

Project 1: American Community Survey

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Contents

1 Overview and Questions of Interest

- Questions of Interest

2 Findings

- Transportation Type

- Energy Type

- Veteran Disability and Benefits

- Immigration

3 Obstacles and Solutions

4 Future Questions and Work

Introduction

- Statistics draws together diverse backgrounds
- Some projects require several different summaries from a single dataset
 - ACS is a large *sandbox* to play in
- Given four group members it is natural that there would be four different areas of interest

Questions of Interest

- 1 Is there a difference in travel time between Portland and Los Angeles?
 - Applications in urban sprawl, traffic circulation, etc...
- 2 Is there a spatial relationship in predominant energy type usage accross states? Is there a relationship between median bill cost for various energy types?
 - Applications in solar energy (sustainable energy alternatives)
- 3 How do proportions of self-sufficient veterans differ from state to state?
 - Applications in veteran health care
- 4 How do income levels of immigrants compare to those of US born workers?

Findings

Topics

- 1 Transportation Type
- 2 Energy Type
- 3 Veteran Disability and Benefits
- 4 Immigration

Transportation Type

Mean Travel Time by Type

Transportation Type	City	Mean Travel Time (min)	Error (min)
Bicycle	Los Angeles	15	0
Bicycle	Portland	20	0
Bus	Los Angeles	45	0
Bus	Portland	35	0
Car/Truck/Van	Los Angeles	25	0
Car/Truck/Van	Portland	20	0
Ferry	Los Angeles	60	5
Ferry	Portland	35	0
Motorcycle	Los Angeles	20	0
Motorcycle	Portland	15	0
Other	Los Angeles	30	0
Other	Portland	55	0
Railroad	Los Angeles	75	0
Railroad	Portland	50	0
Streetcar	Los Angeles	55	0
Streetcar	Portland	20	0
Subway	Los Angeles	45	0
Subway	Portland	35	0
Taxi	Los Angeles	15	0
Taxi	Portland	10	2
Walked	Los Angeles	10	0
Walked	Portland	10	0

Averages:
 LA Average: ~35 minutes
 Portland Average: ~25 minutes

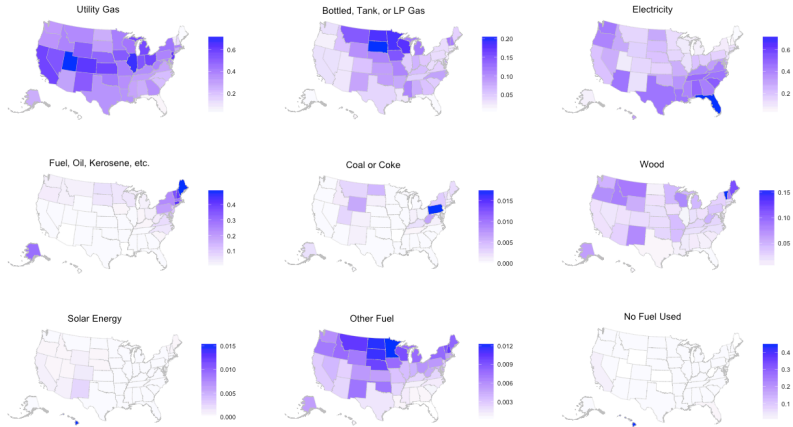
Transportation Type: Take Home Message

- Motor vehicles still the most predominant form for commuting
- Cycling and walking = longer commutes in Portland?
 - Higher proportions using these forms
 - Indicative of sprawl - Los Angelians won't walk/cycle unless they are close
- Longer commute times are not necessarily bad!
 - Higher proportion of use = more contribution to mean
 - Interesting discovery - Portlanders love their sustainable forms!
 - Walking, Cycling, Subway
- Perhaps most interesting: only one person commutes by ferry in Portland!



Energy Type

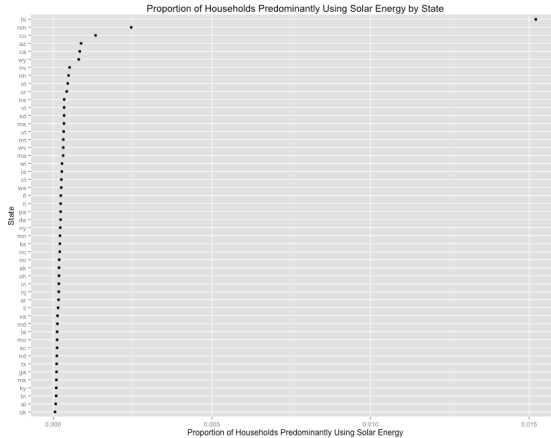
Energy Type





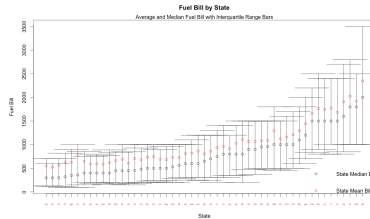
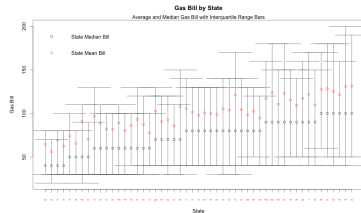
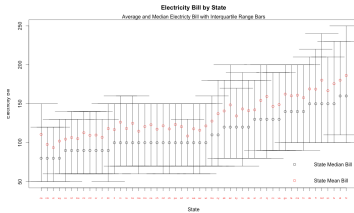
Energy Type

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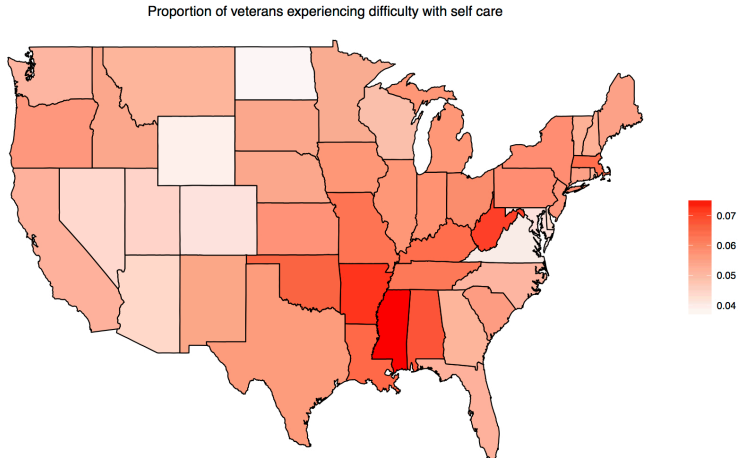


Energy Type: Take Home Message

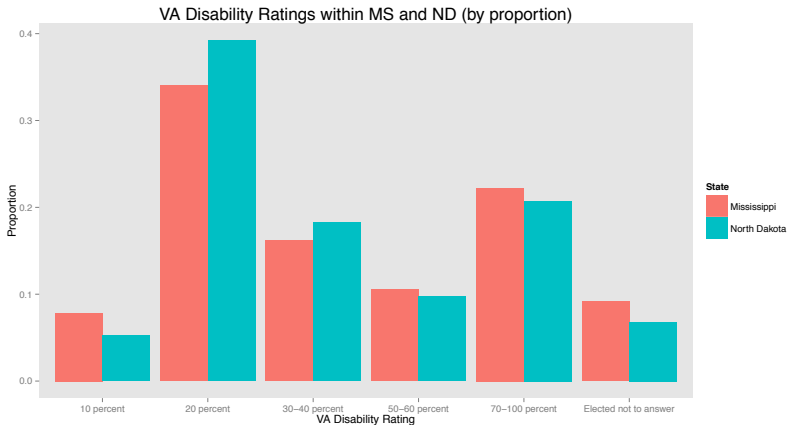
- HI is clear leader in solar energy (1.5%)
- Electricity and utility gas most used (no surprise)
 - Gas: NJ highest gas bill (mean=131.34, median=100), AZ lowest gas bill (mean=64.21, median=40)
 - Electricity: HI highest electricity bill (mean=186.30, median=160), CA lowest gas bill (mean=110.61, median=80)
 - Fuel: AK highest fuel bill (mean=2349.56, median=2000), CA lowest fuel bill (mean=548.5, median=300)
 - California pays less for energy overall perhaps due to relatively moderate/mild temperatures



Veteran Disability and Benefits



Veteran Disability and Benefits





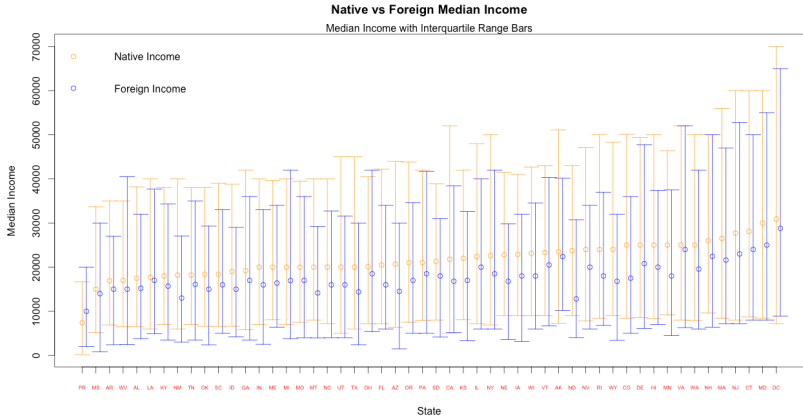
Veteran Disability and Benefits: Take Home Message

- Observed spatial patterns with some outliers
 - Highest incidence rate in the Deep South
 - Lowest incidence rate in the northernmost South
 - Texas doesn't follow the Deep South pattern - the problem may not be in enlistment rates/political leaning!
- Minor shifts in disability rating
 - MS: Higher incidence of 10%, 50%-100%, and electing out
 - ND: Higher incidence of 20%-40%



Immigration

Immigration



Immigration :Take Home Message

- Median values higher for US born than immigrants in ever state (excl. PR)
- Cannot necessarily claim statistical significance due to IQR overlap
- Taking a closer look:
 - The proportion of immigrants that earn less than \$15,000 is greater than native born.
 - The proportion of immigrants that earn more than \$50,000 is less than native born.

Obstacles and Solutions

Universal:

- NA's in dataset
- Communication: Online tools (Google Groups and Google Drive)
- Continuity of project
- General github problems



Obstacles and Solutions

Individual:

- Transportation: Coding of light rail and determining scope of areas to compare
- Energy: Coding of data
- Veterans: "NA" vs "Elected Not To Answer"
- Immigrants: Technology and graphical display

Future Questions

- Incorporate sample weights and post-stratification
- Assess missing information
- Public policy applications