Case Study: Bike Sharing

Increase the number of annual subscribers

Author: Irakli Bulia
Date: 2021/12/13

The problem

Company	Context	Problem statement
Cyclistic offers a fleet of 5,824 bicycles that are geotracked and locked into a network of 692 stations across Chicago.	Cyclistic's finance analysts have concluded that annual members are much more profitable than casual riders, maximizing the number of annual memberships will be a way of success for the company.	Design marketing strategies aimed at converting casual riders into annual members.

Challenges

Study customers	Analysis	Marketing Strategy
Find out how do annual members and casual riders use Cyclistic bikes differently?	Why would casual riders buy Cyclistic annual memberships	How can Cyclistic use digital media to influence casual riders to become members

Current Tariff Plans

Single Ride

$3.30/trip

One trip up to 30 minutes.

Day pass

$15/day

Unlimited 3-hour rides in a 24-hour period.

Annual Membership

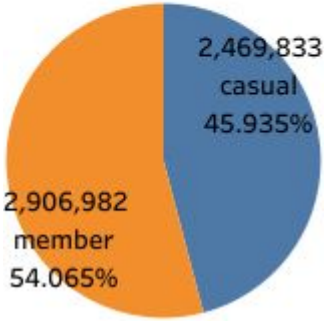
$9*/month

Unlimited 45-min rides.

*$108 BILLED UPFRONT ANNUALLY

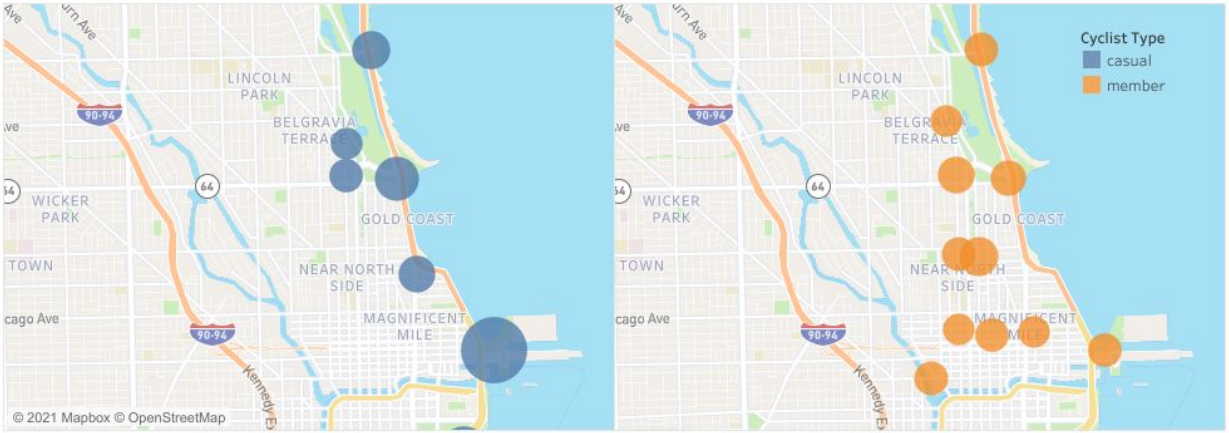
Key Findings

Casuals Riders Vs. Members

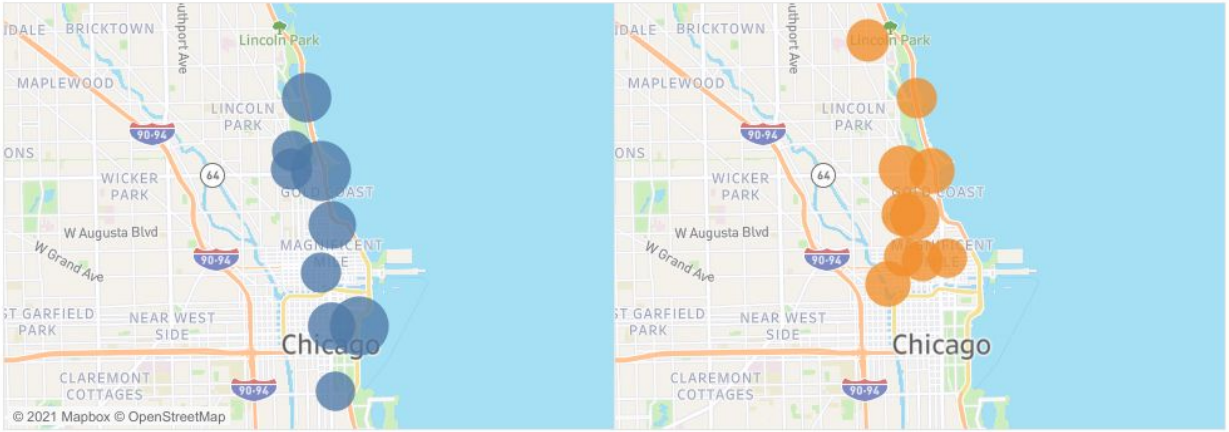


Members make 8% more rides than casual cyclists.

Most Busy Start Stations | Casuals Vs. Members

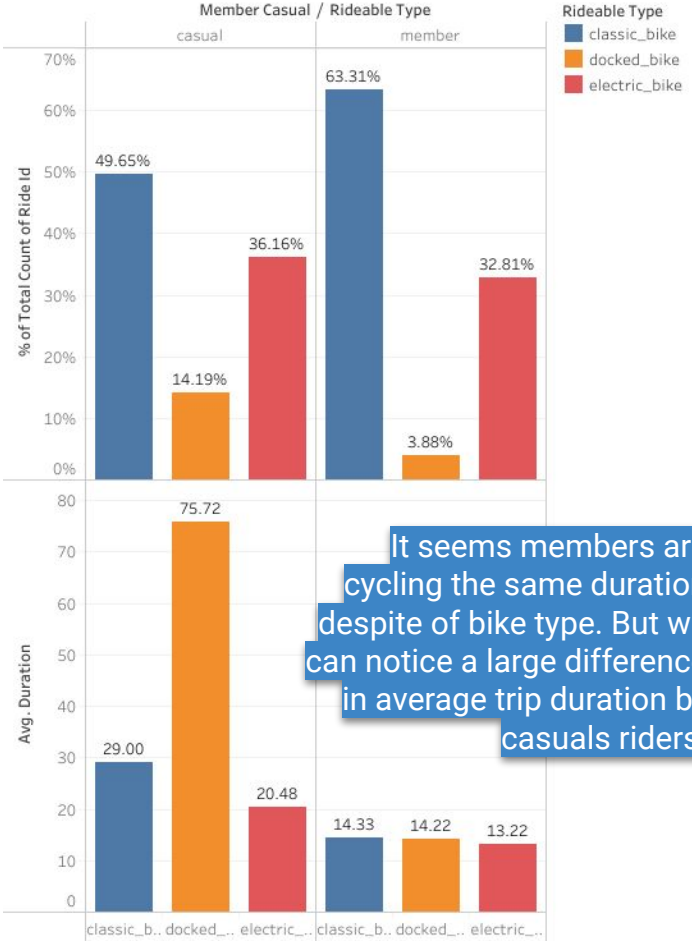


Most Busy End Stations | Casuals Vs. Members



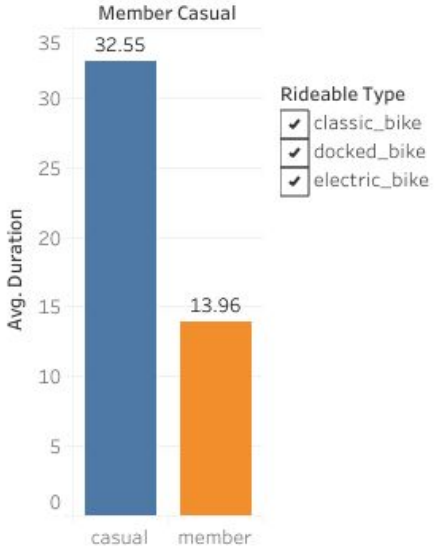
Members and casual riders have different popular places.

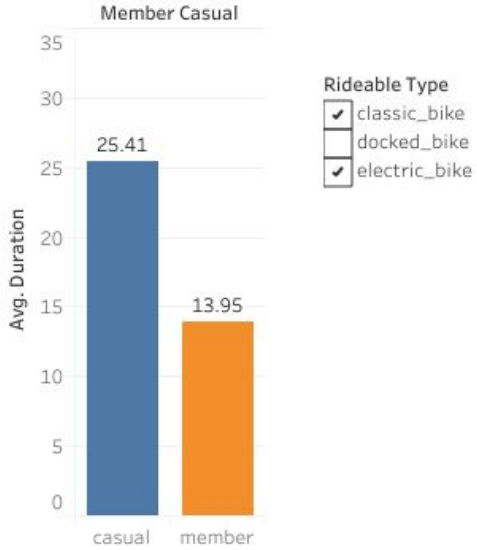
Bike Type Popularity



It seems members are cycling the same duration despite of bike type. But we can notice a large difference in average trip duration by casuals riders.

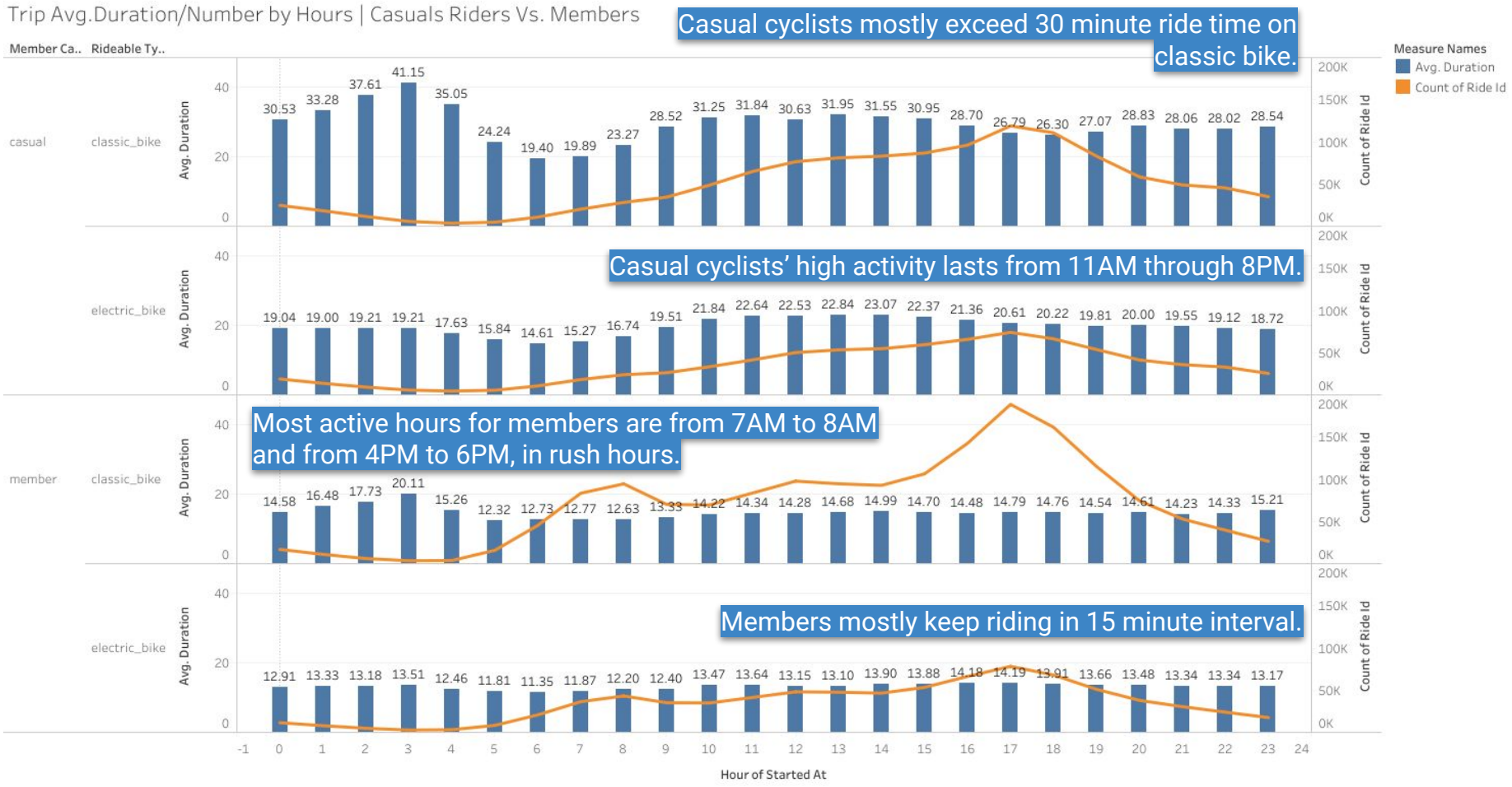
Data skewing by docked bikes



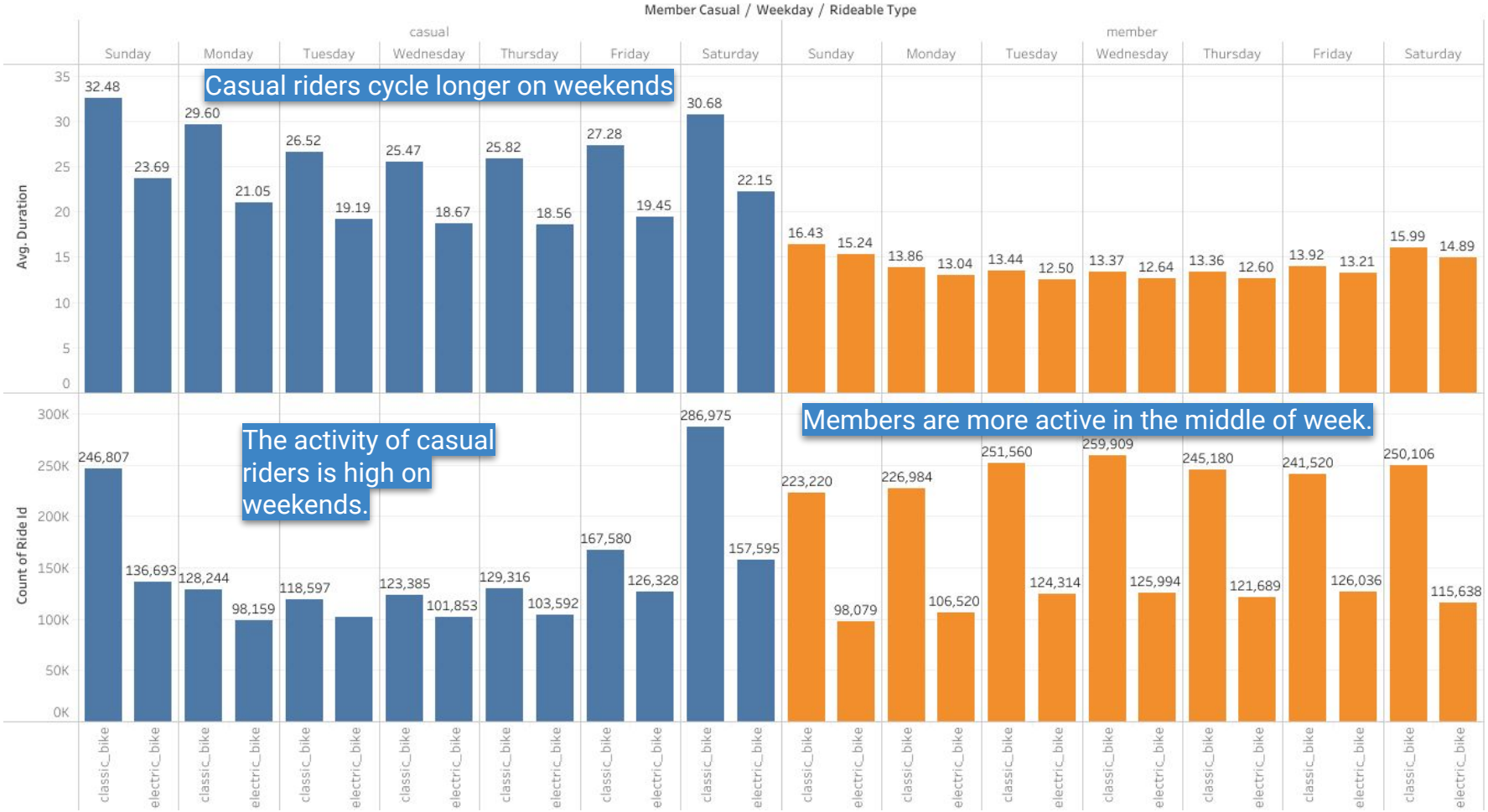


Including of docking bikes in aggregations gives a noticeable difference in calculation of average duration by casual riders: about 8 minutes difference!

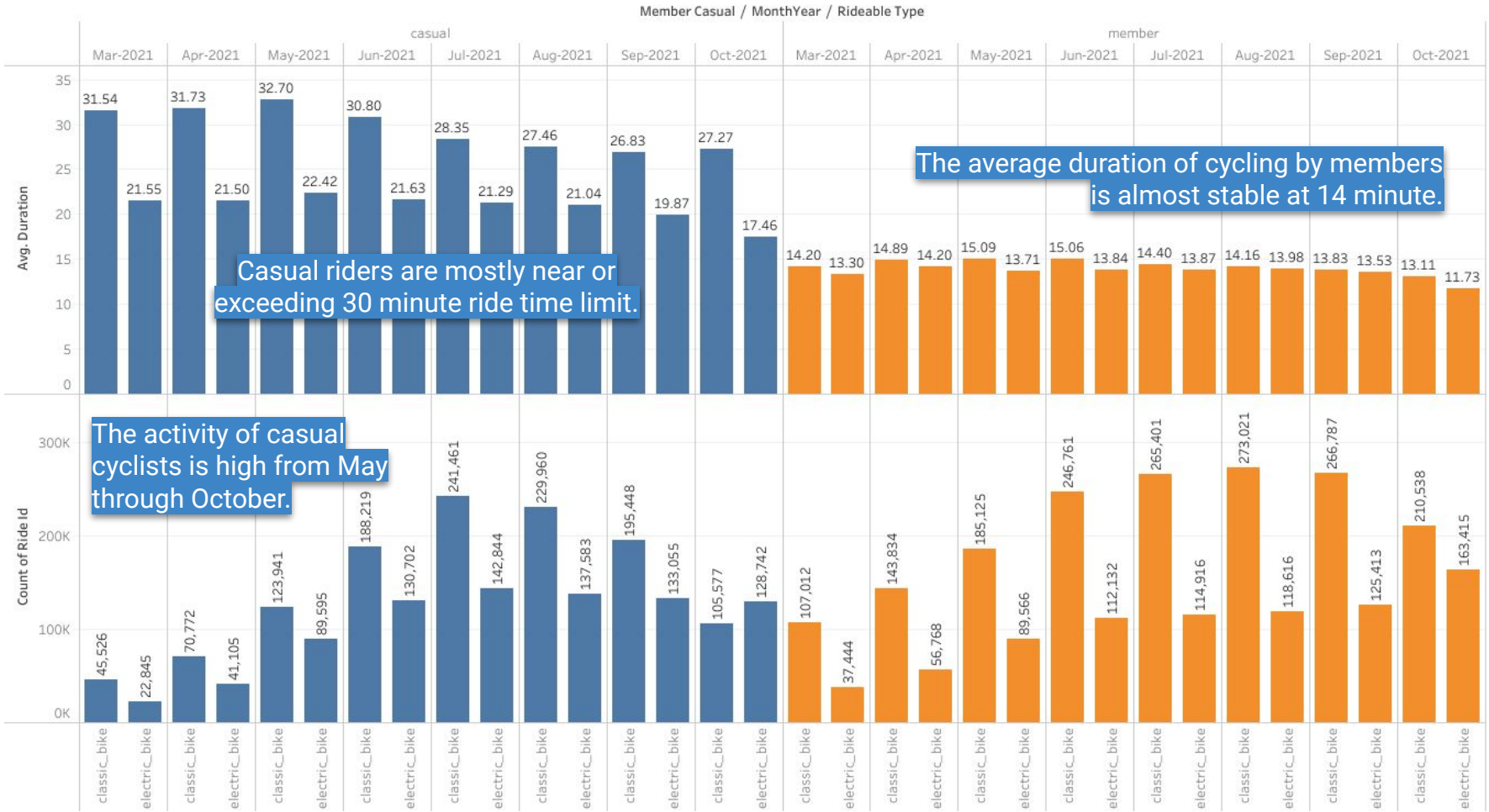
For future analysis I decided to filter out docked bikes data.


Trip Avg.Duration/Number by Hours | Casuals Riders Vs. Members
Casual cyclists mostly exceed 30 minute ride time on classic bike.
Casual cyclists' high activity lasts from 11AM through 8PM.
Most active hours for members are from 7AM to 8AM and from 4PM to 6PM, in rush hours.
Members mostly keep riding in 15 minute interval.
Member Ca..
Rideable Ty..
casual
classic_bike
electric_bike
member
Avg. Duration
Count of Ride Id
Measure Names
Avg. Duration
Count of Ride Id
30.53 33.28 37.61 41.15 35.05 24.24 19.40 19.89 23.27 28.52 31.25 31.84 30.63 31.95 31.55 30.95 28.70 26.79 26.30 27.07 28.83 28.06 28.02 28.54
19.04 19.00 19.21 19.21 17.63 15.84 14.61 15.27 16.74 19.51 21.84 22.64 22.53 22.84 23.07 22.37 21.36 20.61 20.22 19.81 20.00 19.55 19.12 18.72
14.58 16.48 17.73 20.11 15.26 12.32 12.73 12.77 12.63 13.33 14.22 14.34 14.28 14.68 14.99 14.70 14.48 14.79 14.76 14.54 14.61 14.23 14.33 15.21
12.91 13.33 13.18 13.51 12.46 11.81 11.35 11.87 12.20 12.40 13.47 13.64 13.15 13.10 13.90 13.88 14.18 14.19 13.91 13.66 13.48 13.34 13.34 13.17
Hour of Started At

Trip Avg.Duration/Number by Day of Week | Casual Riders Vs. Members

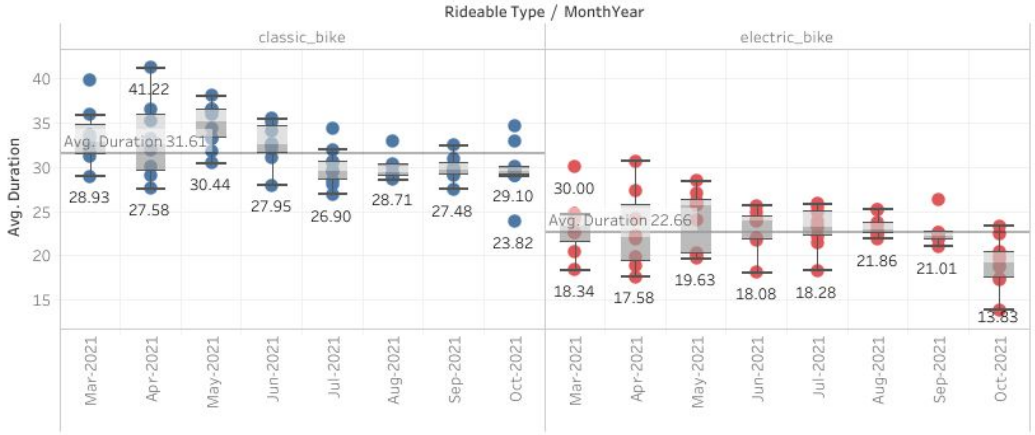


Trip Avg.Duration/Number by Months | Casual Riders Vs. Members



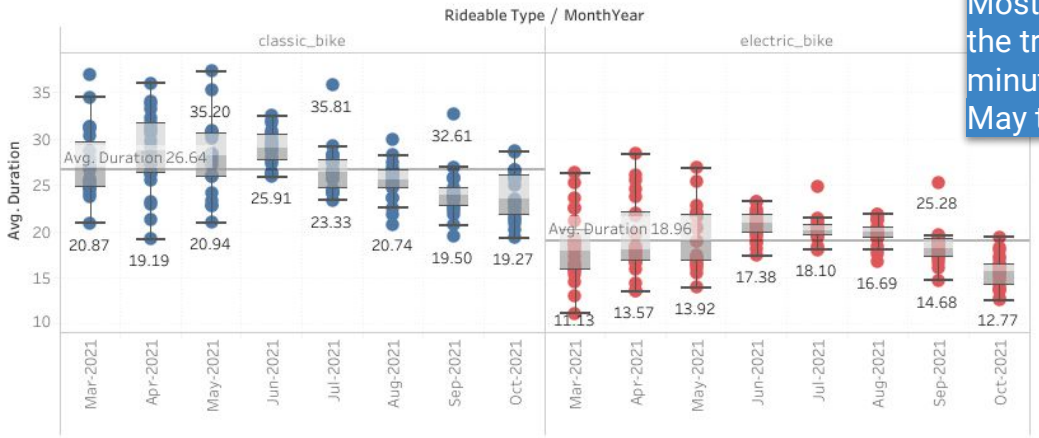
Casual riders average trip duration is exceeding 30 min on weekends from May to September using classic bikes.

Distribution of Trip Duration on Weekends by Bike Types | Casual Riders



Distribution of Trip Duration on Workday By Bike Types | Casual Riders

Most of casual riders keep the trip time up to 30 minutes on weekdays from May to September.



Recommendations

New plans

Monthly membership

Targeted at:

- Casual cyclists, cycling regularly on weekends.
- Tourists visiting city for couple of days.

Semi-Annual membership

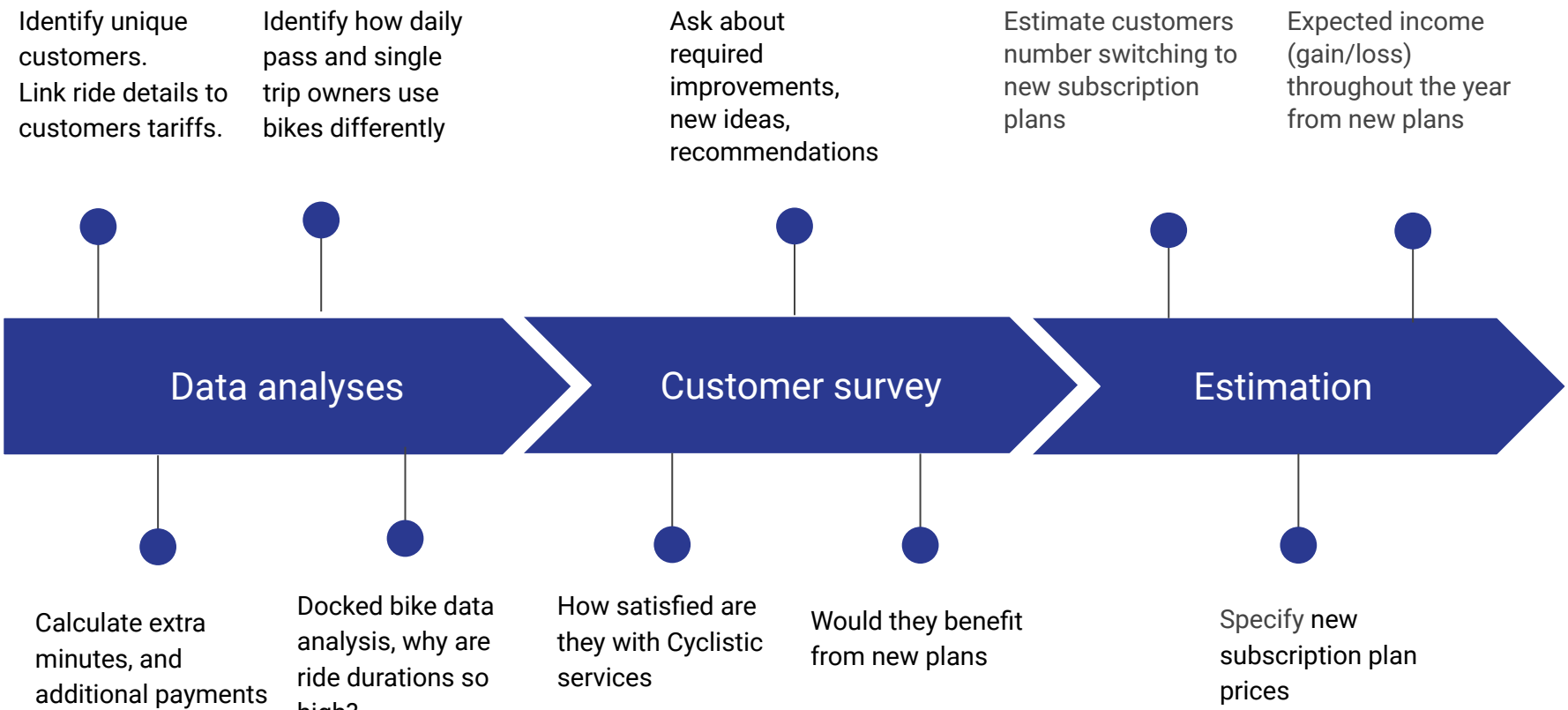
Targeted at:

- Casual cyclists during warmer months - could potentially upgrade to an annual plan after a happy 6 months.

Increased free ride time

- Motivate customers by giving them extra free cycling time when they buy new tariff plans. Weekend cyclists would definitely benefit.

Next Steps


Identify unique customers.
Link ride details to customers tariffs.
Identify how daily pass and single trip owners use bikes differently
Ask about required improvements, new ideas, recommendations
Estimate customers number switching to new subscription plans
Expected income (gain/loss) throughout the year from new plans
Data analyses
Customer survey
Estimation
Calculate extra minutes, and additional payments
Docked bike data analysis, why are ride durations so high?
How satisfied are they with Cyclistic services
Would they benefit from new plans
Specify new subscription plan prices

Digital media advertisement

Cyclistic App

In-app notifications:

- About bicycles environmental friendliness.
- About the health benefits of cycling.
- About various use cases demonstrating the financial benefits of cycling.
- Offer the most suitable plan depending on the cyclist's riding history.

Social Media Sites

Advertising on digital media:

- Company’s social network pages.
- Sponsored articles on popular websites.
- Via personal email.

Github.com Case Study Roadmap

Medium.com Complete Description of the Analysis Process

Kaggle.com Data Analysis in R Notebook

Tableau.com for Visualizations