Quantifying inequity in transportation @ NYC

Xia Wang, Sara Arango, Boya Yu, Juan Mora

Problem identification and project goals

Problem

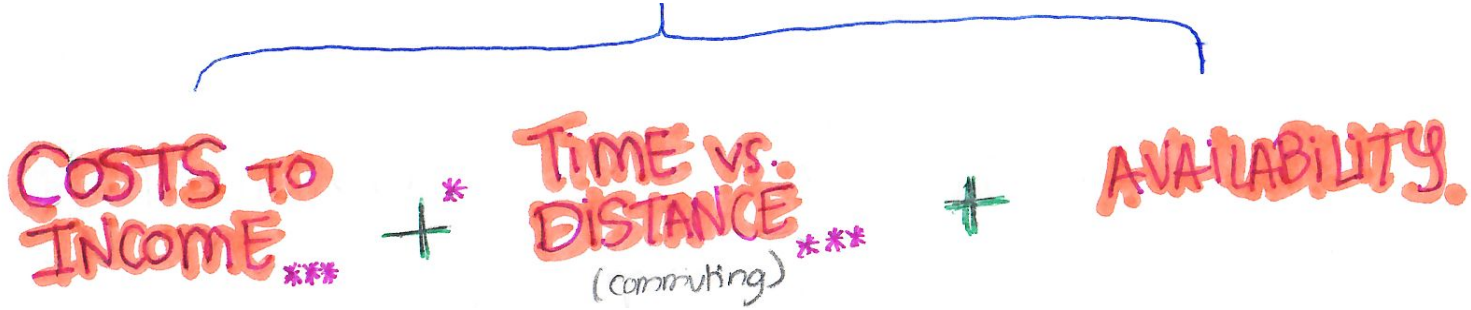
New York City transportation system presents apparent signs of inequality, especially the low-income segment of the population who commute on a daily basis.

Defined Goals

- **Identify possible factors** that could reflect transportation inequity in NYC.
- **Compute** those factors to create an indicator of inequality (index) for NYC transportation system.
- **Facilitate** this index in a comprehensive way for policy makers and public planners to use as one element of consideration in **decision making.**

Approach

Index



- Costs per mode (surveys)
- Income per Block Group (ACS 2013)

- Distance between block groups (Google Maps API)
- Time per mode between C.G. (USCB 2013)

- Stations, lines, km of lanes per Block Group (Google Maps API)
- Area (ACS)

Initial analysis

Why use block groups as units?

- Proper Size
- Data Accessibility
- Policy Implementation

Block Groups	Costs to Income	Time vs. Distance	Avail-ability
1	0~100	0~100	0~100
2	0~100	0~100	0~100
...	...	...	...

Prospective Result

Problems identified

Limitations and Assumptions

- Inaccuracy of cost estimation
- Calculate the distance using the centroid of the census blocks
- Some bus/metro stops fall on the borders of several census blocks

Problems

- Problems determining use of Infrastructure between people in different blocks (limits).
- Data Anomaly: on a Census block (Rikers Island), the cost of transportation is higher than income
- Correlation of the components of the index