Television, Identity, and Various Outcomes

Andrew Kao

Literature Review

- Oberholzer-Gee, Waldfogel *(AER 2009)*

- Olken *(AEJ:AE 2009)*

- Yanagizawa-Drott *(QJE 2014)*

- Newman, Velez *(*retracted *AJPS 2019)*

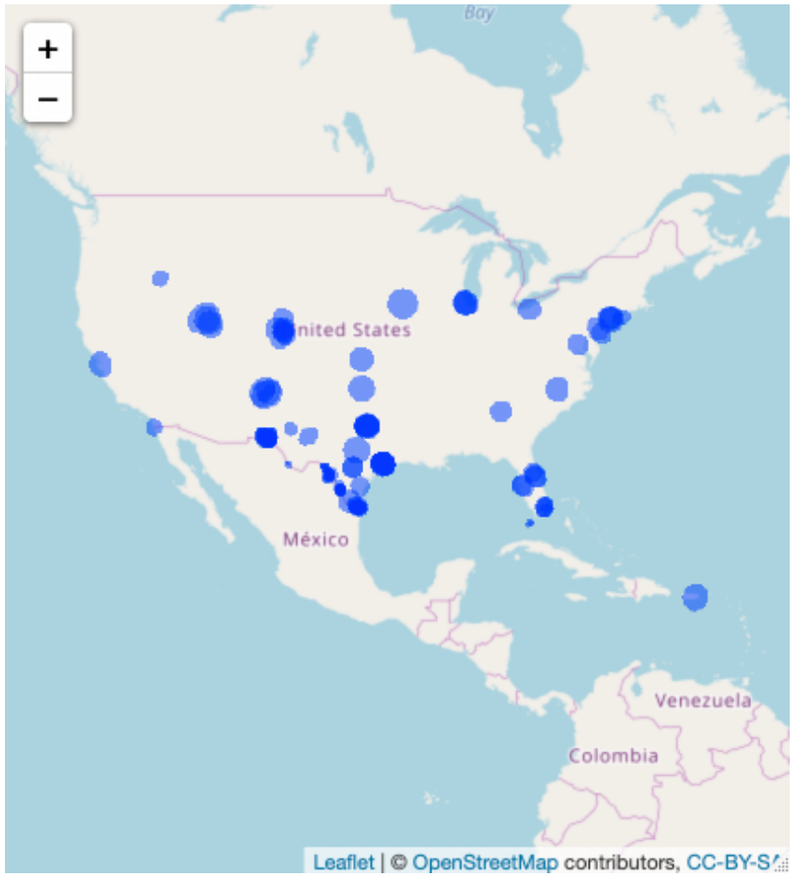
“Contributions”

- Test theory with large scale, precisely geolocated microdata

- Look at novel (and maybe interesting) outcomes

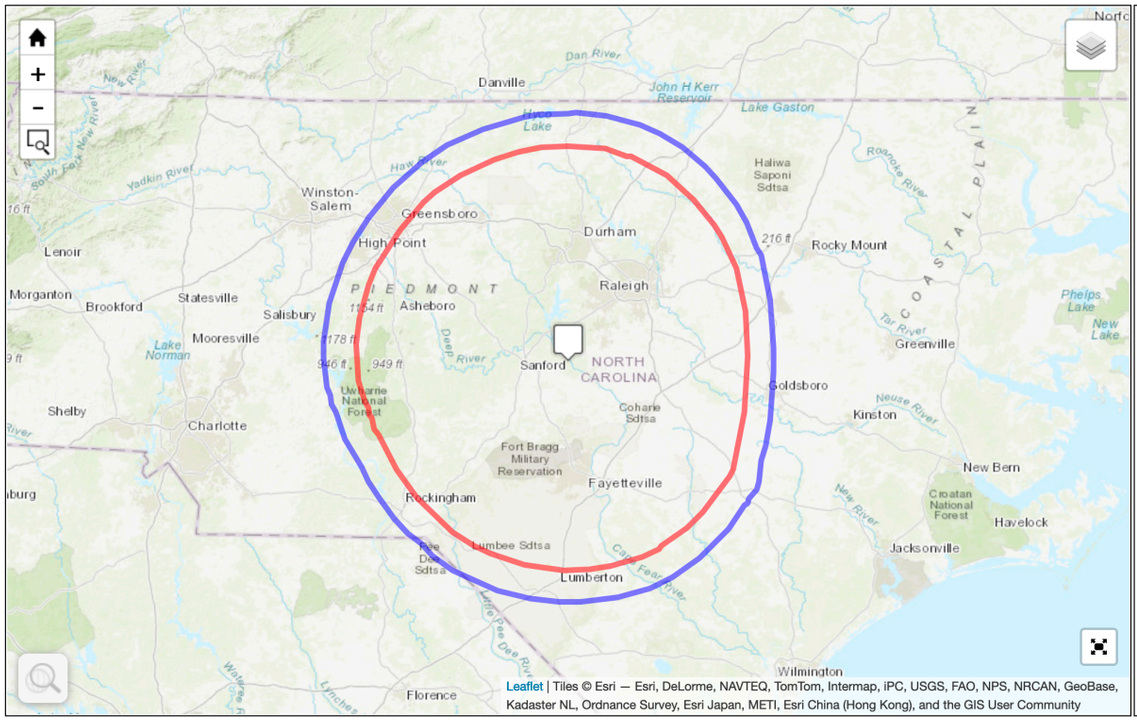
- ???

Instrument



Coverage Maps

WUVC-DT (40-1) BLCDT-20060912ACZ



Longley-Rice

- 81+ dBu : Easy Indoor
- 71-80 dBu : Med. Indoor
- 61-70 dBu : Hard Indoor
- 51-60 dBu : Easy Outdoor
- 41-50 dBu : Med. Outdoor

Noise-Limited Bounding Contour

- 41 dBu : (Ch. 14+)
- 36 dBu : (Ch. 7-13)
- 28 dBu : (Ch. 2-6)

Minimum Field Strength Contour

- 48 dBu : (Ch. 14+)
- 43 dBu : (Ch. 7-13)
- 35 dBu : (Ch. 2-6)

LP/CA Protected Contour

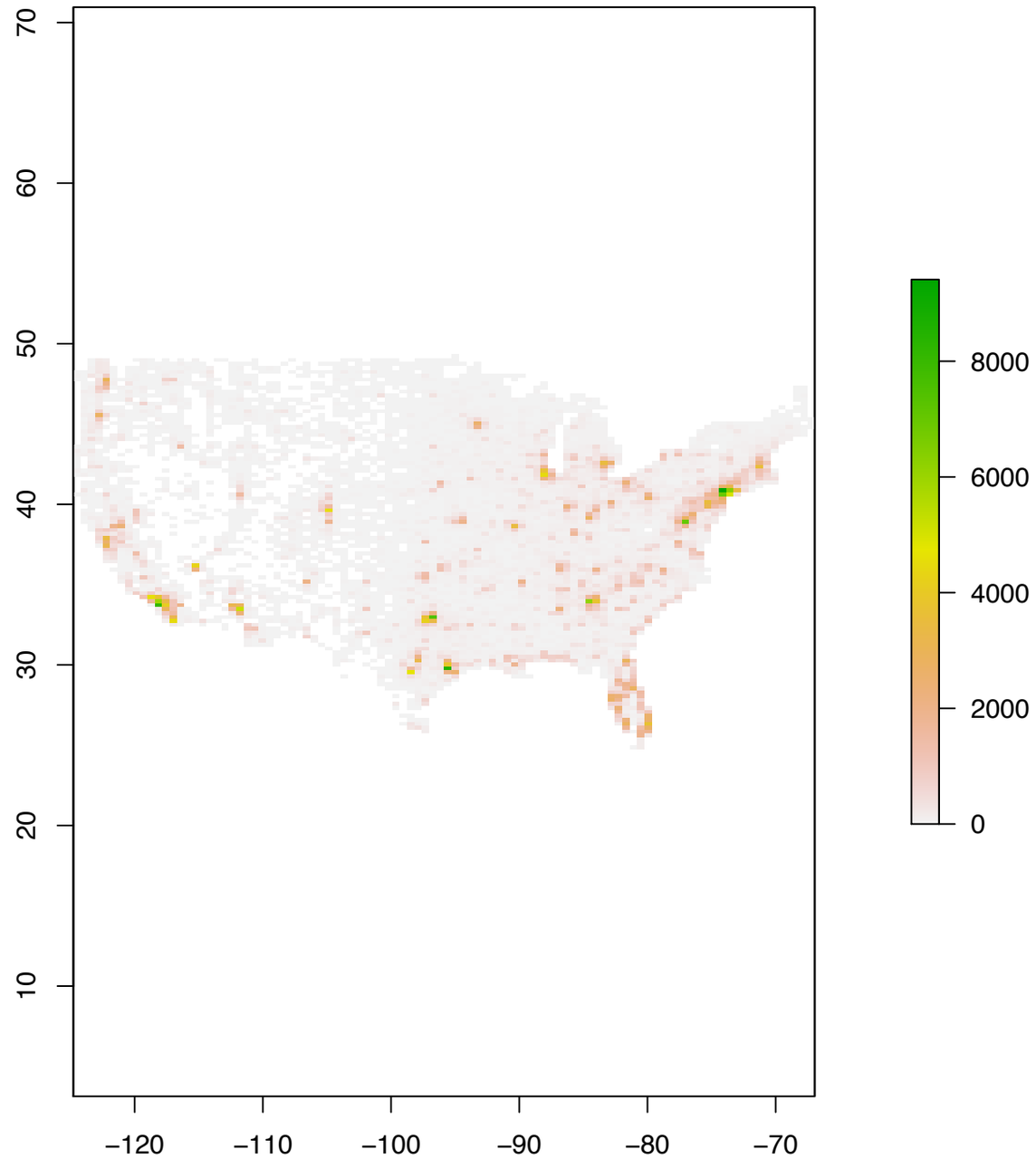
- 51 dBu : (Ch. 14+)
- 48 dBu : (Ch. 7-13)
- 43 dBu : (Ch. 2-6)

Interfering Contour

- 19 dBu : (Ch. 14+)
- 13.5 dBu : (Ch. 2-13)

Data

- Donations
- Low Income Housing
- Education (Schools)
- Small Business



Model

Conditional on being within some distance of a contour:

$$Y_i = \beta \mathbb{I}[InsideContour]_i + \gamma X_i + \epsilon_i$$

but also maybe:

$$Y_i = \beta \mathbb{I}[InsideContour]_i \times Distance_i + \gamma X_i + \epsilon_i$$

and when I have the time:

$$Y_i = \beta \mathbb{I}[InsideContour]_i + \gamma X_i + \lambda WY + \epsilon_i$$

Table 5: Effect of TV on Migration, Outside Sample Distance Dummy

	Dependent variable:		
	mig		
	(1)	(2)	(3)
TV	-138.970^{***}	-160.743^{***}	-164.748^{***}
	(50.833)	(55.860)	(58.288)
origLogPop	55.128^{***}	49.692^{***}	54.916^{***}
	(16.276)	(10.915)	(17.009)
destLogPop	79.360^{**}	75.183^{**}	72.917^{**}
	(31.339)	(29.864)	(28.813)
origpcHisp		424.714^{***}	380.709^{***}
		(149.604)	(130.054)
destpcHisp		490.885^{***}	518.338^{***}
		(145.334)	(159.358)
origLogInc			-58.140
			(90.270)
destLogInc			29.220
			(25.991)
mi_to_county	-0.181^{***}	-0.219^{***}	-0.220^{***}
	(0.061)	(0.064)	(0.065)
Constant	$-1{,}446.295^{***}$	$-1{,}395.887^{***}$	$-1{,}156.459^{**}$
	(520.832)	(457.051)	(584.710)
Observations	3,704	3,704	3,704
R^2	0.045	0.064	0.064
Adjusted R^2	0.044	0.062	0.062
Residual Std. Error	646.360 (df = 3699)	640.108 (df = 3697)	640.222 (df = 3695)
Note:			*p<0.1; **p<0.05; ***p<0.01

Migration?

Maybe Not

Table 6: Effect of TV on Reverse Migration, Outside Sample Distance Dummy

	Dependent variable:		
	revMig		
	(1)	(2)	(3)
TV	−272.468***	−302.891***	−290.716***
	(87.512)	(96.017)	(95.484)
origLogPop	161.229***	136.370***	138.851***
	(59.972)	(40.537)	(47.270)
destLogPop	148.127**	144.794**	156.419**
	(63.158)	(64.019)	(66.248)
origpcHisp		894.758**	890.891***
		(372.920)	(323.861)
destpcHisp		683.396***	574.860***
		(191.365)	(178.543)
origLogInc			−17.479
			(161.210)
destLogInc			−121.820**
			(62.089)
mi_to_county	−0.442**	−0.504***	−0.506***
	(0.176)	(0.172)	(0.172)
Constant	−3,472.526**	−3,281.295***	−2,122.032*
	(1,386.592)	(1,181.058)	(1,169.812)
Observations	1,526	1,526	1,526
R^2	0.091	0.118	0.119
Adjusted R^2	0.089	0.115	0.114
Residual Std. Error	1,015.579 (df = 1521)	1,001.034 (df = 1519)	1,001.478 (df = 1517)
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 8: Effect of TV on Migration, Outside Sample Distance Dummy, Placebo

	Dependent variable:		
	mig		
	(1)	(2)	(3)
TV	−115.357***	−122.427***	−125.001***
	(15.867)	(18.276)	(17.904)
origLogPop	48.124***	44.512***	34.444***
	(8.114)	(5.138)	(6.009)
destLogPop	52.948***	51.614***	47.937***
	(10.943)	(10.697)	(11.042)
origpcHisp		238.308*	304.169***
		(123.072)	(116.669)
destpcHisp		160.862*	180.496**
		(84.827)	(87.786)
origLogInc			103.236***
			(36.142)
destLogInc			27.392
			(26.837)
mi_to_county	−0.175***	−0.193***	−0.193***
	(0.021)	(0.028)	(0.028)
Constant	−997.115***	−953.661***	−2,029.962***
	(200.369)	(167.388)	(272.762)
Observations	16,213	16,213	16,213
R^2	0.060	0.065	0.066
Adjusted R^2	0.060	0.064	0.066
Residual Std. Error	411.701 (df = 16208)	410.745 (df = 16206)	410.443 (df = 16204)
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 3: Effect of TV on Reverse Migration, Inside Sample Distance Dummy

	Dependent variable:		
	revMig		
	(1)	(2)	(3)
destintersects	99.944***	89.970***	91.930***
	(17.175)	(16.266)	(16.675)
origLogPop	61.200***	64.586***	66.483***
	(5.997)	(5.607)	(6.921)
destLogPop	48.882***	51.154***	53.175***
	(6.180)	(6.041)	(7.396)
origpcHisp		240.036***	221.952***
		(42.937)	(51.401)
destpcHisp		188.211***	172.267***
		(52.216)	(41.979)
origLogInc			−17.348
			(34.963)
destLogInc			−16.309
			(39.993)
mi_to_county	−0.183***	−0.200***	−0.201***
	(0.017)	(0.018)	(0.018)
Constant	−1,245.467***	−1,370.636***	−1,095.047***
	(139.378)	(134.758)	(281.106)
Observations	4,338	4,338	4,338
R^2	0.079	0.097	0.097
Adjusted R^2	0.078	0.096	0.096
Residual Std. Error	412.131 (df = 4333)	408.145 (df = 4331)	408.203 (df = 4329)
Note:			*p<0.1; **p<0.05; ***p<0.01

Donations to Trump

Table 9: Effect of TV on Hispanic Donations to Trump, 100 KM Radius

	Dependent variable:		
	donations		
	(1)	(2)	(3)
intersects	5.098***	4.214***	3.896***
	(0.780)	(0.819)	(0.804)
distance	0.0001*	0.0001**	0.0001***
	(0.00004)	(0.00004)	(0.00004)
logPop	15.750***	16.071***	10.445***
	(0.746)	(0.750)	(0.905)
pcHispanic		23.154***	56.794***
		(6.660)	(7.252)
income			0.005***
			(0.0005)
Constant	−161.767***	−167.135***	−170.310***
	(8.086)	(8.217)	(8.062)
Observations	2,819	2,819	2,819
R^2	0.189	0.193	0.224
Adjusted R^2	0.189	0.192	0.223
Residual Std. Error	56.443 (df = 2815)	56.332 (df = 2814)	55.236 (df = 2813)
F Statistic	219.292*** (df = 3; 2815)	168.138*** (df = 4; 2814)	162.656*** (df = 5; 2813)
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 11: Effect of TV on Hispanic Donations to Trump, 25 KM Radius

	Dependent variable:		
	donations		
	(1)	(2)	(3)
intersects	3.923***	2.809*	2.497*
	(1.361)	(1.480)	(1.458)
distance	0.001***	0.001***	0.001***
	(0.0004)	(0.0004)	(0.0004)
logPop	18.511***	19.150***	12.433***
	(1.677)	(1.708)	(2.050)
pcHispanic		23.632*	66.660***
		(12.407)	(14.338)
income			0.006***
			(0.001)
Constant	−200.071***	−208.550***	−209.086***
	(18.347)	(18.855)	(18.563)
Observations	1,007	1,007	1,007
R^2	0.147	0.150	0.177
Adjusted R^2	0.144	0.147	0.173
Residual Std. Error	75.485 (df = 1003)	75.387 (df = 1002)	74.217 (df = 1001)
F Statistic	57.630*** (df = 3; 1003)	44.243*** (df = 4; 1002)	43.086*** (df = 5; 1001)
Note:			*p<0.1; **p<0.05; ***p<0.01

Challenges

- “I took a quick look at the paper and I don’t buy it. At all. They make it sound as if there’s a strict “boundary” in the TV signal, defined by the FCC regulations. But all it is (I know this from elsewhere) is that FCC defines a cutoff in the signal strength, where if the signal is above that value then FCC “guarantees” there won’t be interference from other stations. But there’s no discontinuous jump in the signal strength at that cutoff. It’s continuous. So an RDD makes no sense.
  Note that the paper:
  1. Does not show a first stage around the cutoff (it wouldn’t exist anyways)
  2. Does not even show reduced form RDD graphs as a function of distance.”
  - David Yanagizawa-Drott

- Computational Power (autocorrelation)

- Meaningful Story & Mechanisms

Questions and Feedback