CSCI 492 Project 2

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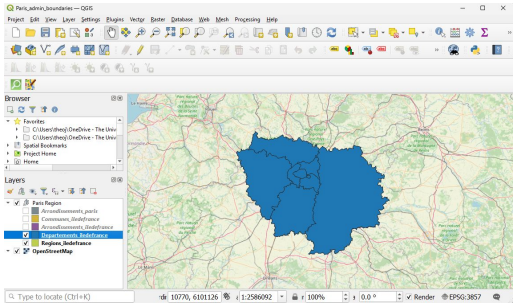
Hypothesis

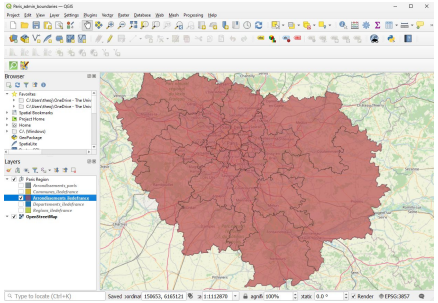
Spatially-identified “transport deserts” in the Paris metropolitan region will likely share lower socioeconomic outcomes.

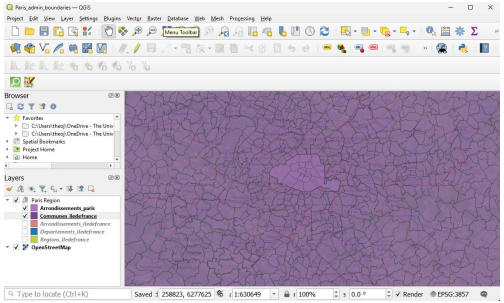
Data

Administrative boundaries as polygons.

- IRIS (census-designated neighborhoods)
- Communes
- Arrondissements
- Departements
- Region (for clipping data)



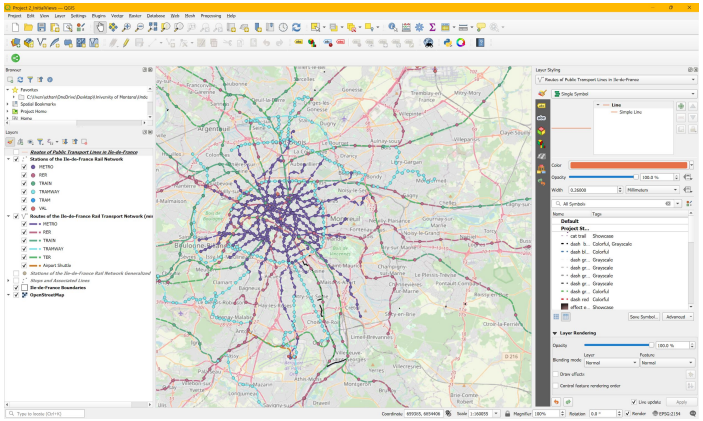


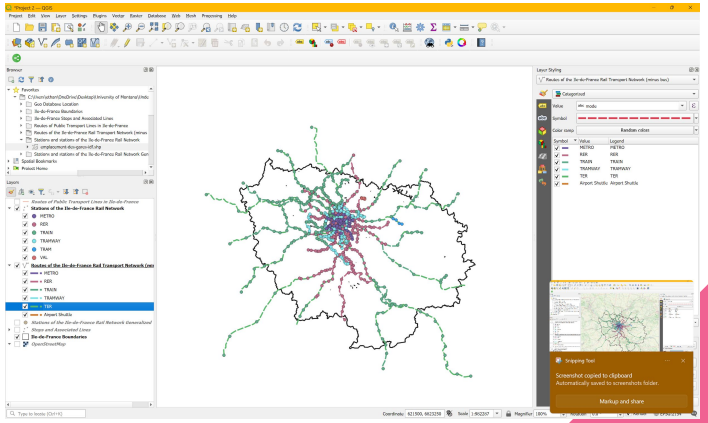


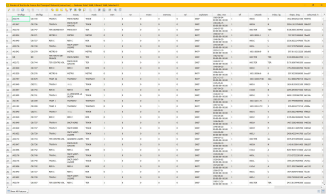
Data

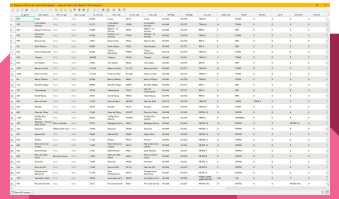
RATP official rail transit network dataset

- Contains every station location and the line (network) it serves.
- Crucial data for calculating transit times and transit deserts.
- Preliminary visualizations show potential transit deserts, to explore further in analysis:









Data

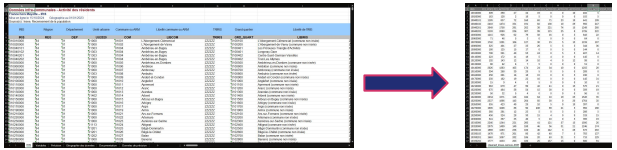
Institut national de la statistique et des études économiques

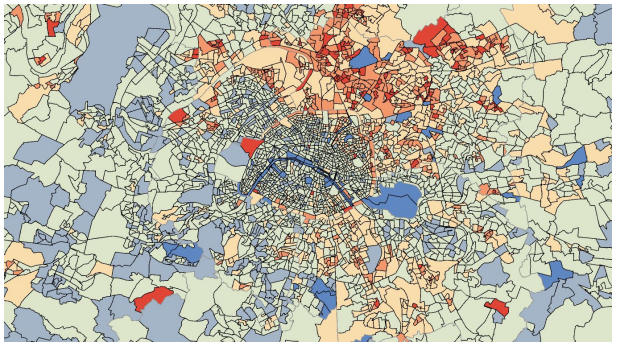
Insee

Mesurer pour comprendre

INSEE Census Data

- 2021 is latest year, but 2019 is also available for pre-pandemic insights.
- Spoiled with wealth of information provided.
- Cleaned dataset, dropped blanks, and found variables of interest:
  - Population
  - Employed/Unemployed/Student count
  - Method of commuting to work
  - Working in local area or in external area





Design

- Spatial analysis: calculate number of direct stations per neighborhood; calculate neighborhood centroids; calculate travel time between central Paris to the closest station of a neighborhood centroid; calculate average unemployment/income at multiple administrative levels; calculate average unemployment/income in transit desert clusters.
- Spatial joins: administrative boundaries, census neighborhoods, centroids, transit networks, travel times, socioeconomic indicators.
- Spatial weights: find best neighbors (with better connections to central Paris) for transit deserts.
- Choropleth maps: transit desert clusters and socioeconomic indicators.