

Choosing the safest place to live

Analysis of COVID-19 infection rates in the New York neighborhood

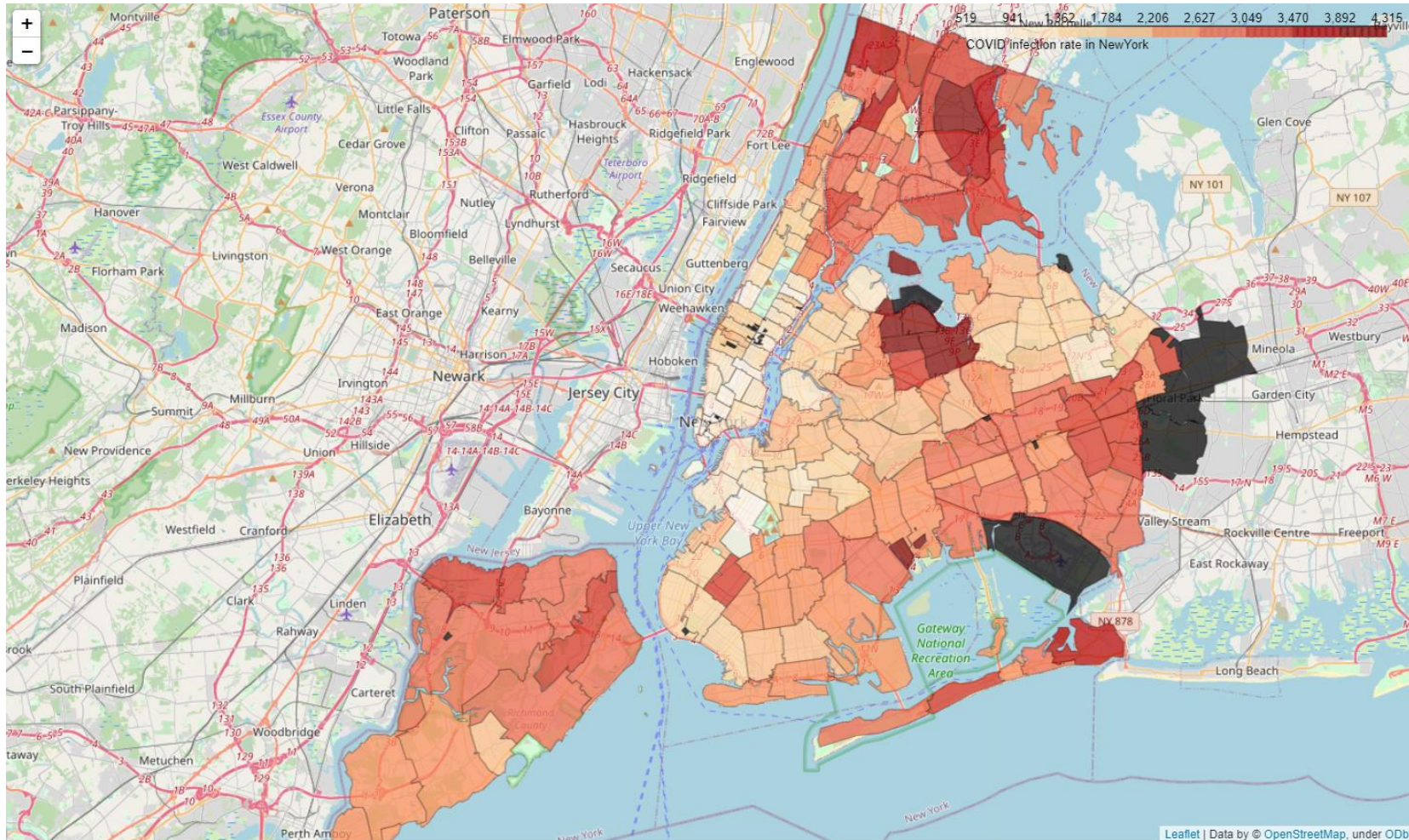
Chosing the best neighborhood to survive the pandemic

- ▶ Pandemic outbrake has hit the world badly
- ▶ US number of cases reported daily is not getting down and situation remains critical
- ▶ Different neighborhoods of the New York City are affected at a different scale
- ▶ It would be important also to predict hot spots in other cities as well

Data acquisition and cleaning

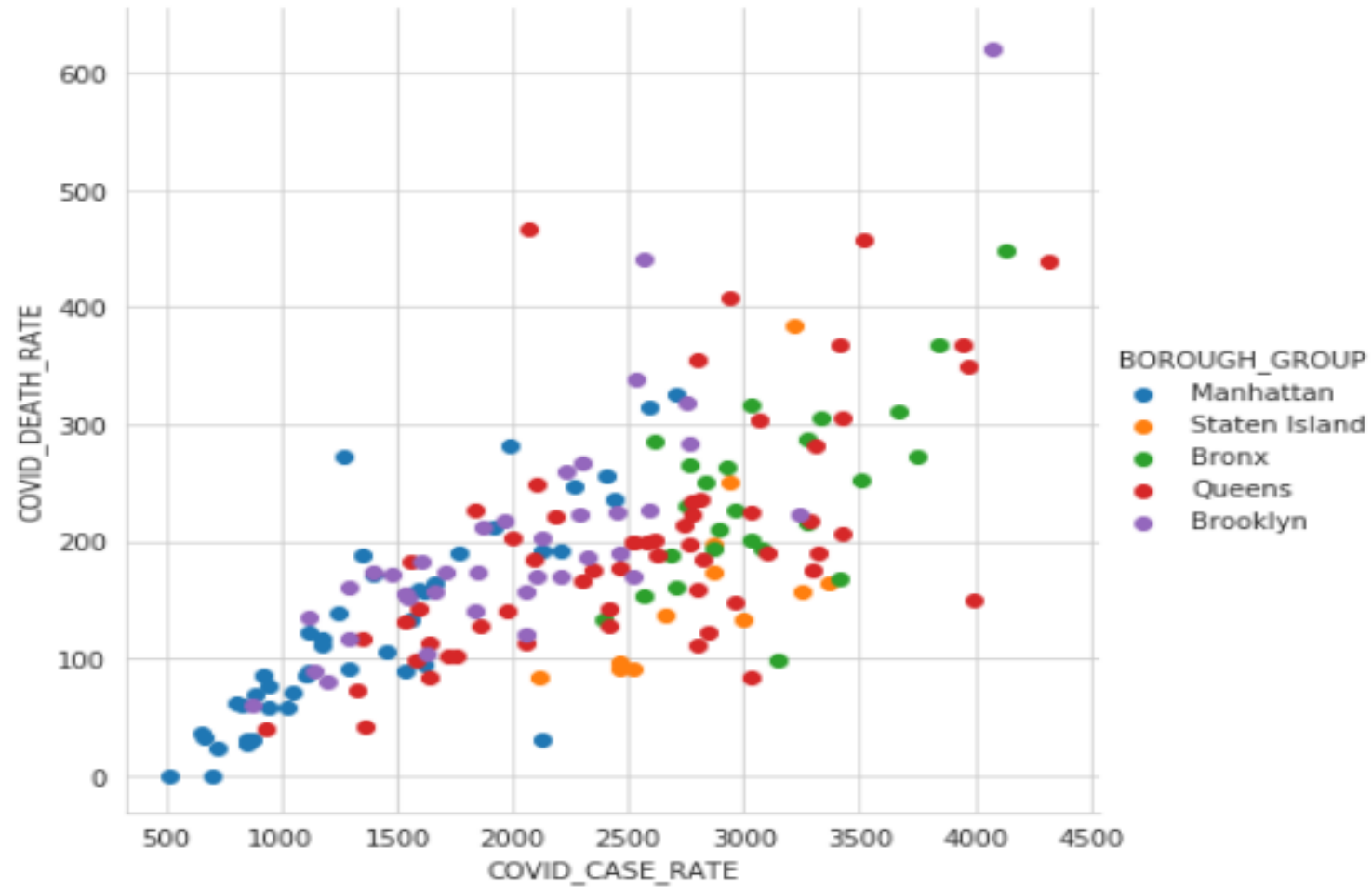
- ▶ COVID cases per New York City Zip code used
- ▶ Data enhanced with the venues from Foursquare API
- ▶ For displaying on map also respective GeoJSON file for NYC taken
- ▶ Major data cleaning was required due to the different formats in neighborhood names and instability of geocoding on OSM

COVID infection rates in NYC

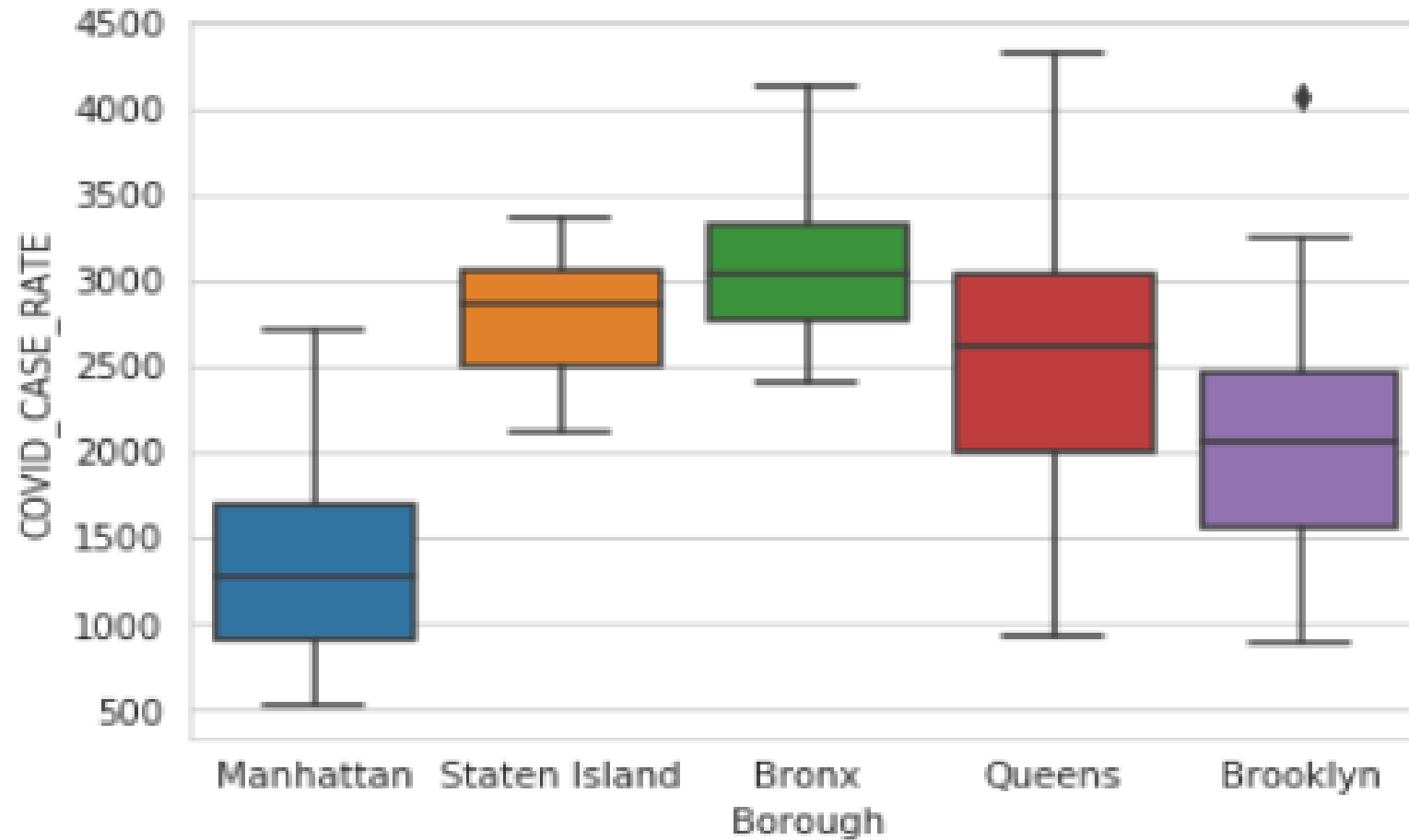


The map displays COVID-19 death rates across New York City and its surrounding regions. The color scale ranges from light blue (low death rate) to dark purple (high death rate). High death rates are concentrated in the South Bronx, parts of the East Bronx, and the Lower East Side. The map includes labels for major highways, parks, and surrounding towns. A scale bar at the top right indicates distances in miles.

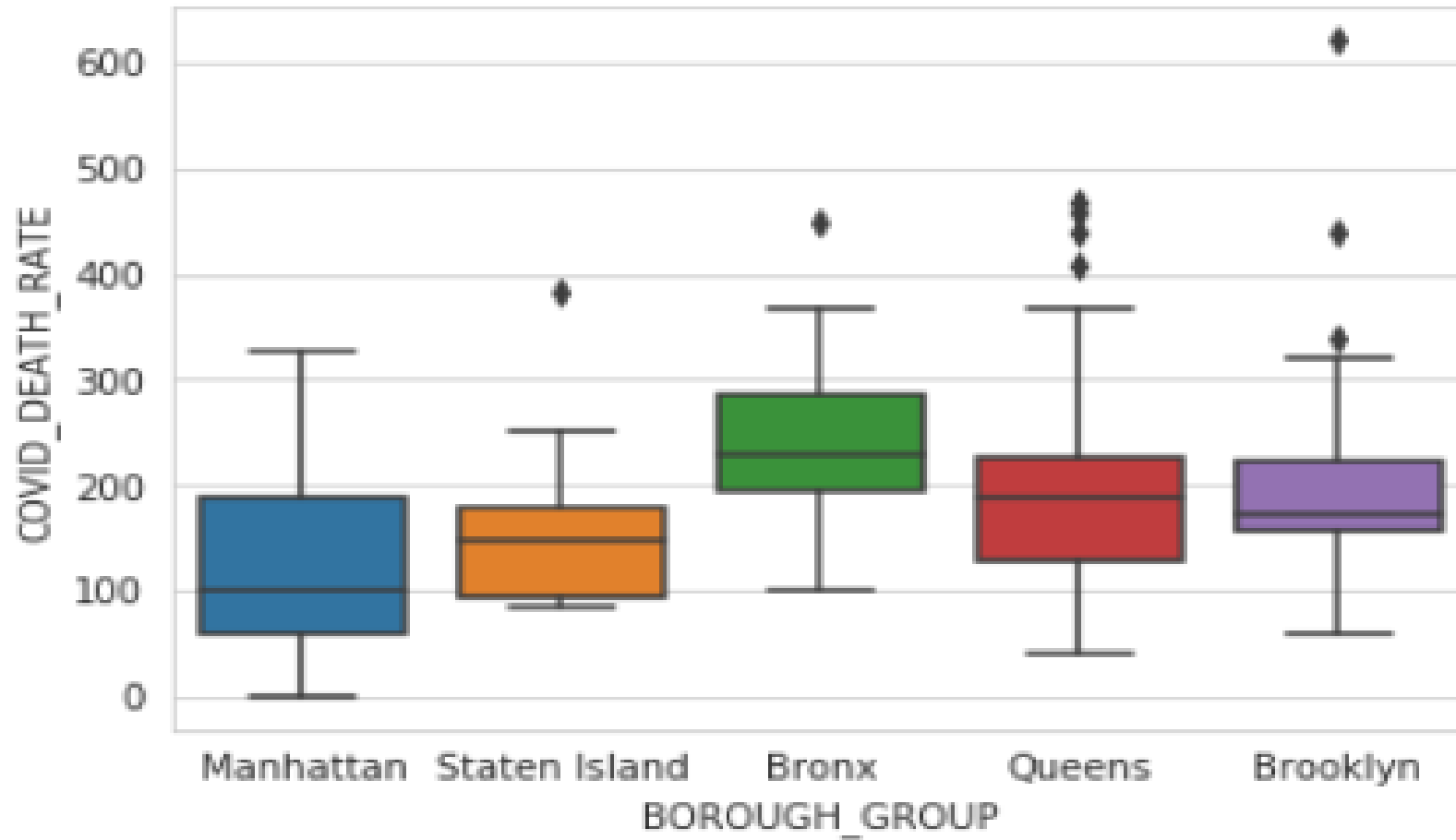
Infection rate vs. death rate



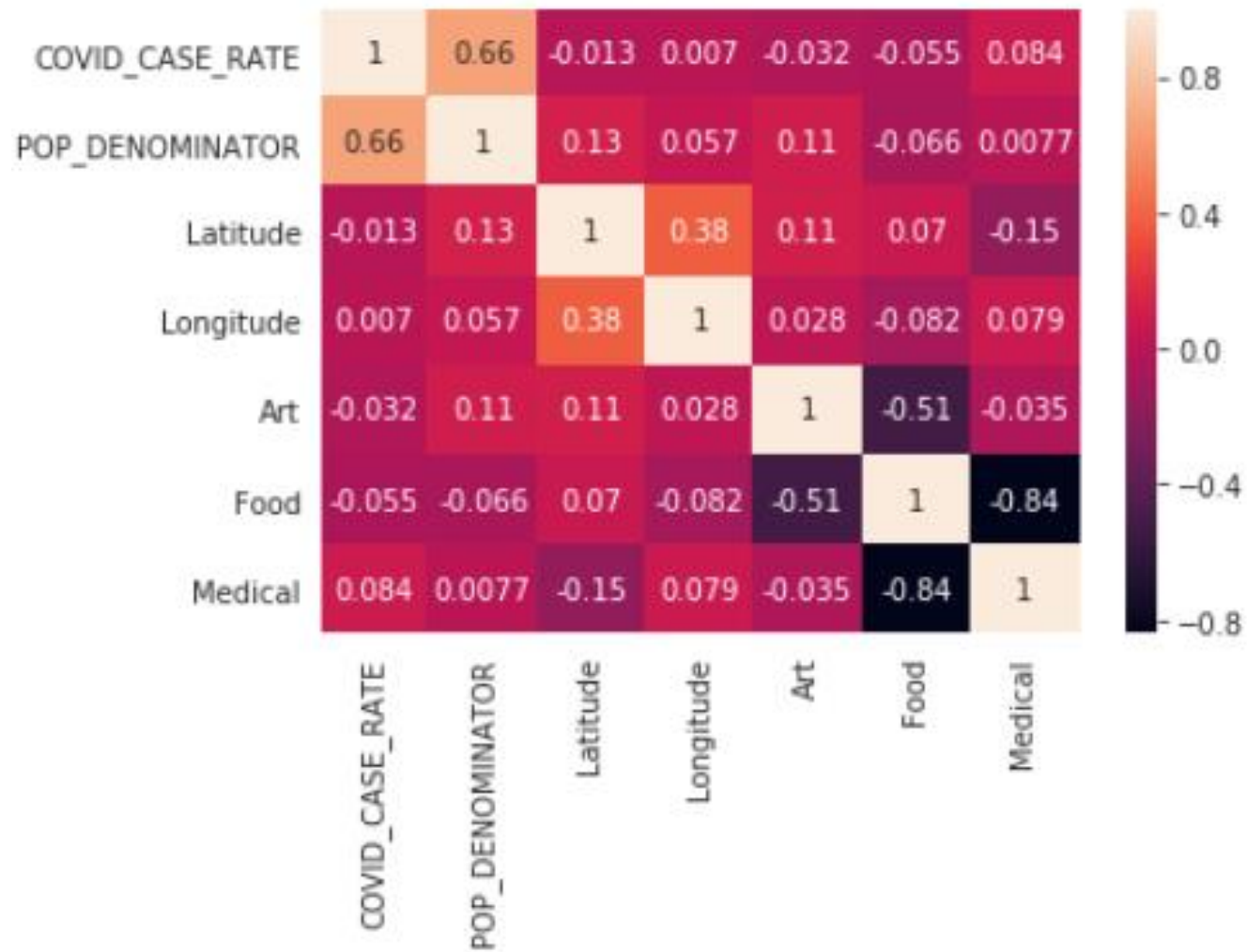
COVID cases per neighborhood



COVID death rate per neighborhood



Correlation matrix



Regression confirms no link

```
LinearRegression(copy_X=True, fit_intercept=True, n_jobs=None,  
                  normalize=False)
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Mean Absolute Error: 11.785929590247573
```

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Mean Squared Error: 218.7551994831311
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Root Mean Squared Error: 14.790375231316178
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R2 score: 0.007980795135463903
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Conclusion and future work

- ▶ Best place to live in New York is in Manhattan
- ▶ No link identified between places where people are gathering or availability of medical centers and the infection rates
- ▶ Next step here would be to analyze at the finer grained level the different venue category availability and compare the data from New York with similar neighborhoods in the other cities