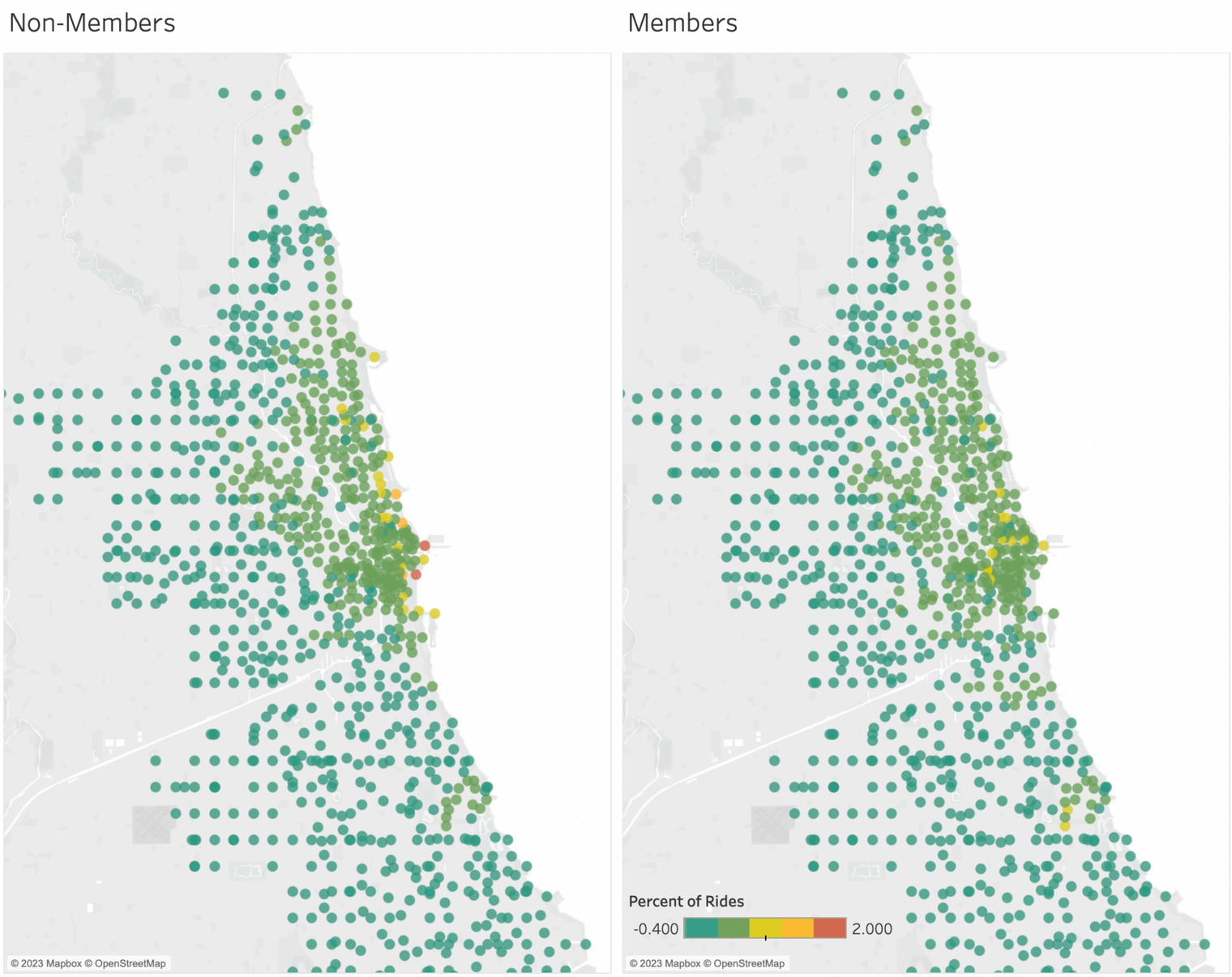




Map of rides

Concentrated in the city

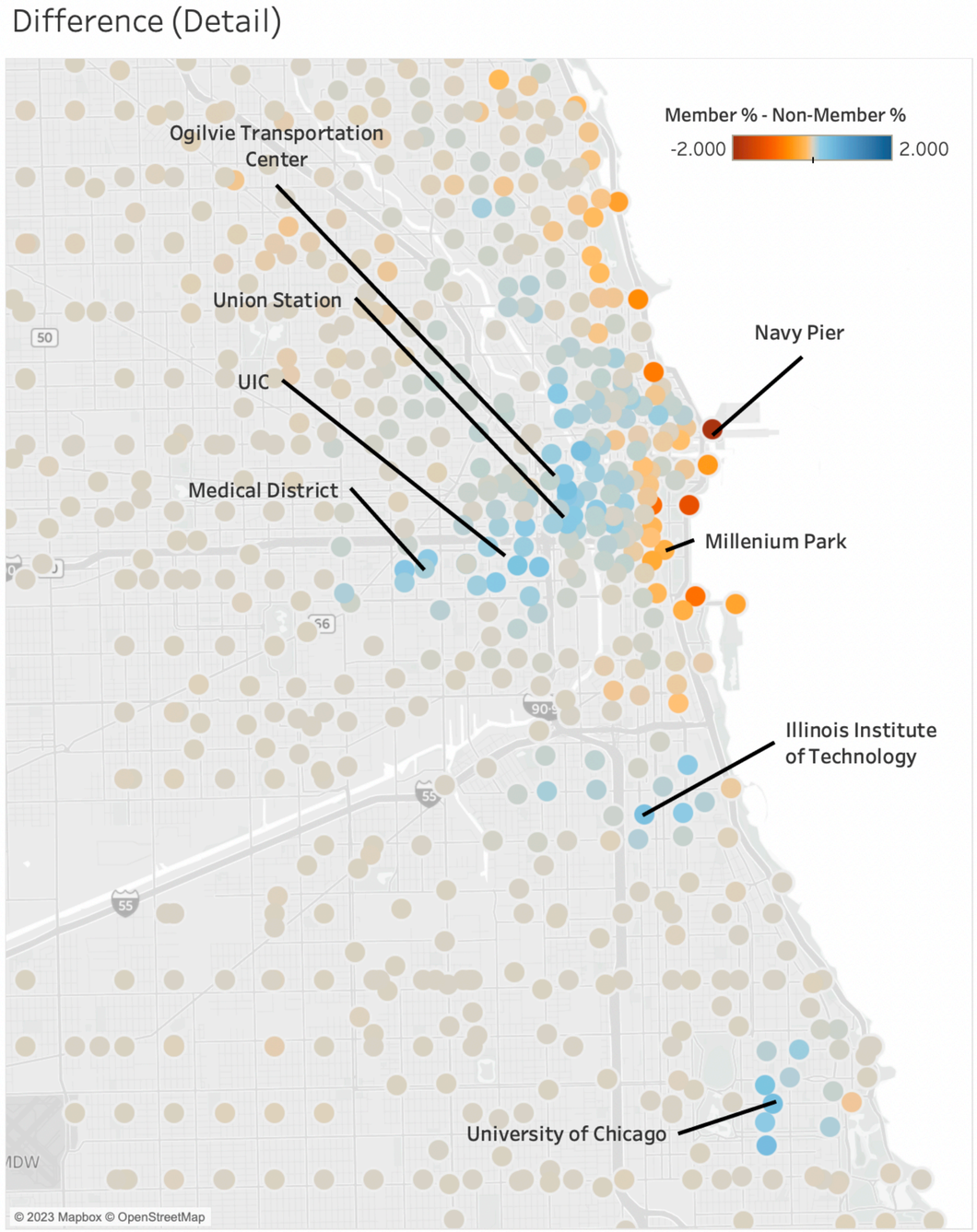
- Color indicates percentage of trips by each category started at each station
- Similar overall pattern
- Mostly aligns with overall population density



Difference in usage

Members avoid the shore

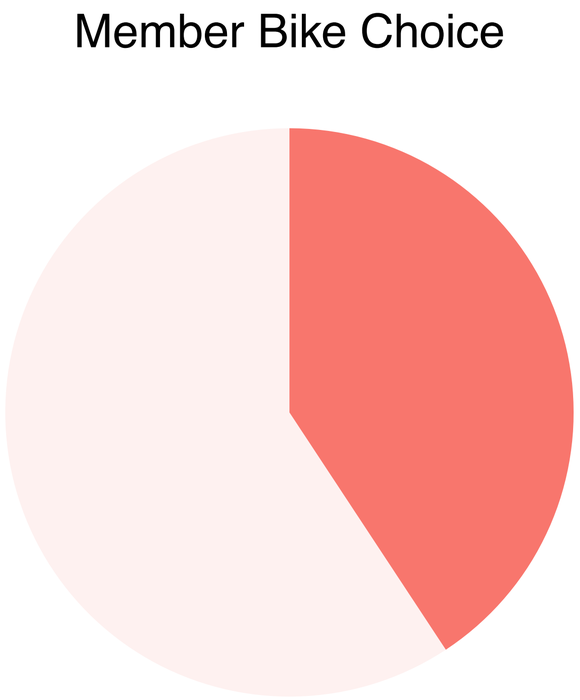
- Blue indicates stations typically used by members vs. non-members
- Members clusters around transit hubs and universities
- Non-members clusters around tourist/recreation areas

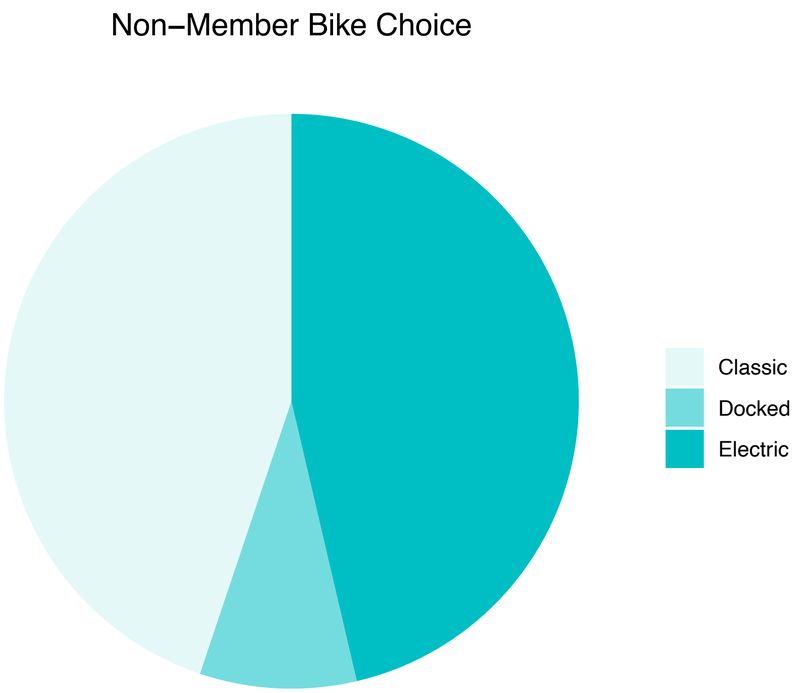


Bike type

Members use classic slightly more

- Members are somewhat less likely to use electric bikes
- Data on bike locations was not available, so this could be driven by locations/time of day





Conclusions

Members have places to be

- Members ride more during **rush hour,** on **weekdays**, and either faster or **more direct**ly to their destination.
- Geographically, members ride more around **transit hubs** and **universities**. They almost always make **oneway** rides from one station to another
- These all suggest members are more likely to use bike sharing to get to places they need to be, especially work
- Non-members, alternately, ride more for leisure or tourism
- Future work linking customers across rides would give more detail into the composition of the two groups.