

NYC Citi Bike Analysis

The following analysis has January 2018 to September 2018 as a timeframe. This timeframe was chosen because it is the most updated time window in the database.

From the 936 total different bike stations, I have first focused on the top 20 popular stations. Popular stations might have a higher likelihood to have empty docks because of their higher demand. Popular stations are defined by the number of users who have unlocked their bikes.

Finally, this analysis has focused on the stations where users pick up their bikes. This is due that complaints are focused on bike stations being empty.

Problem 1 - Insufficient Bike Capacity in Popular Stations

Small stations are defined as the 25% lowest capacity of all available stations. These stations have an approximate capacity of 30 bikes or less. Stations *8 Ave & W 31 St* and *Great Jones St* form part of the top 2% busiest stations. These stations have an average daily usage of 203 trips and 163 trips respectively. An expansion of these stations might be necessary to attend empty bike station complaints.

Problem 2 - Peak Usage Time

The most demanded stations have different peak usage times. It is possible to divide them into two categories: Morning-commuter stations and afternoon-commuter stations. The first is characterized by having its peak hours from 6 am to 8 am. While the latter has its peak hours from 5 pm to 6 pm. Stations such as *W 33 St & 7 Ave* or *Christopher St & Greenwich St* belong to the morning-commuter group, while stations such as *Pershing Square North* or *Central Park S & 6 Ave* belong to the afternoon-commuter group.

Recommendation:

In order to attend the empty bike stations' complaints, it is necessary to expand stations that are in the top 2%, 5%, and 10% usage where their maximum capacity is 30 bikes or less. Such stations should be progressively expanded to 44 docks - median station capacity. This would permit more users to dock their bikes in such stations. Following this train of thought, it is necessary to create a bigger supply of bikes in the busiest stations during and after peak hours (5 pm to 6 pm and 6 am to 8 am). This would lead to less scarcity of bikes in stations that have the most demand.