

KOSTAT-UNFPA Summer Seminar on Population

Workshop 1: Demographic Analysis: Methods and Tools in R

# Population Growth

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Instructor: Tim Riffe

Assistant: Inchan Hwang



Universidad  
del País Vasco



Euskal Herriko  
Unibertsitatea

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Statistics  
Korea



# Workshop plan, July 1-5, 2024

- |                    |                             |
|--------------------|-----------------------------|
| 1: Monday          | Intro concepts, and R setup |
| 2: Tuesday         | Mortality and fertility     |
| 3: Wednesday       | Structure                   |
| <b>4: Thursday</b> | <b>Growth</b>               |
| 5: Friday          | Projection                  |

# Review of session 3

- Structure to separate risk groups (e.g. age for mortality)
- Proxy structure
- Transient structure versus strata
- Composition can drive aggregate change
- Structure can change its meaning (examples: old age dependency, changing meaning of education)
- `pivot_longer()`, `group_by()` |> `summarize()`
- Composed pipelines
- `facet_wrap()`, `facet_grid()`, `overlaying`

# Growth

- Empirical growth
- Stationarity and Stability
- Structure vs size
- Speedometers
- Model abuse

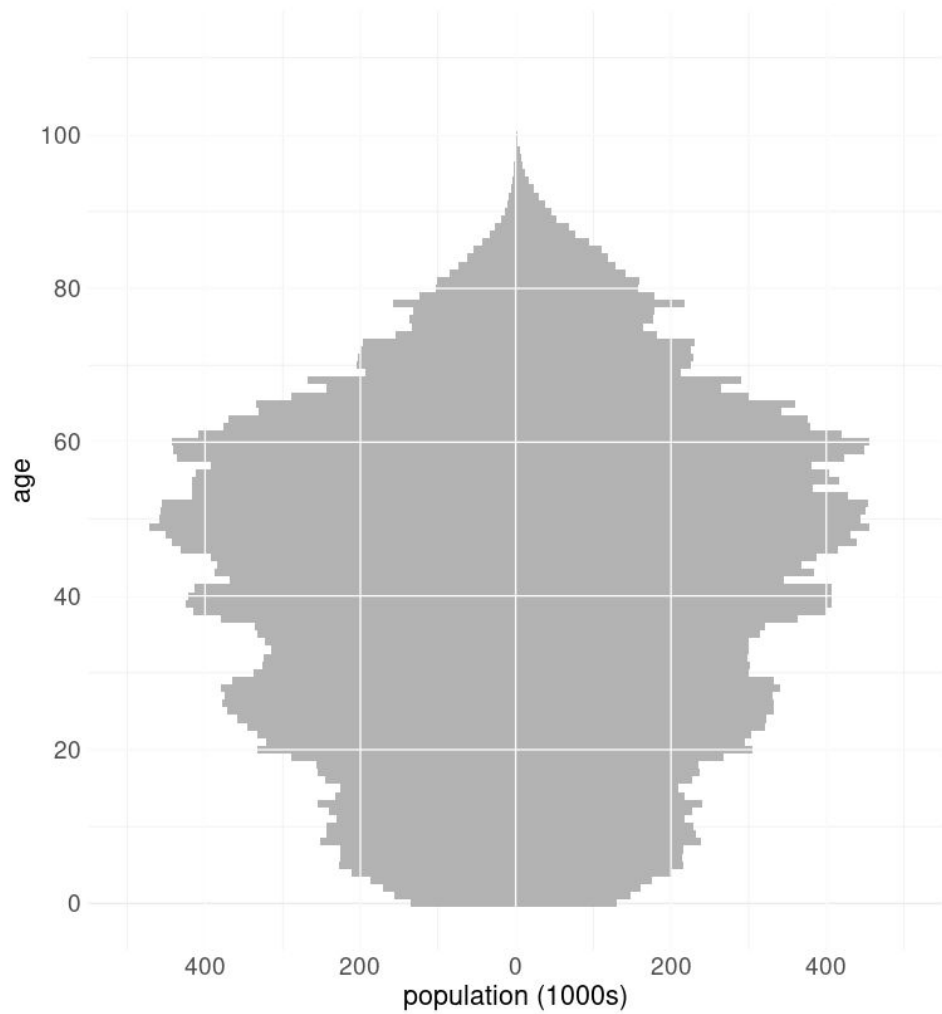
# Empirical growth

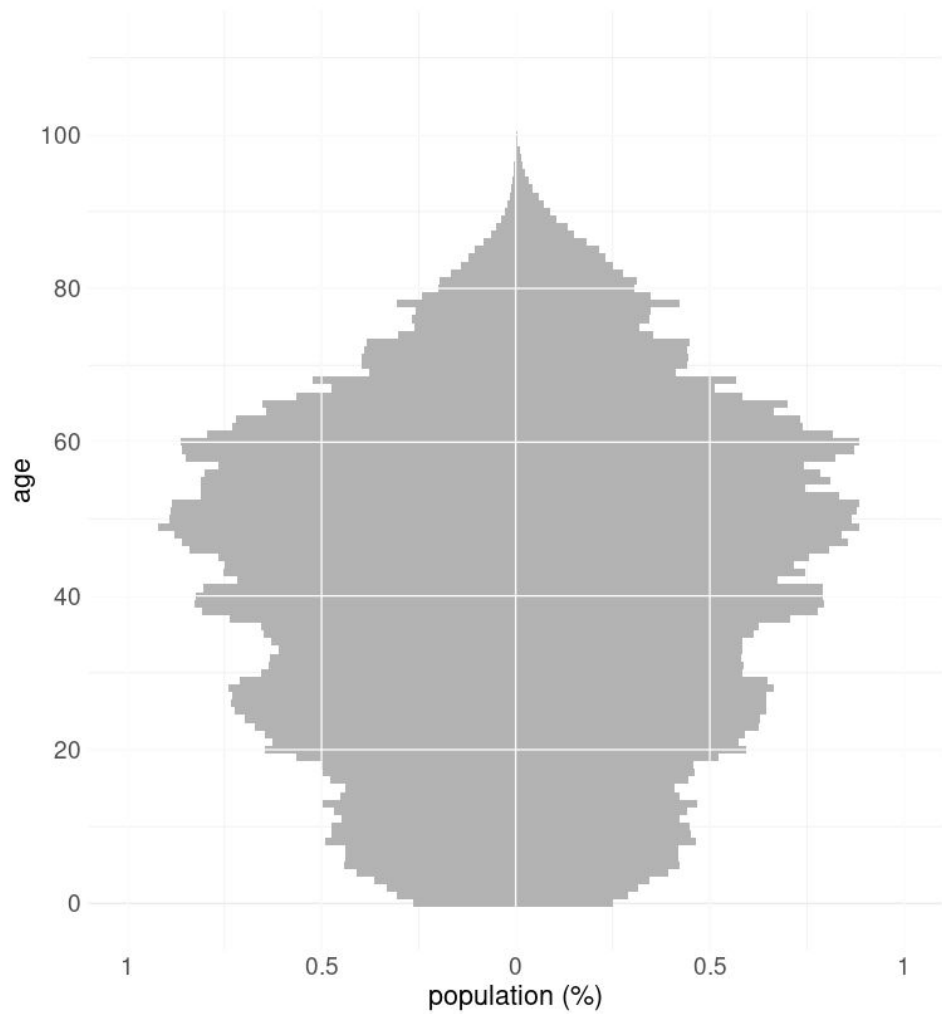
- Geometric

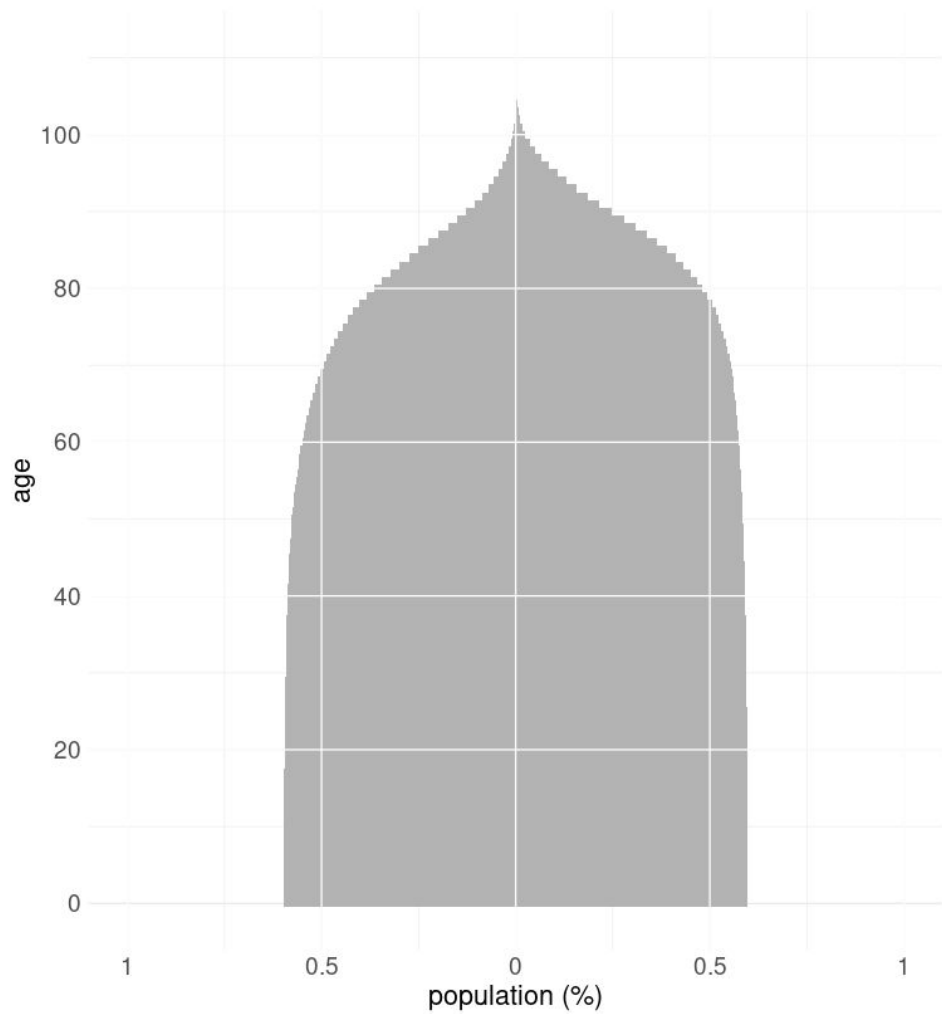
$$r = \frac{N(T) - N(0)}{N(0)} \frac{1}{T}$$

- Exponential

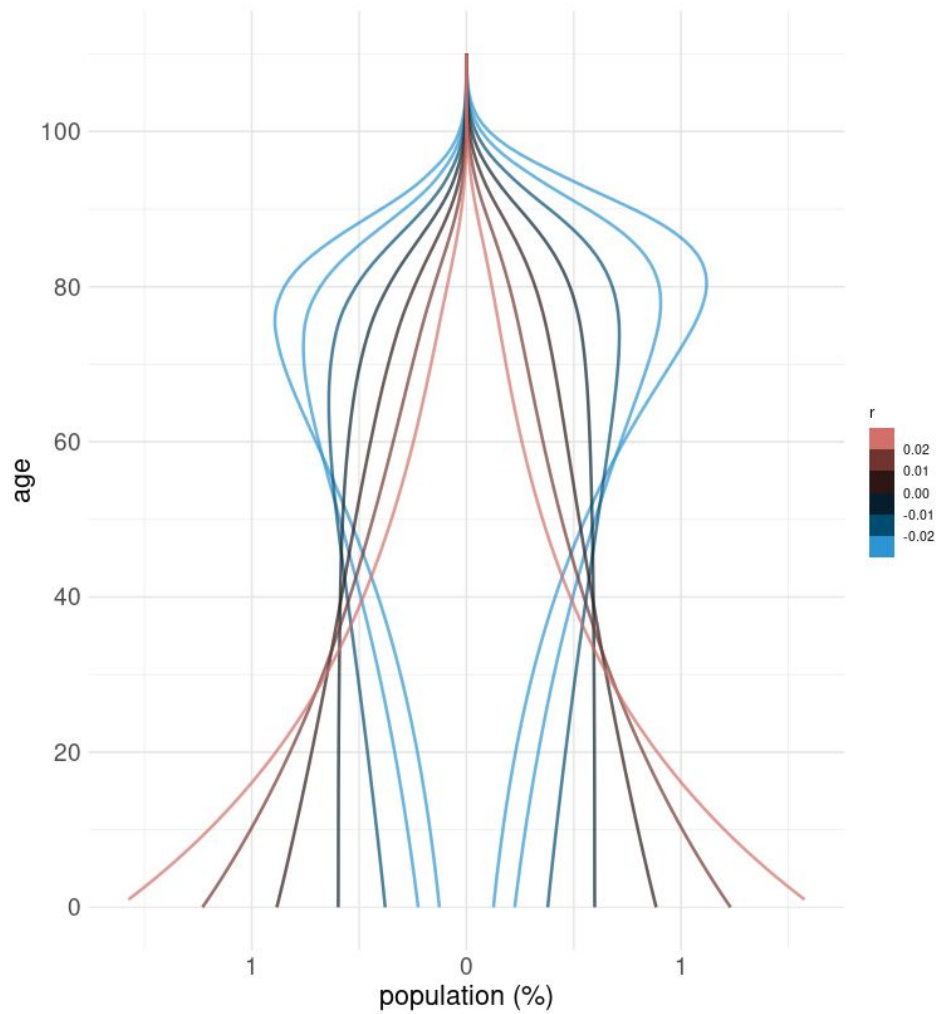
$$r = \frac{\ln\left(\frac{N(T)}{N(0)}\right)}{T}$$











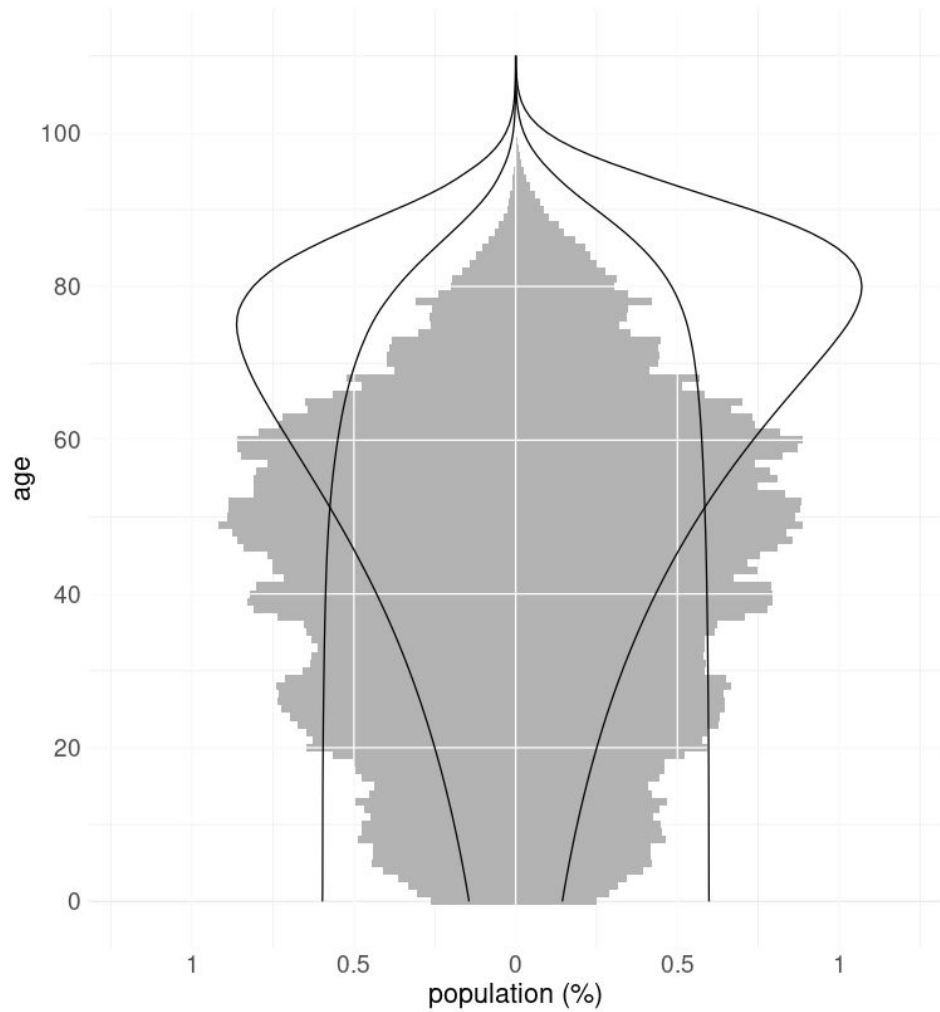




Photo:  
Riccardo Pierri

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REPORT



# Is low fertility really a problem? Population aging, dependency, and consumption

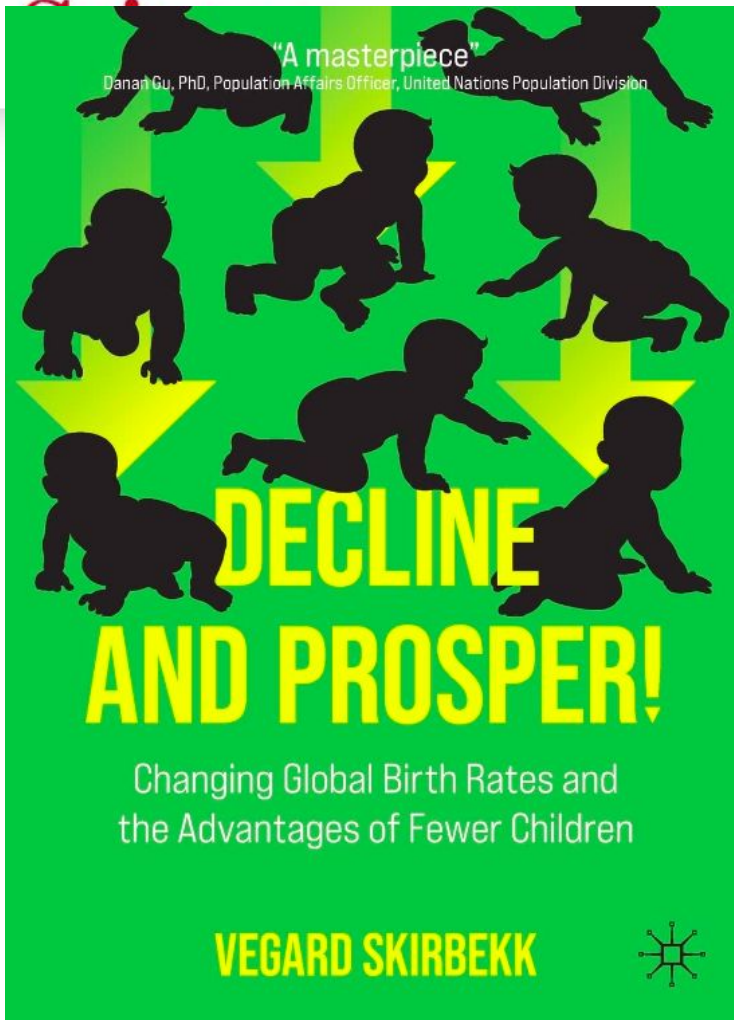
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+47 authors

[Authors Info & Affiliations](#)

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REALLY A PROBLEM? POPULATION AGING, DEPENDENCY, AND CONSUMPTION



# problem? Population aging, de- nption

DONALD LEE, ANDREW MASON, EUGENIA AMPORFU, CHONG-BUM AN, LUIS ROSERO BIXBY, JORGE BRAVO

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