# Analysis of Cyclistic Users

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## 2023-01-24

## Business Task

The goal of this case study is to determine the differences between annual members and casual riders using Cyclistic. These differences will determine how we can influence casual riders to become annual members. The data used in this study comes from a 12-month period starting from January 2022. It was made available through Motivate LLC, a bike-rental company that works with local governments to provide bike-sharing services.

## Analysis

For this study, a sample size of 1000 riders, 500 annual members and 500 casual riders, will be used.

### Bike Type

We are going to look at how riders differ based on the type of bikes they ride.

For annual memebrs, these are the percentages:

```
##   rideable_type percentage
## 1  classic_bike       0.65
## 2 electric_bike       0.35
```

For casual riders:

```
##   rideable_type percentage
## 1  classic_bike      0.524
## 2   docked_bike      0.082
## 3 electric_bike      0.394
```
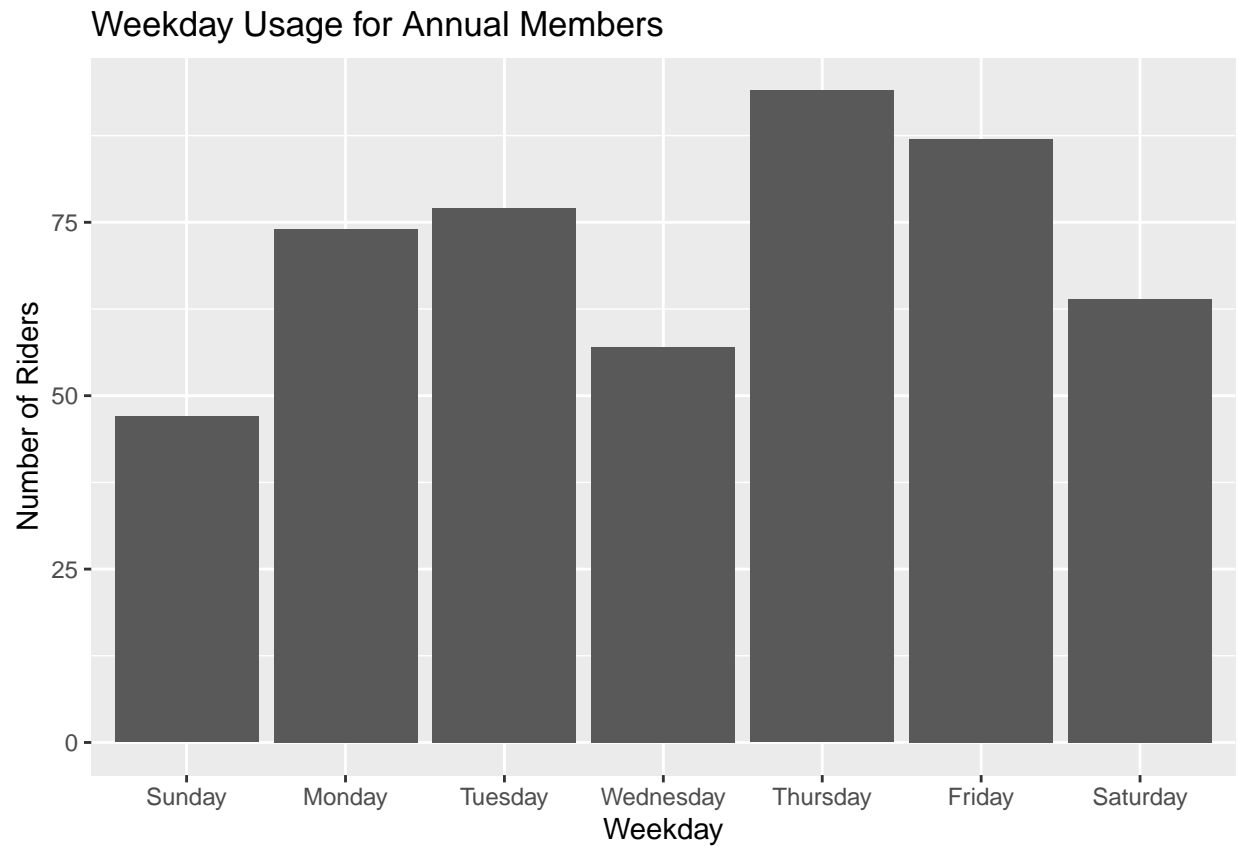
However, we do not know whether docked bikes are electric or classic. We also know that annual members do not use docked bikes. The table will be filtered to reflect only classic bikes and electric bikes.

```
##   rideable_type percentage
## 1  classic_bike  0.5708061
## 2 electric_bike  0.4291939
```

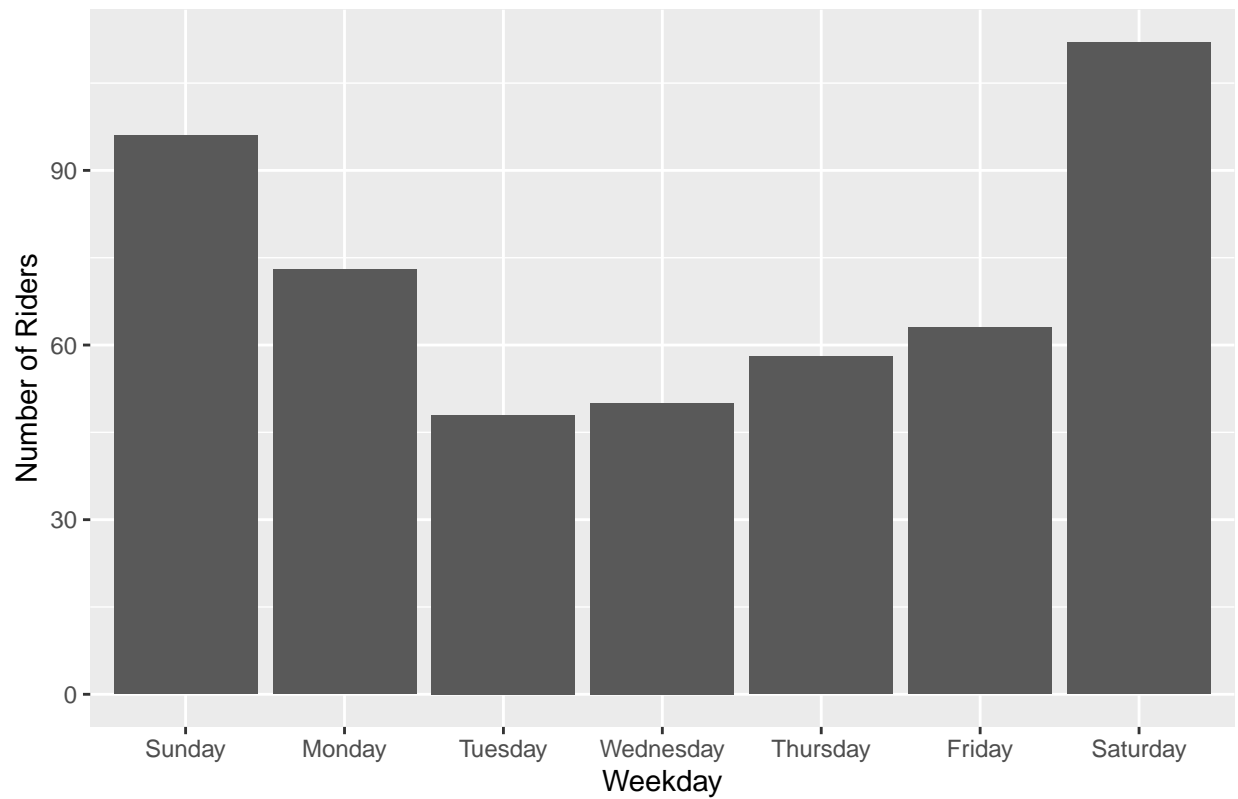Within casual riders, there are higher percentage of user riding with electric bikes compared to annual members.

**Time - By Weekday**

Next, we can look at how the groups differ by when they ride. Annual members use bikes the most during the weekday.

## Weekday Usage for Annual Members



This trend is not the same for casual riders. On weekends, bikes are used the most.
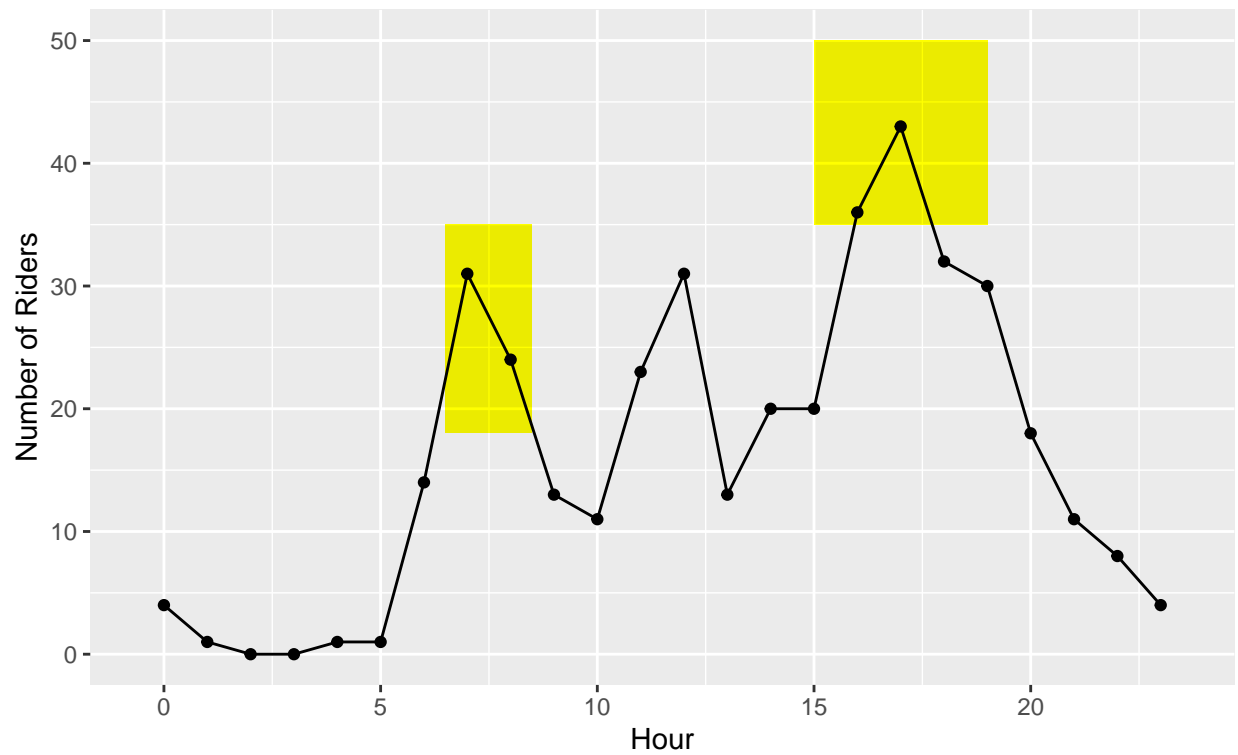
## Weekday Usage for Casual Members



It is possible that annual members tend to use bikes for commuting. To determine the likelihood, we will also look at what time users ride during the day.

**Time - By Hour**

Peaks for annual members occur between two intervals: from 7:00am to 9:00am and from 3:00pm to 8:00pm.
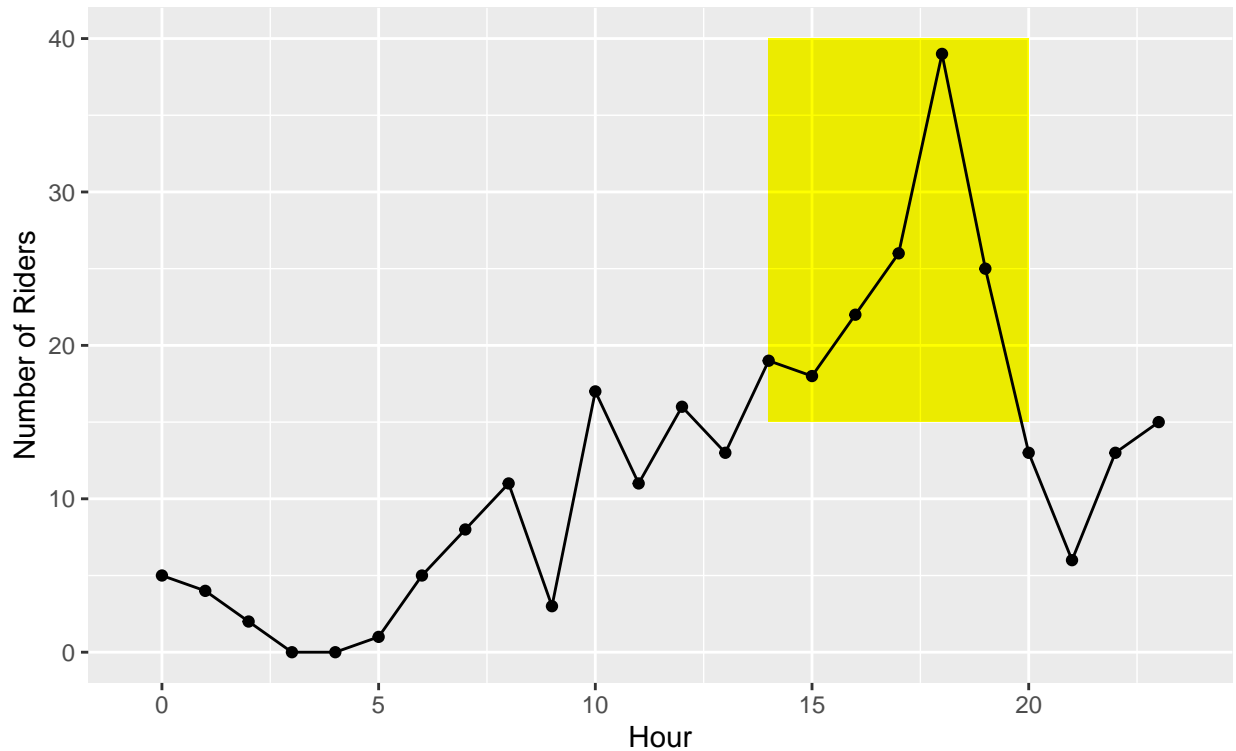
## Time Started During Weekday
For annual members



While the same peak occurs in the evening for casual riders, there is no peak during the morning. the number of rides start around 7am-8am and increase until it hits a peak at 5pm.

## Time Started During Weekday
### For casual members



## Recommendations

The first suggestion is to focus on casual riders that use Cyclistic for work. It is likely that most annual members use bikes for commutes to and from work. There are two peaks in ride times for annual members: 7am-8am and 4pm-6pm. These times are rush hours. It would be easier for casual riders who are commuters to justify an annual membership compared to casual riders riding for leisure.

The second suggestion is that we advertise how much users can save by riding with Cyclistic. More casual riders are riding around 4pm-7pm, the time many people leave for work. They are buying single-ride passes just to ride from work. If that is the case, we can advertise how riders can save more money.

The last recommnedation is to advertise to those who are older or have disabilities. Casual riders use electric bikes more often compared to annual members. Highlighting the ease of travel with electric bikes would help riders in this demographic more inclined to use them more often.