

Reporting

on the Status
of Women and Girls
in Your Community

**A GUIDE TO USING
U.S. CENSUS DATA**

PREPARED BY THE
Center for the Advancement of Women



Mount Saint Mary's University
LOS ANGELES

Message from the Director



Mount Saint Mary's University presented the inaugural *Report on the Status of Women and Girls in California*[™] in 2012. Over the past six years, women have made incredible progress in many sectors, but striking gender gaps remain. Because we know that information is power, Mount Saint Mary's annual reports offer some of the most authoritative and comprehensive compilations of current research, focusing on issues and trends affecting the more than 19 million women and girls who call California home.

The information presented in our reports is gathered from existing databases and surveys at both the state and national level, and from public and private sources. Our reports focus on critical areas such as demographics, poverty, education, employment and earnings, media, business, leadership, political representation, physical and mental health, violence and veterans. The data doesn't sit on a shelf; it is used by policymakers, agencies, foundations, journalists and everyday citizens to educate and spur action.

The Center for the Advancement of Women at Mount Saint Mary's University, launched in 2017, is a manifestation of the University's commitment to identify solutions to persistent gender inequities. Our goal is bold: **In partnership with a diverse coalition of partners, we will work to eradicate gender discrimination in our lifetime.** In order to achieve this, we need allies. That's why, in addition to our own reports, we will empower others to fight injustice—by arming them with the tools needed to conduct similar research in their own communities. This *Guide to Using U.S. Census Data* provides readers with an introduction to census data, the fundamentals of accessing the data, and walks you through an example that we explored in our 2017 report.

This guide has been skillfully prepared by Eleanor Siebert, PhD, lead researcher for our annual reports. Our hope is that these guidelines will equip you to retrace our steps and research important data applicable to your community. Of course, if you need further assistance in building your local report, the Center for the Advancement of Women is happy to provide support.

Warmly,

A handwritten signature in black ink, appearing to read "E. Archer". The signature is fluid and cursive, with a long horizontal flourish at the end.

Emerald Archer, PhD
DIRECTOR, CENTER FOR THE ADVANCEMENT OF WOMEN

A Guide to Using Census Data

Create your own community report on the status of women and girls.

Getting Started

Over the last six years, Mount Saint Mary's University has developed statewide research reports on women and girls, as well as local-level reports for the cities of Los Angeles, Glendale and Pasadena, as well as for Los Angeles County and Kern County. This guide showcases how we collected much of the data used in those reports, and is intended to serve as a starting point to understand data relevant to your community.

In compiling our reports on the status of women and girls, we have identified areas of concern that require evidence to describe the situation that currently exists or a situation that is trending with respect to women. Our reports utilize a secondary research approach, citing data collected by others. The most common sources of data used include the U.S. Census Bureau, government departments or organizations, and sometimes data used for other research purposes. Internet searches frequently lead to these and other data sources that may be of interest. However, there are some cautions to be aware of when using data collected by others: The data need to be the most recent available, and they need to be accurate and unbiased (not specifically collected to promote a particular point of view). Note that secondary data may not cover the area of interest with which you are most concerned (*e.g., they may not be specific to women or to California women*).

Types of Data

Our reports use data that are either qualitative (based on focus group responses) or quantitative (based on a set of measurements). Many report topics utilize survey information. In reporting survey information, it's important that there are adequate controls for randomizing the sample surveyed and that the size of the sample is sufficient to reach a valid generalized conclusion. In addition, the survey questions must have been carefully designed so that all participants clearly understand what is being asked. The U.S. Census Bureau (census.gov) is the nation's leading source of quality data about people and the nation's economy; it is a major data source used in Mount Saint Mary's reports on the status of women and girls.

The U.S. Census Bureau conducts several survey programs, including: the decennial census, an economic census (every five years), and the American Community Survey (annually). The most useful of these surveys, for our purposes, is the annual American Community Survey (ACS), published in mid-September, with data on population, housing and workforce characteristics. The ACS reaches out to between 3 and 4 million households each year. The data cover different periods of time — 1-year, 3-years and 5-years — and has been tracked over several decades.

Focusing the Data Collection

At the heart of each research report is a question that focuses the search for data. The initial question identifies the topic of interest; the more specific the question, the more productive the search for relevant data can be. For example, if the topic of interest is poverty, then the topic can be made more specific by limiting the question to the poverty of women. Further refinement of the question can include a focus on a geographic region, a particular age group, or a particular racial or ethnic group of women. However, if the question is too specific, there may be limited or no relevant information. Knowing how to hone the question is facilitated by being somewhat knowledgeable about the topic of interest and by being familiar with the type of data that are available.

Data topics available through the ACS vary widely.

¹ References to "reports on the status of women and girls" in this guide include our annual *Report on the Status of Women and Girls in California*TM and the local Reports on the Status of Women and Girls created by Mount Saint Mary's University faculty and staff for specific cities and counties. The approach for all reports is uniform.

American Community Survey (ACS) Data Topics

POPULATION TOPICS

- Age
- Ancestry
- Citizenship
- Disability
- Education
- Fertility
- Field of degree
- Food stamps/SNAP
- Grandparents as caregivers
- Health insurance
- Hispanic origin
- Income
- Industry, occupation, and class of worker
- Labor force status
- Language
- Marital history and status
- Migration
- Period of military service
- Place of birth
- Place of work and journey to work
- Race
- Relationship to householder (*e.g., spouse*)
- Residence 1 year ago
- Sex
- Undergraduate field of degree
- Veteran status
- Work status last year
- Year of naturalization

HOUSING TOPICS

- Bedrooms
- Computer and internet use
- Farm residence
- House heating fuel
- Value of housing units
- Kitchen facilities
- Plumbing facilities
- Rent
- Rooms
- Selected monthly owner costs
- Telephone service available
- Tenure (owner/renter)
- Units in structure
- Vehicles available
- Year moved into unit
- Year structure built

Survey information on these topics is tabulated and the ACS has several data products: data profiles, comparison profiles, selected population profiles, ranking tables, subject tables, detailed tables, geographic comparison tables, summary files and public use microdata sample (PUMS) files. Each data product includes a series of tables that are identified by leading letters to identify the data product, followed by numbers to identify the subject.

We have generally found the most useful tables to be:

- **DATA PROFILES**
DP tables provide broad social, economic, housing and demographic profiles.
- **SELECTED POPULATION PROFILES**
SP tables provide broad social, economic, and housing profiles for a large number of race, ethnic, ancestry and country/region of birth groups.
- **SUBJECT TABLES**
S tables provide social, economic, housing and demographic details, classified by subject.
- **DETAILED TABLES**
B and C tables provide access to the most detailed ACS data and cross tabulations of ACS variables.

Precision of Data

All data used are estimates. For example, ACS numbers are based on data from a sample of the total housing units and people in the population. These data may be weighted based on sample characteristics needed in order to bring it into closer agreement with the full population. The ACS reports the sampling error for each estimate with a margin of error that has a 90% probability of containing the true value.²

In our reports on the status of women and girls, census data points have been taken from the ACS reports; they have been reported directly, as well as used to compute information of greater relevance to our issues. For simplicity, we have not included uncertainties in measured values. As a result, most data in Mount Saint Mary's reports on the status of women and girls have been rounded to the nearest whole number. Margins of error vary among reported data, depending in part on sample size and characteristics, but an uncertainty of 2-5% of a data point value is to be expected.

Accessing ACS Data

1. Go to factfinder.census.gov
2. To do a basic search, click on "guided search" and enter search selections.
 - a. The first screen will ask you to identify the topic you're interested in by means of a drop-down menu (see "ACS Data Topics" on previous page).
 - b. The next variable in the guided search is the geographic region of interest. The default is "U.S. Options," which includes choosing the state, city or county, or at a more granular level, a census tract or zip code tabulation area. You may choose more than one area and very often we select the U.S. and California simultaneously in order to get comparison data.
 - c. It will also ask if you have any particular group of people as identified by race in which you're interested. We leave this open in order to have the search engine return the greatest number of topic tables.
3. Clicking on "search," the screen opens with a list of tables that match your selections. Topic tables are listed for the latest year, as well as 3-year and 5-year periods.
4. Click to open a table. If you have selected the latest year, there will be additional options on the left of the screen to access data from previous years.
5. You can view tabulated data for any year/multi-year period and, if interested, download it in either an Excel or PDF file. Once downloaded to your computer, you can print or save for future reference and/or manipulation.
6. When you are ready to return to the list of tables, click the reverse arrow to return to search results.
7. If the basic tables do not offer the variable correlation you're interested in, scroll to the bottom of the page with the list of tables and click on "advanced search." This will take you out of the "guided search" option and to additional detailed tables (B and C) that match your search selections.

² For more information on variance estimation, please see ACS Design and Methodology (Chapter 12), U.S. Census Bureau, U.S. Government Printing Office (Washington, D.C.) 2014. ftp.census.gov/programs-surveys/acs/methodology/design_and_methodology/acs_design_methodology_ch12_2014.pdf.

Example of Using U.S. Census Data

Mount Saint Mary's gives high priority to educational attainment; thus, as an example of using census data, we have chosen a question about undergraduate degrees earned by women:

*In 2015, how did the percentage of bachelor's degrees in science and engineering held by California women vary by age group?*³

To answer this question, we'll need to consult ACS education tables for the 2015 ACS 1-year estimates.

Go to factfinder.census.gov and follow the next steps:

- Click on "Guided Search," and then on "Get Me Started."
- In the next frame: Select topics on "People" and in the next frame, select "Education." From the drop-down menu under "Education," select "Field of Degree."
- In the next frame, refine the search by limiting the geographical area to one state: "California."

Note that the screen shows a "selections box" which lists the search parameters you have chosen—People: Education, Field of Degree; State: California. These parameters may be changed at any time.

- Click through the next selection, leaving open any additional restrictions on the search, until a list of basic table titles appear. The first listed tables are the basic content (S) tables, followed by the B and C tables that cross-correlate some of the variables.
- Select a table title. Explore the table titles to initially select the one which seems most suitable to answer the question.

The first table, "Table S1502: Field of Bachelor's Degree for First Major," may be appropriate. Since we are interested in the undergraduate degree fields of women as a function of age, "Table B15011: Sex by Age by Field of Bachelor's Degree for First Major for the Population 25 Years and Over" also meets these guidelines.

- Choose the 2015 1-year estimates and open the selected table.

Start with the most basic table (S1502). Will the data in this table answer the question (slightly paraphrased from the question above): What percentage of the undergraduate degrees in science and engineering in different age groups are held by women? It will, but a secondary calculation must be done. Clicking on the reverse arrow "Back to search results," will return you to the page with table titles.

- Check out other possible tables. For example, open Table B15011 to see if those tabulated data can be more directly used. The answer proves to be "no." Like with Table S1502, a secondary calculation would be necessary to answer the question. Either table may be used, but Table S1502 has one less manipulation and so that is our choice.

"Table S1502" contains the total number of bachelor's degrees held by field, by age group and by sex; while these data can be used to calculate the percentages of interest, the table does not specifically list the percentage of degrees held by women in each category. CAUTION: Table S1502 has a column listing "percent females." However, this column represents the percentage of women in that age group holding degrees in each of the fields listed (not the percentage of bachelor's degrees in those fields). To answer our question, data from "Table S1502" will be used.

³ This answer to this question appears in the first four columns of Figure 9 (page 9) in the 2017 Report on the Status of Women and Girls in California.TM

If you don't find a table of interest in your initial search, explore other table titles by scrolling to the bottom of the page and clicking on "advanced search." Going to the "advanced search" brings up 354 tables (in this case) from additional years and tables that may contain cross-tabulations of ACS data that more directly answer the question. However, in this case, there are no data that specifically give the percentage of degrees held by women in each category, and we will need to resort to a secondary calculation using data from Table S1502.

- Download Table S1502. Download the table in either Excel or PDF format. Since a secondary calculation will be necessary, an Excel format will allow the data to be directly manipulated. Alternatively, since there are only a few straightforward calculations, manually entering the data into an Excel program is quite easy.

Our choice is to download Table S1502 in PDF format and select the data needed to answer the question for California women as shown below.

What percentage of undergraduate science and engineering degrees in each age group are held by women?

AGE GROUP	TOTAL NUMBER OF SCIENCE/ ENGINEERING DEGREES HELD BY WOMEN AND MEN	NUMBER OF SCIENCE/ ENGINEERING DEGREES HELD BY WOMEN	CALCULATED PERCENT OF DEGREES HELD BY WOMEN*	REPORTED PERCENT OF DEGREES HELD BY WOMEN
25-39 years	1,259,039	587,166	46.64%	47%
40-64 years	1,580,998	628,776	39.77%	40%
65 years and over	587,528	171,008	29.11%	29%
Total population over 25 years of age	3,427,565	1,386,950	40.46%	40%

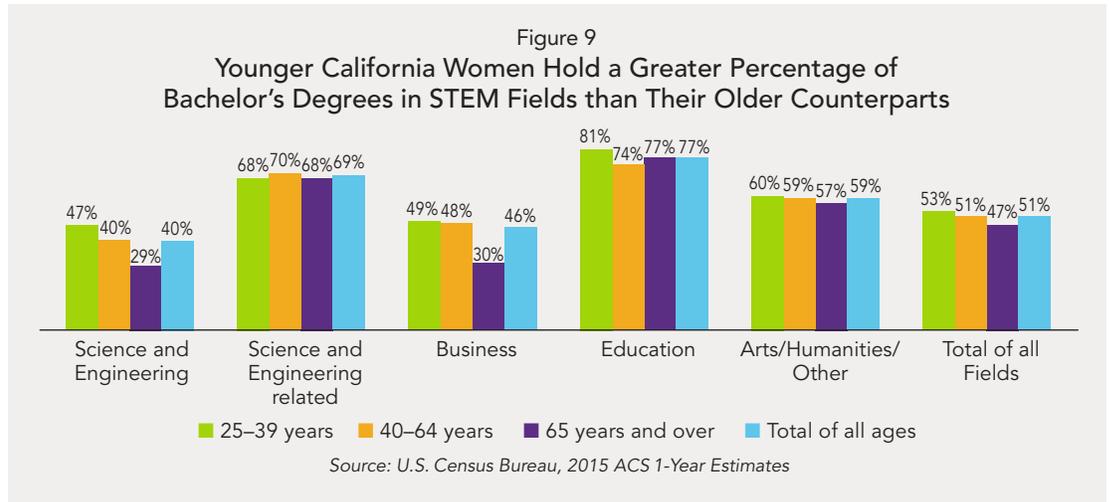
* Secondary calculation: Percent of degrees held by women = 100 (# degrees by women / # total degrees)

- Rounding calculated values. Each number extracted from Table S1502 has a margin of error associated with it. For example, Table S1502 shows the total number of California women and men holding a degree in science and engineering is 3,427,565 with a margin of error of 24,165; this margin of error is just under 1% of the published value. When published numbers with errors are used in a secondary calculation, the uncertainties propagate into the calculated value. The margins of error in each of the numbers in columns two and three range from just under 1% to 3%; the uncertainty in the calculated percent of degrees is the sum of the margins of error (expressed as a percent) in each number used to calculate it. In this case, each calculated percentage has an uncertainty arising from the margins of error of 2-4%. To indicate the certainty with which the calculated value is known, we round the value to the nearest whole number. These rounded values are reported in the first four columns of the bar graph shown in Figure 9, page 9, of the *2017 Report on the Status of Women and Girls in California*.™

The final table that appeared in our 2017 report using this data is below:

Proportion of Bachelor's Degrees Held by Women

While women hold more than half of all baccalaureate degrees, they hold less than half of the bachelor's degrees in science and engineering (40%) and in business (46%). However, the proportion of bachelor's degrees held by women in all fields has shifted over time.



Notice that several options during the search could be pursued to expand the question being researched. For example:

- Tables of data from different years could permit a view of trending data;
- Tables for racial/ethnic groups (unfortunately, not disaggregated by gender) could be used to highlight disparities among racial/ethnic groups; and
- A table with a detailed field of bachelor's degrees (also not gender-disaggregated) could be used to further explore STEM areas.

For More Information

Mount Saint Mary's University is the only women's university in Los Angeles, and has the oldest women's leadership program in the western United States. The University is recognized nationally for its data-driven approach to gender equity, and for playing a critical role as a convener for leadership trainings and discussions on timely issues affecting women and girls.

Launched in 2017, the Center for the Advancement of Women at Mount Saint Mary's builds upon these initiatives as a dedicated hub for our most impactful work. The Center provides an opportunity to deepen our research, expand our training support throughout the state, and amplify our advocacy work to improve the lives of women, girls and families.

Contact the Center:

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