

Cyclistic – Bike Rental Data Analysis

BUSINESS STATEMENT

We will be analyzing historical bike trip data from 2019 to better understand how Cyclistic usertypes (subscribers and customers) differ in their bike-sharing habits. Casual riders are riders that purchase single-ride or full-day passes. We refer to our casual riders as “customers”, and our membership holders as “subscribers”. Compared to casual riders, our annual membership offering is more profitable and make up much of our current revenue. Our goal is to understand the motivations and obstacles behind casual riders buying into our annual membership program, and how we can digital media to influence this conversion.

DATA SOURCES

We are using historical bike-sharing data from 2019 provided by Divvy to analyze.

RESULTS AND FINDINGS

The data used in this analysis were cleaned, organized, and analyzed in SQL. Summary statistic queries were performed in SQL to analyze different demographic groups / cohorts in the analysis. Excel was used to visualize the data.

GENDER

In 2019, subscribers made 1,182,441 total bike trips, with an average trip duration of ~14 minutes. Customers made 85,401 total bike trips with an average trip duration of ~41 minutes.

Male subscribers contribute to 76% of the total annual bike trips, and female subscribers make up 24% of the total bike trips. For trip duration, male subscribers averaged ~14 minutes, and female subscribers averaged 15 minutes

Male customers contribute to 59% of the total annual bike trips, and female customers make up the remaining 41%. For trip duration, male customers averaged ~37 minutes, and female customers averaged ~46 minutes.

For either usertype, male bike users make up the majority of total annual trips (see Table 1 For breakdown).

Usertype	Gender	Number of Trips (Annual)	Duration (Minutes)
Subscriber	Male	906,531	13.53
Customer	Male	50,357	37.09
Subscriber	Female	275,910	15.44
Customer	Female	35,044	46.16

Table 1. Number of bike trips and duration based on usertype and gender.

GENERATION

The ages of subscribers and customers were further categorized into smaller groups. Individuals of certain age ranges are placed into their corresponding generations (Table 2).

Generation	Birth year range
Gen Z	1997 – Current Year
Millennials	1981 – 1996
Gen X	1965 - 1980
Baby Boomers	1946 - 1964
Silent (Generation)	1925 - 1945
G.I.	1924 or earlier

Table 2. Breakdown of American generations by birth year range.

Millennials account for about two-thirds of subscriber and customer trips. Gen X accounts for 22% of subscriber bike trips, and 12% of customer bike trips. Gen X, Baby Boomers, Silent, and G.I. generations account for less than 5% of bike trips for both user types. (See Figures 1 and 2 for a more comprehensive breakdown.)

Younger generations, namely Millennials in Chicago, have a higher inclination to use bike rentals as a form of transportation

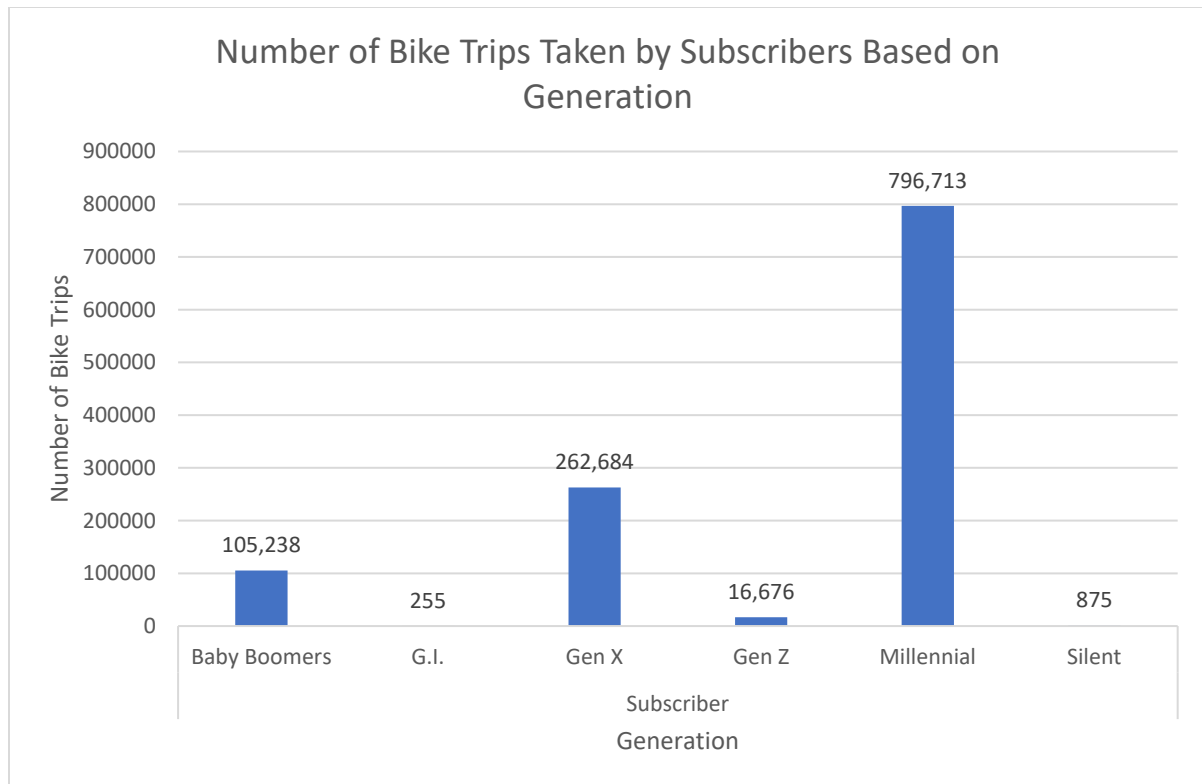


Figure 1. Number of bike trips taken by subscribers based on generation.

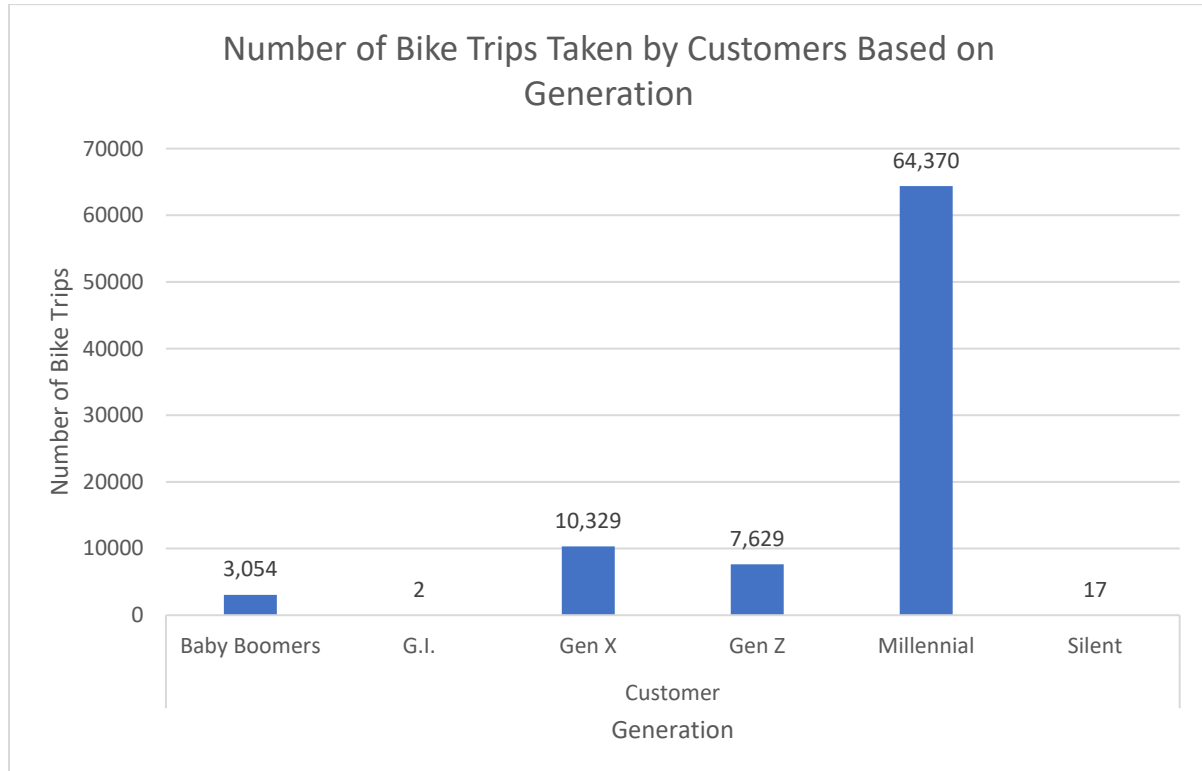


Figure 2. Number of bike trips taken by customers based on generation.

WEEKLY TRIP PATTERNS

Subscribers and customers have distinctly different patterns of use for bike rental trips. Subscribers utilize their bikes rentals the most during weekdays, Monday to Friday. Customers utilize their bike rentals the most during weekends – Saturday, Sunday, and Friday. (Figures 3 and 4)

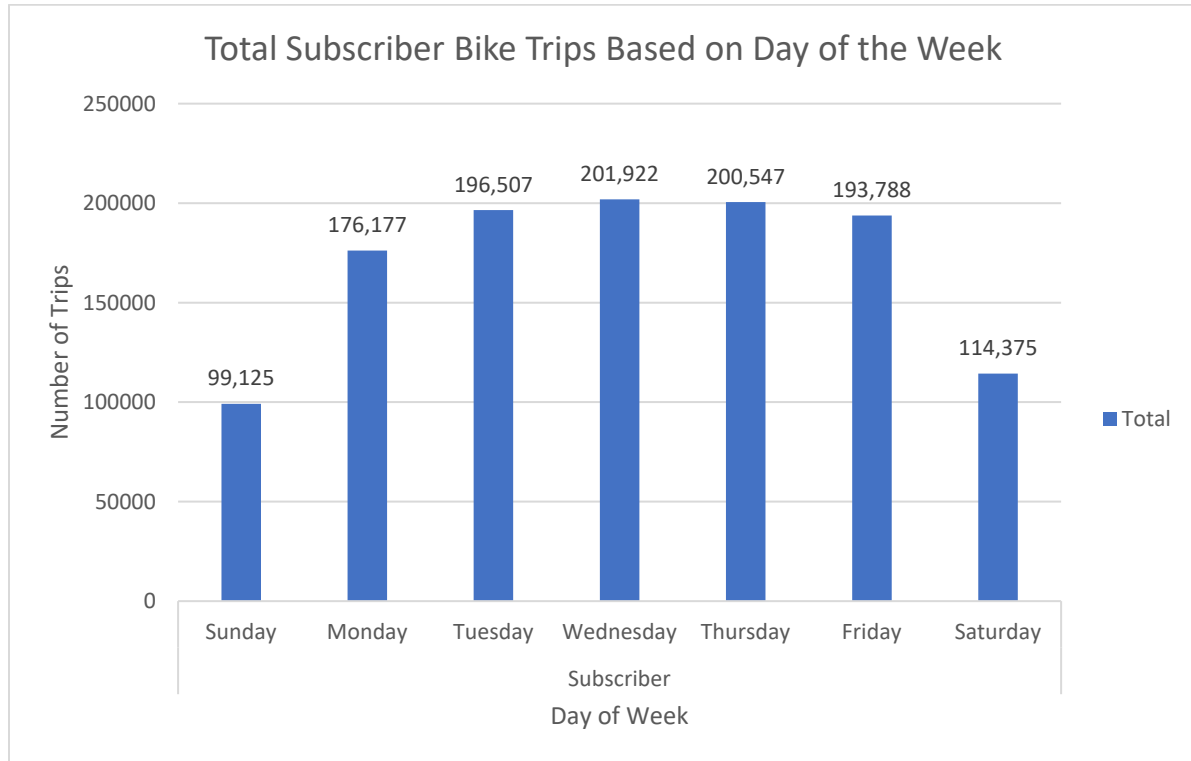


Figure 3. Total subscriber bike trips based on day of the week for subscribers.

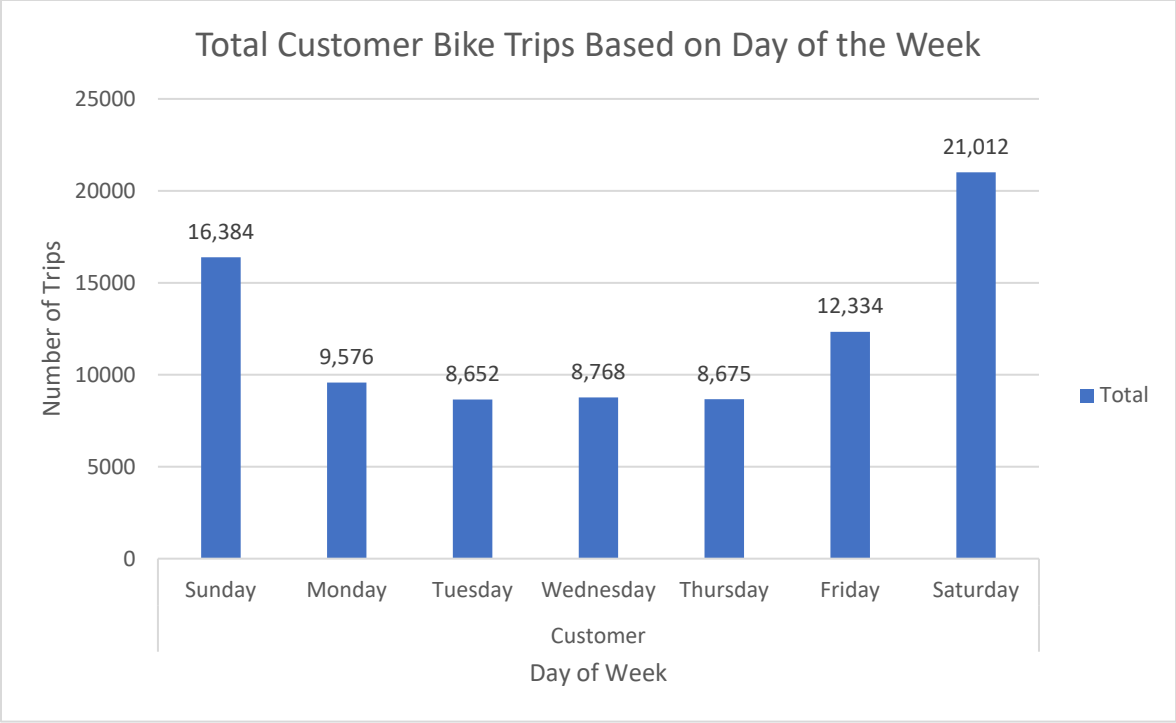


Figure 4. Total subscriber bike trips based on day of the week for customers.

ANALYSIS RECOMMENDATIONS

RECOMMENDATION #1 – Trip duration and weekday patterns

My first recommendation is to conduct a study / survey that identifies the motivation behind both subscriber and customer usage of bikes rentals to create an informed approach to membership conversion.

The data shows that our subscribers take short, but more repeated and frequent trips during the weekday, indicating the likelihood of these bike trips being work/commuter related. Customers take longer trips on the weekends, indicating less of a time constraint on travel and conveying the likelihood of the bike trips being for leisure. I am suggesting the following questions to be considered for use in the survey. These are roughly drafted questions and should be revised to implement survey best practices.

- Which of the following purposes have you used Cyclistic's bike rental for?
- What do you primarily use your bike rental for?
- Where do you currently reside?
- Are you aware of Cyclistic's bike rental membership?

RECOMMENDATION #2 – Generational Differences

My second recommendation is to adjust our marketing strategies to target certain age groups of our customer base. Millennials make up 75% of our customer-based bike rentals, and Gen X make up the next largest cohort at 12%. I would recommend focusing our marketing resources on these two groups.

RECOMMENDATION #3 – Gender Differences

My third recommendation is to conduct a study / survey to understand the gender gap in both subscriber and customer bases. 76% of our subscribers are male, and 24% are female. 59% of our customers are male and 41% are female. There is an apparent disparity between genders when we view customer data and current membership. I suggest the study / survey propose questions that investigate obstacles in membership conversion for our female customers and address the obstacles accordingly.