

# Census and American Community Survey Data in the Undergraduate Classroom

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# Background

## ▶ SSDAN

- ▶ Within Population Studies Center at Univ. of Michigan since ~1995
- ▶ Small budget operation
- ▶ Make demographic data accessible to general public and for use in education



# Background

- ▶ Past Projects and Related Work
  - ▶ Allyn & Bacon Social Atlas of the US (Pearson)
  - ▶ ACS Compass Guide - Media Handbook
  - ▶ DataFerrett and ACS
  - ▶ KidsCount in the Classroom
  - ▶ Investigating Change workbook (Cengage)
- ▶ Funding from
  - ▶ NSF
  - ▶ NICHD
  - ▶ US Dept of Education
  - ▶ Annie E. Casey
  - ▶ US Census Bureau
  - ▶ Sloan Foundation

# Background - Websites

- ▶ SSDAN: <http://ssdan.net>
- ▶ Programs in the Population Sciences: <http://pips.ssdan.net>
- ▶ DataCounts: <http://ssdan.net/datacounts/>
- ▶ CensusScope: <http://CensusScope.org/>
- ▶ TeachingWithData: <http://teachingwithdata.org>

# Including Data Builds QL and:

- ▶ Engages students with disciplines more fully
  - ▶ Participatory learning
  - ▶ Better picture of how social scientists work
  - ▶ Prevents some of the feelings of “disconnect” between substantive and technical courses
  - ▶ Empirical Evidence
- ▶ Piques student interest
- ▶ Opens the door to the world of data

# DataCounts!

- ▶ Simple datasets (~3,000) for undergrad ed, data from 1950 to 2016
- ▶ Uses WebCHIP → no need to learn complex stats package. Start simple!
- ▶ Great for intro and non-methods courses to show students how to answer questions with data
- ▶ Find from <http://ssdan.net/>

# DataCounts! Topics

- ▶ Datasets cover wide range of topics
  - ▶ Population Structure
  - ▶ Racial/Ethnic and Gender Inequality
  - ▶ Immigrant Assimilation
  - ▶ Labor Force Characteristics
  - ▶ Marriage, Divorce, Households and Families
  - ▶ Poverty
  - ▶ Aging Population

# DataCounts!

- ▶ Most modules start with a question
  - ▶ How does the year of immigration affect the English speaking ability? Does race matter?
- ▶ Datasets have answers to many questions
- ▶ What would we need to answer?
  - ▶ acs2010 -- EngHisp/EngAsian

When immigrated

→

Eng spkg ability

↓

				Total
Total				



# DataCounts! - Engaging Students

- ▶ What are the variables used?
- ▶ What will we need to answer the questions?
- ▶ <http://ssdan.net/datacounts/webchip>
  - ▶ Acs16\_1yr - earnededuc16

Sex  
→

				Total
Educational Attainment ↓				
Total				

# DataCounts!

- ▶ Your Turn!
- ▶ Simple Exercise - Earnings and Gender
- ▶ <http://ssdan.net/datacounts/webchip>

# DataCounts! - Activity

## Individual Exercise

How do race and gender relate to earnings?

- Use the dataset *ACS16* → *EducEarn* for Question 1 and 2.

### Directions

- Go to <http://ssdan.net/datacounts/webchip>
- Select the pulldown menu under CHOOSE DATASET
- Scroll down to the **acs16\_1yr** in the drop-down menu under “Collection”
- Select the data set **EducEarn16** (short for “Education and Earnings”) under “Dataset”

### Question 1

Using WebCHIP, compare earnings with sex, taking note of any patterns.

	Male	Female	Total
<\$25k			
\$25-34k			
\$35-49k			
\$50-69k			
\$70-99k			
\$100k+			
<b>Total</b>			

# DataCounts! - Activity

## Question 2

How does earnings between the sexes differ by race?

	<i>NH-White</i>			<i>Black or Afr. Amer.</i>		
	Male	Female	Total	Male	Female	Total
<\$25k						
\$25-34k						
\$35-49k						
\$50-69k						
\$70-99k						
\$100k+						
<b>Total</b>						

	<i>Hispanic</i>			<i>AIAN</i>		
	Male	Female	Total	Male	Female	Total
<\$25k						
\$25-34k						
\$35-49k						
\$50-69k						
\$70-99k						
\$100k+						
<b>Total</b>						

# DataCounts!

- ▶ Don Draper - *Mad Men*

- ▶ Dropped out of HS, partner in ad agency
- ▶ Are white collar occupations more likely taken by those with a college degree than they used to be?
- ▶ Are those with less than a high school degree likely to hold white collar occupations as of 2008? Were they likely to hold them in 1960?

- ▶ `acs2008trend -- EducOccup`

Occupation Class

1960

2008

Education

				Total	
					Total
Total					
	Total				

# DataCounts!

## ▶ Tips

### ▶ Datasets

- ▶ Names often suggest tables: Educlmm → Education \*  
Immigration
- ▶ Assigning state-level datasets reduces opportunity to copy/paste from other classmates

### ▶ Modules

- ▶ Adapting → much faster than creating from scratch
- ▶ Ability to post your own, including adaptations

# DataCounts! Next Steps

State (FIPS)	Weight	Earnings from Wages/Salary	Hours worked per week	Gender	Race / Ethnicity	Age (Professional)	Earnings (Professionals)
ST	PWGTP	WAGP	WKHP	gender	RaceEth	AgePro	Earn2
01	112	0	80	1	1	4	1
01	67	100000	50	1	1	4	6
01	81	119000	42	1	1	4	6
01	65	322000	65	1	1	3	10
01	82	120000	40	1	1	5	6
01	106	322000	55	1	1	2	10
01	245	130000	55	1	1	1	7
01	151	62000	50	1	1	5	3

Median Earnings by Gender and Age Group							
Average of WAGP	Column Labels						
Row Labels	0	1	2	3	4	5	Grand Total
1	80000	99668.40052	246348.6752	270677.1361	252457.1019	212844.5724	228761.1422
2	24300	90536.69986	196850.3294	206549.5868	198518.4518	197597.2222	169597.5857
Grand Total	38225	95307.26902	228286.5385	249918.8871	240571.2919	211230.1471	209739.201

- ▶ Excel files
  - ▶ Transferrable skills
  - ▶ Common/comfortable package

# DataCounts! Next Steps

- ▶ SAS/SPSS/Stata/R files
  - ▶ Original variables
  - ▶ Greater flexibility
  - ▶ Scaffolding
- ▶ Access to code
  - ▶ Demonstrate how recodes happen
  - ▶ Modify to meet own needs
  - ▶ Further scaffolding

	PUMS person weight	Sex	PUMS Wages/salary income	gender	RaceEth	AgeWork	Eam	FTYRW
1	00051	2	0052000	2	2	5	5	1
2	00062	1	0000000	1	2	5	1	1
3	00449	2	0039000	2	2	5	4	1
4	00016	1	0000000	1	1	5	6	1
	State of current residence	PUMS person weight	PUMS Wages/salary income	PUMS Hours worked per week	gender	RaceEth	AgePro	Eam2
1	01	00112	0000000	80	1	1	4	1
2	01	00067	0100000	50	1	1	4	6
3	01	00081	0119000	42	1	1	4	6
4	01	00065	0322000	65	1	1	3	10
5	01	00082	0120000	40	1	1	5	6
6	01	00106	0322000	55	1	1	2	10

```

else if wagg >= 35000 AND wagg <= 49999 then Earn =
else if wagg >= 50000 AND wagg <= 69999 then Earn =
else if wagg >= 70000 AND wagg <= 99999 then Earn =
else if wagg >= 100000 then Earn = 7;
else Earn = 0;
/*Variable Earn2 - Earnings from Salary/Wages for Profes
if wagg = "bbbbbb" then Earn2 = 99;
else if wagg < 40000 then Earn2 = 1;
else if (40000 <= wagg < 55000) then Earn2 = 2;
else if (55000 <= wagg < 70000) then Earn2 = 3;
else if (70000 <= wagg < 85000) then Earn2 = 4;
else if (85000 <= wagg < 100000) then Earn2 = 5;
else if (100000 <= wagg < 125000) then Earn2 = 6;
else if (125000 <= wagg < 150000) then Earn2 = 7;
else if (150000 <= wagg < 200000) then Earn2 = 8;
else if (200000 <= wagg < 250000) then Earn2 = 9;
else if wagg >= 250000 then Earn2 = 10;
else Earn2 = 0;
    
```



# Programs in the Population Sciences – <http://pips.ssdan.net>

- ▶ Helping to recruit and guide those interested in careers and graduate programs in the population sciences
- ▶ Graduate Programs
- ▶ Career Paths
- ▶ Internships and other opportunities
- ▶ Deadlines
- ▶ Resources for Faculty
  - ▶ Webinars
  - ▶ Workshops (incl. Summer 2018!)



The screenshot shows the homepage of the Programs in the Population Sciences (PIPS) website. The header includes the PIPS logo and the text "Programs in the POPULATION SCIENCES". A navigation menu lists: Home, Programs, Careers, Make It Happen - Profiles, About, Opportunities. A main banner image shows a large, ivy-covered building on a campus. To the right of the image is a text box: "Advancing educational and career opportunities in demography, sociology, economics, public health, public policy, and more." Below the banner is a text box: "Programs in the Population Sciences (PIPS) offers a central point where undergraduate students interested in pursuing graduate studies or careers in the population sciences can find information and connect with others." The page is divided into three columns: "Upcoming Deadlines", "Announcements", and "Featured Program".

**Upcoming Deadlines**

All	Programs
Florida State University Demography M.S.	June 1, 2018
Penn State World Campus M.P.S. in Applied Demography Fall Semester	July 15, 2018

[View all deadlines](#)

**Announcements**

- Faculty Workshop: Using the American Community Survey in Undergraduate Courses -- June 14-16, 2018 (deadline extended)
- Faculty Workshop: Using the American Community Survey in Undergraduate Courses -- June 14-16, 2018
- Population Studies Programs and Careers Info Sessions
- Graduate Programs in the Population Sciences Information Session 2 - November 14, 2PM EST
- Upcoming Webinars - Information Sessions on Graduate Programs in Population Sciences

[View all announcements](#)

**Featured Program**

**Cornell University**

The Cornell Population Center (CPC) serves as the intellectual hub for demographic research and training at Cornell University. It supports demographic research relating broadly to four core themes: (1) families and children; (2) health behaviors and disparities; (3) poverty and inequality; and (4) immigration and diversity. CPC is a university-wide program serving 116 faculty and 86 student...



At the bottom of the page, there are logos for the Institute for Social Research, the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NIH), and the Population Studies Center.

# Data in the News - TwD

- ▶ Found on TeachingWithData.org
- ▶ Updated regularly
- ▶ Ties Data to Substance

TeachingWithData.org  
Pathway to Quantitative Literacy in the Social Sciences

Home Search About Us Data Resources Instructor Resources User Support




## Data in the News

### Population Density in the Early 20th Century

The Census Bureau's [weekly data visualization](#) shows the change in population density by county of the United States each decade from 1920-1950. In the 1920s, predominantly rural counties in the East saw declining population densities due to a trend of migration to cities. The 1930s saw the Great Plains decline in population while rural areas in the East became more densely populated again. As World War II ended, the United States saw increased geographic mobility, which led to 21.5 percent of civilians moving to different counties or states between 1940 and 1947. The map shows that urban and populated Northeast and Midwest counties saw the largest growth in the 1940s, while predominantly rural counties in the Great Plains and the South continued to see declining population density.

2012-08-16



### 55% of American Cell Phone Owners Have a Smartphone

Nielsen reports that smartphones are most popular among the younger and higher income demographics in America. 81% of those aged 18-24 and earning over \$100,000 possess a smartphone representing the highest usage of any age and income category. Overall, smartphones are a popular product: 60% of those aged 25-34 and making less than \$50,000 still own a smartphone; and 72% of Americans aged 25-34 earning between \$50,000 and \$100,000 possessed one. In early 2012, smartphones achieved the majority share of users in the mobile phone market, and today, 55% of cell phone owners have a smartphone. Additionally, women are more likely to use apps frequently. While men retain the greater share of app users, 58% of women actually rank in the top third of app users. Finally, consumers continue to embrace the iOS and Android operating systems. In May of last year, the number of Android and iOS users topped off at 49 million, but this figure pales in comparison to the number of users by May of 2012: 90 million.

2012-08-08



Age Group	Income Group	Smartphone Penetration (%)
18-24	<\$50,000	60
18-24	\$50,000-\$100,000	72
18-24	>\$100,000	81
25-34	<\$50,000	60
25-34	\$50,000-\$100,000	72
25-34	>\$100,000	81
35-44	<\$50,000	55
35-44	\$50,000-\$100,000	65
35-44	>\$100,000	75
45-54	<\$50,000	45
45-54	\$50,000-\$100,000	55
45-54	>\$100,000	65
55-64	<\$50,000	35
55-64	\$50,000-\$100,000	45
55-64	>\$100,000	55
65-74	<\$50,000	25
65-74	\$50,000-\$100,000	35
65-74	>\$100,000	45

From Nielsen's Report on Mobile Consumers

### U.S. Drought Worst Since Dust Bowl

The drought currently overwhelming much of the U.S. ranks among the worst in American history and is the worst since the Dust Bowl. Since 1999, the National Drought Mitigation Center has tracked the spread and intensity of droughts, and according to the center, 11 states possess regions with an "exceptional drought," characterized as resulting in "widespread crop losses," and water emergencies. The "exceptional drought" category is the



# Census Reporter

- ▶ <https://censusreporter.org/>
- ▶ Summary data from latest ACS
- ▶ Explore by location or topic
- ▶ Connections between data and its collection
- ▶ Profiles, comparisons, explanations
- ▶ Identify geographic areas such as the census tract
  - ▶ 1009 Larimer Street, Denver, Colorado 80204

# US Census Bureau PUMS

- ▶ Now as SAS datasets!
  - ▶ Available through American FactFinder or FTP
  - ▶ <ftp://ftp.census.gov/programs-surveys/acs/data/pums/2016/>
  - ▶ Data Dictionary ([https://www2.census.gov/programs-surveys/acs/tech\\_docs/pums/data\\_dict/PUMS\\_Data\\_Dictionary\\_2012-2016.pdf](https://www2.census.gov/programs-surveys/acs/tech_docs/pums/data_dict/PUMS_Data_Dictionary_2012-2016.pdf))
- ▶ Create custom extracts

# CensusScope and TwD

- ▶ CensusScope - [CensusScope.org](http://CensusScope.org)
  - ▶ Limited but useful geography levels
    - ▶ Nation, State, County, Metro
    - ▶ Consistent Metro definitions through time
- ▶ Teaching with Data - [TeachingWithData.org](http://TeachingWithData.org)
  - ▶ Data in the News blog (news articles built around social science data)
  - ▶ Resources
    - ▶ Ready-made Resources (e.g., Lessons/Activities, Syllabi)
    - ▶ Data (e.g., Tables, Maps, Data Extracts)

# Questions?

## Thank you!

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