

# Analysis of the Triboro line

## Requirements

### Libraries

```
library(tidyverse)
```

### Data

```
subway_lines <- readr::read_csv('data/nta-subway-lines.csv')
subway_times <- readr::read_csv('data/nta-subway-times.csv')
driving_times <- readr::read_csv('data/nta-driving-times.csv')
walking_times <- readr::read_csv('data/nta-walking-times.csv')
```

## Exploratory data analysis

### Distribution of job counts

Original

Natural log

### Distribution of commute counts

Original

Natural log

### Number of subway lines and commute count

Original

Transformed

### Subway Transit time and commute count

Original

Transformed

### Driving in traffic time and commute count

Original

Transformed

### Walking time and commute count

Original

Transformed

## Regression of Subway, Driving, and walking

### Subway model

#### Driving

#### Walking

**Multiple linear regression for all three factors**

**Equations plotted for all factors**

Along all axis

Cut to most pivotal times (10 to 50 minutes) Table of values at 10, 25, 50

## **Auto Correlation of Subway, Driving, and Walking**

**Global Moran's I**

**Subway** Statistic Plot

**Driving** Statistic Plot

**Walking** Statistic Plot

**LISA**

**Driving** Statistic Plot with major roadways overlayed

**Walking** Statistic Plot of local area

**Subway** Statistic Plot with subway lines

**Network autocorrelation**

**Visualization of network**

**Visualization of network's complement**

**Global Moran's I**

**LISA** Plot by coloring desire lines