Emerging Technologies Impact on Public Transportation Use

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Introduction

- **E-Scooters** are a relatively new phenomenon around the world
- In Austin, E-Scooters have dominated the streets
- Trip data is limited
- Comparing e-scooters, bicycles, and transit demand.
- Collecting, cleaning, and analyzing data would help cities to regulate e-scooters.
- UT has implemented policies to regulate the flow of traffic caused by the e-scooters.

Objectives:

- Evaluate e-scooters and bikes demand patterns
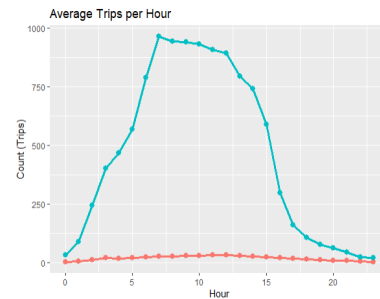- Analyze e-scooters and transit interaction

Method

- Used R to clean and analyze the data collected from the City of Austin Transportation website
- R is a computer language used mainly for statistics and data analysis
- Cleaned the data to remove any extreme values that would skew the average
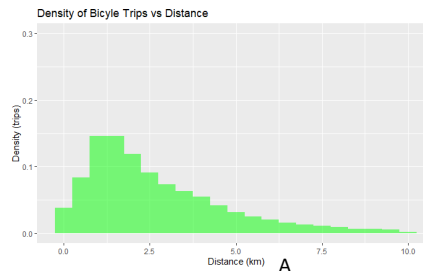- Used R modules to interpret data & create supporting graphs, plots, and histograms.
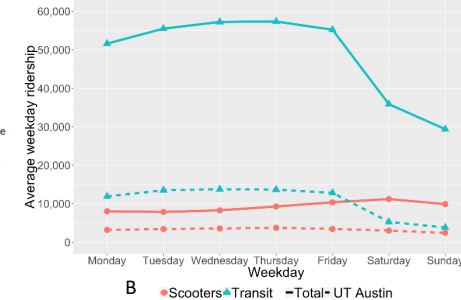
Data Description and Results
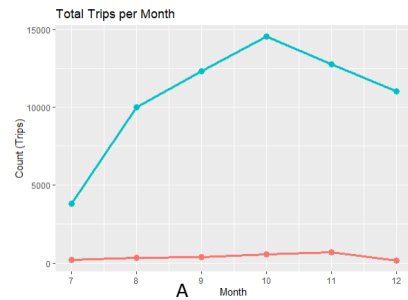
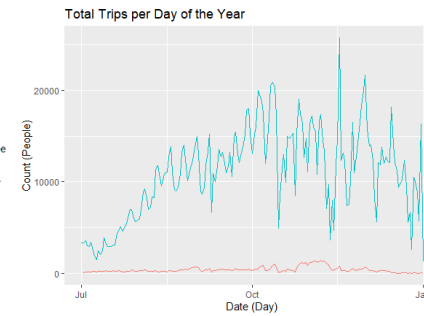Total bicycle and e-scooter trips per month from July-December 2018

Average trips per weekday of scooters and transit through Austin (solid) and UT (dashed)

The average trips taken per hour of bicycles and scooters during the Fall 2018 semester

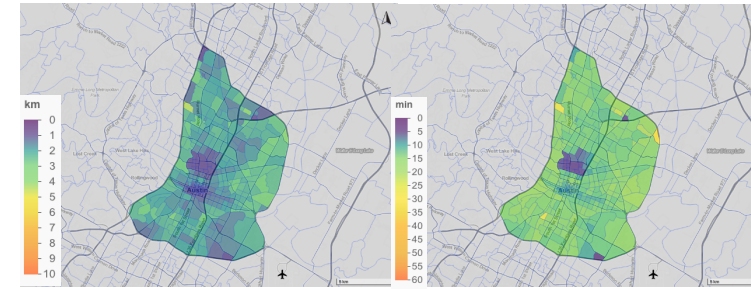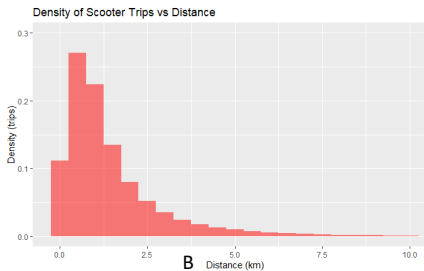The total trips taken of bicycles and scooters per day from July 1 to December 31

Each graph depicts the density (the total area under the curve sums to 1) as a function of distance for A) bicycles and B) e-scooters

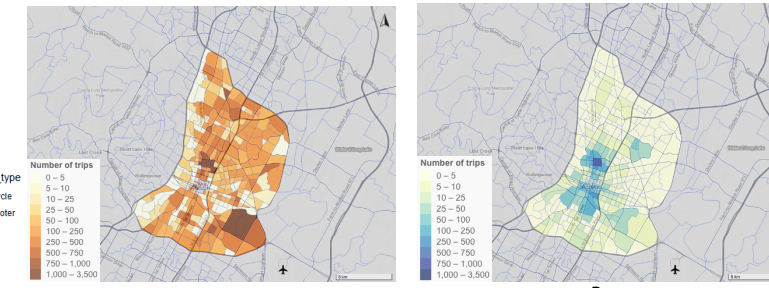Maps of Austin depicting A) the average distance traveled and B) the average time traveled per region for e-scooters

Maps of Austin depicting the number of trips taken per region for A) transit and B) e-scooters

Conclusion

- E-scooters are in higher demand than bicycles
- There is a higher demand for e-scooters during the academic session (Late August- Late December)
- E-scooters are used for shorter trips more frequently on the academic campus than in other parts of Austin