

Socio-economic Determinants of Vaccine Uptake

The 2021 Summer Team Impact Project Program

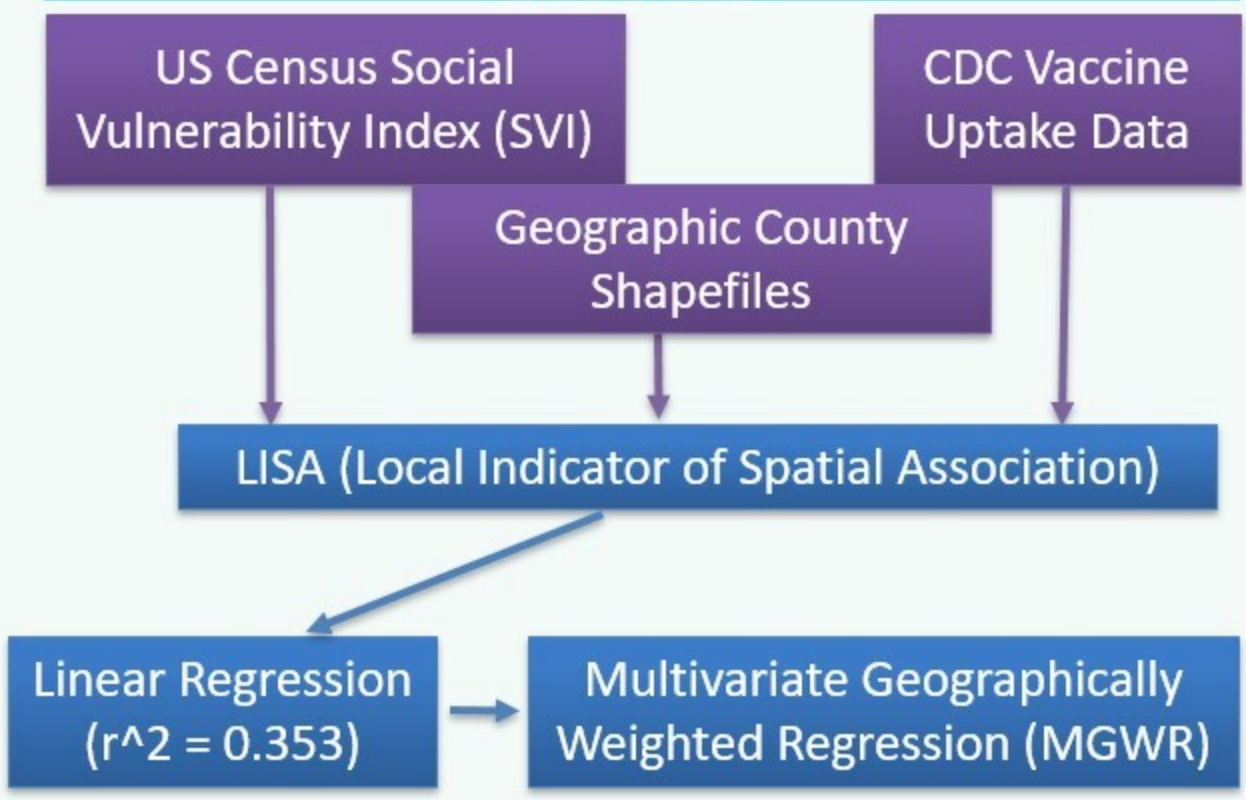
Leela Yaddanapudi¹, Shivani Gurrapu¹, Jack Blumstein², Kevin Cevasco, Amira Roess, Hamdi Kavak, Tim Leslie, Andreas Züfle, Taylor Anderson

1 Department of Computer Science, 2 Department of Computational and Data Sciences

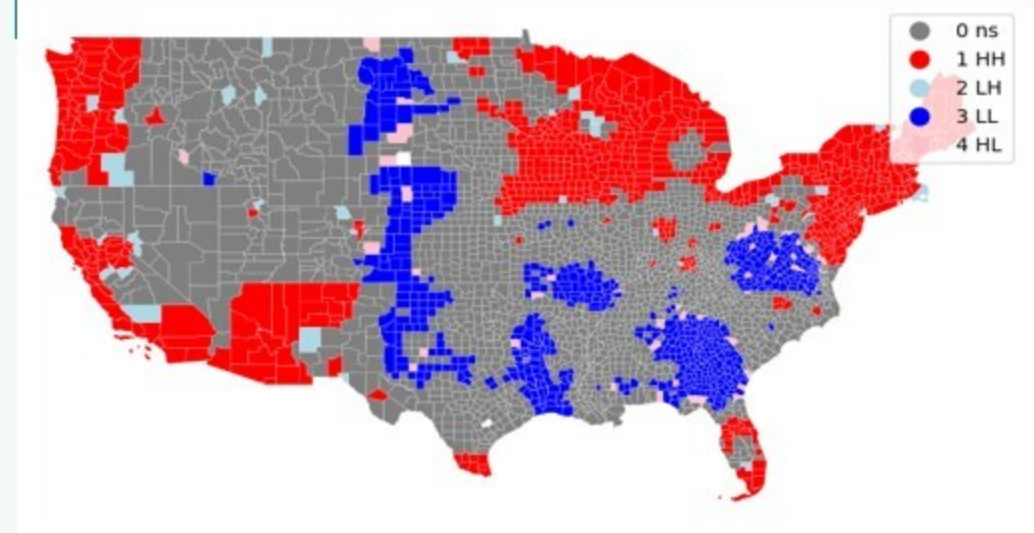
Purpose

Objective: Understand how socio-demographic factors influence vaccine uptake at the CBG (Census Block Group) Level and find vulnerable communities with low estimation of vaccine uptake.

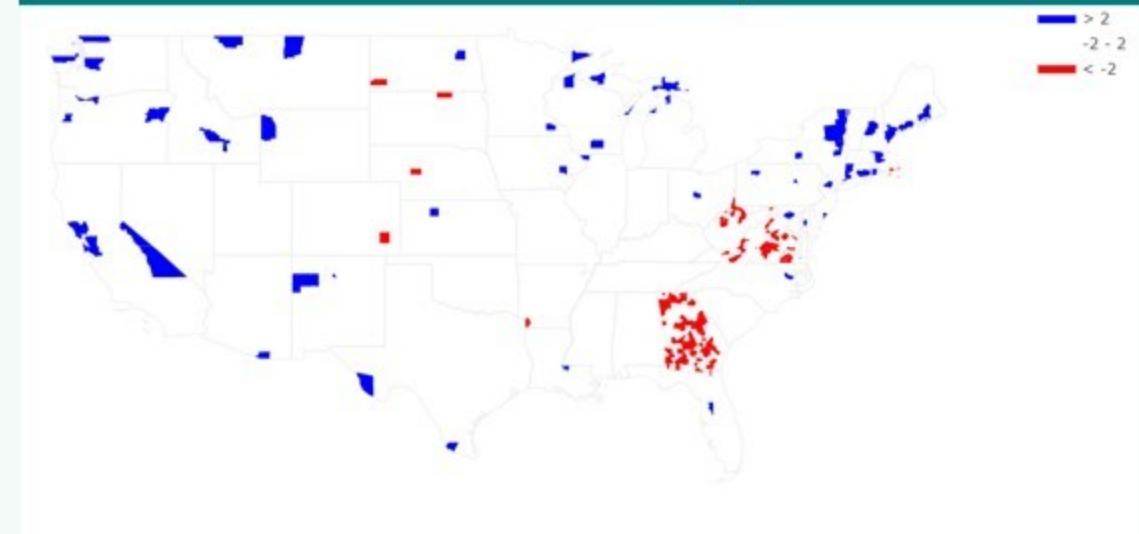
Methods



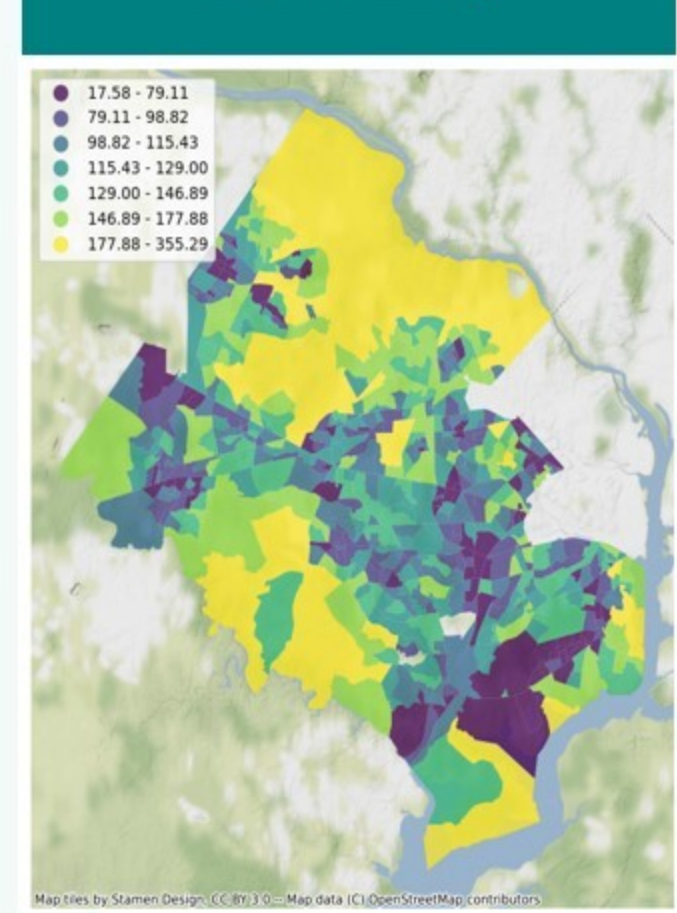
LISA (Local Indicator of Spatial Associations)



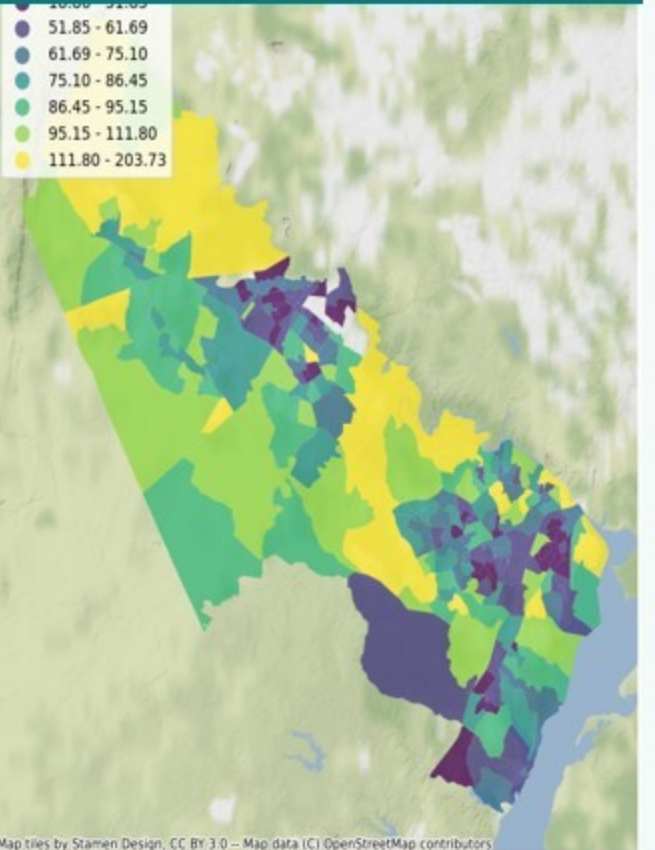
Outliers Map



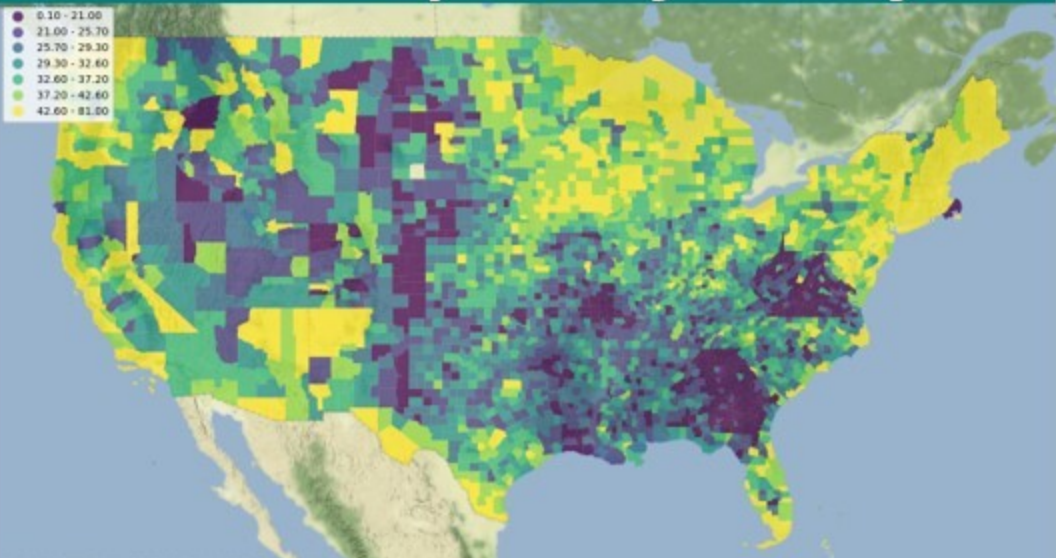
Fairfax County CBG Level Map



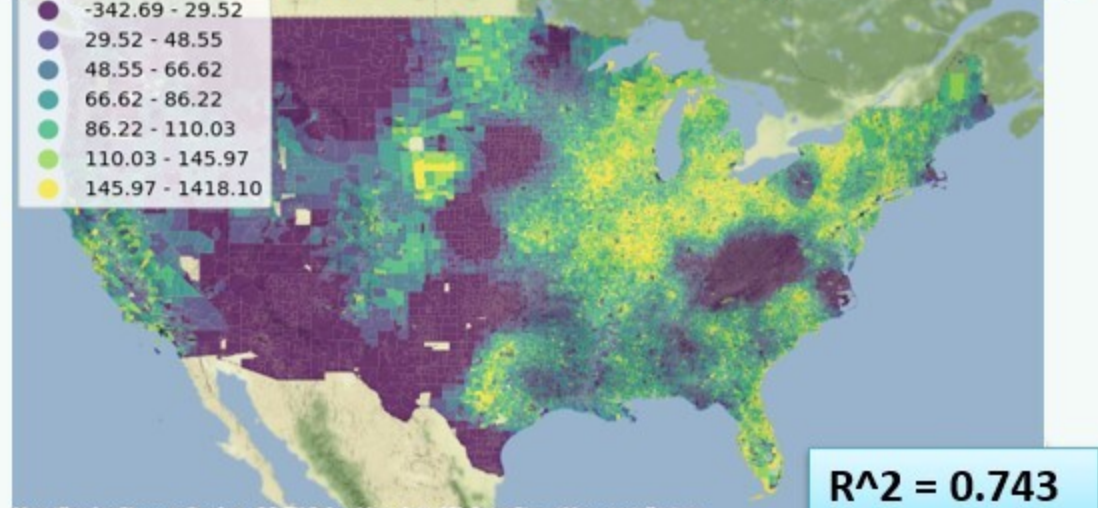
Prince William County CBG Level Map



Vaccine Uptake by County



Vaccine Uptake at the CBG Level (MGWR Results)



R² = 0.743

Major Citations

- [1] CDC. COVID-19 Vaccinations in the United States, County. <https://data.cdc.gov/Vaccinations/COVID-19-Vaccinations-in-the-United-States-County/8xxk-amqh>
- [2] Facebook Data For Good. COVID-19 Trends and Impact Survey. <https://dataforgood.fb.com/docs/covid-19-symptom-survey-request-for-data-access/>
- [3] ATSDR. CDC/ATSDR Social Vulnerability Index. https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html

Acknowledgements

This work is supported by the National Science Foundation Grant #2109647 and the 2021 Summer Team Impact Grant of the George Mason University Office of the Provost and Executive Vice President.