Graphs and Tables and SOM: Supplementray Online Material for paper

Adam Okulicz-Kozaryn*
Rutgers - Camden
Micah Altman†
MIT

Draft: Thursday 25$^{\text{th}}$ September, 2014

Contents

1 PAPER Tables and Graphs

TODO grpahs and tables for paper body here

*EMAIL: adam.okulicz.kozaryn@gmail.com
†EMAIL: ???

I thank XXX. All mistakes are mine.
I ???

2 Only ONLINE APPENDIX

[note: this section will NOT be a part of the final version of the manuscript, but will be available online instead]

!!!TODO look more carefully at energy definitions!!

3 General Considerations

3.1 Electricty use: residential and non-residential

How is electricity used in United States homes? This is an important consideration because it really shows what we do with this electricity–how we consume it, what are the end uses. Data are shown in table 1. Furthermore end uses of energy changed over time, for instance from 1993 to 2009: applianes share increased from 24% to 35% and space heating dropped from 53% to 41% `http://www.eia.gov/todayinenergy/detail.cfm?id=10271&src=%E2%80%B9%20Consumption%20%20%20%20%20%20Residential%20Energy%20Consumption%20Survey%20%28RECS%29-b1`. Also, the good news is that average energy consumption per household dropped from 114 m BTU in 1980 to 90 m BTU in 2009 `http://www.eia.gov/consumption/residential/reports/2009/consumption-down.cfm?src=%E2%80%B9%20Consumption%20%20%20%20%20%20Residential%20Energy%20Consumption%20Survey%20%28RECS%29-b5`.

Table 1: Estimated U.S. Residential Electricity Consumption by End Use, 2012 `www.eia.gov/tools/faqs/faq.cfm?id=96&t=3`

End Use	Quadrillion		
Btu	Billion		
kilowatthours	Share of		
total			
Space cooling	0.85	250	18.00%
Lighting	0.64	186	14.00%
Water heating	0.45	130	9.00%
Refrigeration	0.38	111	8.00%
Televisions and related equipment 1	0.33	98	7.00%
Space heating	0.29	84	6.00%
Clothes dryers	0.2	59	4.00%
Computers and related equipment2	0.12	37	3.00%
Cooking	0.11	31	2.00%
Dishwashers3	0.1	29	2.00%
Furnace fans and boiler circulation pumps	0.09	28	2.00%
Freezers	0.08	24	2.00%
Clothes washers3	0.03	9	1.00%
Other uses4	1.02	299	22.00%
Total consumption	4.69	1375	

3.2 TODO Petroleum use: residential and non-residential

3.3 TODO Natural Gas use: residential and non-residential

4 countries

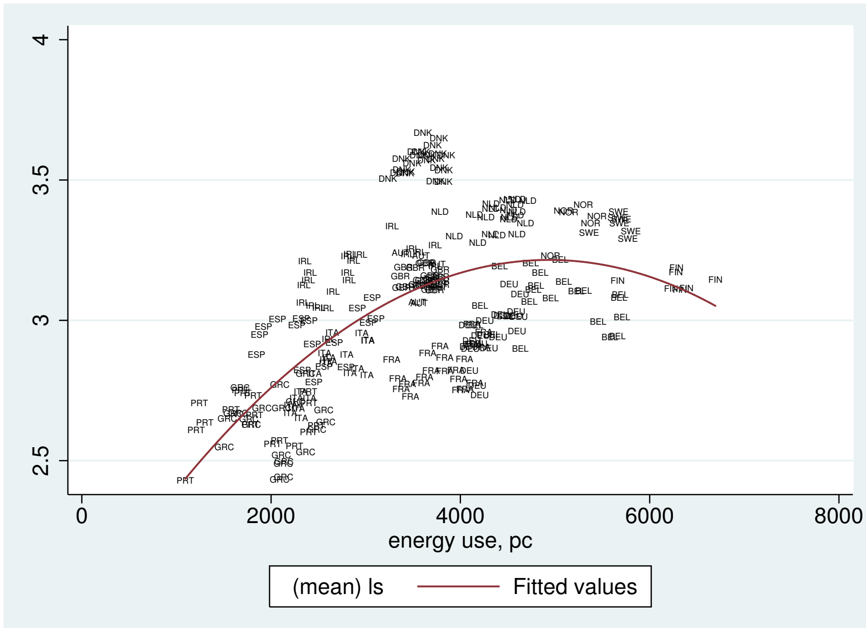
Literature about happiness across countries usually focuses on role of income, with a well known Easterlin Paradox, where economic growth does not lead to greater happiness over time.[1]. Yet, in space, across countries it is agreed upon that richer countries are happier at least with quadratic relationship.

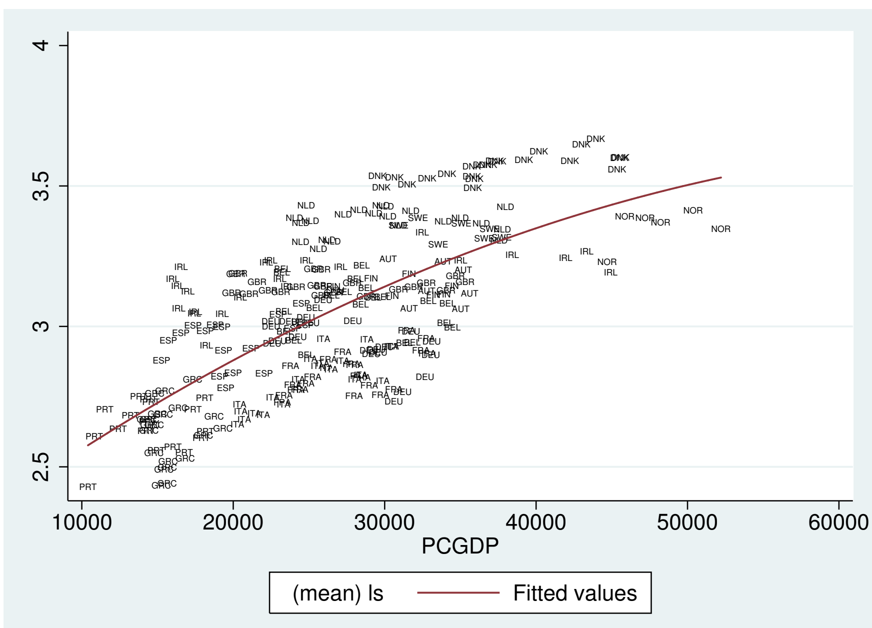
[1]veenhoven's criticsim–have it somewhere–easterlin delusion etc

In this study we aregue that countries that consumer more enrgy are not happier when controlling for income–and interpret this as another argument for energy conservation. Also it counters commoin wisodom–one could think that greater energy consumption leasd to greater happiness–if not then whatt;s the point of energy consumption.

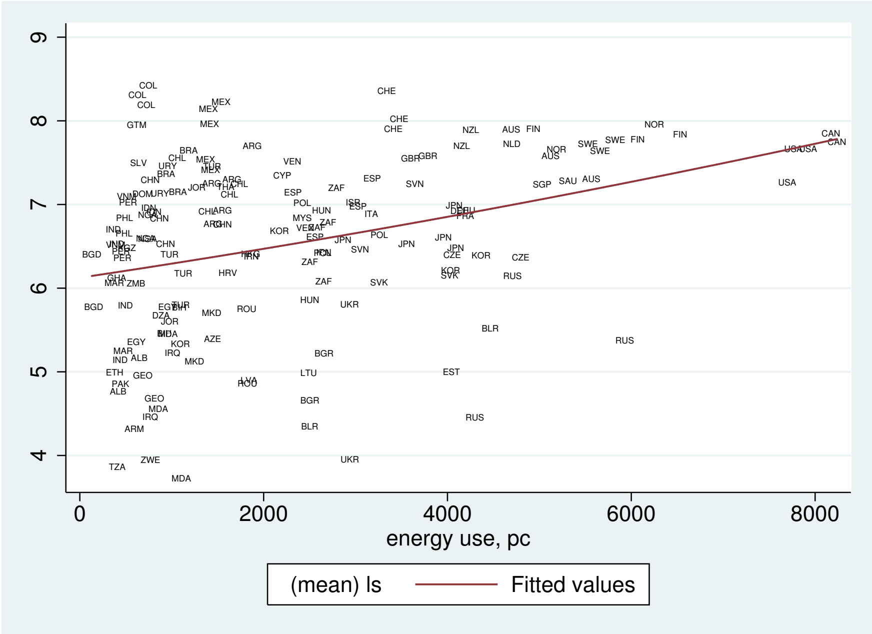
One explanation is that sustainable people are happy (cite that i think ecological economics paper–shoudl be in ebib)

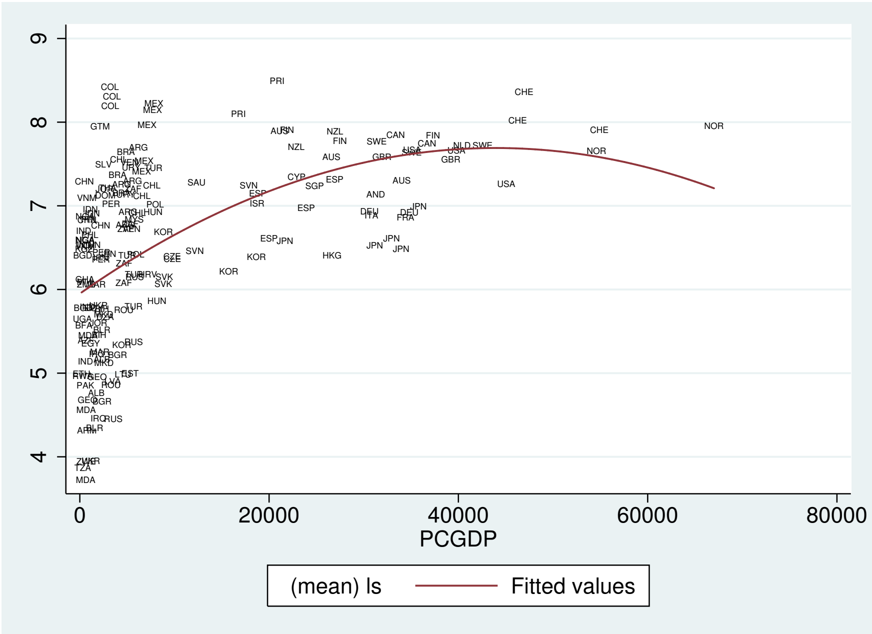
4.1 europe-mannheim



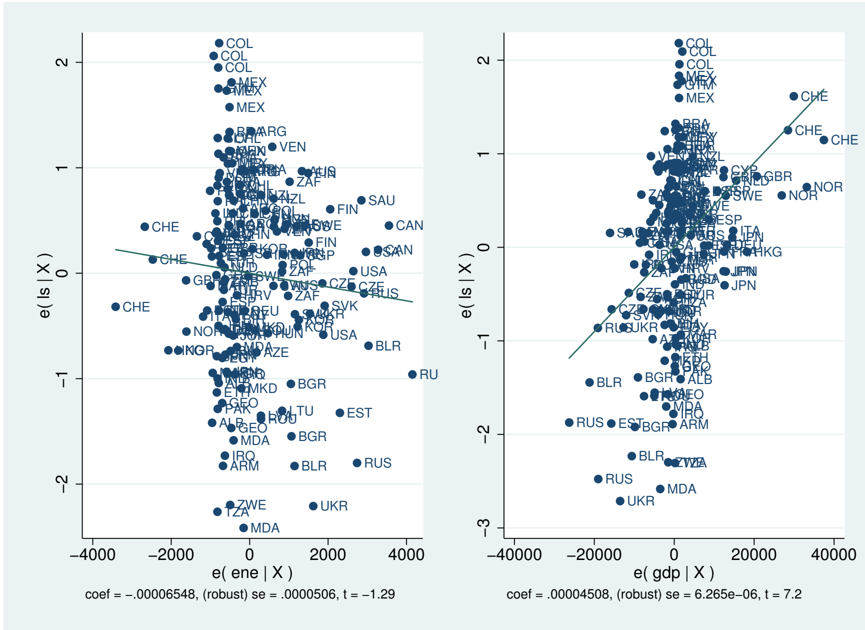


4.2 world





very interesting–when controlling fpr gdp, energy becomes negativbe!!



5 Census Divisions

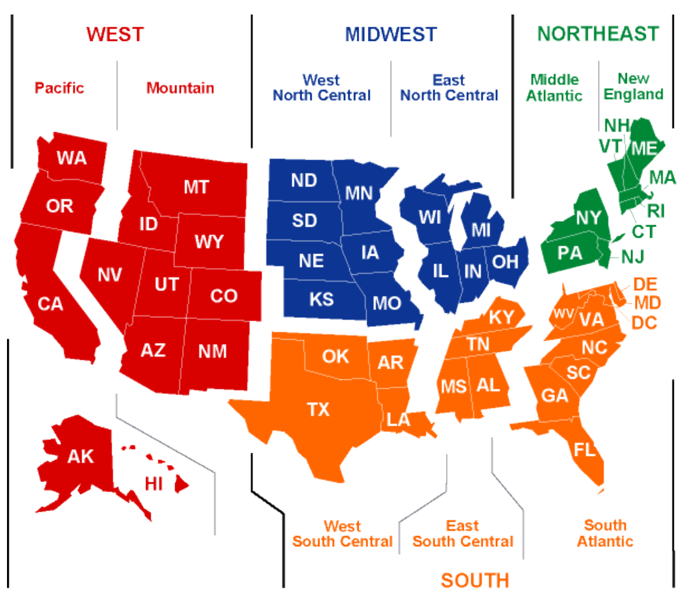


Figure 1: Census divisions.

have a ts graph here showing happiness by division and lectricity consumption–guess smooth them

6 States

This paper started as one author frequently flies from NJ to TX and noticed from the air and on the ground huge differences in energy use between the two states. Bigger houses, roads, cars, indeed everything is big in Texas! And indeed differences are striking–Texas consumee about twice as much enbrgy as NJ does per capita; yet interestingly not a big difference in residential energy consumption–perhaps everything is newer in TX and hence more enrgy efficent. The biggest diffences are in transportation ?? v ?? –¿¿

```
TETPB    Total energy consumption per capita, m BTU
TERPB    Total energy consumption per capita in the residential sector, m BTU
TEAPB    Total energy consumption per capita in the transportation sector, m BTU
TECPB    Total energy consumption per capita in the commercial sector, m BTU
TEIPB    Total energy consumption per capita in the industrial sector, m BTU
```

sorted on TETPB, this is for 2009

state	TETPB	TERPB	TEAPB	TECPB	TEIPB
RI	182	58	60	44	20
NY	192	56	56	62	18
HI	205	27	100	31	48
MA	211	65	69	42	35
CA	212	40	84	41	47
CT	215	71	68	52	23
AZ	219	59	76	52	31
FL	222	66	77	54	25
NH	227	69	80	51	27
NV	244	58	80	43	63
VT	248	80	85	47	36
MD	256	74	81	74	27
OR	269	68	87	51	63
NC	273	78	76	63	56
NJ	273	68	103	72	31
MI	274	76	75	61	62
UT	274	59	86	55	74
PA	287	73	77	54	83
DE	294	77	79	71	67
CO	296	68	85	60	83
IL	303	76	78	63	86
GA	304	76	98	57	73
WA	307	77	91	59	80
VA	308	81	93	78	56
ME	311	68	94	48	101
WI	313	76	76	63	98
MO	313	89	96	69	59
OH	321	81	82	61	98
DC	324	61	34	222	7
NM	325	57	99	59	110
ID	326	82	80	55	109
TN	333	84	96	60	93
MN	340	77	90	66	108
SC	345	79	99	57	110
AR	360	78	100	57	125
MS	379	75	122	54	128
WV	382	94	92	60	136
AL	384	78	98	54	153
KS	402	84	102	75	141
OK	403	80	121	65	137
IN	423	87	92	59	186
NE	431	88	99	77	168
MT	431	90	116	81	144
KY	449	89	110	60	191
TX	452	64	110	58	219
SD	453	90	113	77	173
IA	477	81	100	68	227
ND	656	103	133	98	321
LA	841	79	150	62	550
AK	904	77	273	89	465
WY	933	85	217	111	519

(obs=306)

	TERPB	TEAPB	TECPB	TEIPB	TETPB
TERPB	1.0000				
TEAPB	0.2141	1.0000			
TECPB	0.2132	0.1255	1.0000		
TEIPB	0.3914	0.7993	0.1818	1.0000	
TETPB	0.4418	0.8620	0.3274	0.9757	1.0000

(obs=306)

	TERPB	TEAPB	TECPB	TEIPB	TETPB	ls
TERPB	1.0000					
TEAPB	0.2141	1.0000				
TECPB	0.2132	0.1255	1.0000			

```
   TEIPB |   0.3914   0.7993   0.1818   1.0000
   TETPB |   0.4418   0.8620   0.3274   0.9757   1.0000
      ls |   0.0952   0.2740   0.1246   0.2629   0.2839   1.0000
```

```
ls is happiness
```

Furthermore, interestingly transportation corrlates negatively with commerce–DC one of the most effiicnet in trasportation (61) is least efficient in commerce (222). Total energy consumption correlates most with transportation (.86) and especially industry (.9). Happiness does correlate positively with all energy uses, mostly with transport and industry and total (about .3).

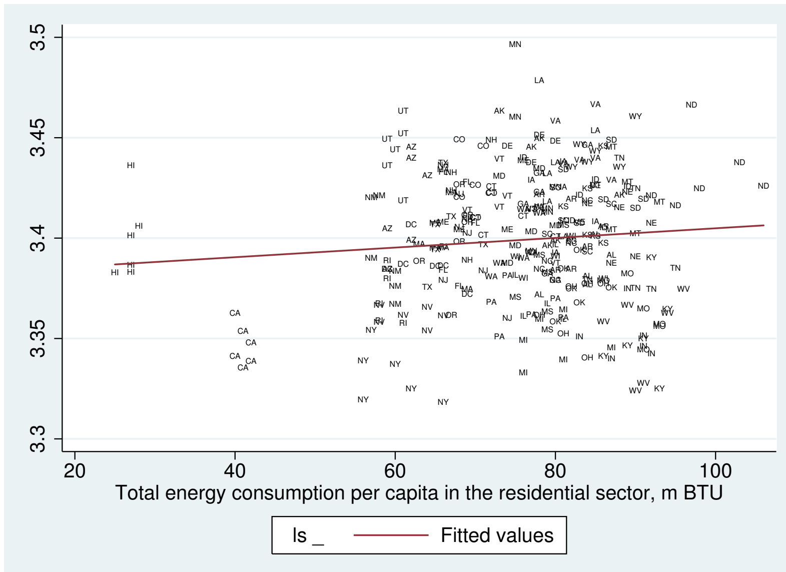


Figure 2: lfTERPBls

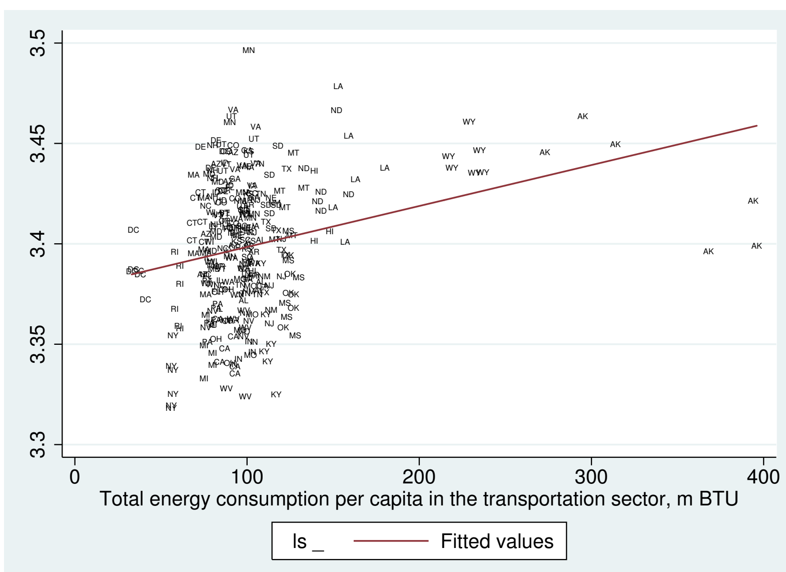


Figure 3: lfTEAPBls

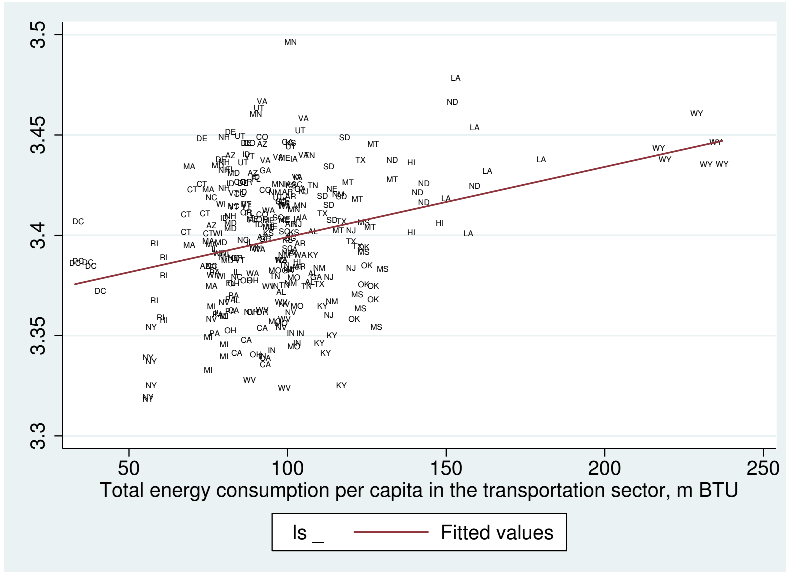


Figure 4: no alaska; lfTEAPBlsNoAk

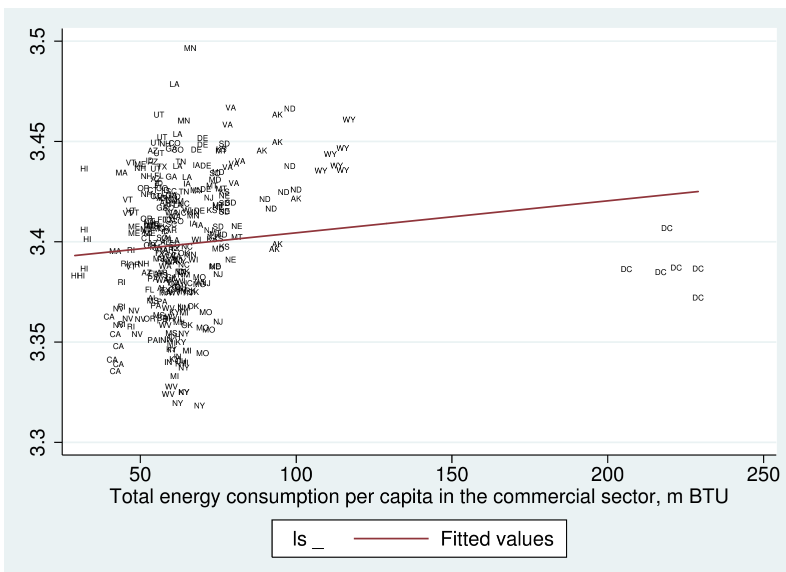


Figure 5: lfTECPBls

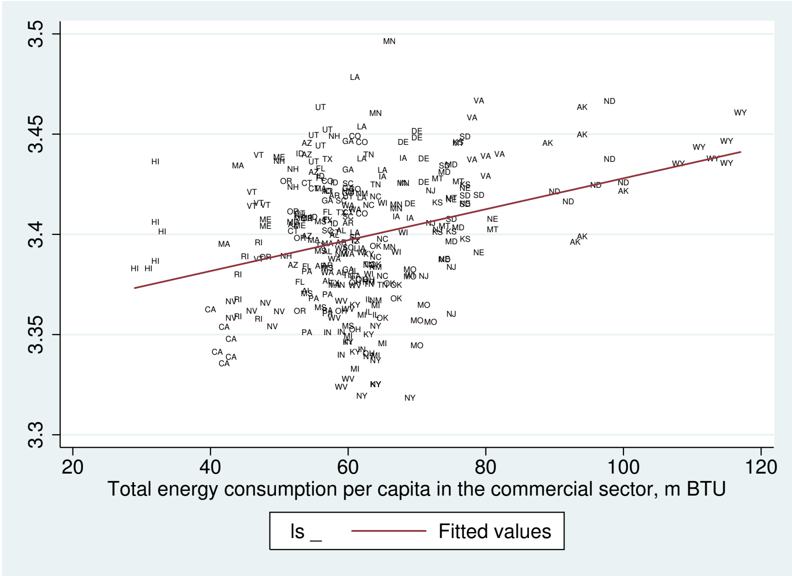


Figure 6: lfTECPBlsNoDc

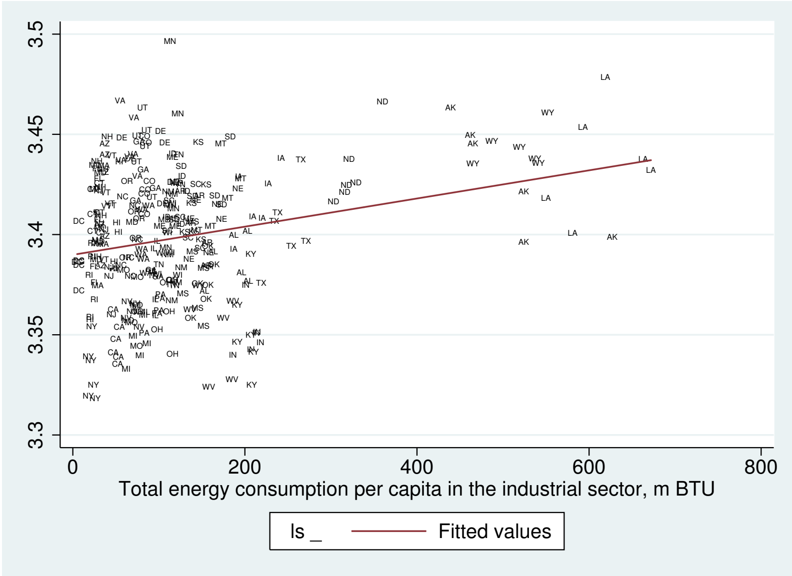


Figure 7: lfTEIPBls

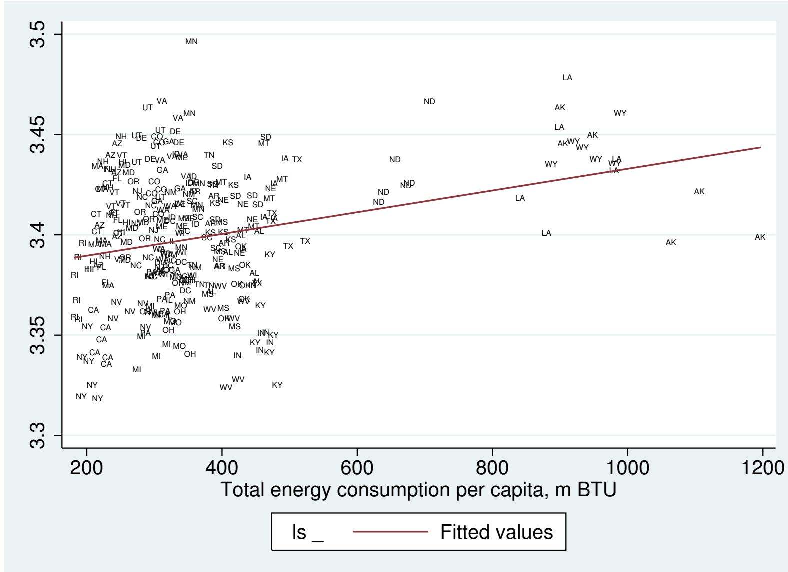


Figure 8: lfTETPBls

We expect the more dense and more urban areas are less happy. Note that ppulation density and percent urban are very different variables–population density is largely driven by history-when state was established–Western States (except California) are less dense than North Eestern states. It is also driven by size of state–large states like Pennsylvania are less dense than smaller states like Rhode Island. Percent urban is different–and it reflects administrative prcesses such as zoning and is sensitive to a defninition of urban area. There are large differences in both variables. In some North Eastern states there are more than 1,000 people per square mile (NJ, RI), in most Western states, on the other hand, there are fewer than 100 people per square mile. Several states are above 90% urban, yet few states are mostly non urban. Below a table sorted on population density.

Finally, we will look at 2 key variables for happiness, social support, one measure of social capital, and the other "harder" measure–general health. States in West and North are more supportive with an exception of Delaware, which is very supportive and surrounded by unsupportive states.

state	popDen	perUrb
AK	.0012512	66.02
WY	.0058089	64.76
MT	.0068089	55.89
ND	.009768	59.9
SD	.0107636	56.65
NM	.0170242	77.43
ID	.0190094	70.58
NE	.0238206	73.13
NV	.0246217	94.2
UT	.0337594	90.58
KS	.0349687	74.2
OR	.0399737	81.03
ME	.0430245	38.66
CO	.0487062	86.15
IA	.0546036	64.02
OK	.0548	66.24
AR	.056154	56.16
AZ	.0564202	89.81
MS	.0632948	49.35
MN	.0666861	73.27
VT	.0679205	38.9
WV	.0771272	48.72
MO	.0872253	70.44
AL	.0945003	59.04
TX	.0966383	84.7
WA	.1014513	84.05
WI	.1050449	70.15
LA	.1051988	73.19
KY	.110114	58.38

.

state	supp	gh
HI	4.03	3.52
NY	4.05	3.60
CA	4.09	3.53
DC	4.10	3.72
TX	4.11	3.46
MS	4.11	3.30
AZ	4.13	3.57
CT	4.15	3.71
PA	4.15	3.55
FL	4.16	3.52
MI	4.17	3.53
SC	4.18	3.47
NV	4.18	3.51
RI	4.19	3.64
IN	4.19	3.48
KY	4.20	3.35
MO	4.20	3.48
NM	4.21	3.51
AR	4.21	3.42
MT	4.21	3.59
OH	4.21	3.51
IL	4.21	3.53
NE	4.22	3.61
AL	4.22	3.34
NH	4.22	3.69
NJ	4.22	3.61
OR	4.23	3.58
CO	4.23	3.69

NH	.1471073	60.3
TN	.1541655	66.39
SC	.1542213	66.33
GA	.1688821	75.07
MI	.1746762	74.57
IN	.1811528	72.44
NC	.1966354	66.09
VA	.2031902	75.45
HI	.2123741	91.93
IL	.2312725	88.49
CA	.2396597	94.95
OH	.2825454	77.92
PA	.2840687	78.66
FL	.3514421	91.16
NY	.4116164	87.87
DE	.4618843	83.3
MD	.596153	87.2
CT	.7391024	87.99
MA	.8414038	91.97
RI	1.018562	90.73
NJ	1.197	94.68
DC	.	100

NC	4.23	3.47
WA	4.24	3.59
ME	4.24	3.60
SD	4.25	3.64
VT	4.25	3.74
ID	4.25	3.57
OK	4.25	3.38
MA	4.26	3.74
MD	4.26	3.63
VA	4.27	3.63
LA	4.27	3.40
WY	4.27	3.63
KS	4.27	3.60
GA	4.28	3.54
WI	4.28	3.61
AK	4.28	3.64
UT	4.29	3.71
IA	4.29	3.60
ND	4.30	3.59
WV	4.30	3.26
MN	4.31	3.72
DE	4.31	3.62
TN	4.32	3.42

Below regressions follow. We have seen that there is a weak to modearte relationshipe between energy use per capita in different sectors and in general and happiness. How do these relationships hold in regrressions? We proceed in a following way. We look at three major energy uses: residential, commericial ,and transport and also total. We leave off indusrtial hence this energy is less liekly to impact werllbeing of people directly and it may bias it–because this energy use is dicatted by industry–there may be indiorect effects–thourgh employment, wages adn development, but that shoudl be picked up by GDP. First, we consider a model where we control for level of economic development (per capita incoime). Then we add envioronmental factors, density, percent urban and avergae temoertaures in Jan and Jul follwoning Abdallah et al. (2008), Brereton et al. (2008)–we use average for each month Jun and Jul and not the single max day. Finally, and this is perhaps innovation in ecological literature, we add at state level two aggregated from BRFSS key person level prodictors of happiness–social support and happiness–tehre is substantail variation on these variables as discussed earlier.

We do not control for crime that is distributed unevenly within each state, and hence global control in not informative.

Let's start with residential energy, TERPB. In column 1, relationship is positive However, once controlling in column 2 for population density and percent urban and tempoeratures , the relationship between TERPB and happiness disappears. Likewise, when added in column 3 controls for social support and general health, the raltionship stays non-existent.

In transportation (TEAPB), on the other hand, the relationship is positive, and if anything it increases with added controls, which is puzzling. There are at least 2 explanations–perhaps thrill of travel Also, Americans prefer (Fuguitt and Brown 1990, Fuguitt and Zuiches 1975) and are happier (Okulicz-Kozaryn 2014, Berry and Okulicz-Kozaryn 2011) in suburbs than in big cities, and there are likely to be more consumption of energyu in ransportatin in states woith more suburbs. Likewise, when considering total energy use (TETPB) a positive relationship persists. This warrants further exploration.

Table 2: ols1

	TERPB1	TERPB2	TERPB3	TEAPB1	TEAPB2	TEAPB3	TETPB1	TETPB2	TETPB3
Total energy consumption per capita in the residential sector, m BTU	0.000+	0.000	0.000						
Total energy consumption per capita in the transportation sector, m BTU				0.000***	0.000**	0.000***			
Total energy consumption per capita, m BTU							0.000***	0.000+	0.000***
Real gross domestic product, m chain 05usd, PC	0.000+	0.002***	0.001***	0.000*	0.002***	0.000+	0.000	0.002***	0.000
popukation density, thosands per sq m		-0.029***	-0.023***		-0.022**	-0.012**		-0.024**	-0.012*
perUrb		-0.001***	-0.001***		-0.000**	-0.000***		-0.001**	-0.000***
avgJanTemp		-0.000	0.001***		-0.000	0.001***		-0.000	0.001***
avgJulTemp		0.001*	0.002***		0.001*	0.002***		0.001*	0.002***
gh			0.204***			0.221***			0.233***
supp			0.203***			0.201***			0.191***
constant	3.368***	3.261***	1.654***	3.369***	3.256***	1.605***	3.373***	3.263***	1.616***
N	306	288	288	306	288	288	306	288	288

+p<0.10 *p<0.05 **p<0.01 ***p<0.001; robust standard errors

First considering enrgy use in residential and in commerce (columns a), interestingly it appears that the positive relationship is driven by commerce, residential energyu use indeed turns negative. Then in columns b, when considering all, three, residential, commerce, and transportation, thw first two remain insignificant and transportation coomes out positive

Table 3: ols2

	a1	a2	a3	b1	b2	b3
Total energy consumption per capita in the residential sector, m BTU	0.000	-0.000	-0.000+	0.000	-0.000	-0.000
Total energy consumption per capita in the transportation sector, m BTU				0.000***	0.000	0.000***
TET*						
Total energy consumption per capita in the commercial sector, m BTU	0.000	0.001***	0.001***	-0.000	0.000	-0.000
Real gross domestic product, m chain 05usd, PC	0.000	0.002***	0.000*	0.000	0.002***	0.000+
popukation density, thosands per sq m		-0.023**	-0.018***		-0.022**	-0.012**
perUrb		-0.001***	-0.001***		-0.001**	-0.000**
avgJanTemp		-0.000	0.001***		-0.000	0.001***
avgJulTemp		0.001*	0.002***		0.001*	0.002***
gh			0.201***			0.218***
supp			0.208***			0.204***
constant	3.374***	3.280***	1.665***	3.350***	3.276***	1.603***
N	306	288	288	306	288	288

+p<0.10 *p<0.05 **p<0.01 ***p<0.001; robust standard errors

These findings are lagrly replicated with fixed effects estimatiion–there is no increase in happiness from energy use in residential or total, but tehre is an increase in transportation. Note, hausman test indicates that we should use fixed, not random effect.

Table 4: fe1

	TERPB1	TERPB2	TERPB3	TEAPB1	TEAPB2	TEAPB3	TETPB1	TETPB2	TETPB3
Total energy consumption per capita in the residential sector, m BTU	-0.001+	-0.001	-0.000						
Total energy consumption per capita in the transportation sector, m BTU				-0.000+	-0.000	0.000+			
Total energy consumption per capita, m BTU							-0.000	0.000	0.000
Real gross domestic product, m chain 05usd, PC	0.003***	0.003***	0.003***	0.003***	0.003**	0.002**	0.003***	0.002*	0.002**
popukation density, thosands per sq m		0.456	0.027		0.532	0.175		0.687+	0.135
perUrb		0.011***	0.008**		0.011***	0.008**		0.011***	0.008**
avgJanTemp		0.000	0.000		0.000+	0.000		0.001*	0.000
avgJulTemp		0.003***	0.002***		0.002***	0.001**		0.002***	0.002***
gh			0.212***			0.220***			0.212***
supp			0.162***			0.168***			0.161***
constant	3.307***	2.211***	1.168***	3.288***	2.193***	1.033***	3.285***	2.140***	1.134***
N	306	288	288	306	288	288	306	288	288

+p<0.10 *p<0.05 **p<0.01 ***p<0.001; robust standard errors

7 Counties

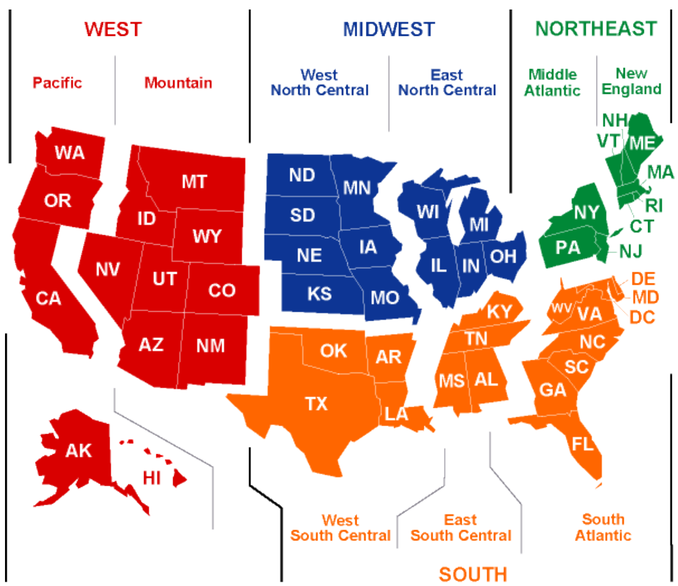


Figure 9: California climate divisions correspondencies with California counties. `http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/regional_monitoring/CLIM_DIVS/california.gif`.

Note, as shown in figure 9, there is not always an exact overlap between counties and climate divisions. They were matched in the following way

The limitation of states is that, well, it is very ecological–large areas! and second, there is not much difference is happijess ascross states, buit there is much more across counties.

Here in bivariate case, too, like across states, there is a positive relationship between energy consumprion and happiness, yet it is somewhat weaker.

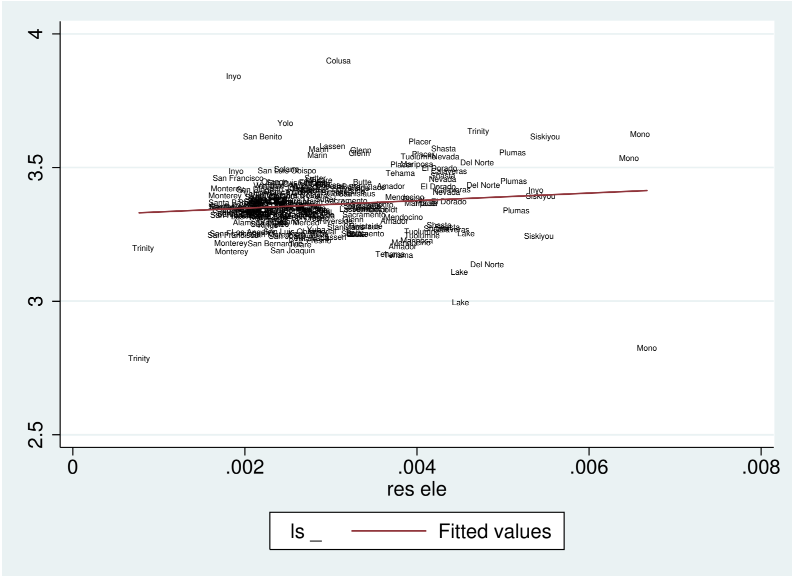


Figure 10: lfELERESls

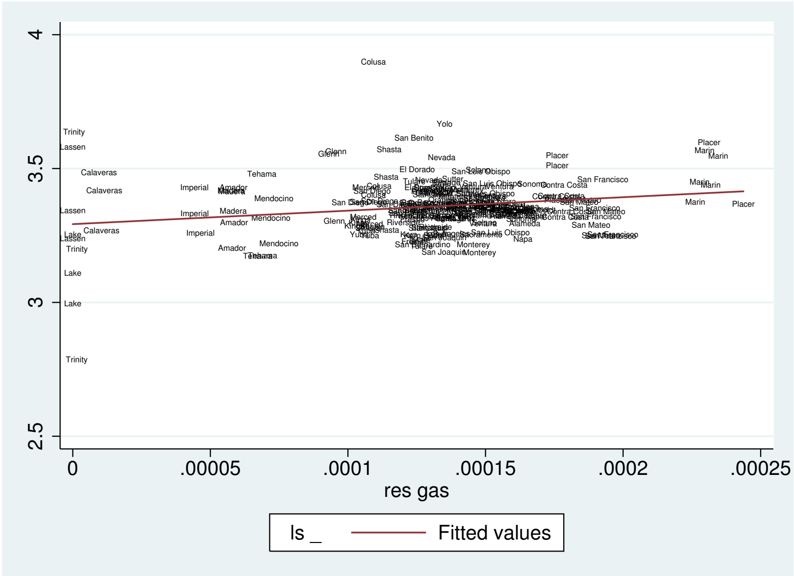


Figure 11: lfGASls

SORTED OON ELERES

county	eleres	eletot
Trinity	0.8	8.1
Monterey	1.8	5.9
Inyo	1.9	4.5
Santa Barbara	1.9	7.5
San Francisco	1.9	7.3
Los Angeles	2.0	6.8
Alameda	2.0	7.2
San Benito	2.1	5.6
San Diego	2.1	6.1
Ventura	2.1	6.5
Santa Clara	2.2	9.3
San Bernardino	2.2	6.5
San Mateo	2.3	6.6
Kings	2.3	9.7
Orange	2.3	6.9
Santa Cruz	2.3	4.8
Solano	2.4	7.5
San Luis Obispo	2.4	6.1

San Joaquin	2.4	8.1
Yolo	2.5	8.2
Kern	2.5	17.7
Tulare	2.5	8.5
Merced	2.6	14.1
Contra Costa	2.6	8.8
Madera	2.7	9.1
Fresno	2.7	7.5
Napa	2.8	7.5
Marin	2.8	5.6
Sonoma	2.8	5.9
Sutter	2.8	6.3
Yuba	2.8	6.7
Riverside	2.8	6.2
Imperial	2.8	8.0
Colusa	3.0	12.0
Lassen	3.0	11.5
Stanislaus	3.2	8.9
Sacramento	3.2	7.5
Glenn	3.3	10.7
Butte	3.3	6.5
Humboldt	3.6	6.8
Tehama	3.7	7.8
Amador	3.7	8.4
Placer	3.8	8.4
Mendocino	3.9	6.8
Mariposa	4.0	6.2
Tuolumne	4.1	8.1
Shasta	4.2	8.8
El Dorado	4.2	6.9
Nevada	4.3	6.7
Calaveras	4.4	7.1
Lake	4.6	7.0
Del Norte	4.8	8.1
Plumas	5.2	10.2
Siskiyou	5.4	11.2
Mono	6.6	14.5
Alpine	.	.
Sierra	.	.
Modoc	.	.

SORTED ON GASRES

county	gasres	gastot
Lake	0.0	0.0
Lassen	0.0	0.0
Trinity	0.2	0.5
Calaveras	1.0	2.0
Imperial	4.4	17.6
Madera	5.8	28.3
Amador	5.8	24.1
Tehama	6.9	17.3
Mendocino	7.3	12.1
Glenn	9.5	27.6
Kings	10.2	44.9
Merced	10.6	45.3
Yuba	10.7	16.6
San Diego	10.9	18.1
Colusa	11.1	121.9
Shasta	11.4	19.2
Riverside	12.1	18.3
Kern	12.1	276.3
San Benito	12.2	23.7
Fresno	12.3	30.3
Tulare	12.4	35.3
El Dorado	12.7	17.3
Stanislaus	12.9	33.6
San Bernardino	13.2	24.1
Orange	13.4	21.2
Nevada	13.4	19.1
Butte	13.4	21.6
Yolo	13.5	30.9
San Joaquin	13.5	28.9
Sutter	13.8	22.7

```
     Los Angeles     13.8     31.8 |
        Monterey     13.9     26.0 |
      Santa Cruz     13.9     21.9 |
     Santa Clara     14.5     25.6 |
      Sacramento     14.8     22.2 |
-----------------------------------|
         Ventura     14.9     24.3 |
 San Luis Obispo     15.0     29.3 |
          Solano     15.1     54.6 |
   Santa Barbara     15.5     29.9 |
        Humboldt     15.7     24.7 |
-----------------------------------|
         Alameda     15.8     27.7 |
          Sonoma     16.0     23.7 |
            Napa     16.6     29.2 |
          Placer     17.6     26.1 |
    Contra Costa     17.8     96.4 |
-----------------------------------|
       San Mateo     18.4     30.7 |
   San Francisco     19.0     32.7 |
           Marin     22.6     31.4 |
           Modoc        .        . |
          Alpine        .        . |
-----------------------------------|
       Del Norte        .        . |
        Siskiyou        .        . |
            Inyo        .        . |
          Plumas        .        . |
            Mono        .        . |
-----------------------------------|
          Sierra        .        . |
        Mariposa        .        . |
        Tuolumne        .        . |
-----------------------------------+
```

And now regressions. Natural gas usage is a function of its availabily, not necassarily gas hunger–for instance Lassen County has zero natural gas use. Furthermore if gas is unused then it may be compensated with other sources, hence electricty and gas in one regression. And as expected, no effect in happiness.

Table 5: CAols1

	eleres1	eleres2	eleres3	eletot1	eletot2	eletot3	gasres1	gasres2	gasres3	gastot1	gastot2
m kWh per 1k people	0.020	0.023	0.009				0.041**	0.041*	0.016		
per capita personal income	0.000**	0.000***	0.000	0.000*	0.000**	0.000	0.000	0.000	-0.000	0.000***	0.000***
popDen		-0.000*	-0.000		-0.000**	-0.000		-0.000+	-0.000		-0.000**
avgJanTemp		0.001	0.002		-0.001	0.002		0.001	0.002		-0.002
avgJulTemp		0.003	0.003		0.003	0.003		-0.000	0.001		0.002
gh			0.135*			0.146**			0.105+		
supp			0.183*			0.185*			0.194*		
m kWh per 1k people				0.001	0.001	0.002				0.007	0.006
m Therms 100k people							0.005	0.005	0.004		
m Therms 100k people										-0.000	-0.000
constant	3.227***	2.916***	1.773***	3.294***	3.085***	1.764***	3.134***	3.092***	1.966***	3.229***	3.160***
N	219	219	219	219	219	219	198	198	198	198	198

+p<0.10 *p<0.05 **p<0.01 ***p<0.001; robust standard errors

and in table 6 a bit of bummer –elecricity residential appears to have effect on happiness if in fixed effects model adn together with natural gas:(

Table 6: CAfe1

	eleres1	eleres2	eleres3	gasres1	gasres2	gasres3
m kWh per 1k people	0.053*	0.062*	0.037	0.154***	0.164***	0.149***
per capita personal income	-0.000	0.000	0.000	-0.000	0.000	0.000
popDen		-0.000	0.000		-0.000	-0.000
avgJanTemp		0.005	0.005		0.005	0.006+
avgJulTemp		0.001	0.006		-0.001	0.001
gh			0.175**			0.177***
supp			0.148**			0.067
m Therms 100k people				-0.007	-0.004	0.005
constant	3.363***	2.975***	1.322+	3.056***	2.799***	1.533*
N	219	219	219	198	198	198

+p<0.10 *p<0.05 **p<0.01 ***p<0.001; robust standard errors

8 Counties–SMART version

A limitation of BRFSS data at county level is that it is not representatoibe of counties. And there are likely problems–for instamce Mono county increased happiness from 2.82 in 2008 to 3.62, which is an extermely large increase and likely due to sampling. To perform a robustness check whether these results may be due to sampling, we have rerun m,odels using SMART verion of data that is represnetative of counties

!!TODO!!

References

Abdallah, S., S. Thompson, and N. Marks (2008): "Estimating worldwide life satisfaction," *Ecological Economics*, 65, 35–47.

Berry, B. J. and A. Okulicz-Kozaryn (2011): "An Urban-Rural Happiness Gradient," *Urban Geography*, 32, 871–883.

Brereton, F., J. Clinch, and S. Ferreira (2008): "Happiness, Geography and the Environment," *Ecological Economics*, 65, 386–396.

Fuguitt, G. V. and D. L. Brown (1990): "Residential Preferences and Population Redistribution: 72-1988," *Demography*, 27, 589–600.

Fuguitt, G. V. and J. J. Zuiches (1975): "Residential Preferences and Population Distribution," *Demography*, 12, 491–504.

Okulicz-Kozaryn, A. (2014): "Natural Sprawl," *Forthcoming in Administration & Society (Disputatio Sine Fine section)*.