Citi Bike

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**Background:**

The Citi Bike service is one of the most popular bikes sharing programs across the country. The program was designed to help riders get to their destination as an alternative to walking, taxis, buses, and subways. This program is affordable, convenient, and offers health and environmental benefits.

**Objective:**

Compare 2019 and 2020 usage in Jersey City, NJ to see what impact Covid-19 had had on the service.

* Specifically, we are comparing:
  + Number of rides taken
  + Average trip duration per month
  + Number of subscribers vs. customers using the service
  + Use of service by gender
  + Use of service by age
  + Most popular start and end stations
  + Most used bike id’s
  + Most popular routes

**Findings:**

**Number of rides taken:**

* 2019- 262,925
* 2020- 219,914
* 43,011 less rides taken in 2020
* We can assume that Covid -19 had a direct impact of usage of service

**Average Trip Duration**

* Average trip duration was around 15 minutes in 2019
* Average trip duration was greater than 15 minutes in 2020
* We can assume that commuters were using the service more in 2019 vs. 2020. In 2020, people could have been using the service to get out of their homes

**Subscribers vs. customers**

Citi Bike offers many pricing options, but for purpose of this project we are going to focus on subscribers vs. customers.

* Subscribers are those who have an annual pass
* Customers are those who either purchase a day pass or a 3 – day pass
* If you look at 2019 on the left 89% were subscribers where 11% were customers
  + Commuters were using the service.
* If you look at 2020 68% were subscribers where 32% were customers
  + People working from home did not need the service
  + Individual want to get out of their house so this is an activity to get out of the house. Maybe roads are not as congested

**Male vs. female usage**

This was something else that fascinated us. This is really a male dominated service.

* In 2019, 71% males were using the service vs. 22% females
* In 2020, 59% males were using vs 25% females

Since there was such a difference in males using the service vs females, we decided to interview individual’s that live or work in the NYC metropolitan area. Here is some of the feedback received from both genders:

* Female
  + Safety – wasn’t number 1 pick to get a around due to safety reasons
  + Convivence- use it during times when they know that parking is difficult
  + Not a good choice going to work due
  + Bikes are heavy
* Male
  + They liked the idea of convivence. Being able to get on a bike and go anywhere at any time was a huge perk
  + Health benefits

**Ages**

We wanted to see what age group was using the service. We used binning to bin the different ages into 5 categories.

We broke the use by

* Silent Generation
* Baby Boomers
* Gen X
* Millennials
* Gen Z.

As you see here, millennials use the service the most for both 2019 and 2020. There was an uptick of use by Gen Z in 2020.We weren’t surprised to see a decrease in use by the baby boomers in 2020 since they are categorized as high risk for Covid-19.

**Top start and end station**

We next analyzed the most popular start and end stations. We were able to groupby start and end stations and then use an API to obtain a map of Jersey City with the Start locations and end locations for both 2019 and 2020.

* We weren’t surprised with that the Grove St. Path was the most popular start and end destination for 2019 and 2020. Many people travel directly into NYC daily from this station.

**Top bike ids**

* This allowed us to see if there were any trends in bike usage and if one bike was used more than another
* There wasn’t a correlation with usage of one bike over another

**Most popular routes used**

* We used a groupby method
* Most popular routes mainly ended at Grove street which makes sense since this is a popular station to use to get into NYC.