

Population Change

Eungang (Peter) Choi

11/15/2018

1 Introduction

2 Fertility

3 Mortality

4 Migration

5 Wrap Up

Introduction

Why am I interested in population Change?

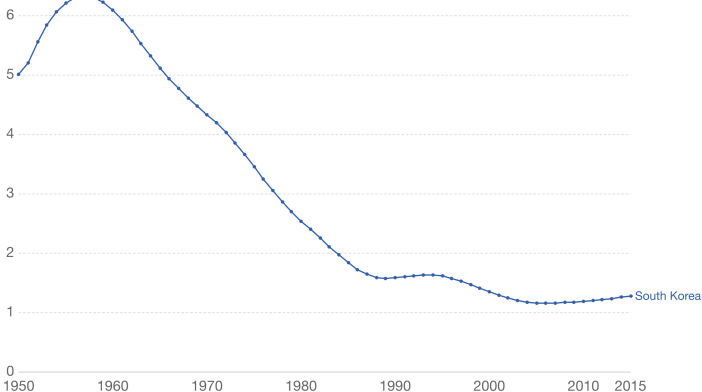
South Korea

- rapid population change
 - aging
 - decline

What it looks like

Children per woman

Shown is the 'total fertility rate' (TFR). The TFR is the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year.



Source: UN Population Division (2017 Revision)

[OurWorldInData.org/fertility-rate](https://ourworldindata.org/fertility-rate) • CC BY-SA

Whats happening?

- **Low fertility** - having less babies
- **Increased life expectancy** - living longer, longevity
- **Aging population** - smaller proportions of younger age groups, larger proportions of older age groups

Problems

- working population
- pensions
- industry and market
- schools, teachers
- so many more. . .

My interests

- Fertility
- Aging society
- Computational methods

What is Demography?

- scientific study of population
- population growth and decline
- measurement, projections, explanation

What determines population change?

- 1 Fertility
- 2 Mortality
- 3 Migration

$$\textit{Population} = \textit{Fertility} - \textit{Mortality} \pm \textit{Migration}$$

Fertility

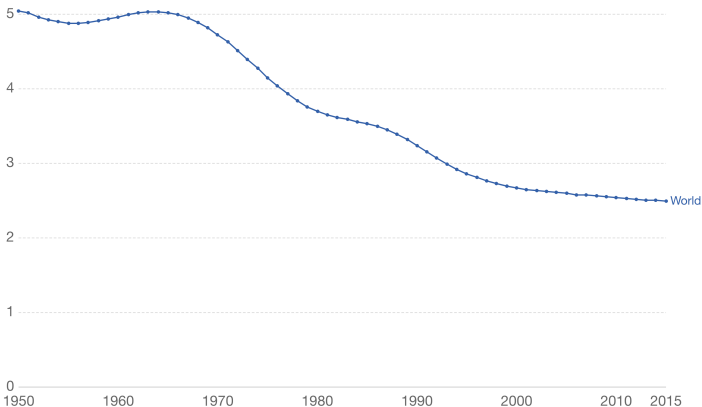
Fertility

- people's reproductive behavior
- number of births within a population
- factors impacting fertility:
 - fecundity: biologically being able to give birth (15-45, 15-50)
 - contraception
 - abortion
 - family

Fertility Trends

Children per woman

Shown is the 'total fertility rate' (TFR). The TFR is the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year.



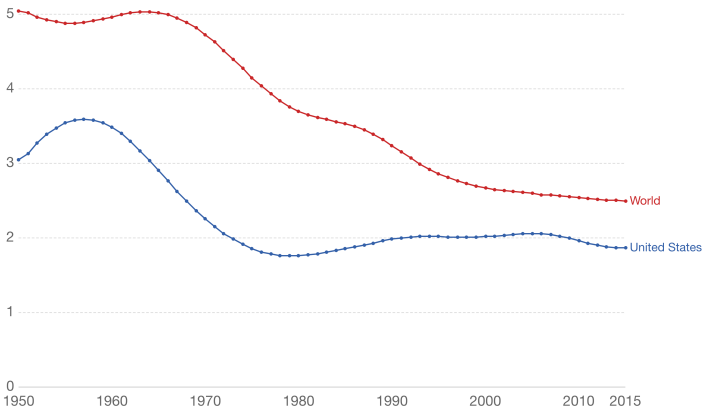
Source: UN Population Division (2017 Revision)

[OurWorldInData.org/fertility-rate](https://ourworldindata.org/fertility-rate) • CC BY-SA

Fertility Trends

Children per woman

Shown is the 'total fertility rate' (TFR). The TFR is the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year.



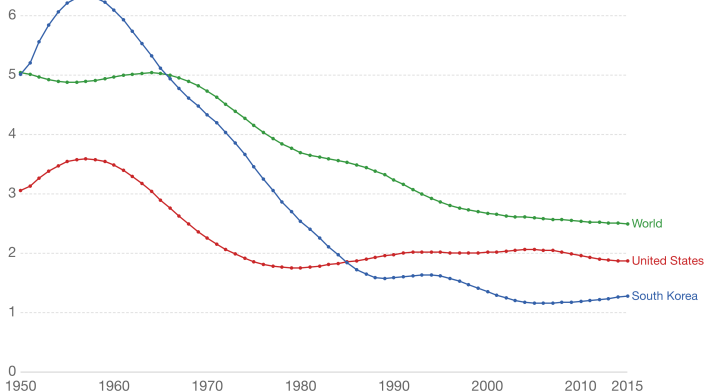
Source: UN Population Division (2017 Revision)

OurWorldInData.org/fertility-rate • CC BY-SA

Fertility Trends

Children per woman

Shown is the 'total fertility rate' (TFR). The TFR is the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year.



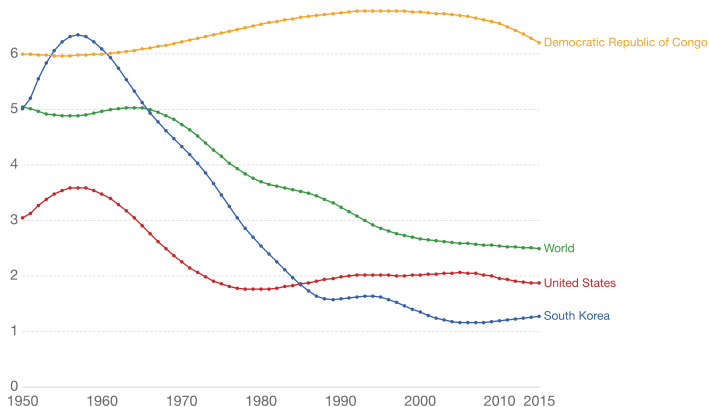
Source: UN Population Division (2017 Revision)

[OurWorldInData.org/fertility-rate](https://ourworldindata.org/fertility-rate) • CC BY-SA

Fertility Trends

Children per woman

Shown is the 'total fertility rate' (TFR). The TFR is the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year.



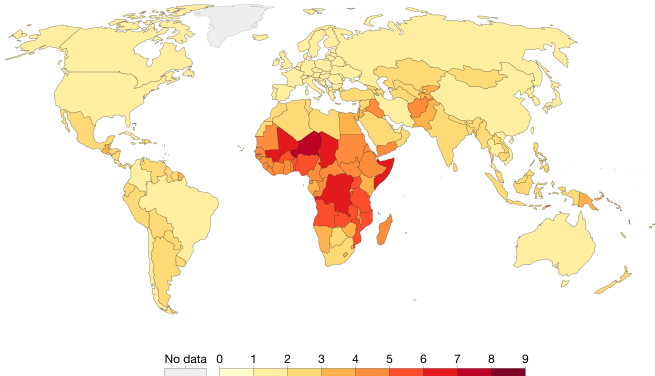
Source: UN Population Division (2017 Revision)

OurWorldInData.org/fertility-rate • CC BY-SA

World Fertility

Children per woman, 2015

Shown is the 'total fertility rate' (TFR). The TFR is the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year.



Source: UN Population Division (2017 Revision)

OurWorldInData.org/fertility-rate • CC BY-SA

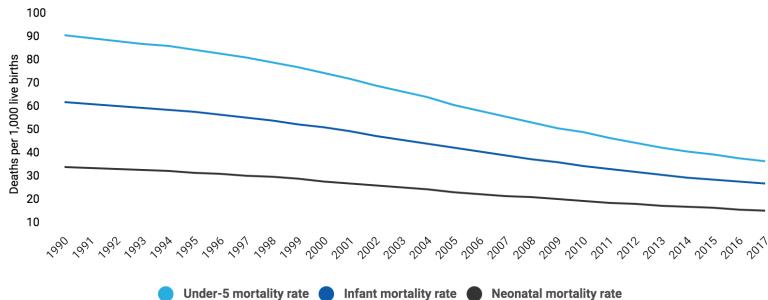
Mortality

Mortality

- deaths within a population
- life expectancy: “number of years an individual can be expected to live”
- child mortality (Under 5 Mortality)
 - UN SDG (Sustainable Development Goal) #3
 - reduce **neonatal** mortality to at least 12 per 1,000 live births and
 - under-5 mortality to at least as low as 25 per 1,000 live births

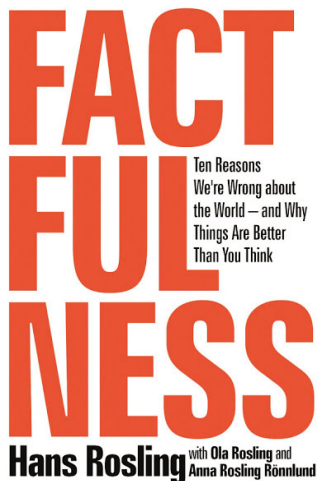
U5MR

Global under-five, infant and neonatal mortality rates, 1990-2017



Source: United Nations Inter-agency Group for Child Mortality Estimation (UN IGME) 2018

Trends in life expectancy and income



- Hans Rosling
- Short Clip

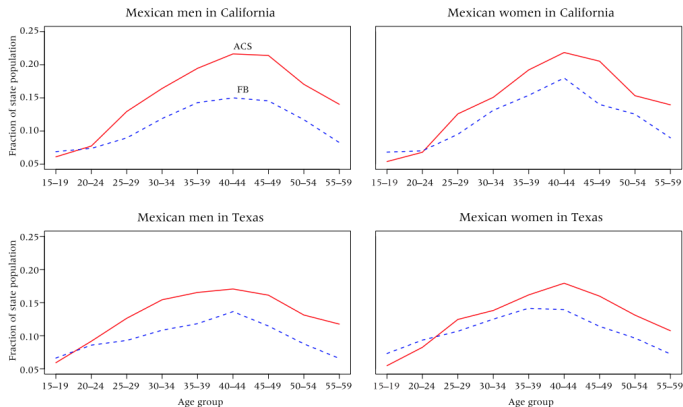
Migration

Migration

- Migration is not related to a biological event
- Two types of migration:
 - Immigration (In-migration)
 - Emigration (Out-migration)
- Measurement problems
 - continuing process (when do we measure?)
 - involves two or more countries

Facebook data to measure migrants (Zagheni, Weber and Gummadi 2017)

FIGURE 3 Facebook and ACS profiles of stocks of migrants by age and sex for Mexicans in California and in Texas



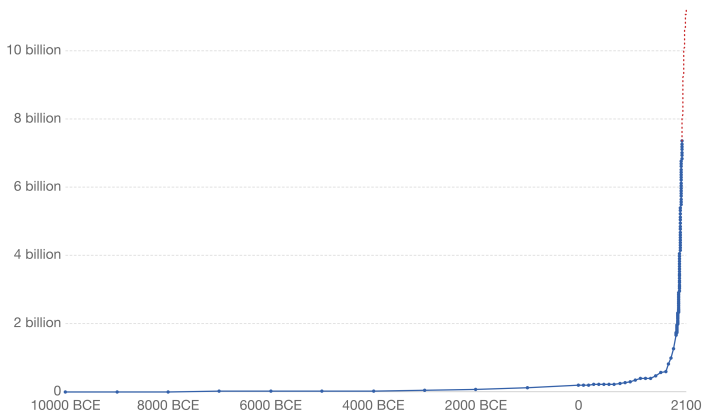
SOURCES: American Community Survey (ACS 2014); Facebook Adverts Manager.

Wrap Up

Why is population change important?

World Population over the last 12,000 years and UN projection until 2100

Our World
in Data



Source: World Population over 12000 years - various sources (2016), Medium Projection - UN Population Division (2015 revision)
OurWorldInData.org/world-population-growth/ • CC BY-SA

- How is what you are studying impacting the population?
- How will that change the future?

Thank You