

# Case Study 1: How Does A Bike-Share Navigate Speedy Success?

## 1. Introduction

Cyclistic is a bike-share program that prides itself on inclusivity, as evidenced by our accommodating bicycles such as reclining bikes, hand tricycles, and more. Cyclistic hopes to persuade more of its customers to promote their membership from casual to annual, and analyzing the historical bike trip data is the most prudent method of finding the most effective method for achieving this goal.

## 2. Scenario

As a junior data analyst at this program, my goal is to find the difference in approach between casual and annual members, and use that knowledge to pinpoint the best possible marketing strategies and promotions to achieve this goal. To that end, I will require in-depth analysis of the given data to better understand the behaviors of the two demographics.

## 3. Data Analysis Process

In this case study, the six steps of the data analysis process will be used in order to solve this problem. Those 6 steps include:

- a. Ask
- b. Prepare
- c. Process
- d. Analyze
- e. Share
- f. Act

### Ask:

The main question we want to know is: “how does each demographic (casual vs annual) use their bicycles”?

### Prepare:

I will be using the data from the first quarter of 2020.

### Process

First, I pull all the data from the table with this functions in SQL:

```
USE [project]
GO
```

```
SELECT [ride_id]
      ,[rideable_type]
      ,[started_at]
      ,[ended_at]
      ,[start_station_name]
```

```

,[start_station_id]
,[end_station_name]
,[end_station_id]
,[start_lat]
,[start_lng]
,[end_lat]
,[end_lng]
,[member_casual]
,[ride_length]
,[day_of_week]
,[ride_length_mean]
,[maximum_ride_length]
,[F18]
,[F19]
FROM [dbo].[Divvy_Trips_2020_Q1$]

```

GO

Then, I use the following queries:

#### **Average ride length per weekday:**

```

USE [project]
GO

SELECT
    member_casual, AVG(EXTRACT(EPOCH FROM ride_length)/60) AS avg_ride_length
FROM (SELECT member_casual, ride_length FROM dbo.Divvy_Trips_2020_Q1$) AS all_rides

GROUP BY
    day_of_week
ORDER BY
    day_of_week;

```

#### **Ride count per weekday:**

```

USE [project]
GO

SELECT [day_of_week], COUNT(*) AS ride_count
FROM (
    SELECT day_of_week FROM [dbo].[Divvy_Trips_2020_Q1$]
)
AS all_rides
GROUP BY
    day_of_week

```

ORDER BY

ride\_count DESC;

From these, I can look at the results and compare them to the following visualizations to reach a conclusion.

#### 4. Analyze

These visualizations were made via Excel.



## 5. Share

From these, we determine that casual members and annual members obviously have a significant disparity in the number of rides between the two groups. However, surprisingly, members have a significantly smaller ride time overall, with each weekday never moving far past 15 minutes maximum for annual members. In contrast, casual members would often ride for significantly longer, with the minimum being little over an hour and on busy days going over two. In addition, there are quite noticeable spikes in both ride length and count during Thursdays and Fridays.

On the topic of number of rides, the sheer volume of annual member rides suggests that while they may ride for less time in each trip, members do, on average, use these bikes far more often than a casual member. With that in mind, the mindset of an annual member seems to be that they treat the service like a fast food service: they won't spend much time there, but they'll use it for most of their needs. In contrast, casual members seem to treat these bikes as something akin to luxury rides: they use it far less, but when they do, they try to squeeze out as much time and, by extension, use out of it as possible each time.

## 6. Act

With these ideas in mind, there are several effective marketing strategies that could be employed. One would be to offer promotions based on ride count. For example, casual members seem to ride significantly less, but for far longer which implies that they see this as some sort of luxury service. However, by trying tactics such as, say, offering discounts or rewards after consecutive rides with memberships, it may entice them to view the service in a different light and make them more likely to consider a membership. Not only that, it may also entice pre-existing members to maintain their membership in order to reap rewards, which can help to stabilize the annual member count for the foreseeable future. Alternatively, marketing based on ride length is another alternative. Since casual members ride for extended periods of time, offering membership rewards based on ride time would incentivize them to consider a membership in order to reap the benefits of their longer average ride time (for example, discounts on rides over an hour long). Finally, marketing based on which days of the week see the most use is also a worthwhile tactic. For example, since casual members seem to use the service often on Sundays, offering membership benefits for weekend rides would be a good way to bring in more annual members from that group.