

Abdalla Alnujaidy
Ali Altamimi

Transforming Riyadh into a Green City

As a result of climate change, countries started to shift their visions to reusable energy and public transportations as a stand to the crisis on hand. The goal of this model is to be able to expand the capacity of the current stations so that it can handle the future increase of the passengers. In addition, the model will allow more people to use trains instead of cars which will help the environment by reducing carbon emissions.

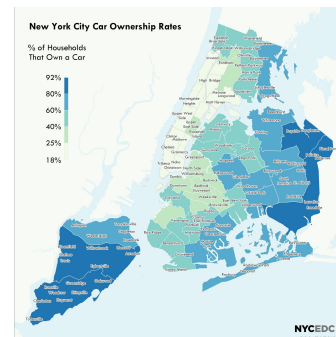
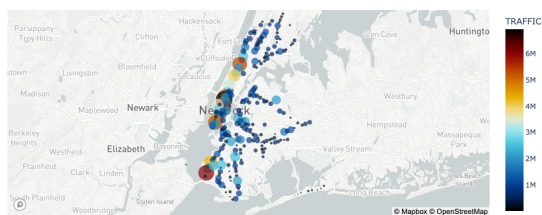
This analysis approach was done by taking twelve weeks from the [MTA Turnstile](#) dataset starting from July 17, 2021 and ending October 02, 2021 and [MTA Stations](#) dataset. Cleaning the data is a step that has to be done after gathering the data. Some of the data that was removed duplicate rows. Moreover, there was some data missing and as a result, filling them with the median was necessary.

After cleaning the data some analysis had to be applied. Plotting the data in a map was a necessary step to observe the concentration of traffic and act on that. It appeared from the graph that the north and east areas had low traffic compared to the west and the south areas. As further analysis, we then took the top and the bottom five stations to analyse the mean/median/mode so that we could understand the data.

We concluded that the top five stations are '34 ST-HERALD SQ', '14 ST-UNION SQ', '86 ST', '23 ST' and '125 ST' And the bottom five stations are 'NEPTUNE AV', 'BEACH 44

ST', 'BEACH 98 ST', 'BEACH 105 ST' and 'BROAD CHANNEL'. From that we did some research to see the correlations between the car usage and the data we concluded. And we noticed that the areas that have more traffic have less people owning a car. According to [NYCEDC](#), “almost 1.4 million households in New York City own a car compared to 3.1 million total households”. This information gives as a clue why most of the turnstile traffic is high in the west and the south of NY city, is because most of them don't own a car.

MTA Traffic



Based on the result established from the analysis and the goal in mind that we need to shift more people to use public trains to reduce the harm to the environment. We have some recommendations to achieve the goal. First, make some new furniture and new machines that can scan people faster than a turnstile machine. Second, provide some discounts to the people who live in the north and south to encourage more people to use the trains. Third, make more commercials regarding the speed in which using the trains is faster than the car. Finally, reopen Closed Stations such as Ninth Avenue and 96th Street with the assumption that more people are going to use the trains and we need these stations to handle the flow of people.