

# The effect of Covid-19 on scooter usage in Austin, Texas

**Motivations**

**Data & Methods**

**Preliminary Results**



**Or Caspi**

orcaspi@gmail.com

 **The Data Incubator**  
A Pragmatic Institute Company

October 27<sup>th</sup>, 2020

# Motivations

**THE VERGE**

**Lime is yanking its electric scooters from California and Washington due to coronavirus**

*Italy, Spain, and France, too*

3.17.2020

**10**  
TAMPA  
BAY

**Is it safe to ride e-scooters under a 'safer-at-home' order?**

3.26.2020

**Los Angeles Times**

**Bird cuts 30% of workforce as coronavirus pushes scooters out of cities**

3.27.2020

**The Washington Post**  
*Democracy Dies in Darkness*

**Lime relaunches scooters in Baltimore for essential medical personnel**

5.22.2020

**SPECTRUM  
NEWS 1**

**E-Scooters Expected to Make a Comeback During Pandemic**

5.11.2020

## How does Covid-19 affect scooter usage in Austin, Texas?

### Audience

- ▶ Operators – How to maximize revenue?
- ▶ Investors – Are scooters a good investment?
- ▶ Policy makers – How to optimize mobility?

### Why Austin?

- ▶ Early scooter adopter
- ▶ High scooter usage capacity
- ▶ Year-round comfortable weather
- ▶ Scooters remain active during Covid-19
- ▶ The city collects and shares trip data

**Or Caspi**

orcaspi@gmail.com

The effect of Covid-19 on scooter usage  
in Austin, Texas



**The Data Incubator**  
A Pragmatic Institute Company



# Data & Methods

## Main dataset:

Austin's micromobility trip log  
(9,701,345 trips – 1,914 MB)

## Additional data sources:

- ▶ Texas's COVID-19 daily cases by county
- ▶ U.S. Census Bureau (ACS 2019 + TIGER)
- ▶ City of Austin built environment shapefiles
- ▶ Open Street Map
- ▶ Weather database

## Descriptive statistics

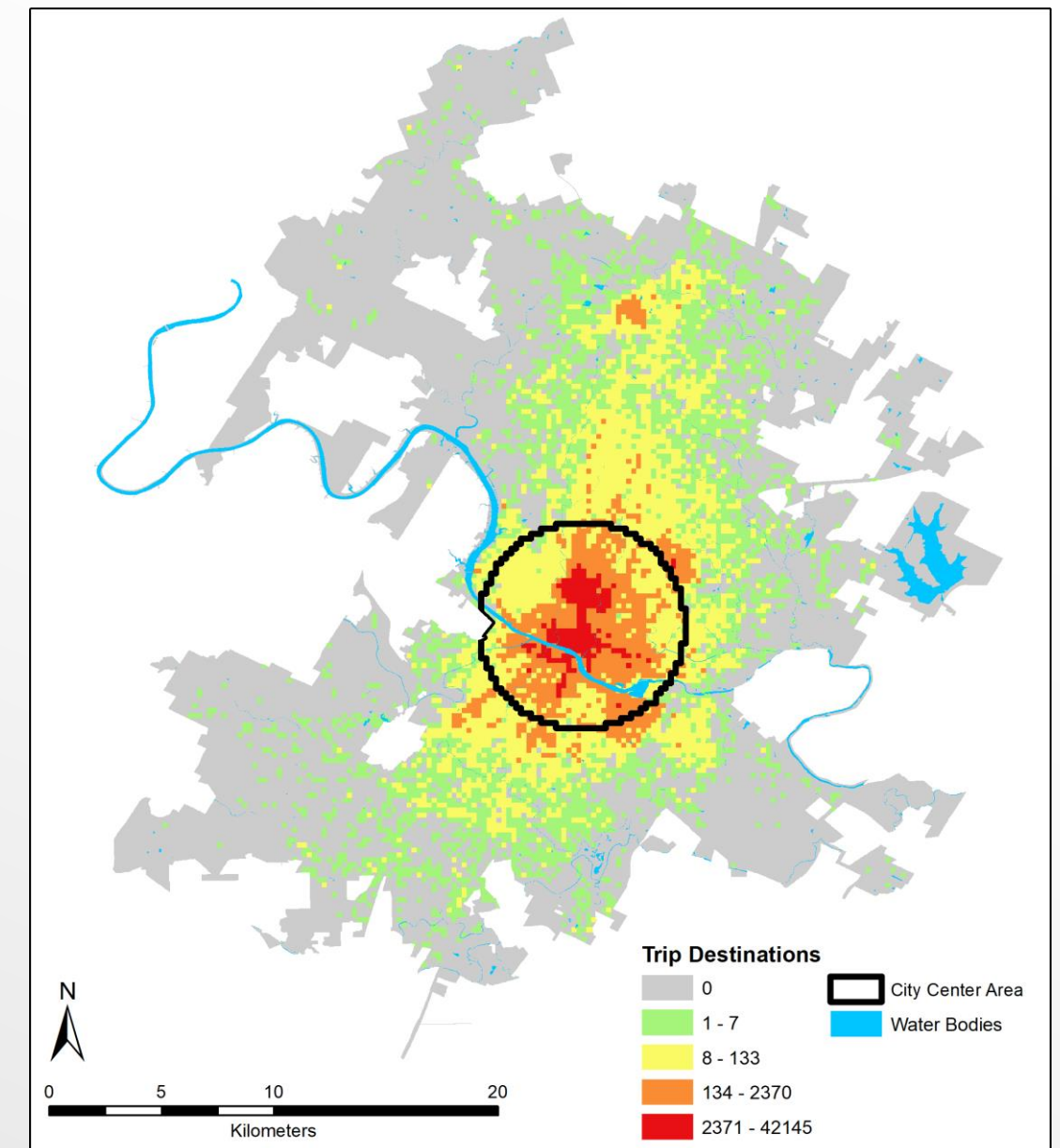
- ▶ Change in total trips
- ▶ Change in trip characteristics

## Spatial analysis

- ▶ Change in trip distribution
- ▶ Change in trip patterns
- ▶ Computing spatial attributes

## Machine learning

- ▶ Random forest to determine variables
- ▶ Time series regression analysis to create a predictive model



Caspi, O., Smart, M.J., Noland, R.B., (2020) Spatial associations of dockless shared e-scooter usage. *Transportation Research Part D: Transport and Environment* 86, 102396. <https://doi.org/10.1016/j.trd.2020.102396>

**Or Caspi**

orcaspi@gmail.com

The effect of Covid-19 on scooter usage  
in Austin, Texas



**The Data Incubator**  
A Pragmatic Institute Company

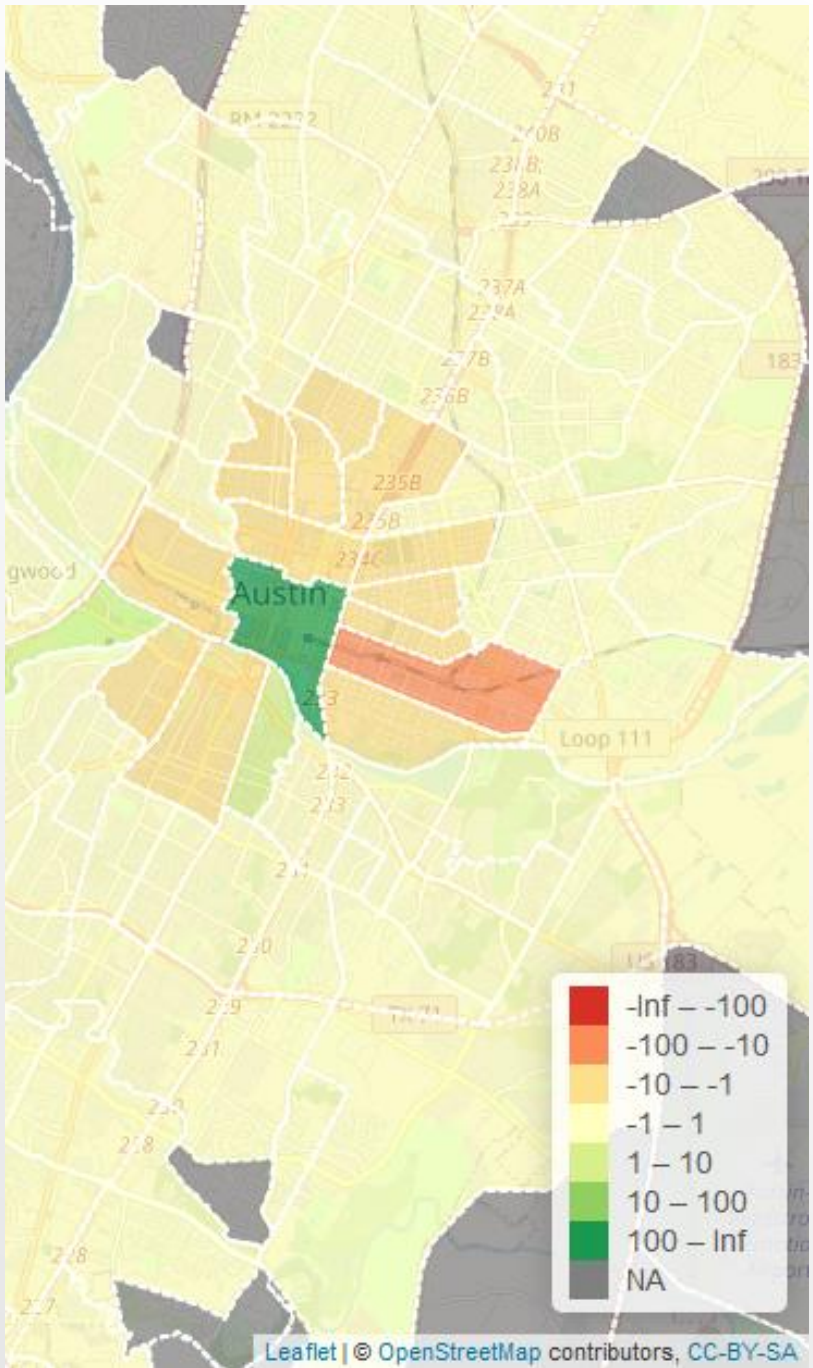
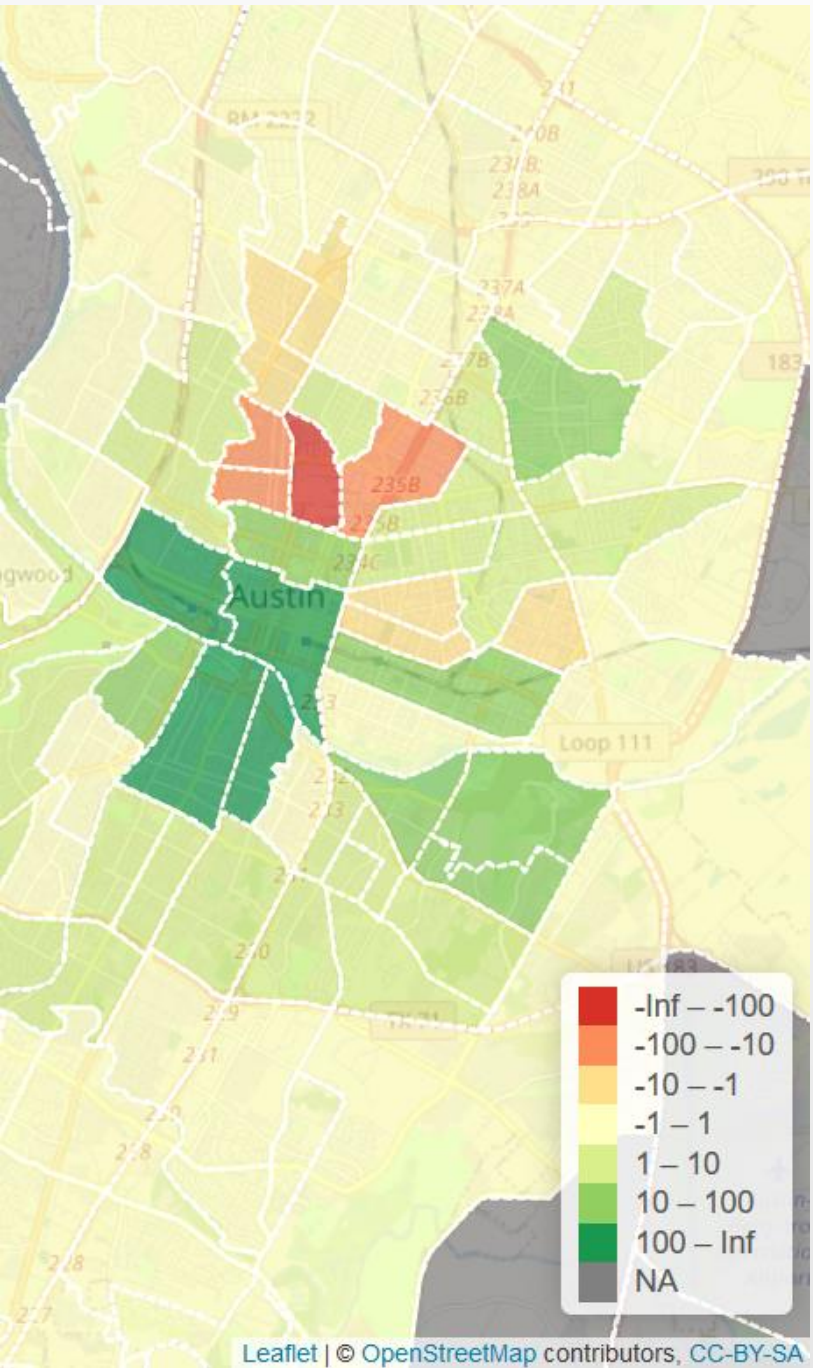
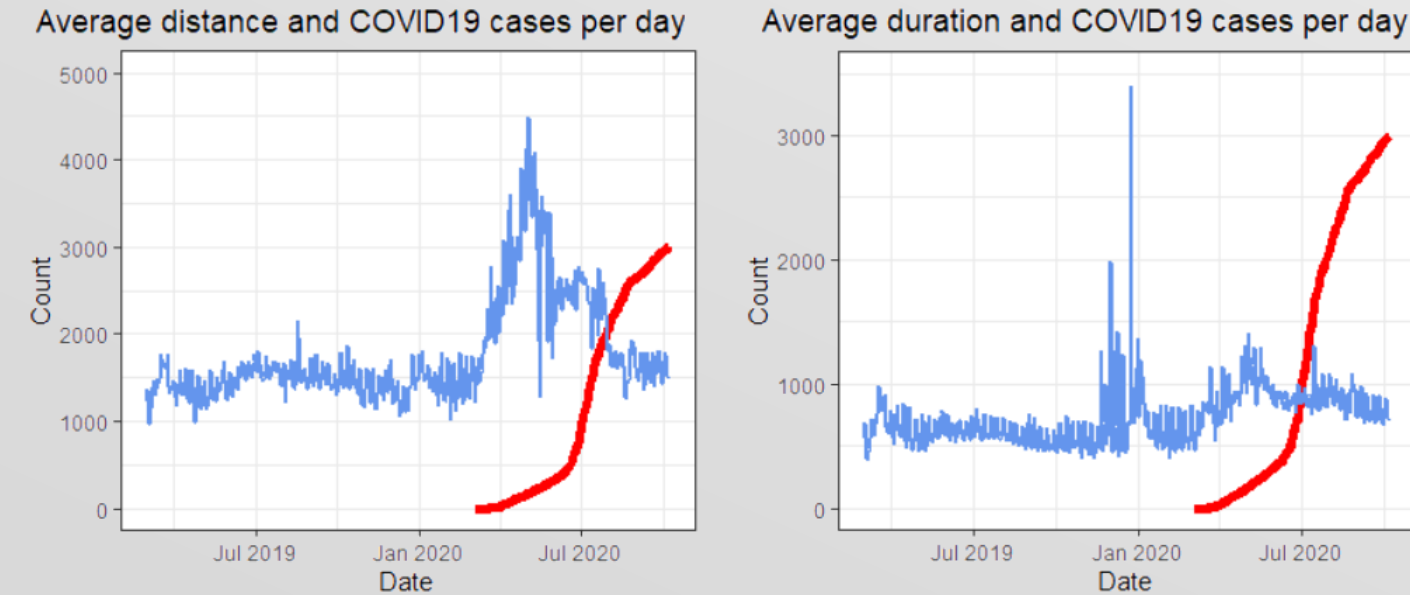
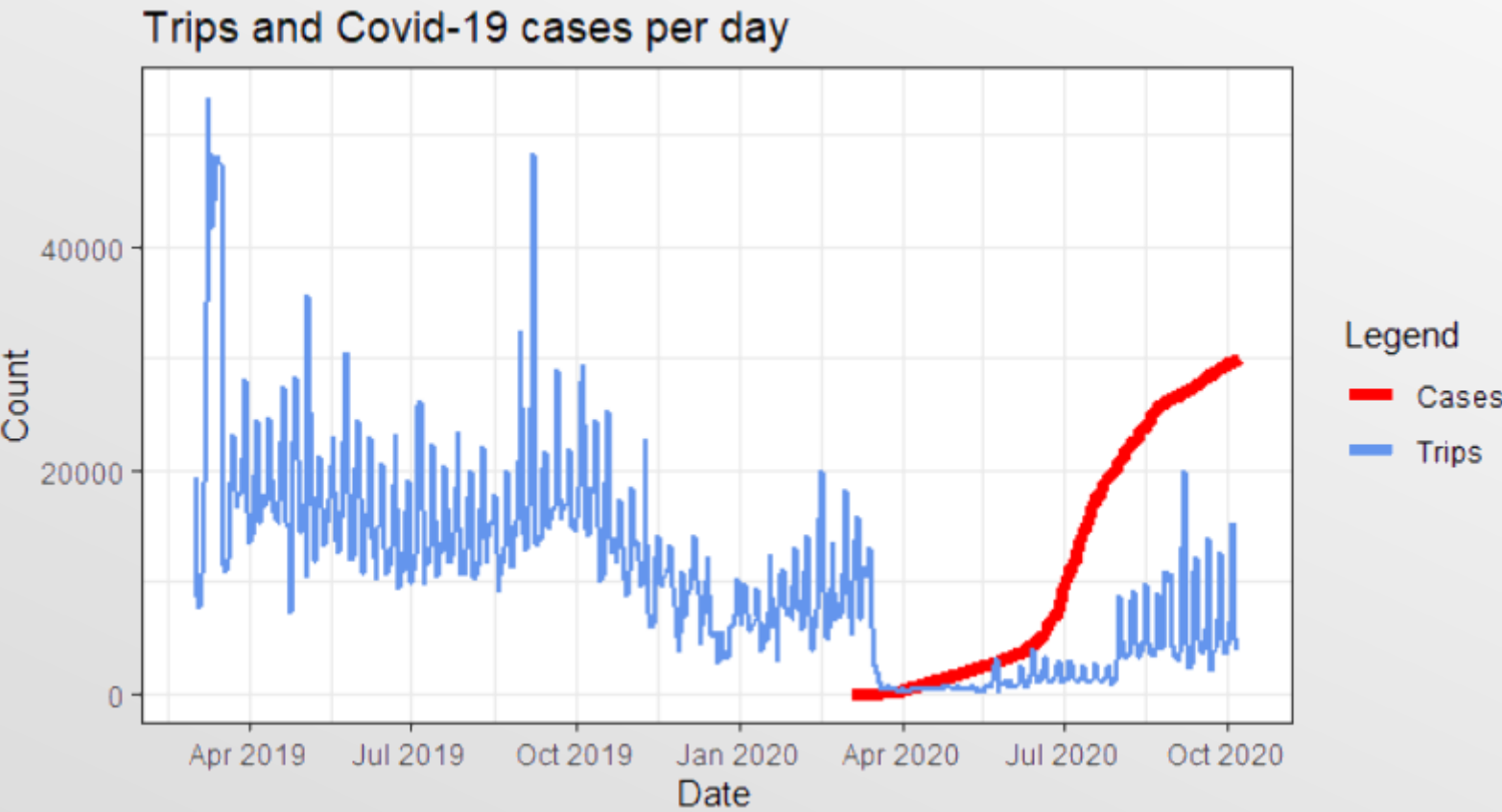




# Preliminary Results

Change in daily trip  
departures  
March – September 2020

Change in daily trip  
destinations from central tract  
March – September 2020



Or Caspi  
orcaspi@gmail.com

The effect of Covid-19 on scooter usage  
in Austin, Texas

The Data Incubator  
A Pragmatic Institute Company

