

Simulation of travel times

Comparison between traffic and car modals

Research Question

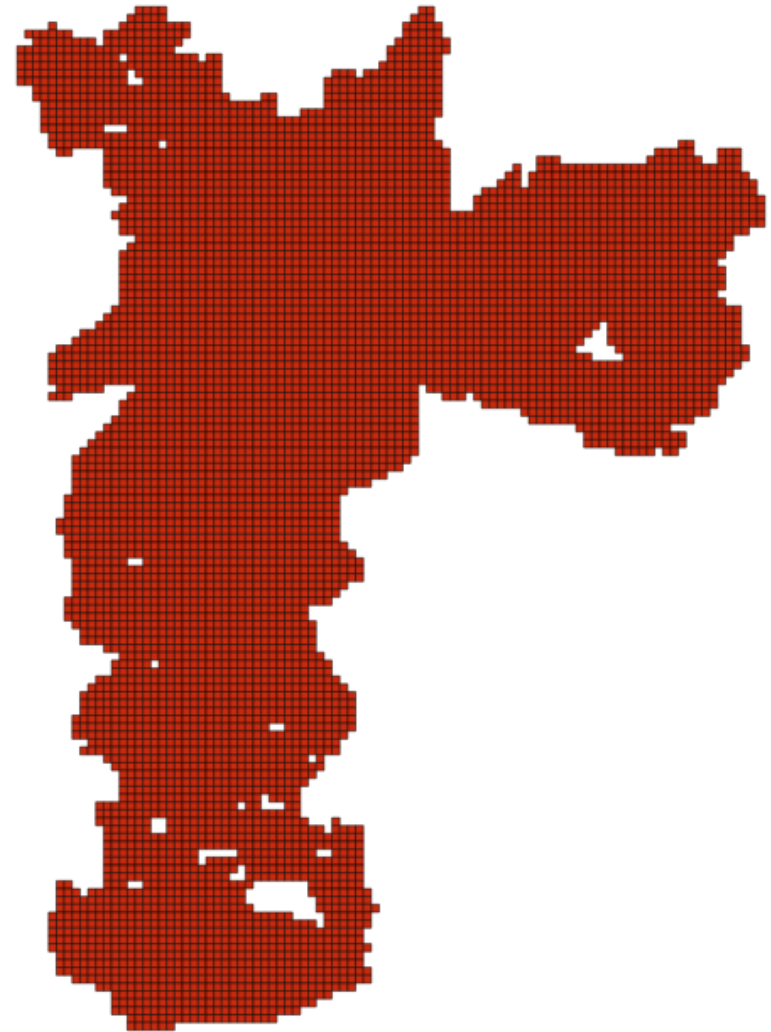
How does traffic travel times compare with private cars'? How (and if possible why) does the travel time performance vary geospacially?

The Simulation

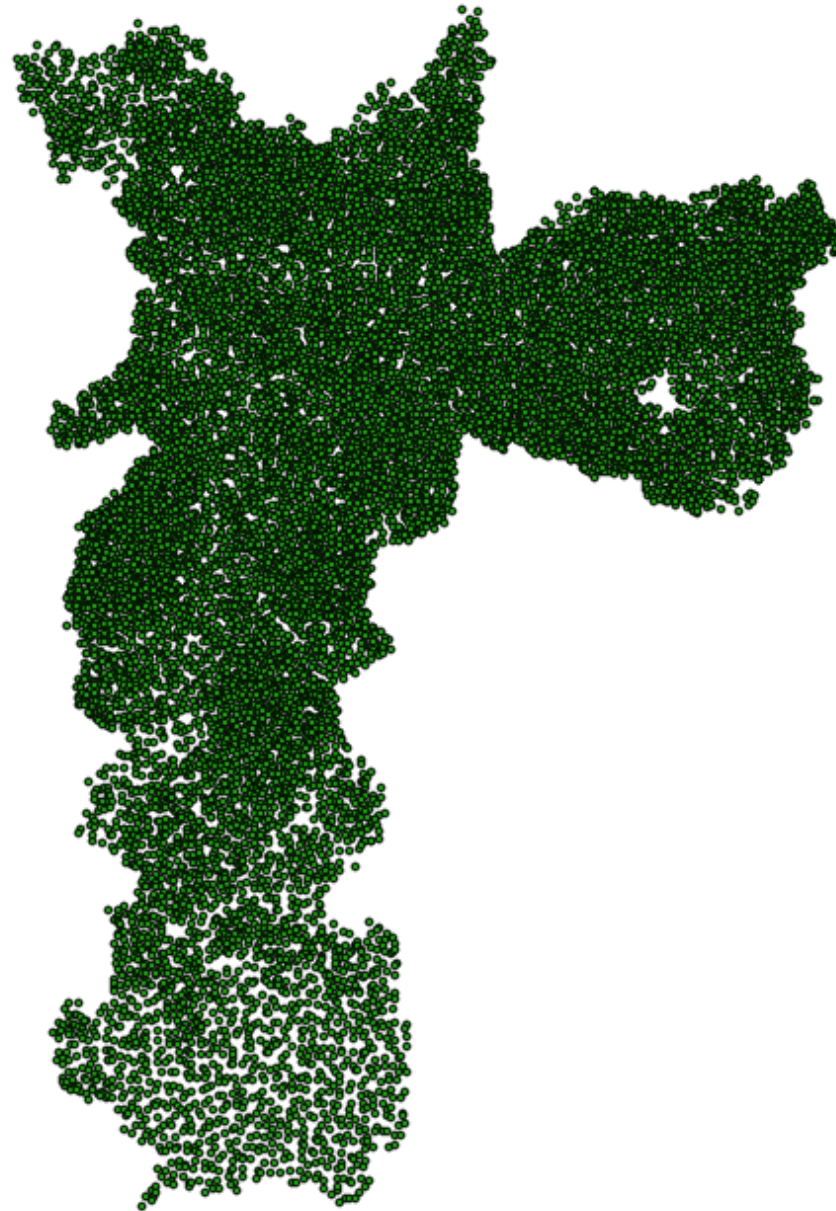
Simulation steps

- Mounting addresses database
- Calculating travel times

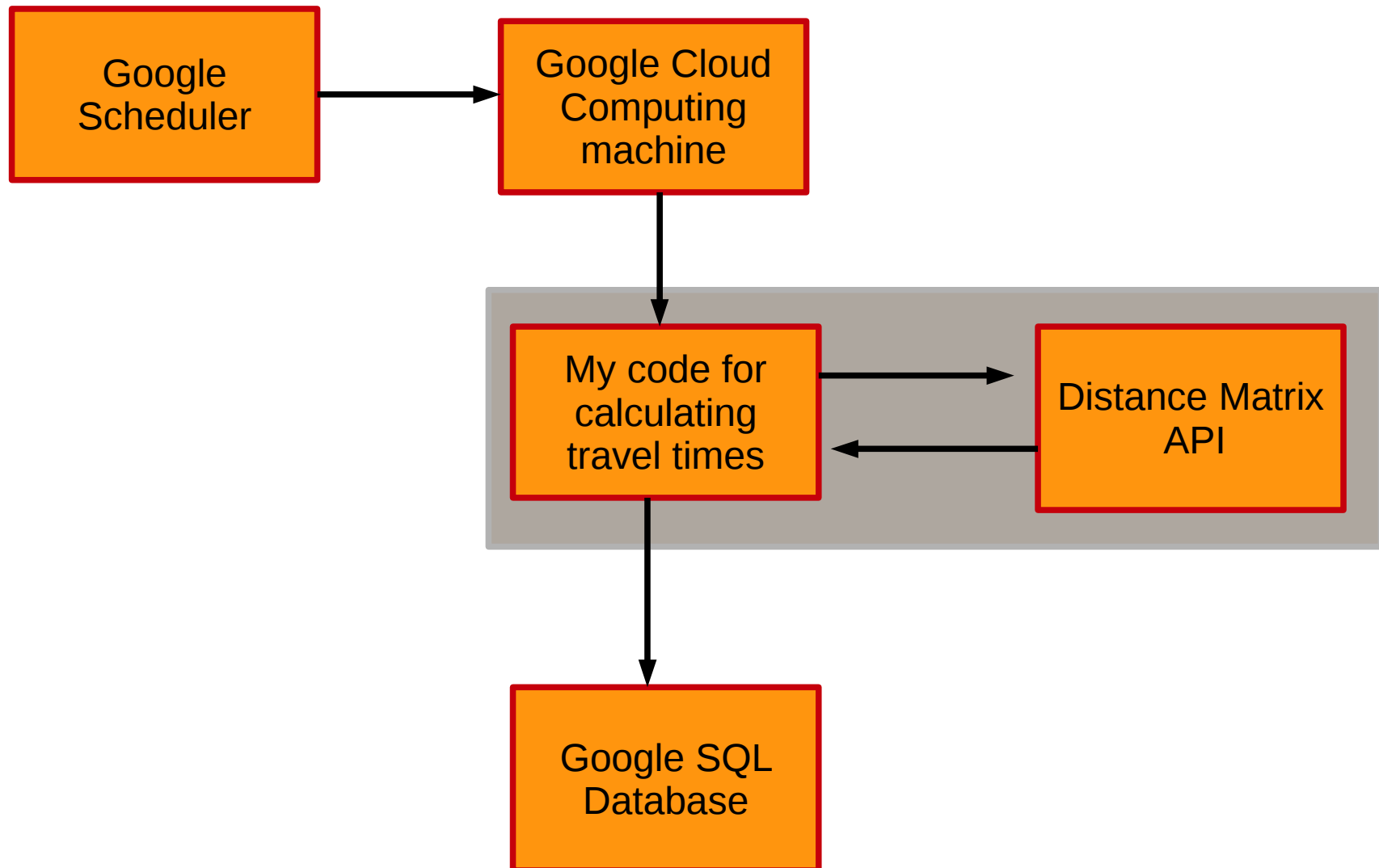
Mounting addresses database



Mounting addresses database



Calculating travel times



Data Structure

ID	Origin Latitude	Origin Longitude	Destination Latitude	Destination Longitude	Date	Hour	Mode	Distance	Travel time

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N = 257,400
128,700 pairs

Preliminary Data Analysis

For the moment – two measures

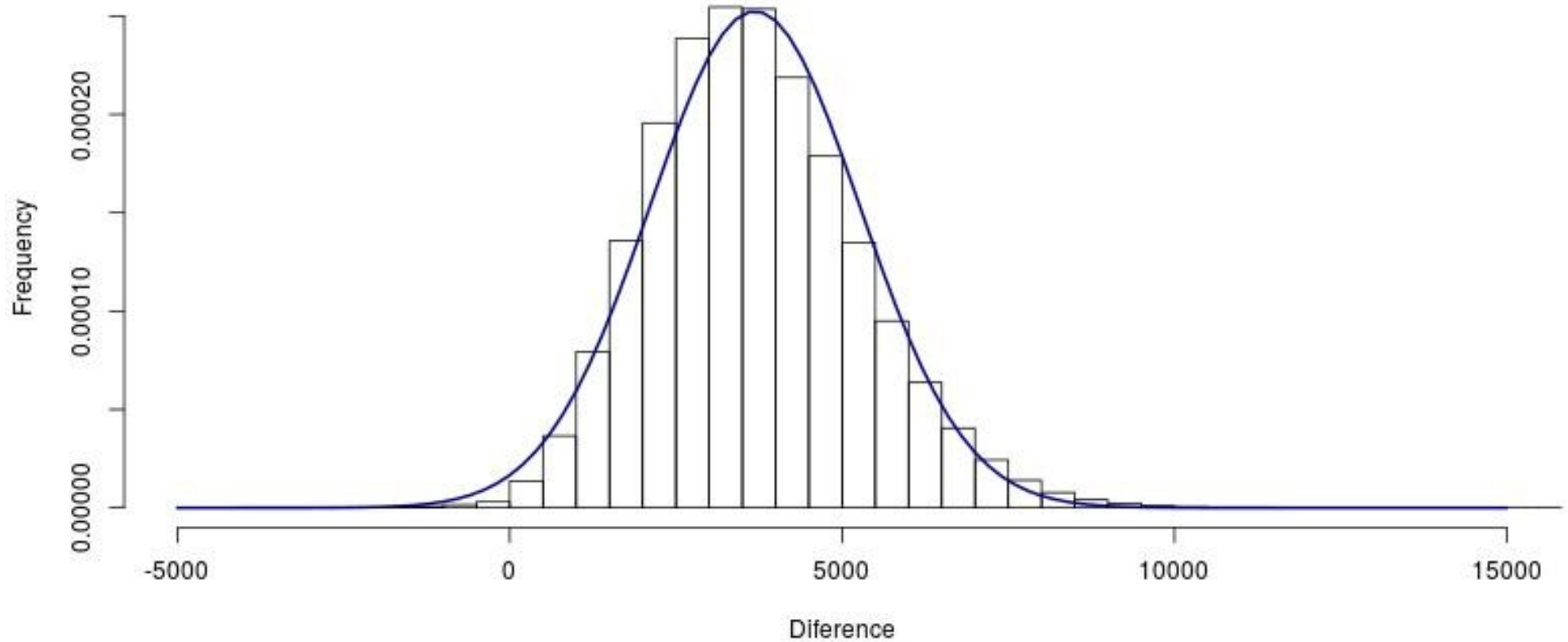
Diference in Travel Times = Public Travel Time - Private Travel Time

Ratio Travel Times = Public Travel Time/Private Travel Time

Preliminary Data Analysis

Characterizing the difference between travel pairs

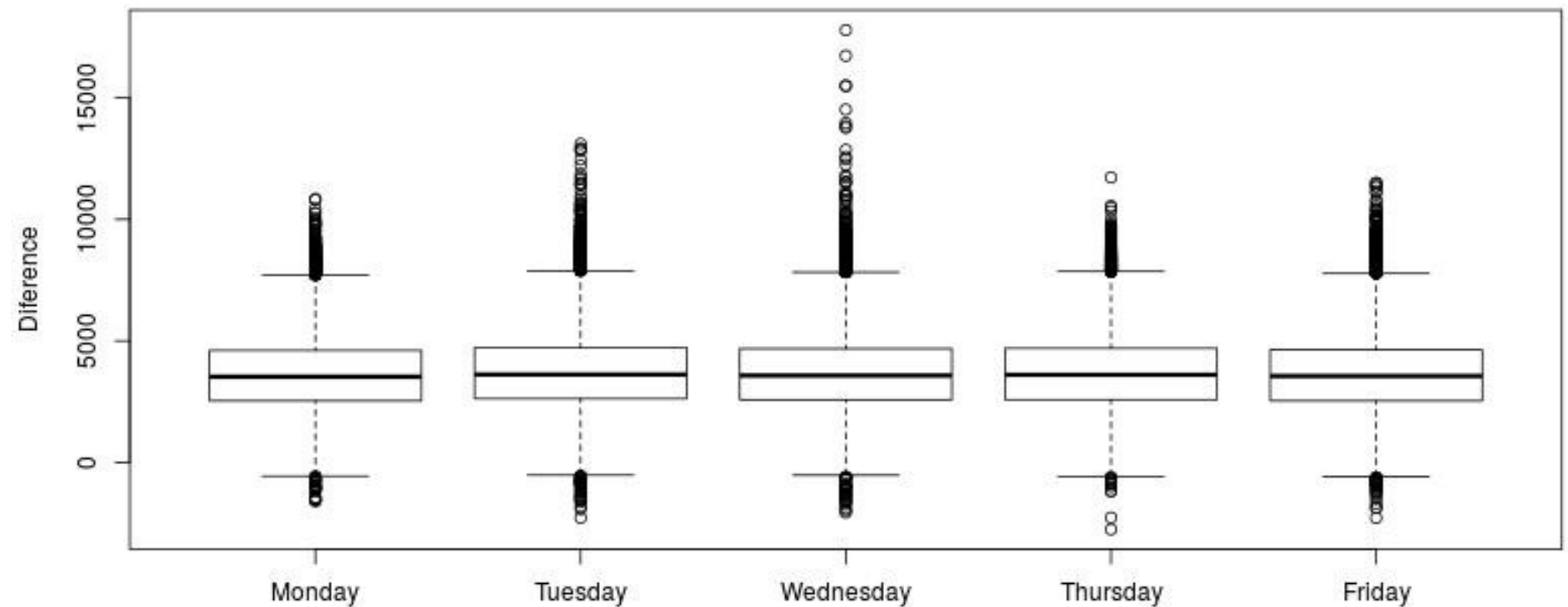
Histogram of Travel Time Difference ($T_{\text{public}} - T_{\text{private}}$)



Preliminary Data Analysis

Characterizing the difference between travel pairs

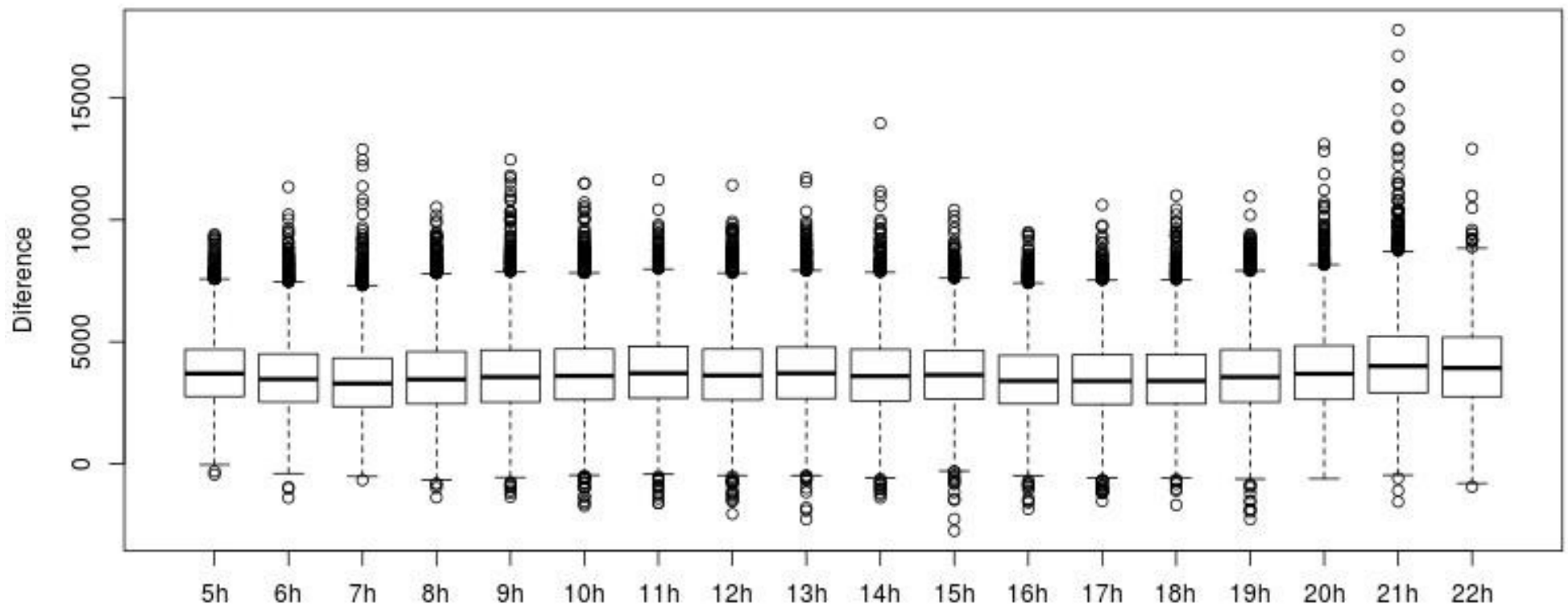
Travel Time Difference ($T_{\text{public}} - T_{\text{private}}$) by weekday



Preliminary Data Analysis

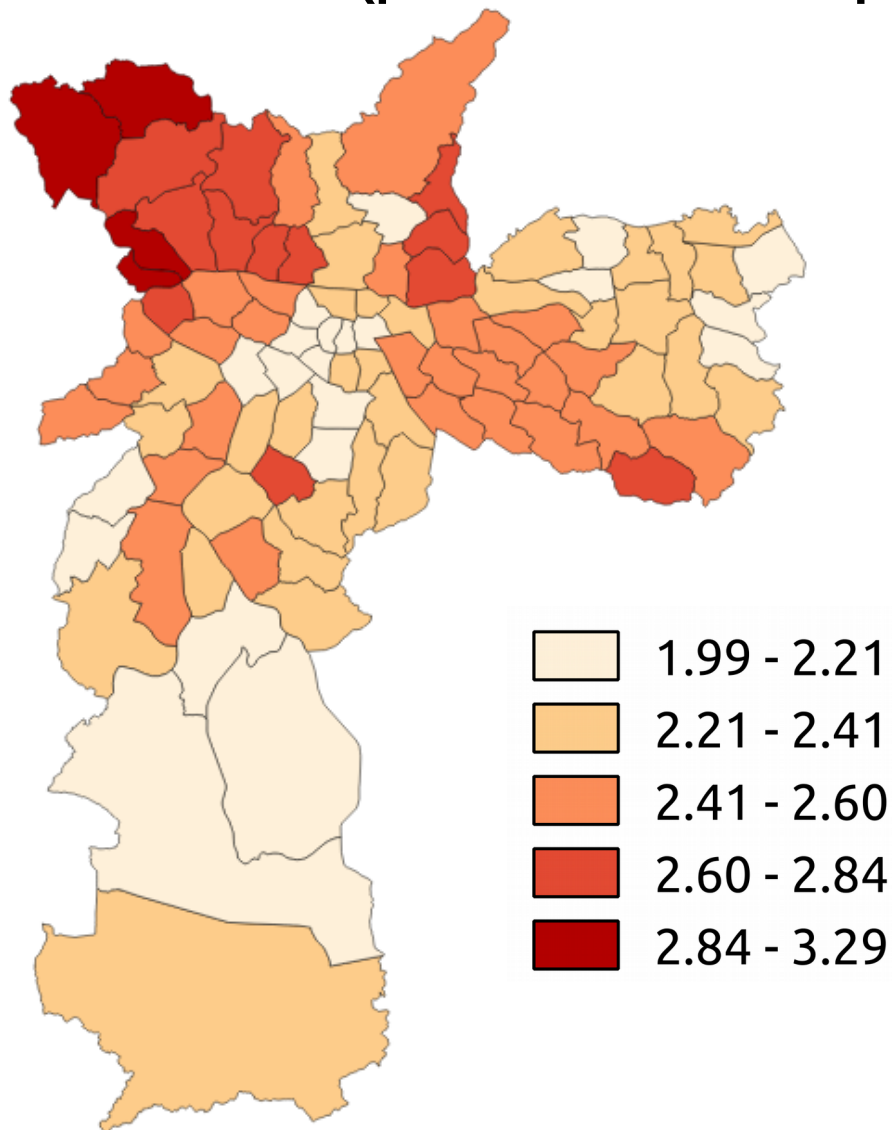
Characterizing the difference between travel pairs

Travel Time Difference ($T_{\text{public}} - T_{\text{private}}$) by hour of the day



Preliminary Data Analysis

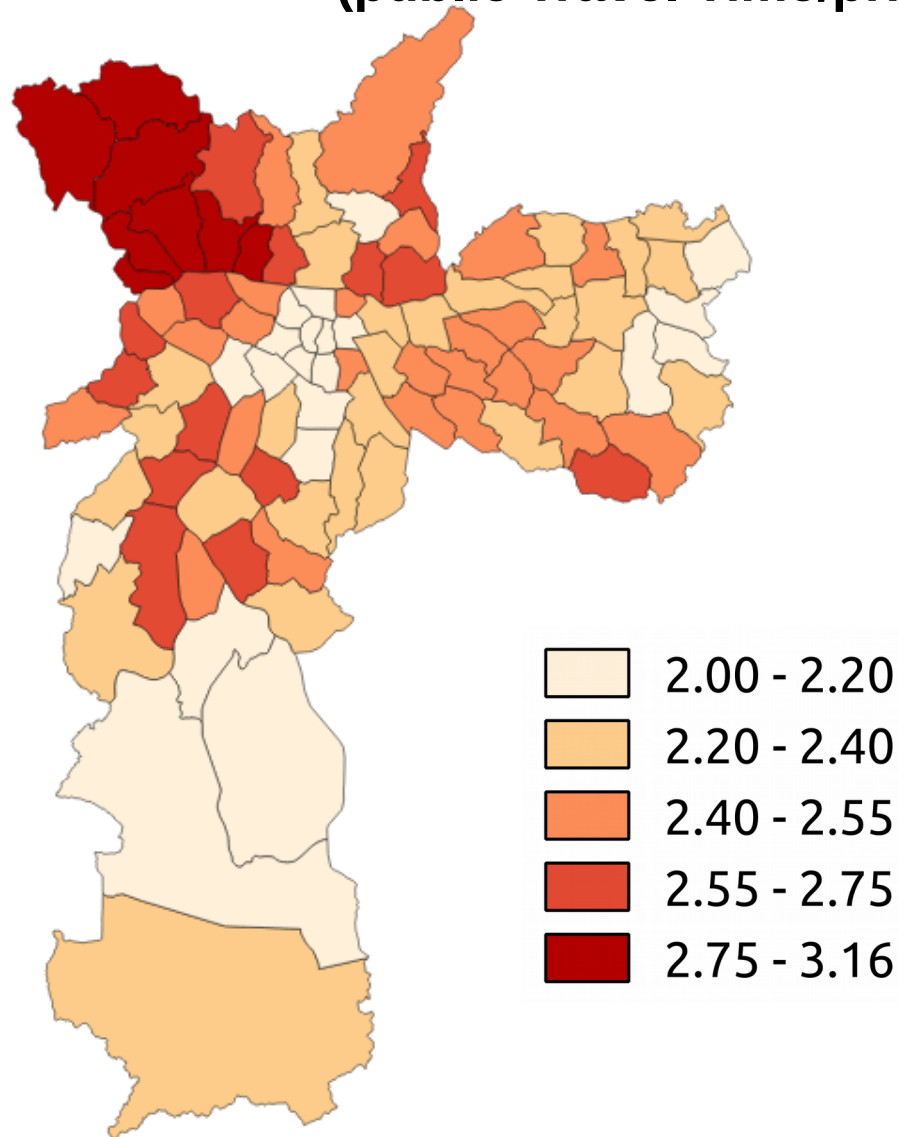
Characterizing the ratio between travel pairs
(public Travel Time/private Travel Time)



Grouping at
district of origin
of travel

Preliminary Data Analysis

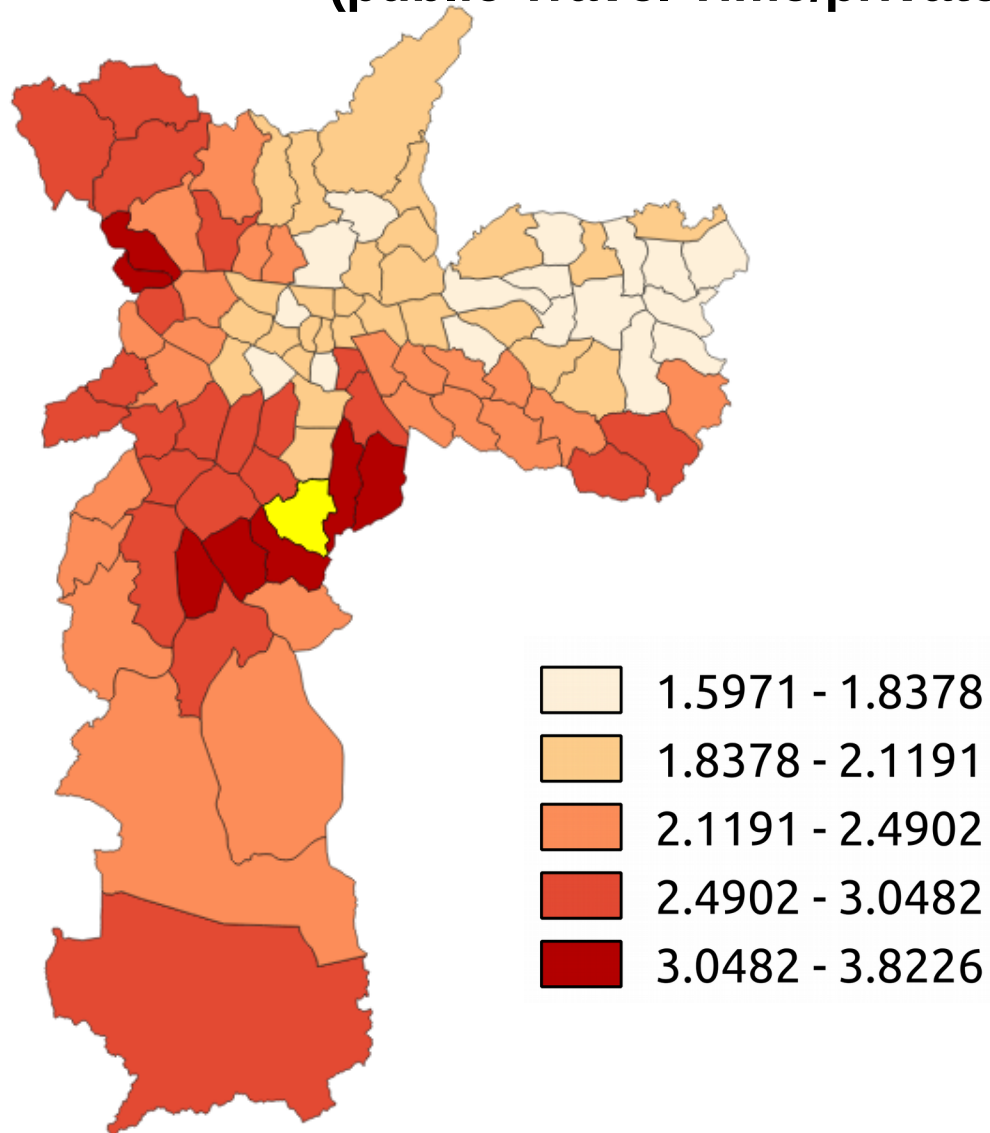
Characterizing the ratio between travel pairs
(public Travel Time/private Travel Time)



Grouping at
district of
destination of
travel

Preliminary Data Analysis

Characterizing the ratio between travel pairs
(public Travel Time/private Travel Time)



Grouping at
district of
destination of
travel – for
travels
departing from
Jabaquara