Vaccination Rates on Tourism

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Research Question

How have vaccination rates affected travel to the most popular tourist county within each of the 50 U.S. States?
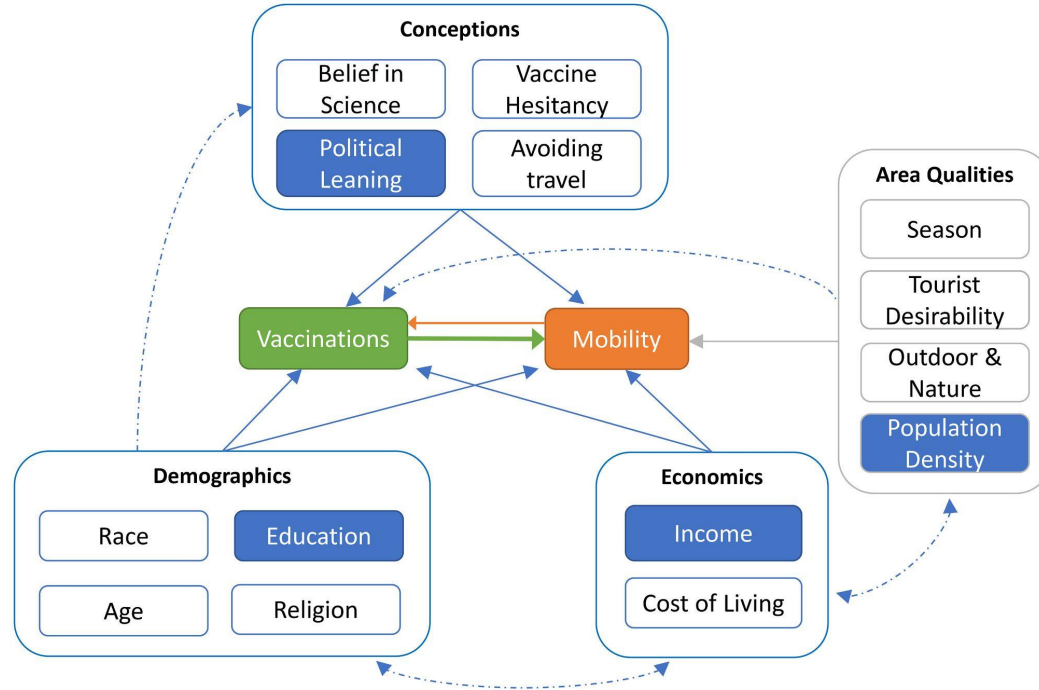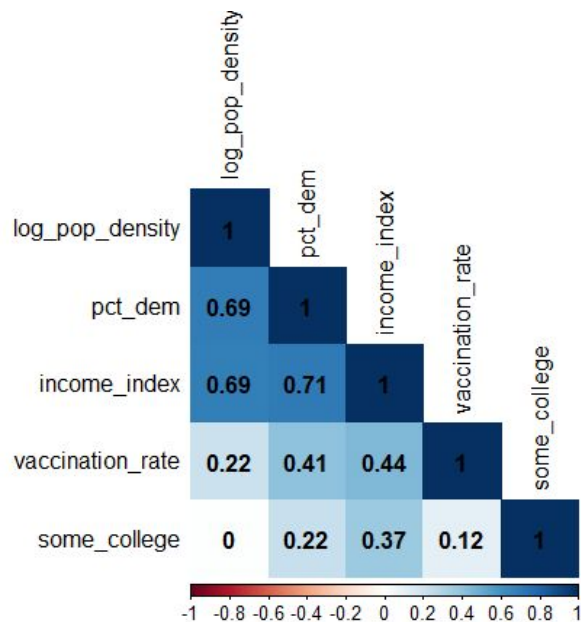

San Antonio Riverwalk

Colonial Williamsburg


Pike Place Market

Causal Model

Variables

Variable Name	Description
Attraction	The major attraction located in the county of interest
FIPS	United States FIPS (Federal Information Processing System) code
county	County name
state	State Name
mobility	June 2021 Google mobility data (divided by 100) for Retail and Recreation
vaccination_rate	Number of people completely vaccinatinated normalized by population in the county
annual_income	Average annual income within the county
pct_dem	Percentage of the population in the county that voted Democrat in the 2020 presidential election
some_college	Percentage of the population in the county that reported having at least some college education
income_index	Average county annual income normalized on $64,013 (average U.S. household income)
pop_density	Population density per square mile

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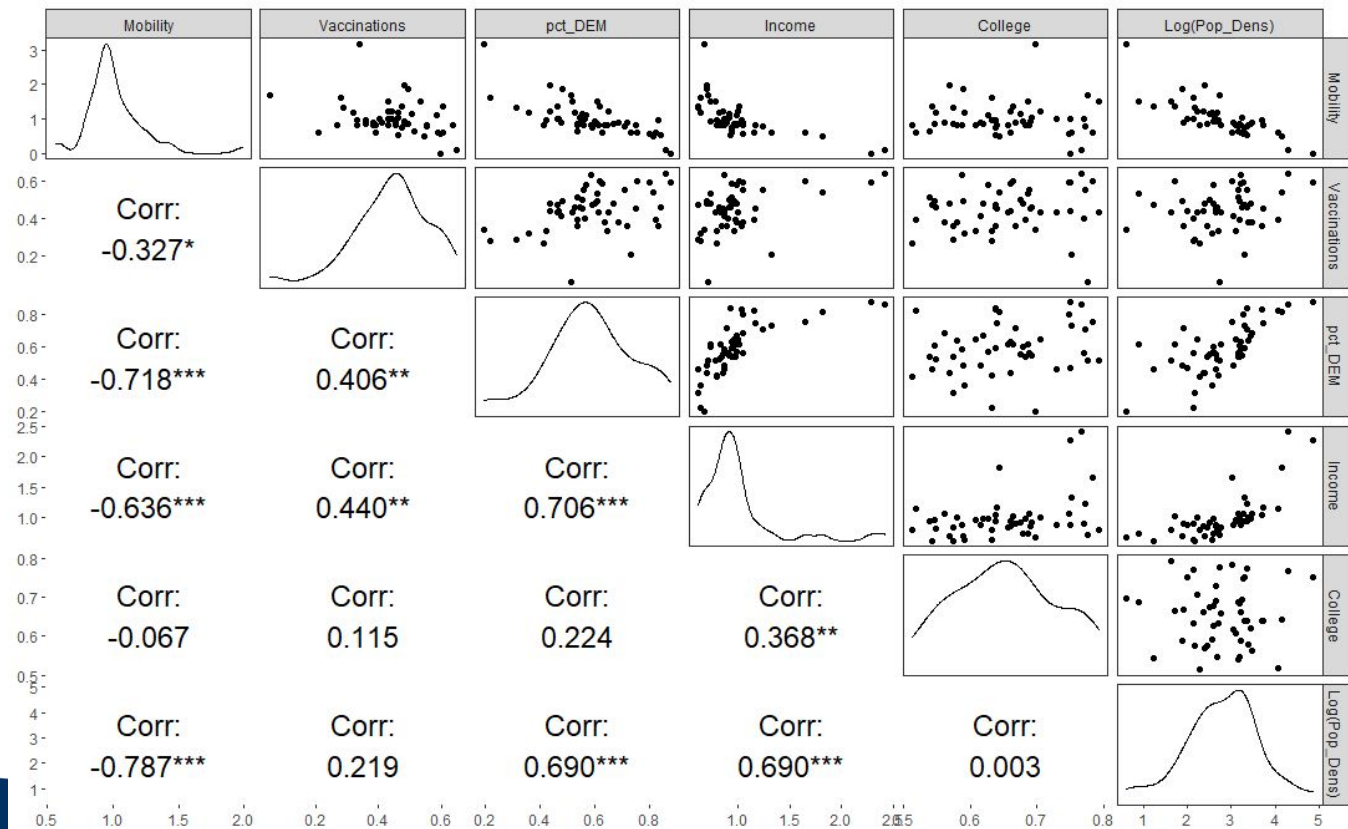
Variables

Model

Table 1: Mobility and Covariate Model Regression

	Dependent variable:		
	Mobility in June 2021		
	(1)	(2)	(3)
Vaccination Rate	−0.629**	−0.083	−0.156
	(0.278)	(0.245)	(0.262)
Percent Democratic		−1.010***	−0.427
		(0.269)	(0.266)
Income Index			−0.008
			(0.137)
College Education			0.046
			(0.362)
log(Population Density)			−0.147***
			(0.056)
Constant	1.295***	1.644***	1.724***
	(0.133)	(0.177)	(0.308)
Observations	50	50	50
R^2	0.107	0.518	0.684
Adjusted R^2	0.089	0.497	0.648
Residual Std. Error	0.209 (df = 48)	0.155 (df = 47)	0.130 (df = 44)
F Statistic	5.762** (df = 1; 48)	25.233*** (df = 2; 47)	19.019*** (df = 5; 44)

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Results and Significance

Expected predictor: Vaccination rate

Actual predictor: Destination population density

We believe these are driven by the same concept: protecting oneself

--not all controls in place (not all data were available)

--majority of omitted variable bias toward zero (6 of 9), weakening the effect

Practical Significance: 15% lower mobility change for each tenfold increase in population density

Recommendation: encourage travel to non-National Park rural areas and small towns,
scaling up to denser areas as the Delta variant becomes less prevalent

Omitted Variables

- **Race**
- **Age**
- **Gender**
- **Religion**
- **Tourist Desirability of Destination**
- **Cost of Living**
- **Belief in Science**
- **Vaccine Hesitancy**
- **Avoiding Travel**