

The sources of demographic information

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Outline

- Three basic demographic data sources
 - National censuses
 - Registration systems
 - Surveys

National censuses

- Total process of collecting, compiling, and publishing demographic, economic, and social data pertaining, at a specified time, to all persons in a country or delimited territory
- Purpose: obtain data about size, composition, and distribution of the population
 - Demographic characteristics: fertility, mortality, education, employment, economic, health...
 - Information on country of birth, citizenship, language, migration, ethnic heritage...



Origin and current status

- First censuses: ancient Egypt, China, and Rome
- First modern censuses in large countries
 - 1790 US census: 3.9 million people
 - Differentiated “free white” males by whether they were over or under the age of 16 to determine fiscal and military obligations of citizens
 - 1787 census of Kingdom of Spain: 10.4 million people
- 230+ countries completed a census by the end of the 2010 “census round” (2005–2014)
 - 96% of the world’s population
- Only 7 countries did not complete 2010 round
 - Eritrea, Iraq, Lebanon, Pakistan, Somalia, Uzbekistan, western Sahara



US decennial censuses

- They had short-form and long-form questionnaires until the 2000 censuses
- Since the 2010 census, only the questions from the short-form questionnaire were included in the census questionnaire
 - Name, sex, age, race, ethnicity, relationship, home ownership
- The long-form questionnaire was revised to comprise the major part of the American Community Survey (ACS)
- The census questions are filled by one person in every household and covers every person in the household

Use a blue or black pen.

Start here

The Census must count every person living in the United States on April 1, 2010.

Before you answer Question 1, count the people living in this house, apartment, or mobile home using our guidelines.

- Count all people, including babies, who live and sleep here most of the time.

The Census Bureau also conducts counts in institutions and other places, so:

- Do not count anyone living away either at college or in the Armed Forces.
- Do not count anyone in a nursing home, jail, prison, detention facility, etc., on April 1, 2010.
- Leave these people off your form, even if they will return to live here after they leave college, the nursing home, the military, jail, etc. Otherwise, they may be counted twice.

The Census must also include people without a permanent place to stay, so:

- If someone who has no permanent place to stay is staying here on April 1, 2010, count that person. Otherwise, he or she may be missed in the census.

1. How many people were living or staying in this house, apartment, or mobile home on April 1, 2010?

Number of people -

2. Were there any additional people staying here April 1, 2010 that you did not include in Question 1? Mark ☒ all that apply.

- ☐ Children, such as newborn babies or foster children
☐ Relatives, such as adult children, cousins, or in-laws
☐ Nonrelatives, such as roommates or live-in baby sitters
☐ People staying here temporarily
☐ No additional people

3. Is this house, apartment, or mobile home — Mark ☒ ONE box.

- ☐ Owned by you or someone in this household with a mortgage or loan? Include home equity loans.
☐ Owned by you or someone in this household free and clear (without a mortgage or loan)?
☐ Rented?
☐ Occupied without payment of rent?

4. What is your telephone number? We may call if we don't understand an answer.

Area Code + Number

- -

5. Please provide information for each person living here. Start with a person living here who owns or rents this house, apartment, or mobile home. If the owner or renter lives somewhere else, start with any adult living here. This will be Person 1.

What is Person 1's name? Print name below.

Last Name

First Name MI

6. What is Person 1's sex? Mark ☒ ONE box.

☐ Male ☐ Female

7. What is Person 1's age and what is Person 1's date of birth?

Please report babies as age 0 when the child is less than 1 year old. Print numbers in boxes.

Age on April 1, 2010 Month Day Year of birth

→ NOTE: Please answer BOTH Question 8 about Hispanic origin and Question 9 about race. For this census, Hispanic origins are not races.

8. Is Person 1 of Hispanic, Latino, or Spanish origin?

- ☐ No, not of Hispanic, Latino, or Spanish origin
☐ Yes, Mexican, Mexican Am., Chicano
☐ Yes, Puerto Rican
☐ Yes, Cuban
☐ Yes, another Hispanic, Latino, or Spanish origin — Print origin, for example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on. ☒

9. What is Person 1's race? Mark ☒ one or more boxes.

- ☐ White
☐ Black, African Am., or Negro
☐ American Indian or Alaska Native — Print name of enrolled or principal tribe. ☒

- ☐ Asian Indian ☐ Japanese ☐ Native Hawaiian
☐ Chinese ☐ Korean ☐ Guamanian or Chamorro
☐ Filipino ☐ Vietnamese ☐ Samoan
☐ Other Asian — Print race, for example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on. ☒ ☐ Other Pacific Islander — Print race, for example, Fijian, Tongan, and so on. ☒

- ☐ Some other race — Print race. ☒

10. Does Person 1 sometimes live or stay somewhere else?

☐ No ☐ Yes — Mark ☒ all that apply.

- ☐ In college housing ☐ For child custody
☐ In the military ☐ In jail or prison
☐ At a seasonal or second residence ☐ In a nursing home
☐ For another reason

→ If more people were counted in Question 1, continue with Person 2.



De jure vs. de facto

- De jure (e.g. U.S., Canada): counts persons based on their “usual”/“normal” place of residence
- De facto: counts persons based on their location on the day of the census
- De facto censuses are more common



Justification for censuses

- Utilization
 - Data for public policy
 - Data for crime/death rates, per capita income...
 - Market analyses by private businesses
 - Estimation of cohabiting households, as well as same-sex households
- Principal reason/justification for censuses written in the US Constitution
 - Provide population counts of population to be used for apportionment of the House of Representatives



Gerrymandering

- Issue of political gerrymandering
 - State legislatures draw congressional districts boundaries to favor one party
- Gerrymandering is against the law
 - Unless topography gets in the way, districts are supposed to be contiguous regions
- Using data from the US Census Bureau, Alasdair Rae, a geographer and urban planner at Sheffield University, built maps of all 435 congressional districts



North Carolina

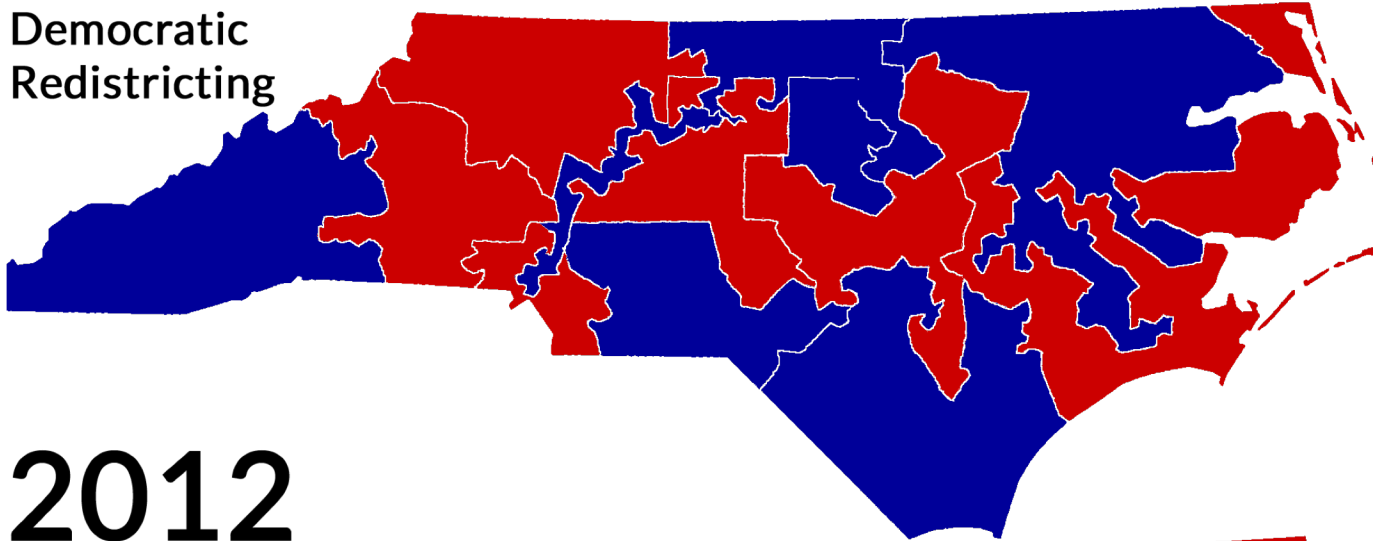
- In 2016, North Carolina lawmakers have been ordered by a US federal court to redraw 28 state House and Senate districts
 - State's legislative map was considered an unconstitutional racial gerrymander
 - Republican-drawn legislative map had illegally packed African-American and Hispanic voters into a few districts
 - In 2010, Democrats won popular vote and a 7 to 6 majority in the state's House delegation
 - In 2012, Democrats won popular vote, but a racially gerrymandered map allowed Republicans to win a 9 to 4 majority



North Carolina

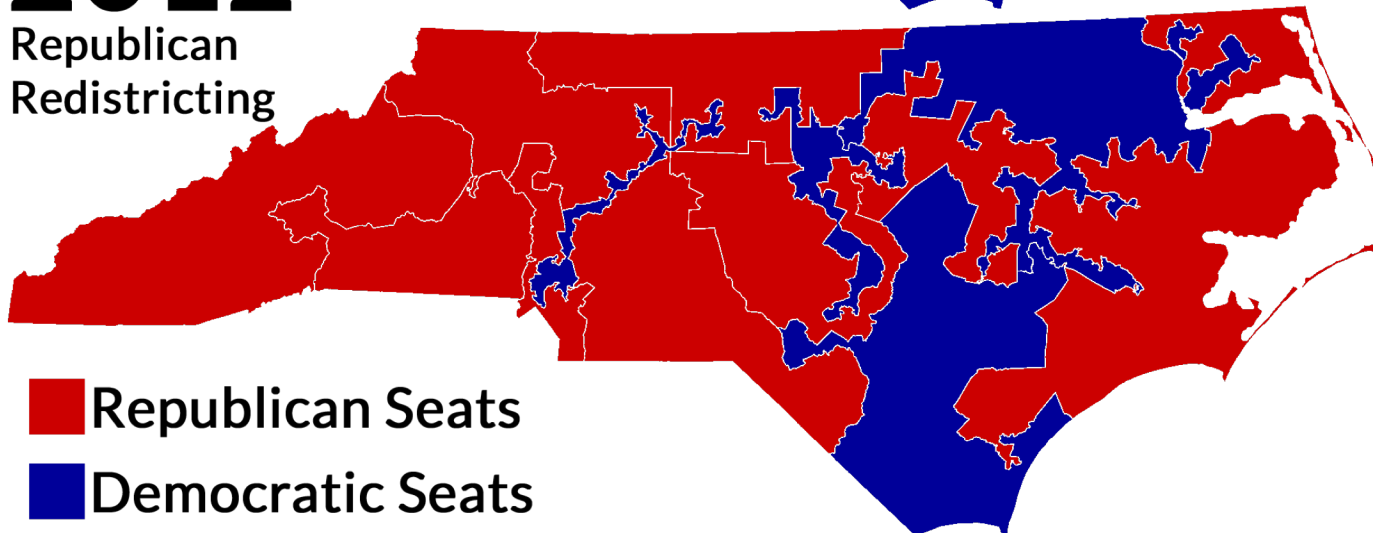
2010

Democratic
Redistricting



2012

Republican
Redistricting



■ Republican Seats
■ Democratic Seats



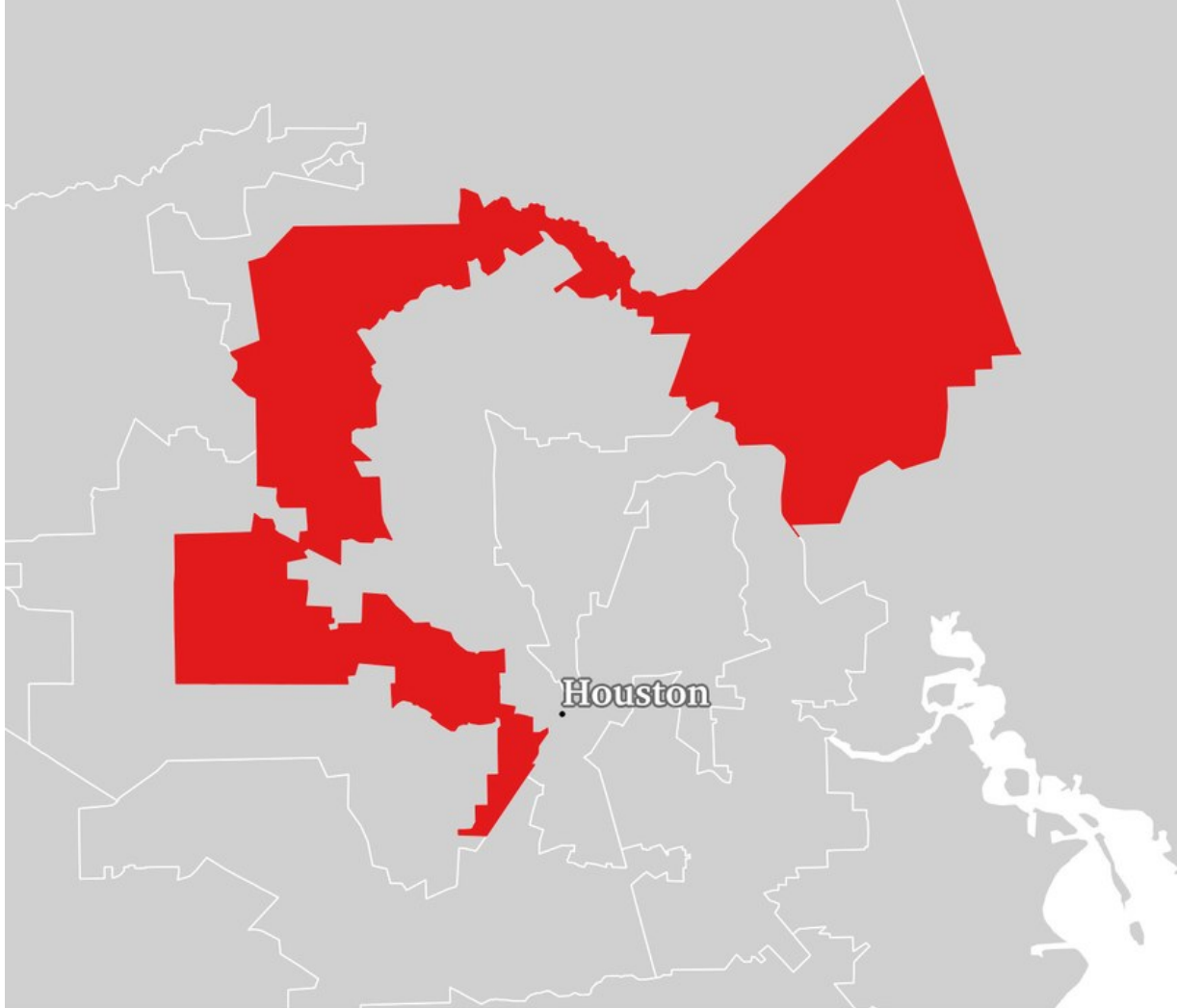
North Carolina

The Evolution of North Carolina's 12th Congressional District



Texas

District: Texas (02)



114th Congress

Rep: Ted Poe

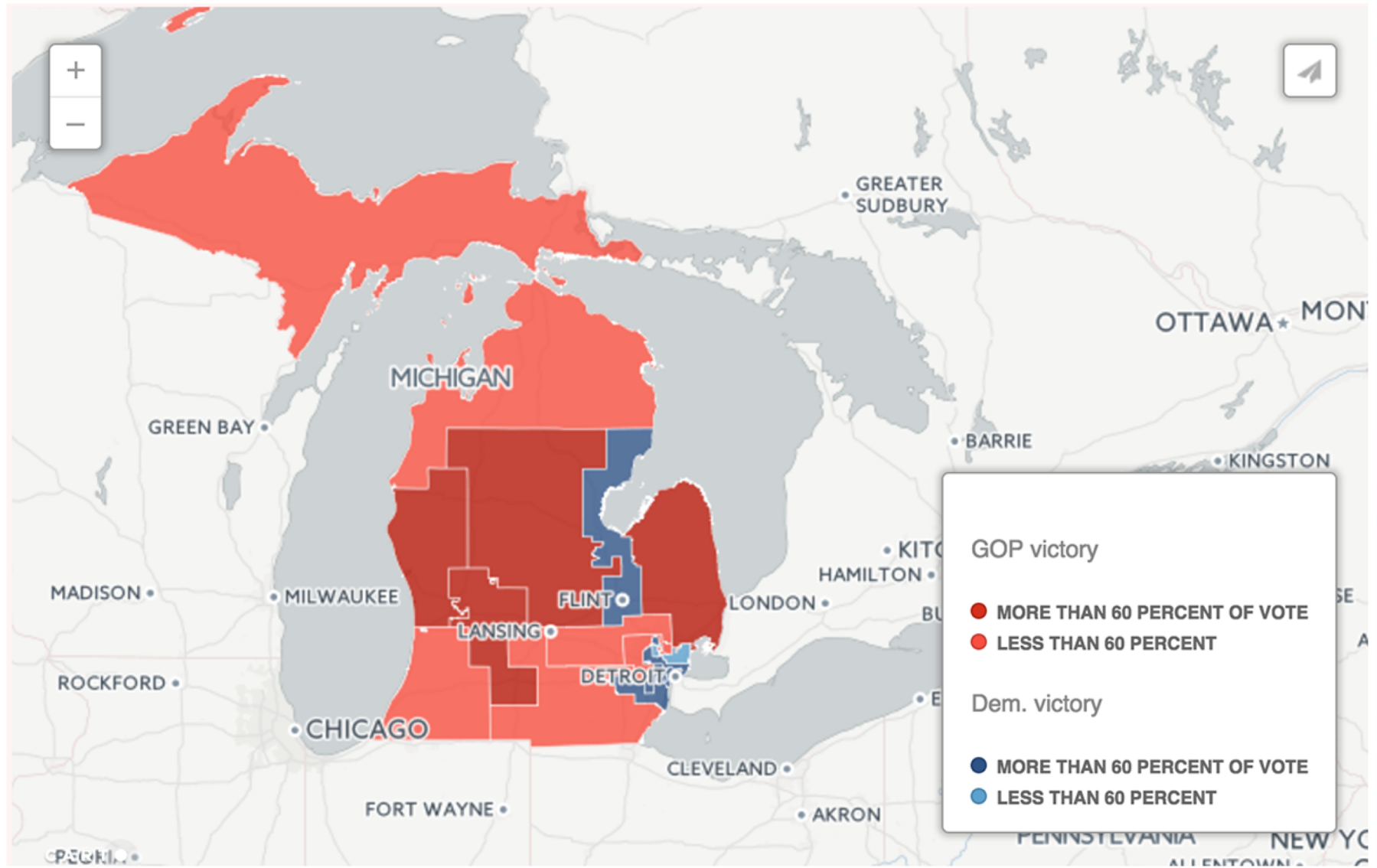
Party: Republican

Data source: USGS
http://nationalmap.gov/small_scale/mld/cgd114p.html

Mapping: Alasdair Rae, University of Sheffield



Michigan



Registration systems

- Population register: national list of persons with their names, addresses, dates of birth, and personal identification numbers
- Vital statistics: data from civil registration systems, as well as from actual records of vital events



Accuracy worldwide

- Births
 - 57 million unregistered babies in 2012 (UNICEF, 2013)
 - The percentage of children under age five
 - 230 million unregistered children (UNICEF, 2013)
 - 90% are registered in industrialized countries
 - Less than 20% are registered in sub-Saharan Africa
- Deaths
 - Only 25% of the world population lives in countries with 90% or more of deaths registered (usually high-income countries)



Legal authority

- Vital records were responsibilities of the clergy in 17th century England
 - This practice was followed by the English colonies in North America
- Individual US states are now the legal authorities
 - All US states had birth and death records on file by 1919
- US Registration Areas established
 - Death Registration Area (1900), Birth Registration Area (1915), National Registration Areas for Marriages (1957) and Divorces (1958)
- Birth and death data are sent by the states to the National Center for Health Statistics who compiles the data for the U.S.



Birth and death certificates

- Birth certificates
 - Names and ages of parents, their occupations, and sometimes levels of education
 - Filled out by physician, midwife, mother, or father
- Death certificates
 - The decedent's age, occupation, place of death, and cause of death
 - Filled out by funeral homes, with personal information about the decedent provided by surviving family members, physician, or coroner



Registered events

- **Fetal deaths:** Disappearance of life prior to live birth, which include miscarriages, abortions, stillbirths
- **Miscarriages:** Spontaneous or accidental termination of fetal life that occurs early in pregnancy
- **Abortions:** Premature expulsion of a fetus, spontaneous or induced, at a time before it is viable of sustaining life
- **Stillbirths:** Late fetal death of 20–28 weeks or more of gestation
- **Deaths:** Permanent disappearance of all evidence of life at any time after a live birth has taken place
- **Births:** Extraction from its mother of a product of conception, which breathes or shows any evidence of life

Censuses versus registrations

	Census	Registration
Contents	Cross-sectional portrayal of the size, composition, and distribution	Demographic events (principally births and deaths) measured as they occur
Characteristic	Static	Dynamic and continuous
Authority (U.S.)	Federal government	State government
De jure/de facto (U.S.)	De jure	De jure



Inferential statistics

- Social scientists need inferential statistics
 - They almost never have the resources or time to collect data from every case in a population
- Inferential statistics uses data from samples to make generalizations about populations
 - **Population** is the total collection of all cases in which the researcher is interested (census)
 - **Samples** are carefully chosen subsets of the population
- With proper techniques, generalizations based on samples can represent populations



Surveys

- Required for the collection of more detailed demographic information that is not contained on censuses and registers
- Extensive kinds of information available through sample surveys
- Some examples...



Demographic and Health Surveys

- 260 sample surveys in 90 developing countries since 1984 every five years
- Data on fertility, population, health, and nutrition
- Interim surveys between DHS rounds
- Provide demographic information previously unknown about developing countries
- Total fertility rate, contraceptive use, child mortality rate...



Examples of fertility surveys

- World Fertility Surveys (WFS)
 - Coordinated cross-national fertility surveys between 1974 and 1986
 - Data on reproductive behavior and related social and psychological indicators in 62 countries, about 40% of the world's population
- Other fertility surveys
 - Focus on a single country or community
 - Examples: European Fertility Project, surveys of family and reproductive behavior in Puerto Rico and Mexico



U.S. federal government surveys

- American Community Survey (ACS)
- Current Population Survey (CPS)
- National Survey of Family Growth (NSFG)
- National Longitudinal Study of Adolescent to Adult Health (Add Health)



American Community Survey

- Redesigned from the census long-form questionnaire to be a “continuous measurement” survey in the late 1990s
- Conducted every year in all counties in the U.S. and Puerto Rico
- Purpose: collect economic, demographic, housing data
- Sample
 - Communities with 65,000 and more population: receive data estimates every year since 2006
 - Communities with 20,000 to 64,999: receive data each year based on three-year estimates since 2008
 - Communities with less than 20,000: receives data each year based on five-year estimates since 2010
- ACS sample had 3.54 million housing unit addresses in 2013

Current Population Survey

- Monthly nationwide survey sponsored by the US Bureau of the Census and US Bureau of Labor Statistics
- Purpose: collect labor force data about the civilian non-institutional population
- Sample: 14 years of age and older in around 60,000 households
- Basic labor force questions, census-type questions, and supplementary questions



National Survey of Family Growth

- A nationally representative multistage survey conducted on a continuous basis
- Sample: male and female respondents between the ages of 15 and 44
- Purpose: collect data on family life, marriage, divorce, pregnancy, infertility, contraception, and men's and women's health
- Audio Computer-Assisted Self-Interviewing (ACASI) for sensitive topics, such as sexuality



Add Health

- National Longitudinal Study of Adolescent to Adult Health (Add Health)
- Started by Professor J. Richard Udry in the early 1990s
- Sample: adolescents in grades 7–12 in the U.S. in 1994–1995
- Four follow-up interviews with the adolescent cohort transitioning into young adulthood, the last occurring in 2008



References

Poston DL, Bouvier LF. 2017. Population and Society: An Introduction to Demography. New York: Cambridge University Press. 2nd edition. Chapter 3 (pp. 35–58).

Weeks JR. 2015. Population: An Introduction to Concepts and Issues. Boston: Cengage Learning. 12th edition. Chapter 4.



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