Cyclistic case study analysis report

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Business task

Analyze how annual members and casual riders use Cyclistic bikes differently in order to make informed marketing decisions about how to convert casual riders into Cyclistic members.

Summary of Analysis

Introduction

During the period of November 2020 through October 2021 there were a total of 5,355,332 rides taken using the Cyclistic bike-sharing service. Of those, 2,462,029 were taken by casual riders, accounting for 46% of all rides, and 2,893,303 rides were taken by Cyclistic members, 54% of all rides. Cyclistic maintains more than 5,800 bicycles and 600 stations throughout Chicago.

Significant findings

The data provided shows two overarching trends:

1. Members, as a whole, have very consistent riding patterns, leading to the conclusion that they tend to be commuters.
2. The most popular bike stations are concentrated in a relatively small area.

The support for these conclusions as well as three key takeaways will enable informed decisions about how to convert casual riders into Cyclistic members.

A look at the data

Across all rides taken, the average ride length of members was 14 minutes, while the average for casual riders was 28 minutes. Figure 1 below shows that the average ride lengths vary under three conditions: bike type chosen, month, and day of the week.

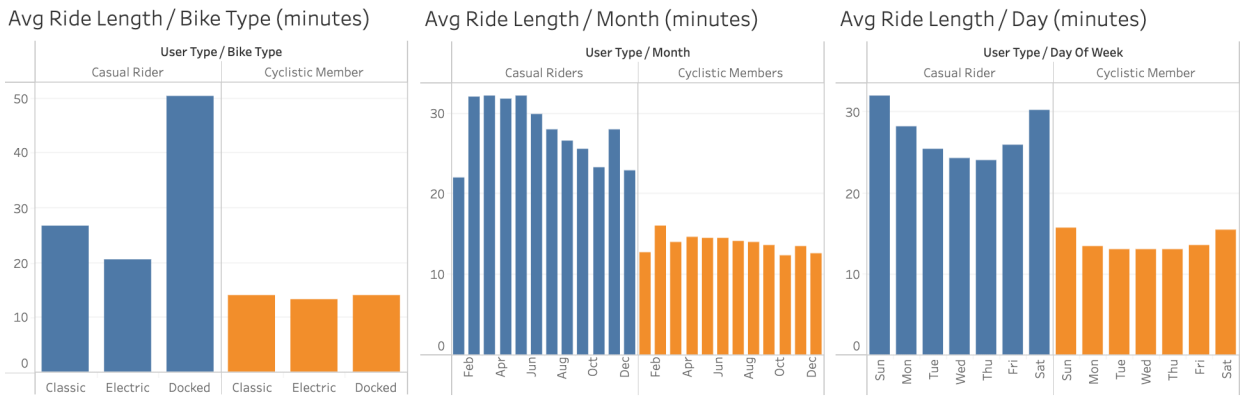

Figure 1

The data shows that the average ride of members (orange) is fairly level across all three charts, with slight upticks on weekends and during warmer months. Casual riders' (blue) average ride lengths vary from bike to bike, month to month, and day to day. Their ride lengths are significantly longer than members', but there is the same pattern of longer rides on weekends and during the warmer months.

Figure 2 shows how the total number of rides taken changes based on bike type, month and day.

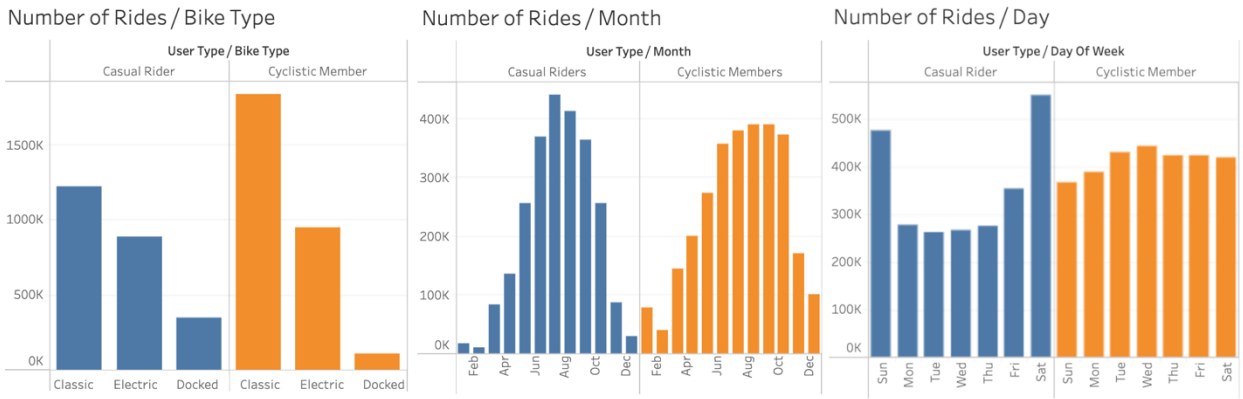

Figure 2

The chart on the left shows that both casual riders (blue) and members (orange) prefer to ride the classic bikes over the electric or docked bikes. The middle chart shows both types of users taking significantly more rides during the warmer months. The chart on the right shows the most contrast between the actions of casual riders compared to members. Casual ridership significantly increases during the weekend, while members take slightly fewer rides during the weekend.

The charts in Figure 2 show patterns among members that indicate they are likely to be commuters. Their ride times are consistently around 14 minutes, as if they are traveling from

one specific place to another specific place, on a regular basis. The number of rides taken drops off slightly on Sundays and Mondays when many businesses are closed. Students are also less likely to commute to school on Sundays.

In addition to number of rides taken and average ride time, the data also gives insight into where users are using the bikes.

Figure 3

Figure 3 shows the 10 most used stations for each user type, members in orange, and casual riders in blue. The arrows indicate two of the stations that are most popular with both user types. Keep in mind that there are 600 stations throughout the city, so it is significant that the most popular stations are concentrated around Lincoln Park, the Magnificent Mile, and Grant Park. These locations are popular with tourists and commuters alike.

Since Cyclistic membership appears to be predominantly composed of commuters, the marketing plan to convert casual riders to members should target casual riders who commute. Figure 4 below shows the 20 stations that raked highest with rides taken by casual riders with a ride length of about 14 minutes (the average ride length of a commuter). Not surprisingly,

those 20 stations are in the same area as the stations in Figure 3, and many are the same stations.

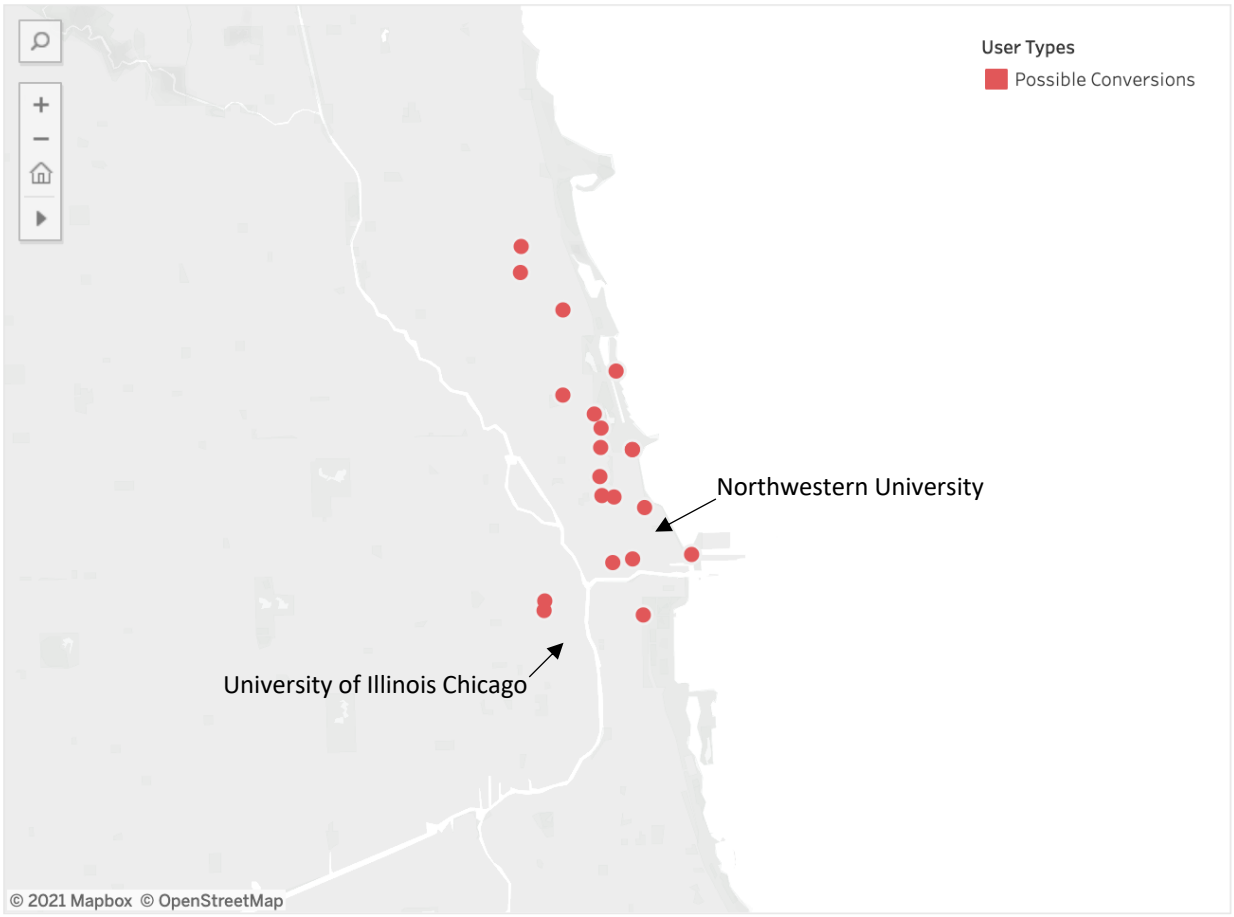

Figure 4

These stations are popular with casual riders whose rides show similar characteristics to those of commuters. These stations are also near two major Universities, Northwestern University and University of Illinois Chicago.

Top three recommendations

1. Target a marketing campaign at the 20 stations most frequented by casual riders who may be commuters[1].
2. Target a marketing campaign at University of Illinois Chicago and Northwestern University students.
3. Run seasonal marketing campaigns in April to the 14 specified zip codes containing the 20 stations most popular with possible commuters. April is when Cyclistic members start to increase their usage, and right before casual riders start to increase their usage.[2]

Further exploration

Since the data provided was completely anonymized, a significant limitation was that rider analysis could only be performed on a generalized group level. A more complete analysis could be performed on data that was anonymized in a way that personal information was protected but riding habits of individuals could be analyzed.

Questions could be asked such as:

- How often are casual riders return customers?
- Of those that are return customers, are there patterns that suggest they may be commuters?
- Within a year how many casual riders become members?
- Of those that became members, how did their riding habits differ pre-conversion versus post-conversion?

[1] Station names: Streeter Dr & Grand Ave, Wells St & Concord Ln, Clark St & Elm St, Wells St & Elm St, Millennium Park, Michigan Ave & Oak St, Clark St & Lincoln Ave, Wells St & Evergreen Ave, Clark St & Armitage Ave, Theater on the Lake, DuSable Lake Shore Dr & North Blvd, Larrabee St & Webster Ave, Lake Shore Dr & North Blvd, Wabash Ave & Grand Ave, Clark St & Newport St, Broadway & Barry Ave, Green St & Randolph St, LaSalle St & Illinois St, Green St & Madison St, Sheffield Ave & Waveland Ave

[2] Targeted zip codes: 60601, 60602, 60603, 60604, 60605, 60606, 60607, 60610, 60611, 60613, 60614, 60654, 60657, 60661