spanish_speaking

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2018-03-27 08:01:38

Spanish speakers

```r
counties <- read.csv(paste0(csv.dir, "city-state-county.csv"),
                     stringsAsFactors = FALSE)

data("county.regions")
counties <- left_join(counties, county.regions)
```

```
## Joining, by = "region"
```

```r
demog <- get_county_demographics(endyear=2013, span=5)
county.demo <- left_join(counties, demog)
```

```
## Joining, by = "region"
```

```r
# Recapitalize county
county.demo$County <- unlist(lapply(county.demo$County, Cap_all))
# Hack District Of columbia...TODO(ROG): Fix Cap_all()
county.demo$County[county.demo$County == "District Of columbia"] = "District of Columbia"
```

Spanish speaking

To gather additional ACS data, we must create a specific ACS 'geometry'.

```r
state.fips <- as.numeric(county.demo$state.fips.character)
county.fips <- as.numeric(substr(county.demo$county.fips.character,3,5))
play.geo <- geo.make(state = state.fips, county = county.fips)

Make.county.geo <- function(i, df) {
  geo.make(state = as.numeric(df$state.fips.character[i]),
           county =
           as.numeric(substr(county.demo$county.fips.character[i],4, 6)))
}

cty <- 1
# Generate name for county-level geography
geo.name <- paste0(county.demo$Site.code[cty], "_",
                   county.demo$county.name[cty], "_", county.demo$State[cty])

# Create geography and assign to generated name
assign(geo.name, Make.county.geo(cty, county.demo))
```

It appears that ACS table B16007 contains info about `AGE BY LANGUAGE SPOKEN AT HOME FOR THE POPULATION 5 YEARS AND OVER`.

ACSSF B16007 46 1 Total:
ACSSF B16007 46 2 5 to 17 years:
ACSSF B16007 46 3 Speak only English

ACSSF B16007 46 4 Speak Spanish

ACSSF B16007 46 5 Speak other Indo-European languages ACSSF B16007 46 6 Speak Asian and Pacific Island languages

ACSSF B16007 46 7 Speak other languages

ACSSF B16007 46 8 18 to 64 years: ACSSF B16007 46 9 Speak only English

ACSSF B16007 46 10 Speak Spanish

ACSSF B16007 46 11 Speak other Indo-European languages ACSSF B16007 46 12 Speak Asian and Pacific Island languages

ACSSF B16007 46 13 Speak other languages

ACSSF B16007 46 14 65 years and over:

ACSSF B16007 46 15 Speak only English

ACSSF B16007 46 16 Speak Spanish

ACSSF B16007 46 17 Speak other Indo-European languages ACSSF B16007 46 18 Speak Asian and Pacific Island languages

ACSSF B16007 46 19 Speak other languages

For our purposes, I suggest we define "English speaking" as $9 + 15$; "Spanish speaking" as $10+16$, and "Other speaking" as $sum(11:13)+sum(17:19)$.

```r
# Table B16007
lang.at.home <- acs.fetch(geography = play.geo,
                          endyear = 2015, table.number = "B16007")

english <- function(i) lang.at.home[i,9] + lang.at.home[i,15]
spanish <- function(i) lang.at.home[i,10] + lang.at.home[i,16]
other <- function(i) sum(lang.at.home[i,11:13]) + sum(lang.at.home[i,17:19])
tot <- function(i) lang.at.home[i,8] + lang.at.home[i,14]

Make.lang.at.home <- function(i) {
  this.cty <- slot(lang.at.home[i,1], "geography")$NAME
  data.frame(county = this.cty,
             tot = as.numeric(slot(tot(i), "estimate")),
             english = as.numeric(slot(english(i), "estimate")),
             spanish = as.numeric(slot(spanish(i), "estimate")),
             other = as.numeric(slot(other(i), "estimate")))
}

lang.at.home.list <- lapply(1:dim(lang.at.home)[1], Make.lang.at.home)
lang.at.home.df <- Reduce(function(x,y) full_join(x,y, all=TRUE),
                          lang.at.home.list)
```

```
## Joining, by = c("county", "tot", "english", "spanish", "other")

## Warning: Column `county` joining factors with different levels, coercing to
## character vector

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```
lang.at.home.df %>%
  mutate(`English only` = english/tot*100,
         Spanish = spanish/tot*100,
         Other = other/tot*100) %>%
  select(county, `English only`, Spanish, Other) ->
  lang.at.home.by.cty
```

```
lang.at.home.by.cty %>%
  knitr::kable()
```

county	English only	Spanish	Other
Los Angeles County, California	43.07724	37.881181	19.041579
Merced County, California	47.29326	42.387693	10.319044
Orange County, California	54.52002	24.738343	20.741637
Riverside County, California	60.15960	32.007089	7.833308
San Mateo County, California	53.13899	18.828671	28.032337
Santa Clara County, California	47.47717	17.612378	34.910457
Santa Cruz County, California	70.03775	23.503891	6.458362
Yolo County, California	64.36704	19.698186	15.934772
District of Columbia, District of Columbia	83.14164	7.958909	8.899453
Miami-Dade County, Florida	26.28578	64.959619	8.754601
Fulton County, Georgia	83.72743	6.232113	10.040458
Oconee County, Georgia	92.02474	3.311390	4.663874
Cook County, Illinois	65.60420	19.149255	15.246542
Monroe County, Indiana	89.00974	2.185335	8.804926
Tippecanoe County, Indiana	84.91829	5.468940	9.612773
Orleans Parish, Louisiana	90.58712	4.470473	4.942405
Suffolk County, Massachusetts	62.20890	17.373642	20.417462
Montgomery County, Maryland	59.77085	15.354920	24.874235
Crawford County, Michigan	98.06006	0.637789	1.302153
Ingham County, Michigan	87.91836	3.557360	8.524281
Camden County, New Jersey	79.88834	11.523596	8.588066
Essex County, New Jersey	64.83052	18.677354	16.492127
Gloucester County, New Jersey	91.22925	3.772162	4.998586
Mercer County, New Jersey	71.01846	13.164138	15.817399
New York County, New York	60.43605	21.609700	17.954245
Richmond County, New York	68.52955	10.271825	21.198630
Tompkins County, New York	85.83154	2.294723	11.873739
Franklin County, Ohio	87.80535	3.355519	8.839135
Lane County, Oregon	91.81392	4.397540	3.788543
Allegheny County, Pennsylvania	92.66391	1.355747	5.980343
Bucks County, Pennsylvania	88.58937	3.033276	8.377357
Centre County, Pennsylvania	89.85879	1.706075	8.435135
Chester County, Pennsylvania	88.40506	5.034666	6.560276
Delaware County, Pennsylvania	88.09701	2.581726	9.321262
Montgomery County, Pennsylvania	86.49153	3.259438	10.249030
Philadelphia County, Pennsylvania	77.87684	9.714651	12.408509
Davidson County, Tennessee	85.14803	7.546768	7.305205
Williamson County, Tennessee	92.07445	3.002793	4.922760
Harris County, Texas	57.54705	32.840242	9.612710
Travis County, Texas	69.24457	22.896063	7.859366
Arlington County, Virginia	71.35793	13.209074	15.432998
Chesterfield County, Virginia	88.99595	5.665188	5.338857

county	English only	Spanish	Other
Henrico County, Virginia	85.04706	4.226000	10.726938
James City County, Virginia	92.47889	3.319709	4.201396
Richmond city, Virginia	90.33650	5.085086	4.578411

```r
lang.at.home.by.cty %>%
  gather(key = language, value = proportion.pop, -county) %>%
  mutate(language = factor(language, levels = c("Other", "Spanish", "English only"))) ->
  lang.at.home.by.cty.gathered

lang.at.home.by.cty %>%
  select(county, `English only`) ->
  lang.sortlist

left_join(lang.at.home.by.cty.gathered, lang.sortlist) %>%
  arrange(`English only`) %>%
  mutate(county = factor(county, unique(county))) %>%
  ggplot() +
  aes(x = county, y = proportion.pop, fill = language) +
  geom_col() +
  coord_flip() +
  play.theme +
  play.palette +
  scale_y_continuous(expand=c(0,0)) +
  ylab("Percent of population")
```

```
## Joining, by = "county"
```

Percent of population

Legend: ■ Other ■ Spanish ■ English only