
Review: Human Capital and Education in Asia

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The Asian Demographic Research Institute,
Shanghai University
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ADRI

ASIAN DEMOGRAPHIC RESEARCH INSTITUTE
上海大学亚洲人口研究中心暨人口研究所

Factors defining well-being – *Stiglitz, Sen and Fitoussi (2009)*

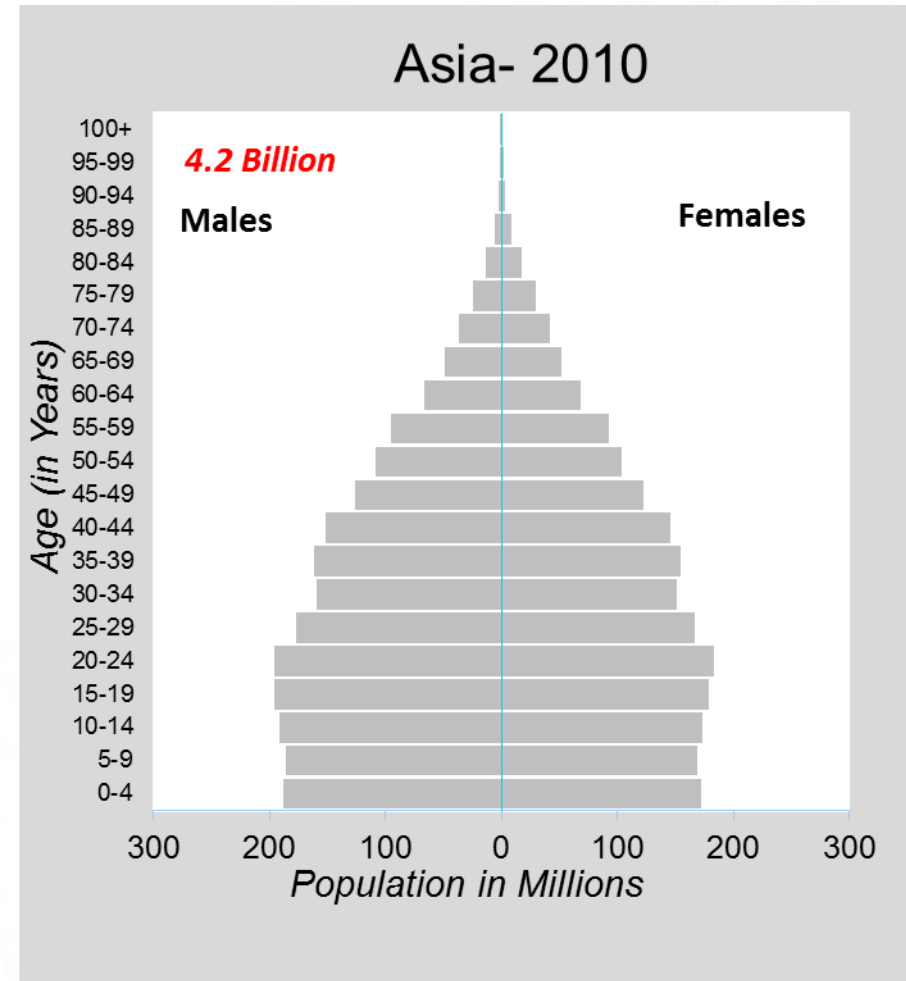
- Material living standards (income, consumption and wealth)
- Health
- **Education**
- Personal activities including work
- Political voice and governance
- Social connections and relationships
- Environment (present and future conditions), and
- Insecurity, of an economic as well as physical nature
- In addition, **the freedom of opportunity and sustainability** of such well-being should be measured as well.
- **objective** (10 groups) and **subjective** well-being (3 groups)
- “Should be assessed not independently but should be **linked and correlated** to other factors of well-being and inequality in terms of individuals, **socio-economic groups, gender, and generations**”

Measuring Human Capital

- Economists define Human capital as
 - the productive potential of a society - capturing the input in terms of labor
 - the number of working age individuals in a society according to their skill levels
- Skills are difficult to measure directly
- The highest level of educational attainment often taken as a proxy for skills
- The **stock** of educated adult people,
 - recent **flows** for younger adults and
 - past flows for older adults.
- But the **quality** (the general knowledge and cognitive skills people actually have), **content**, and direction of education also matter
- **Health** an important component of Human Capital

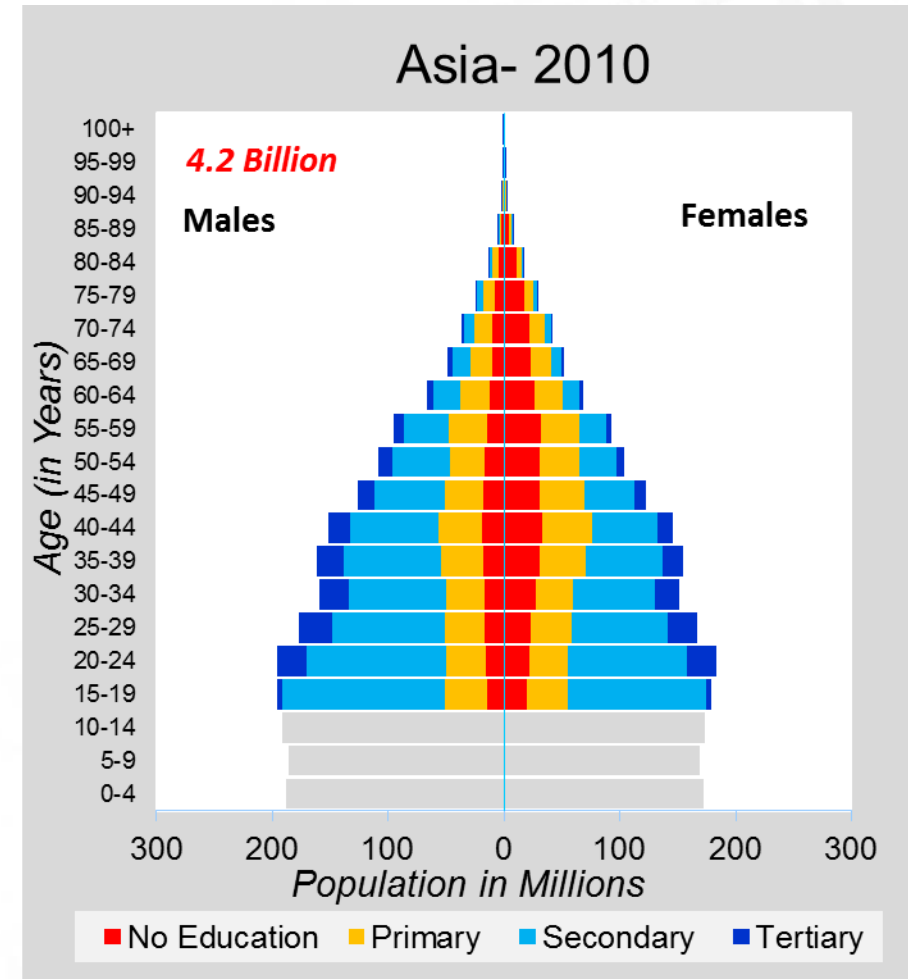
In demography, the pervasive demographic differentials by level of education matter greatly for population dynamics

- Differentials by age, sex, and place of residence
- Demographic behaviors (e.g. fertility, mortality, migration etc.)
- Other socio-economic behaviors
- Data availability
- Methodology



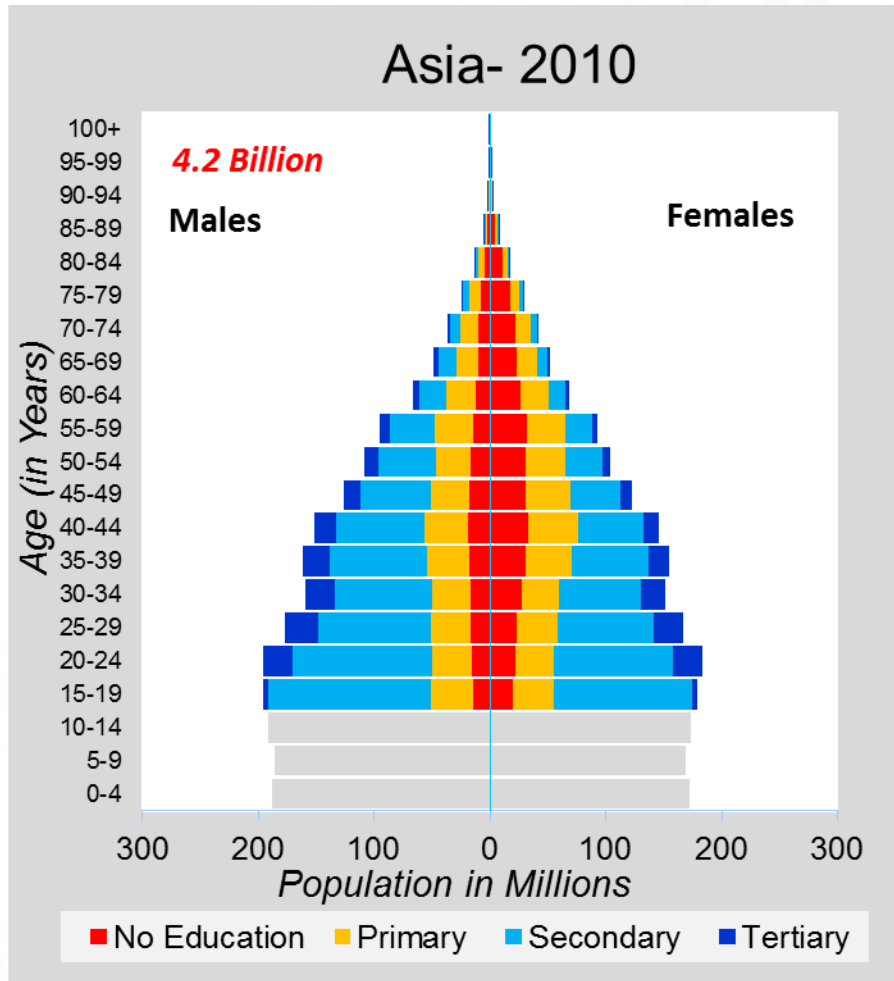
... adding education

- Almost universally, women with higher levels of education have **fewer children**.
- Better education is associated with **lower mortality, better health**, and **different migration patterns**.
- Hence, the global population outlook **depends greatly on further progress in education**, particularly of young women



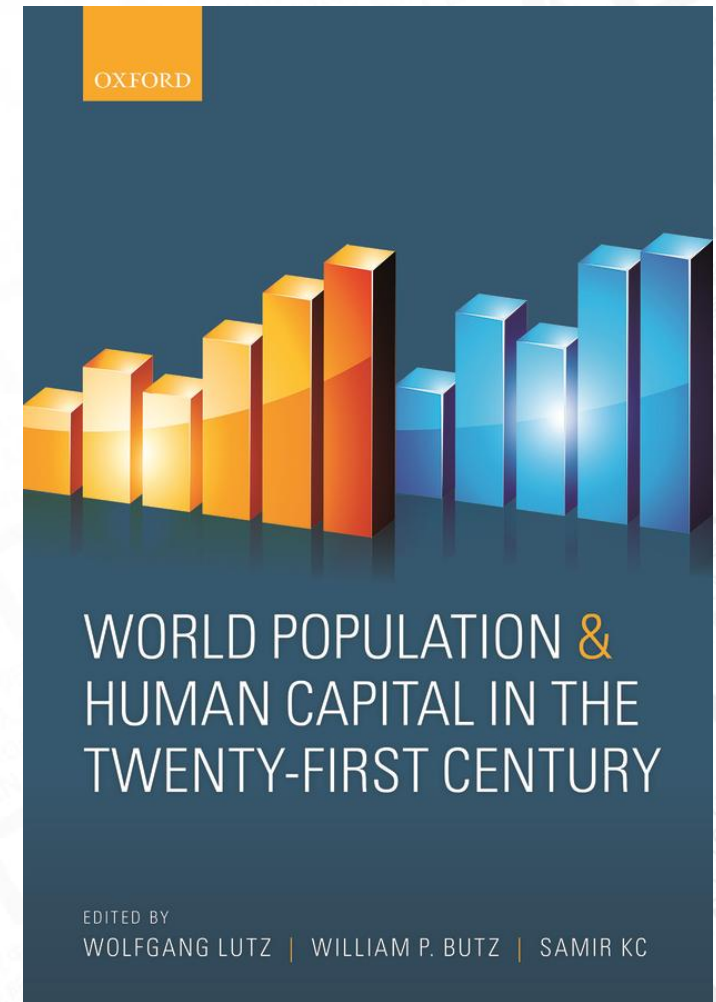
... adding education

- Data by education not readily available or reported
 - But can be estimated as education is often recorded
- Methods of projections are developed
 - Multi-dimensional (Multi-state) projection models



... adding education

- **“Reconstruction of populations by age, sex and level of educational attainment for 120 countries for 1970-2000”**. W. Lutz, A. Goujon, S. KC, W. Sanderson, Vienna Yrbk. Popul. Res. 2007, 193 (2007)
- **“Projection of populations by level of educational attainment, age, and sex for 120 countries for 2005-2050”**. S. KC, B. Barakat, A. Goujon, V. Skirbekk, W. Sanderson, W. Lutz, Demogr. Res. 22, 383 (2010).
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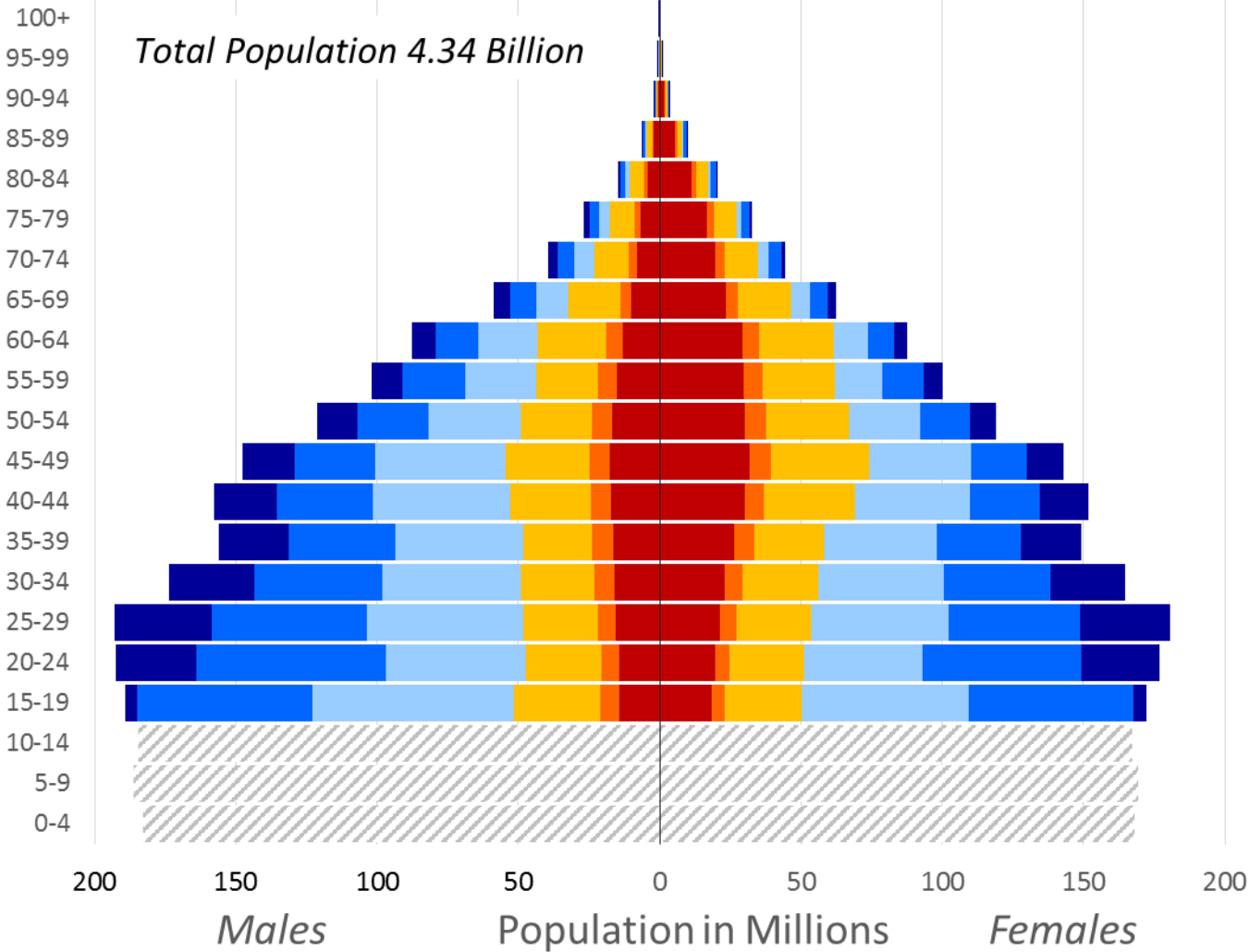


“A Harmonized dataset on global educational attainment between 1970 and 2060 – an analytical window into recent trends and future prospects in human capital development”. Anne Goujon, KC Samir et al. Journal of Demographic Economics, 82, 3 (2016)

Education in Asia

- Education has centuries long tradition and held in high esteem
- until recently formal education was mostly restricted to small segments of the population
- Historically, Brahmanic, Confucian, and Madrasah education
- Later, influenced by colonizing forces or influences from the West.
 - Japan, American style education during the Meiji period which then spread to Korea and China
 - In South Asia, the British introduced Western education.
 - In Central Asia there was considerable Russian influence.
- Only fragmentary statistical information before the 1960s
- For more recent history the statistical information is much richer
- 1970-2010, reconstruction of population by age, sex, and education (WiC)

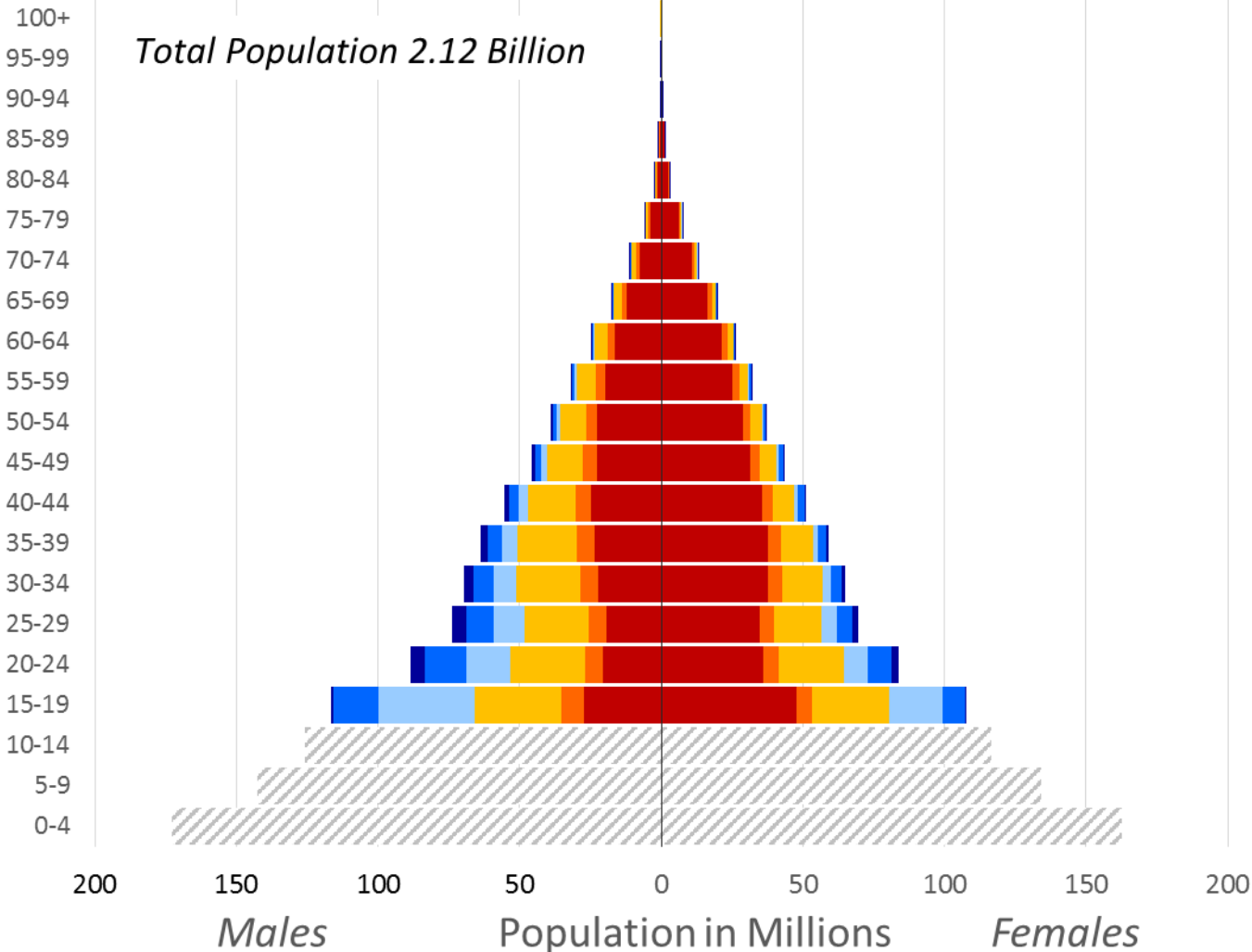
Asia-2015



- Pop <15 yrs
- No Education
- Incomplete Primary
- Primary
- Lower Secondary
- Upper Secondary
- Post Secondary

Source: Wittgenstein Center, 2014

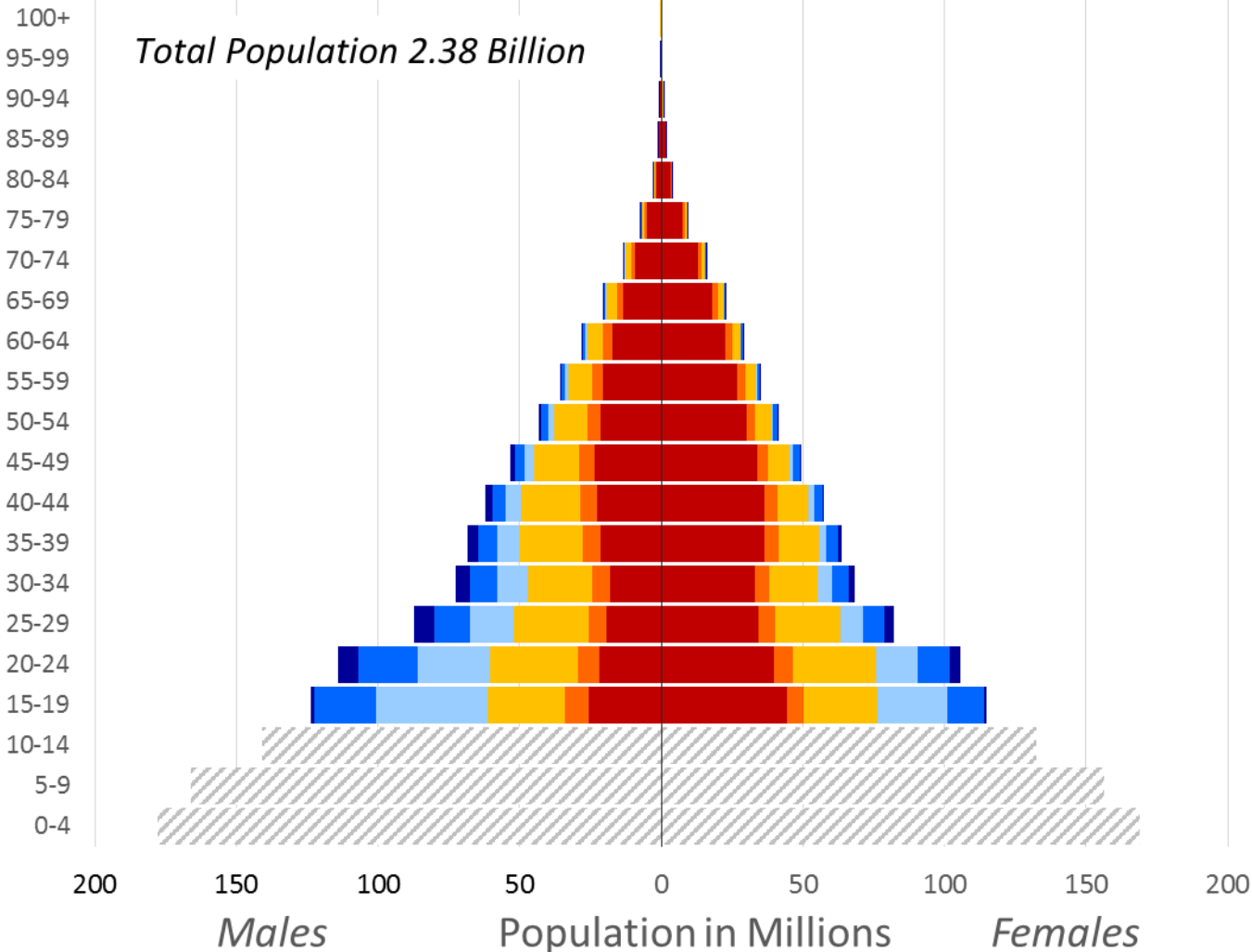
Asia-1970



- Pop <15 yrs
- No Education
- Incomplete Primary
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- Lower Secondary
- Upper Secondary
- Post Secondary

Source: Wittgenstein Center, 2014

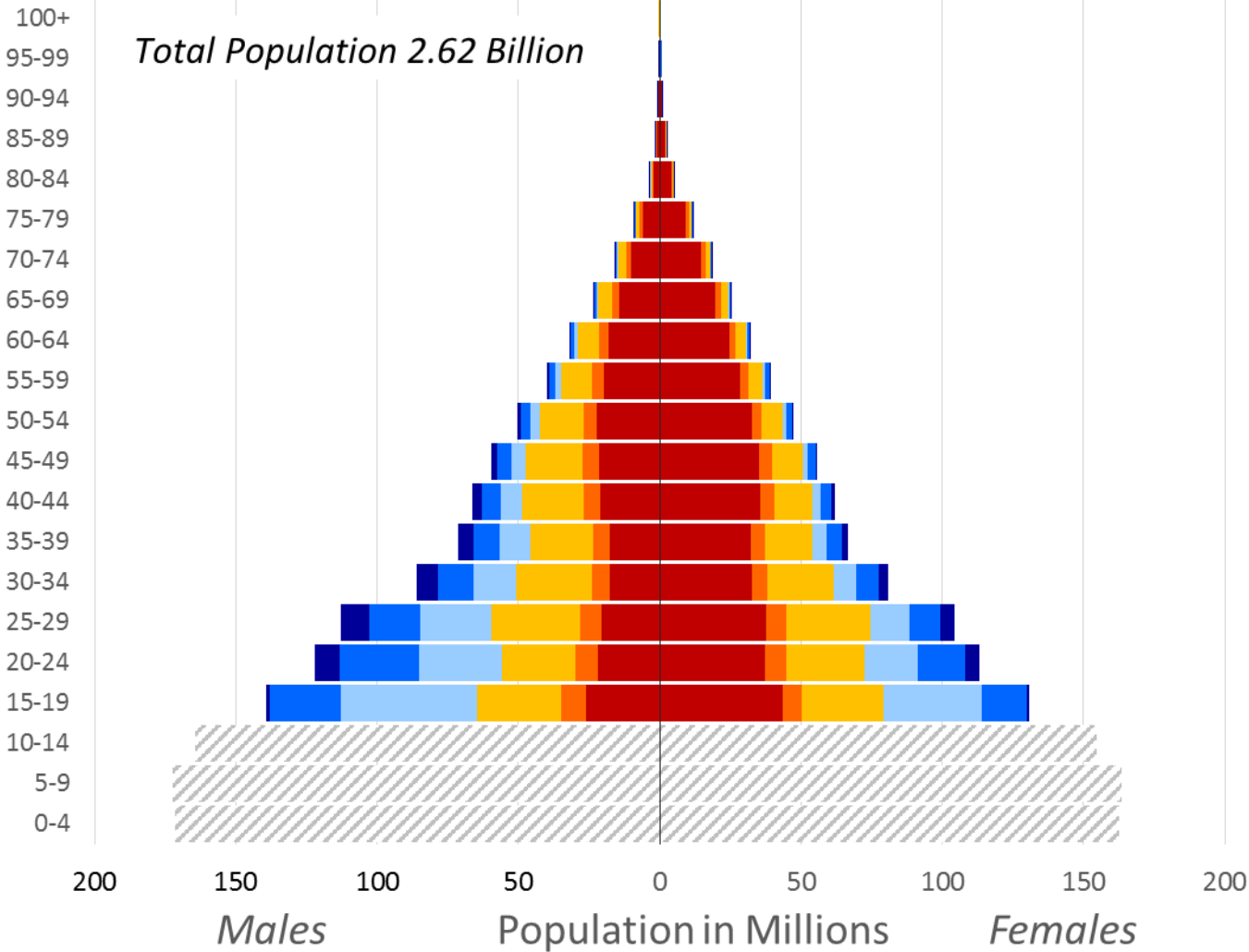
Asia-1975



- Pop <15 yrs
- No Education
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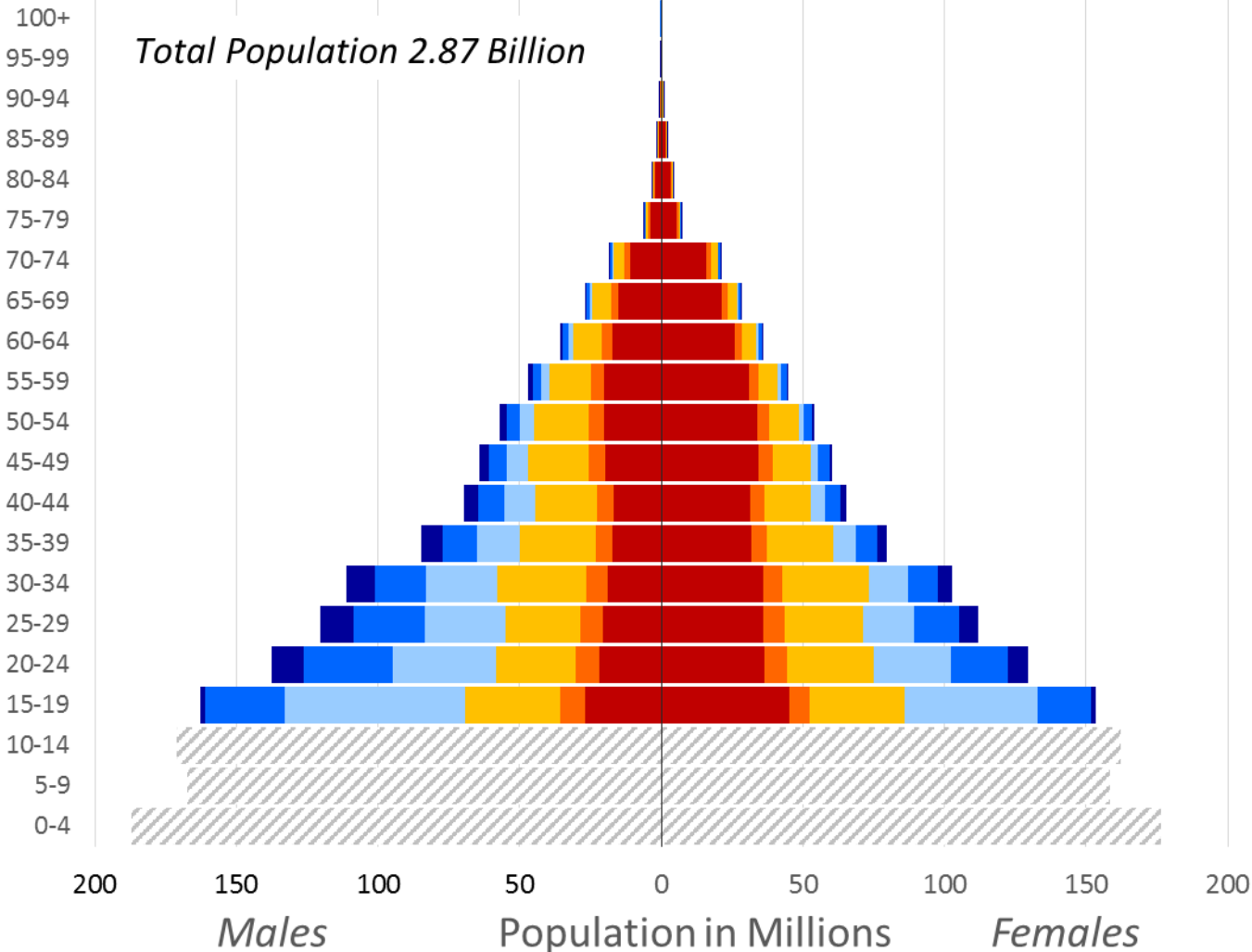
Asia-1980



/ Pop <15 yrs
 ■ No Education
 ■ Primary
 ■ Lower Secondary
 ■ Post Secondary
 ■ Incomplete Primary
 ■ Upper Secondary

Source: Wittgenstein Center, 2014

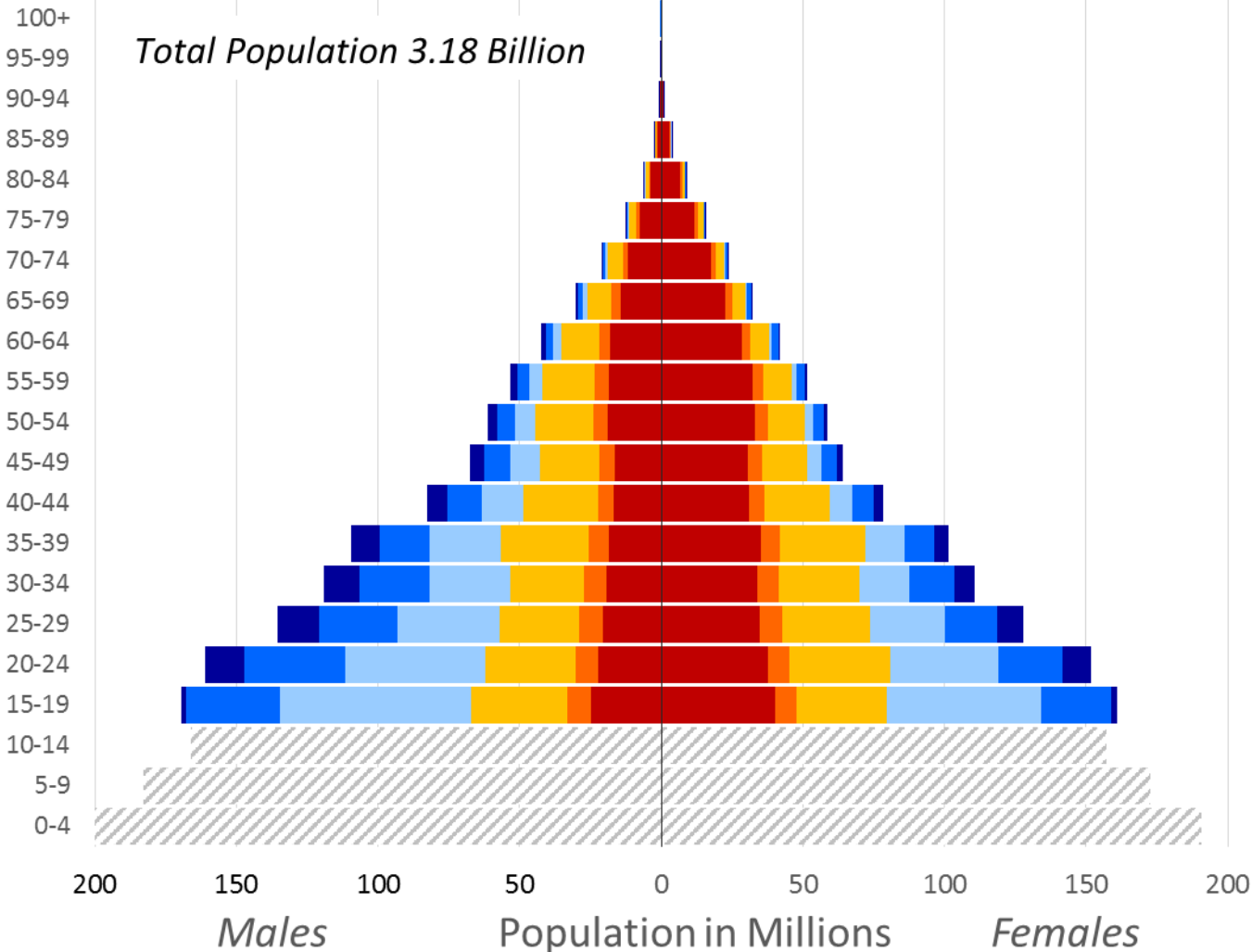
Asia-1985



- Pop <15 yrs
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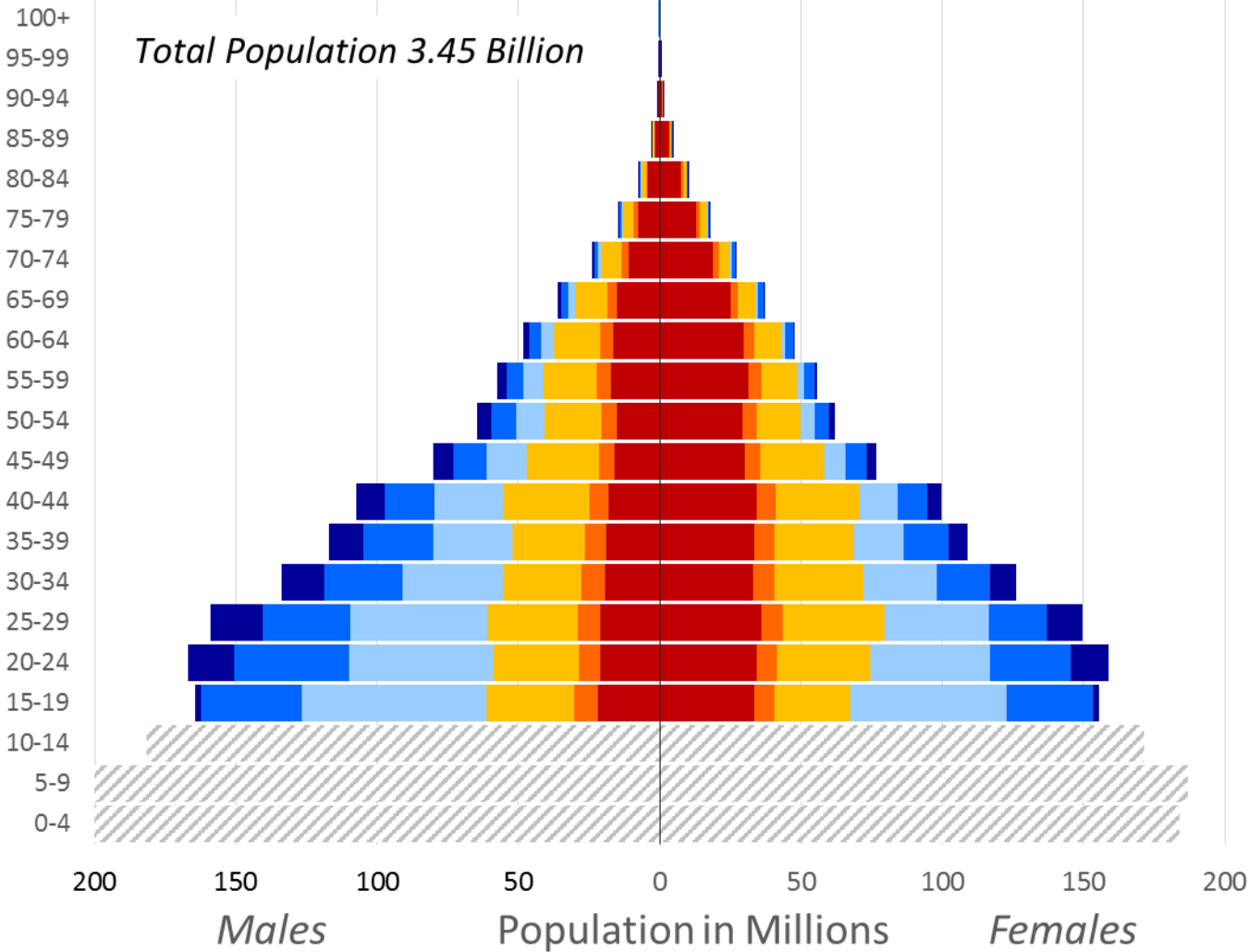
Asia-1990



/ Pop <15 yrs ■ No Education ■ Incomplete Primary
 ■ Primary ■ Lower Secondary ■ Upper Secondary
 ■ Post Secondary

Source: Wittgenstein Center, 2014

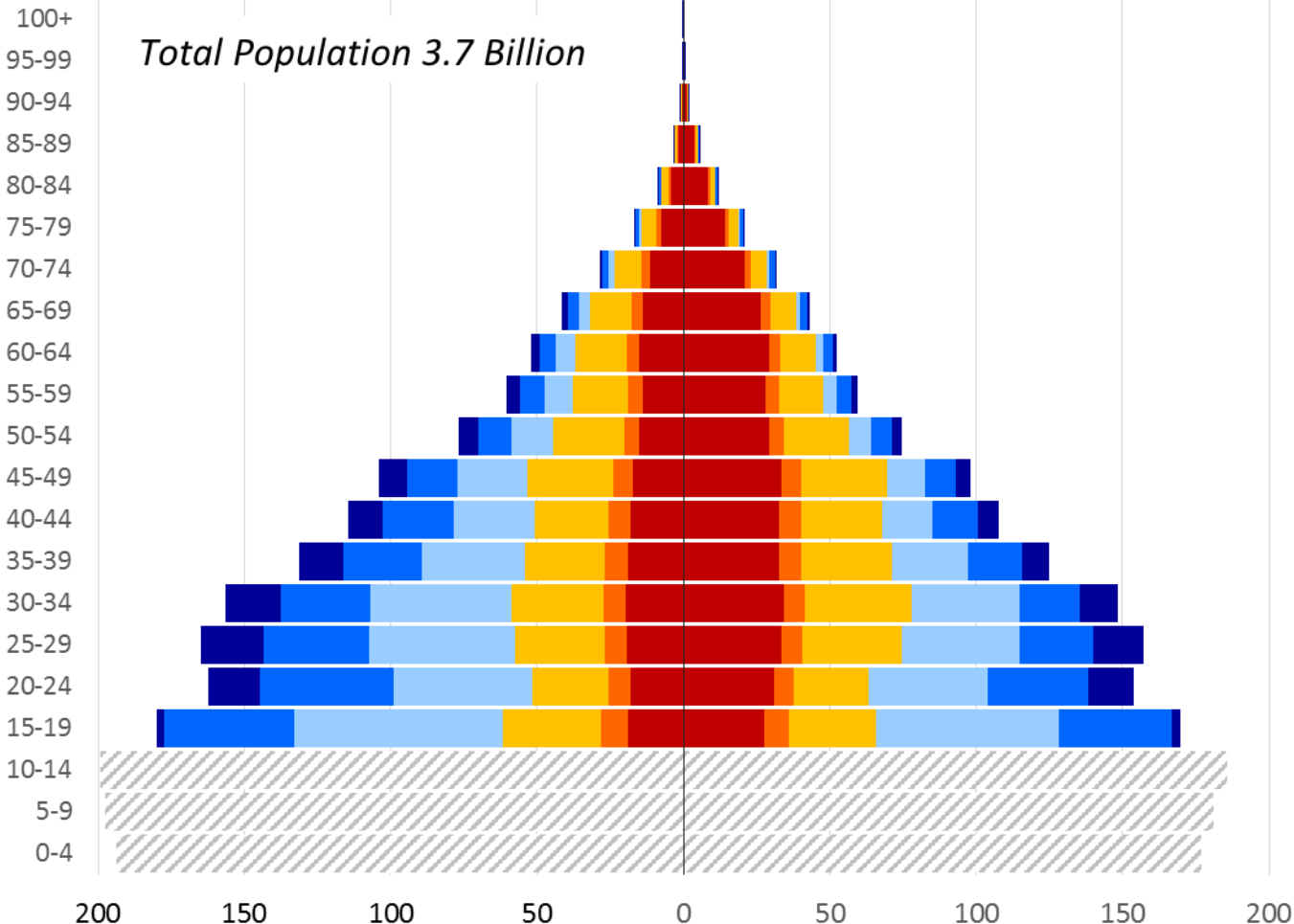
Asia-1995



- ▨ Pop <15 yrs
- No Education
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Source: Wittgenstein Center, 2014

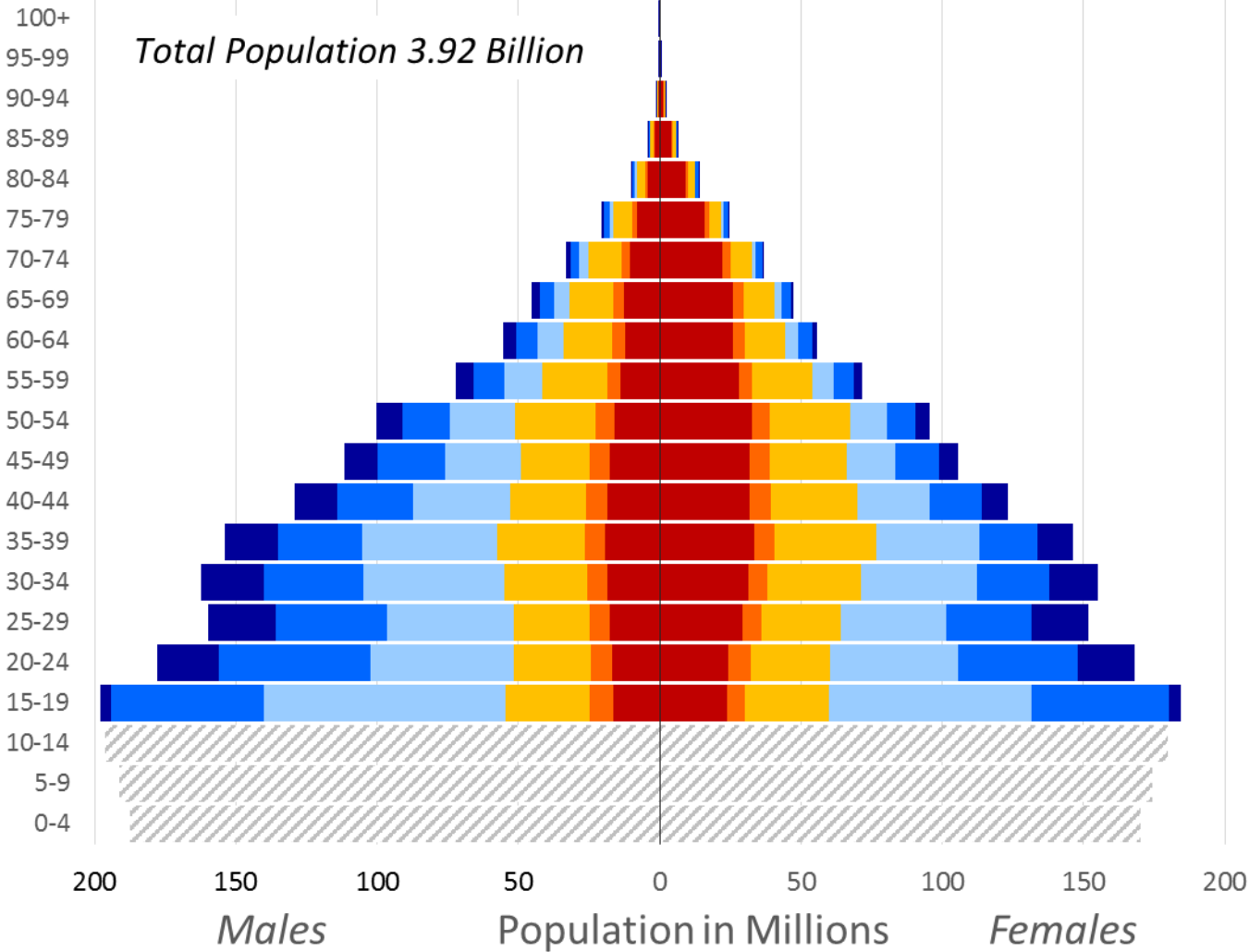
Asia-2000



- -
 -
- Pop <15 yrs
 No Education Incomplete Primary
 Primary Lower Secondary Upper Secondary
 Post Secondary

Source: Wittgenstein Center, 2014

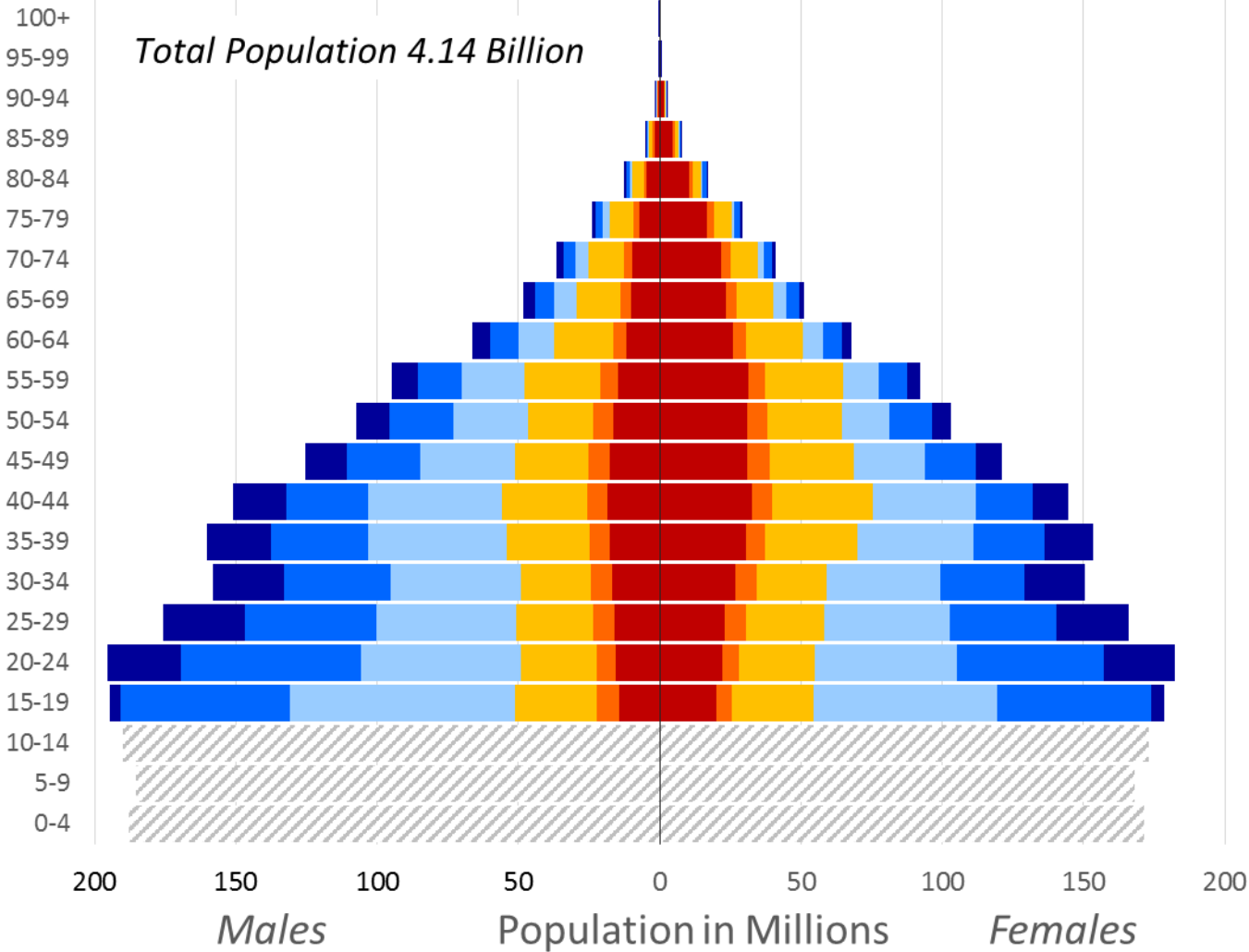
Asia-2005



- Pop <15 yrs
- No Education
- Incomplete Primary
- Primary
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- Upper Secondary
- Post Secondary

Source: Wittgenstein Center, 2014

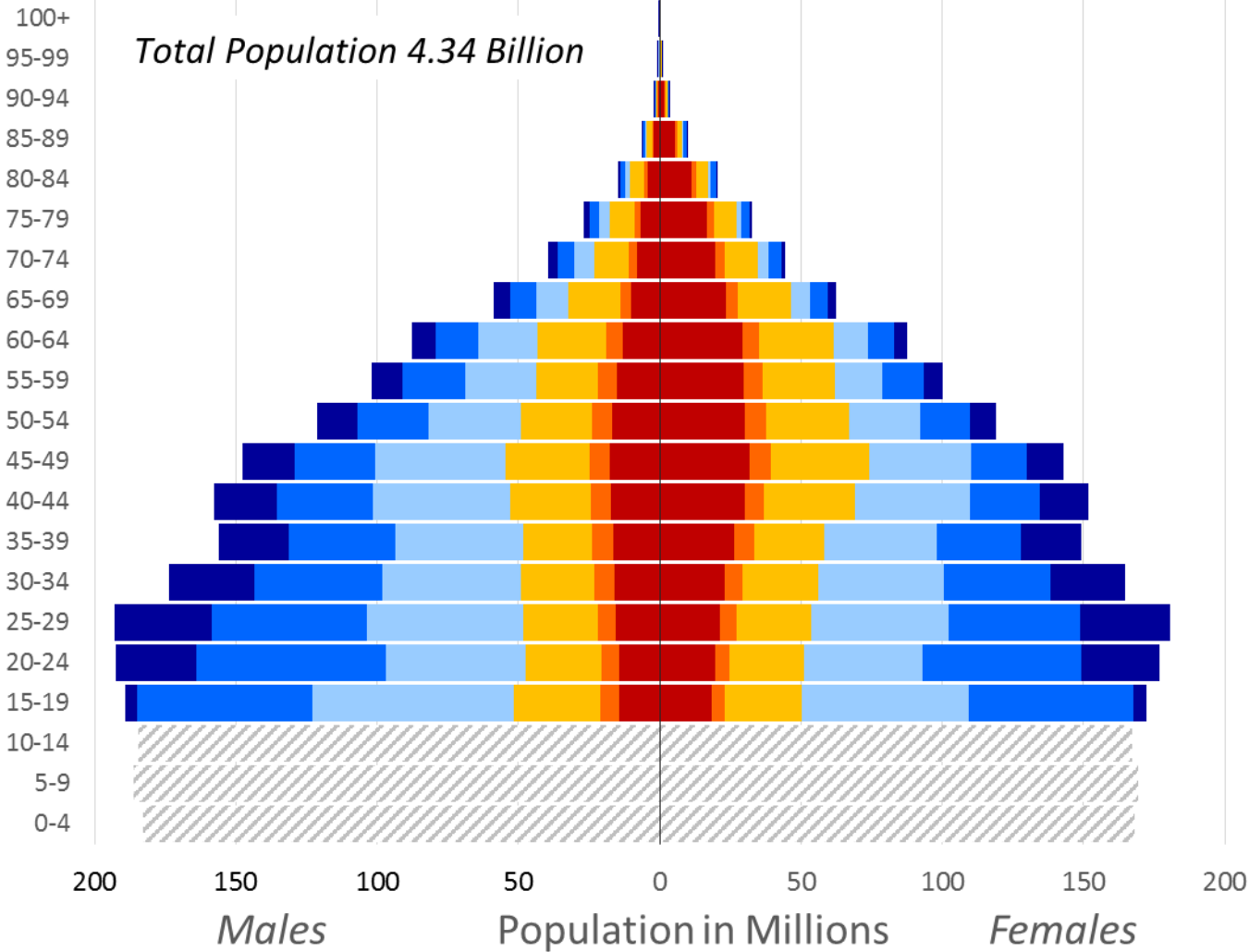
Asia-2010



/ Pop <15 yrs ■ No Education ■ Incomplete Primary
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Source: Wittgenstein Center, 2014

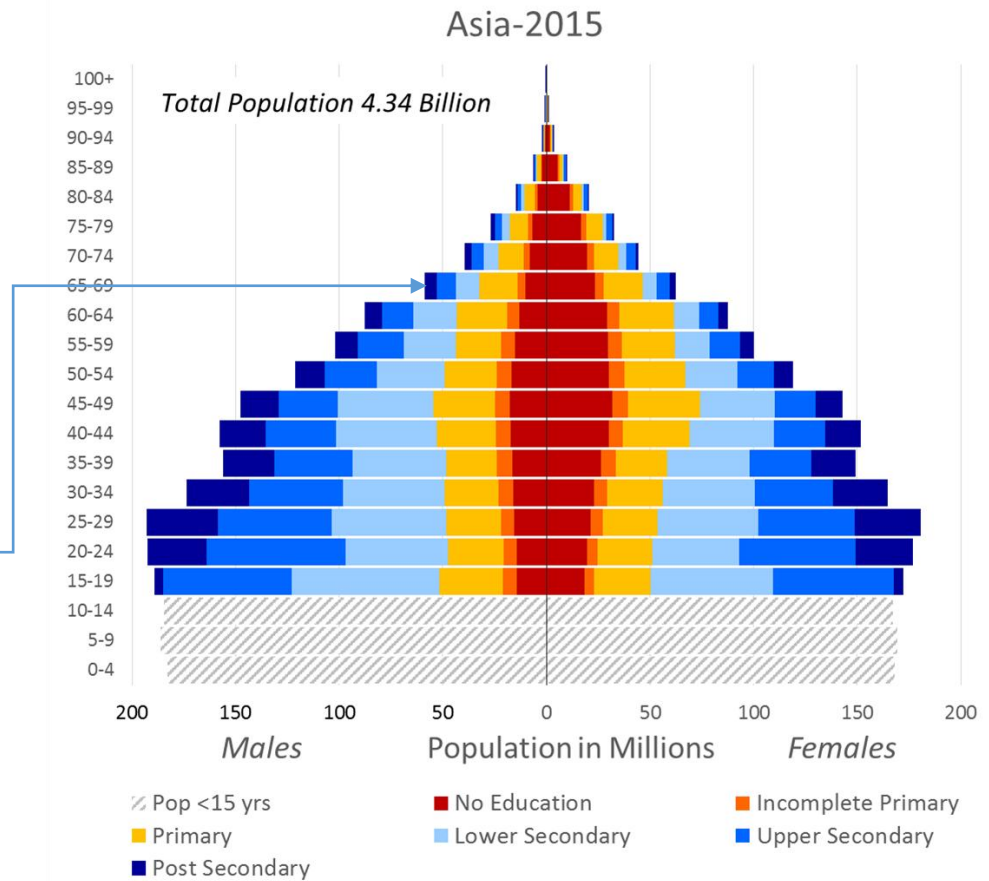
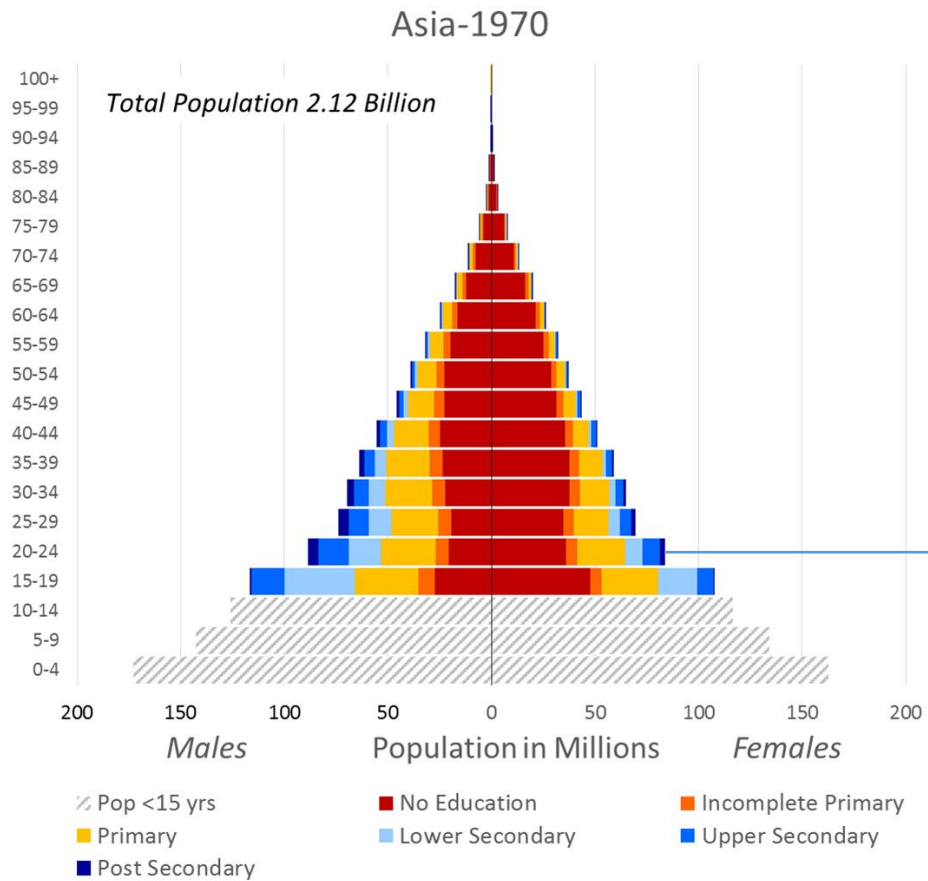
Asia-2015



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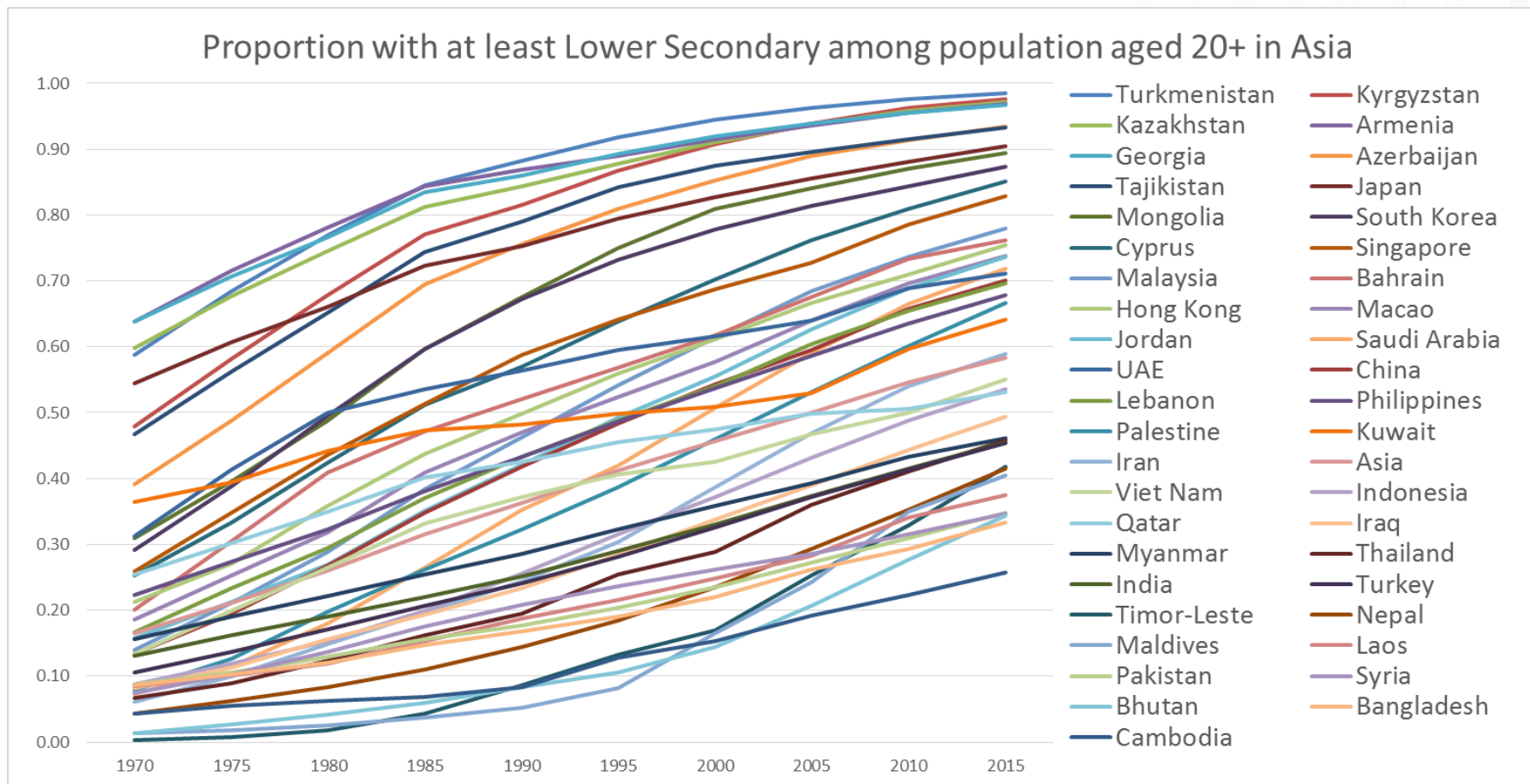
Source: Wittgenstein Center, 2014

...from 16% to 58% proportion with at least lower secondary among 20+ (stock)

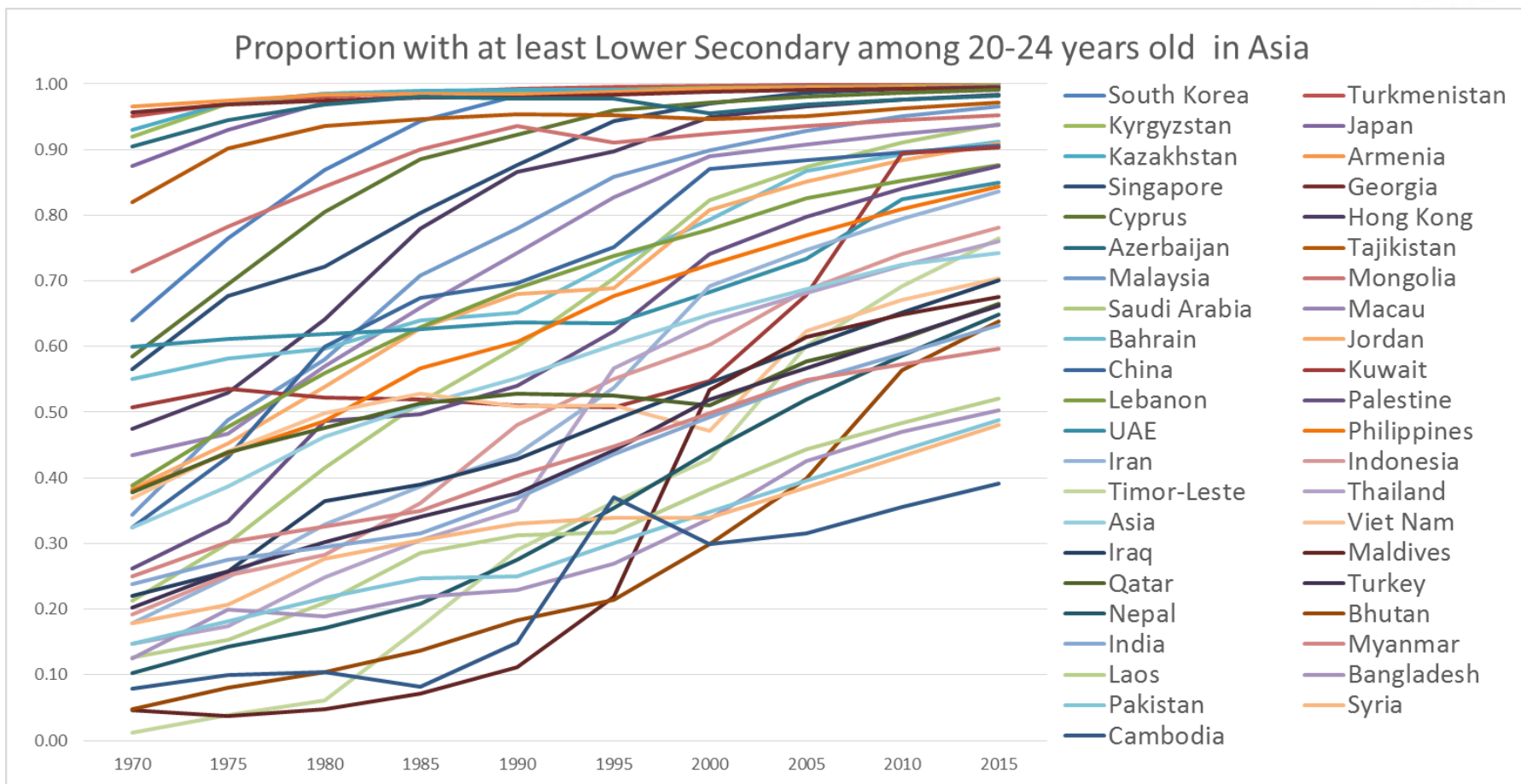


Source: Wittgenstein Center, 2014

... but significant level of inter-country variation in stock



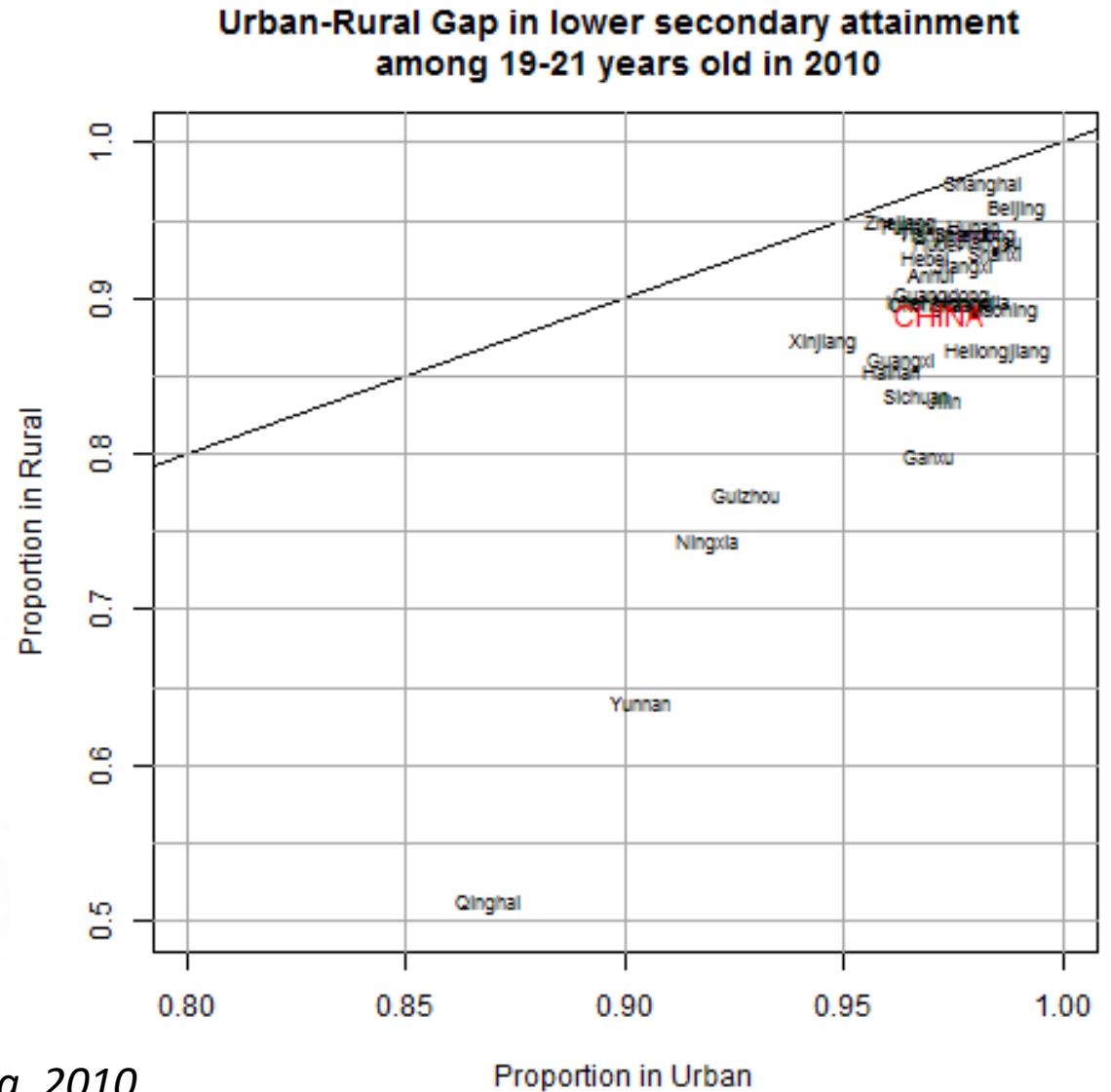
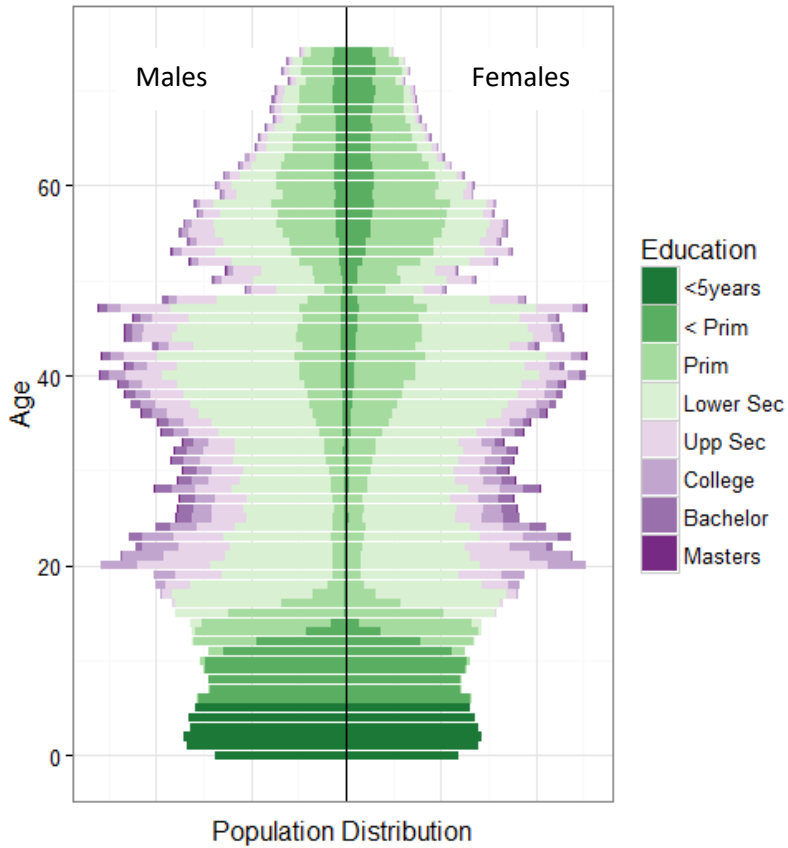
...the variation exists in the flow as well..



SDG Target 4.1: “By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes”

Subnational Level?

Challenges to meeting the SDG targets of universal lower secondary education in China?

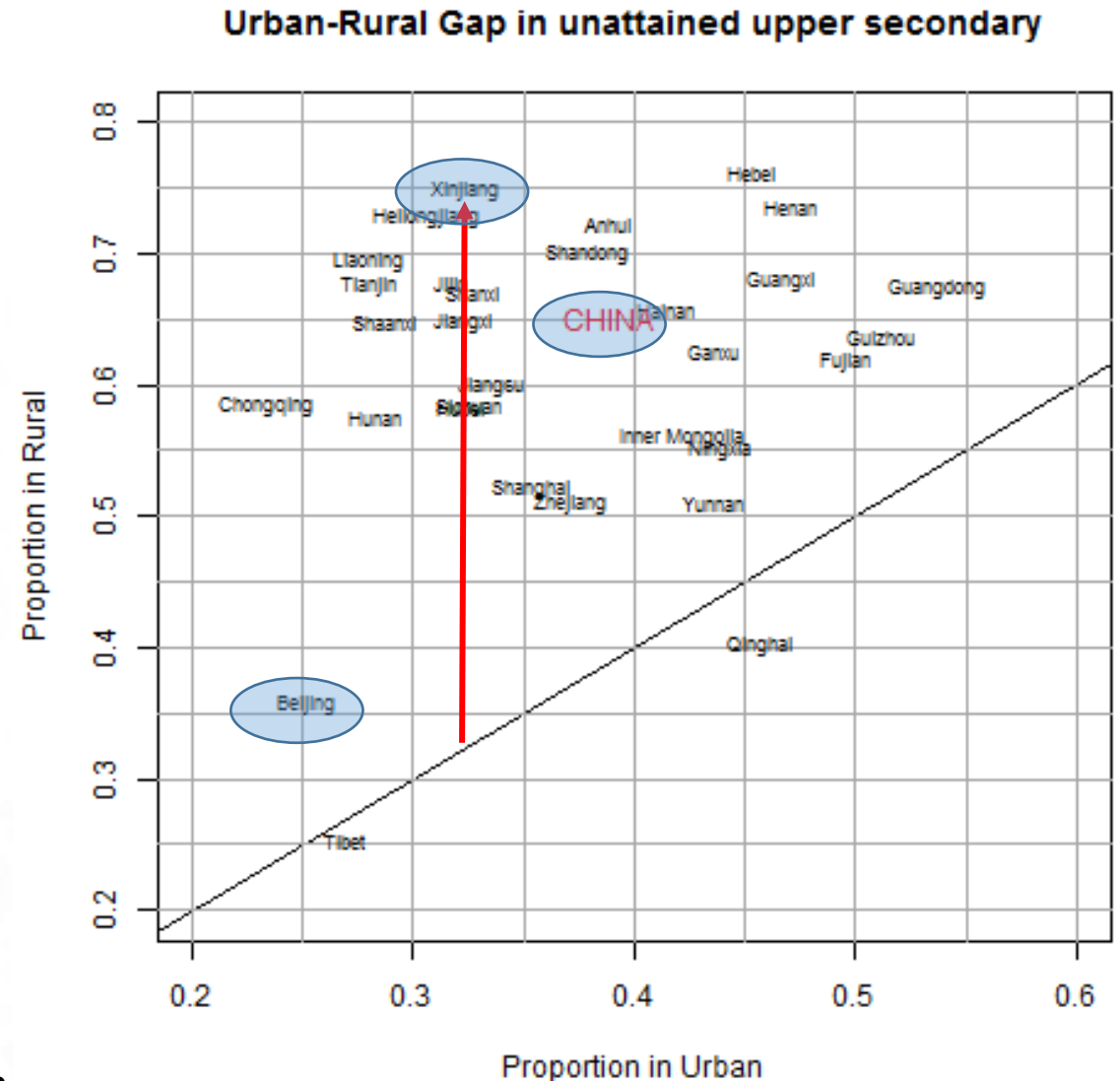


Own Calculation (KC and Wu) based on NBS-China, 2010

...universal upper secondary education in China?

- In China, among 19-21 year old in 2010 proportion with **high school completion 58% (Urban)** and **24% (Rural)**
- **only** lower secondary attainment or **unattained high school 39% (Urban)** and **65% (Rural)**
- The large gaps visible in provinces with a **high level of inequality between rural and urban regions** as indicated by vertical distance from the solid line.
- Xinjiang: 32% (urban) vs 75% (rural)
- Beijing: 25% (urban) vs 36% (rural)
- *Access, Cost, Quality of vocational schools, Law....(PAA submission..)*

Own Calculation based on NBS-China, 2010



Multistate Population Dimensions

Events/ Characteristics	Fertility	Mortality	Migration International	Education transition
Country	●	●	●	●
Age	●	●	●	●
Sex	●	●	●	●
Education	●	●	●	●

India by age, sex, education, state (35), and rural/urban residence - 2011-2101

- Data, analysis and projection (Working paper - soon)
- *How much does including socioeconomic and spatial **heterogeneity** matters for future population in India? (currently working)*
- **Urbanization** in India: internal migration vs reclassification (currently working)
- **R-package** for multistate and multiregional population projection (90%) (ready to be shared in *the first workshop planned in March*)

ADRI - Workshop Proposal

- Title: Analyzing and projecting **sub-national** population trends by age, sex, **education and urban/rural** place of residence: Assisting sustainable development planning in selected Asian countries. **(SDG-17)**
- Countries: Initial studies on China, India, Iran, Indonesia, Nepal, Thailand + plus **other interested countries** (partners to be identified through Meta-Centre)
- Purpose: To analyse **recent trends** in sub-national populations stratified by education and urban/rural residence and develop **alternative scenarios for the future** following the SSP narratives.

ADRI - Workshop Proposal

Plan

- **First workshop** of interested countries (director + research scientist) March 2017 in Shanghai
 - Discussion of **data**, reliability, completeness, consistency etc.
 - Introduction to **methods** of multi-dimensional demographic analysis.
- **Second Workshop**: presentation and discussion of **first results**

Output

- Country specific
 - **multi-dimensional population model**
 - research reports/papers
- papers on methodological insights
- comparative analysis
- Database/Website (consistent)

Transforming our world: the 2030 Agenda for Sustainable Development

- There are 17 goals and 169 targets in the SDGs,
- Goal3: “ensure healthy lives and promote wellbeing for all at all ages” (MORTALITY);
- Goal5: “achieve gender equality and empower all women and girls”; target 5.6: “achieve universal access to sexual and reproductive health and reproductive rights” (FERTILITY);
- target 10.7: “facilitate orderly, safe, regular and responsible migration and mobility of people...” (MIGRATION).
- Goal4: “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” (EDUCATION).
- target 4.1 By 2030, “ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes”
- Goal 1: “end poverty in all its forms everywhere” (MORTALITY AND ...) Goal 2: “end hunger, achieve food security and improved nutrition and ...” (Mortality)

ADRI Pillar: Human Capital and Development

- Looking for
 - Associate Professor
 - Assistant Professor
 - Post-Docs and PhDs
- kcsamir@gmail.com
- kc@iiasa.ac.at

Human Capital and Development in Asia

Samir K.C.

The Asian Demographic Research Institute
(ADRI)

Presentation to the President, Shanghai
University

11th October 2016

The logo for the Asian Demographic Research Institute (ADRI) features the letters 'ADRI' in a bold, white, sans-serif font. The letter 'A' is stylized with a white silhouette of a person's head and shoulders inside its upper right portion.

ASIAN DEMOGRAPHIC RESEARCH INSTITUTE
上海大学亚洲人口研究中心暨人口研究所

Goals of my pillar: Population dynamics and Human Capital

- In the next five year...
- **Good understanding** of past and current demographic and human capital dynamics at national and sub-national levels, including rural or urban place of residence, in Asia
- **High quality projection** of population for Asian countries at national and sub-national level, by important demographic and socio-economic characteristics with a special focus on human capital represented by education and health
- **Dynamic collaboration** with researchers in the field of social and natural sciences where population and human capital matters

Education as a proxy for Measuring Human Capital

- Economists define Human capital as
 - the productive potential of a society - capturing the input in terms of labor
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- Skills are difficult to measure directly
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 - recent **flows** for younger adults and
 - past flows for older adults.
- But the quality (the general knowledge and cognitive skills people actually have), content, and direction of education also matter
 - Content does matter for higher education

... we will achieve the following

- **Everyone accounted for!**

- Country-specific population model (collaboration/workshops)
- Peer reviewed publications on comparative analysis across Asian countries and sub-national units on important demographic related issues

- **Center for Population and Human Capital Projection**

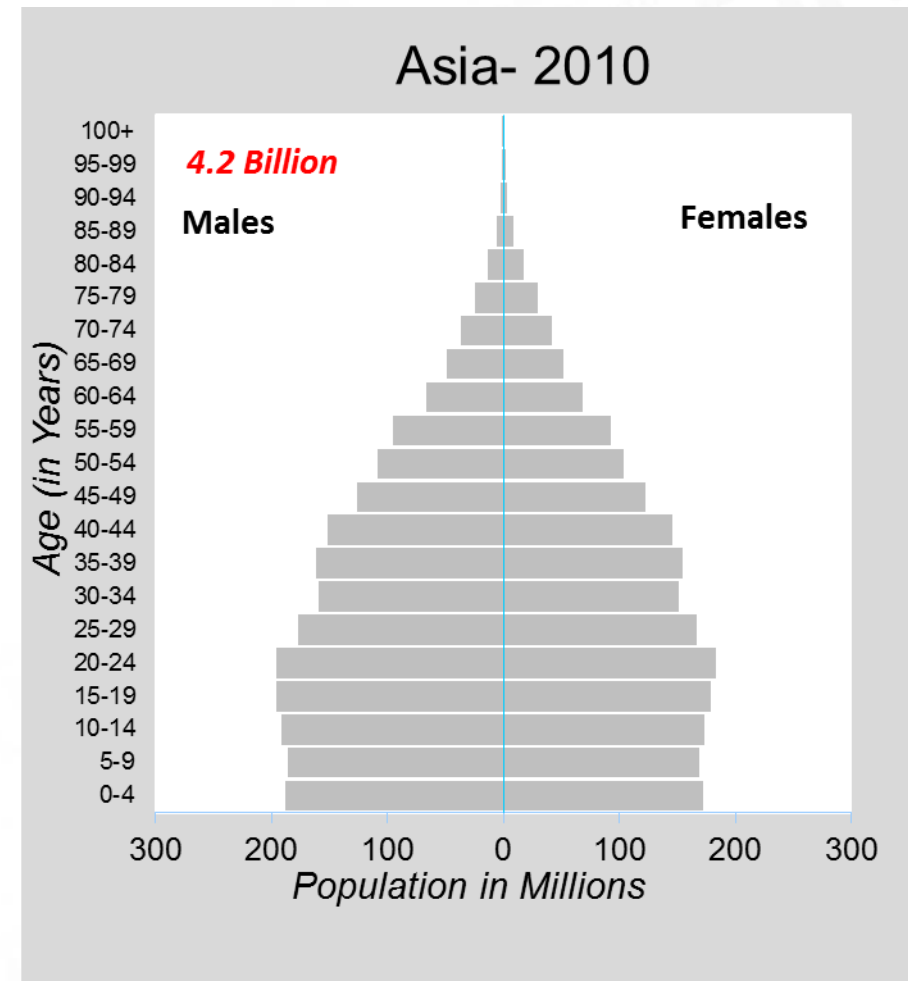
- Population Projections by demographic and socio-economic factors
- Population projection software in R and in Excel/VBA

- **Center for Database on Population**

- in collaboration with UN/IIASA – UNFPA/UNDP/UNICEF/WHO/WB/AIIB
- Survey, Census, and Registry

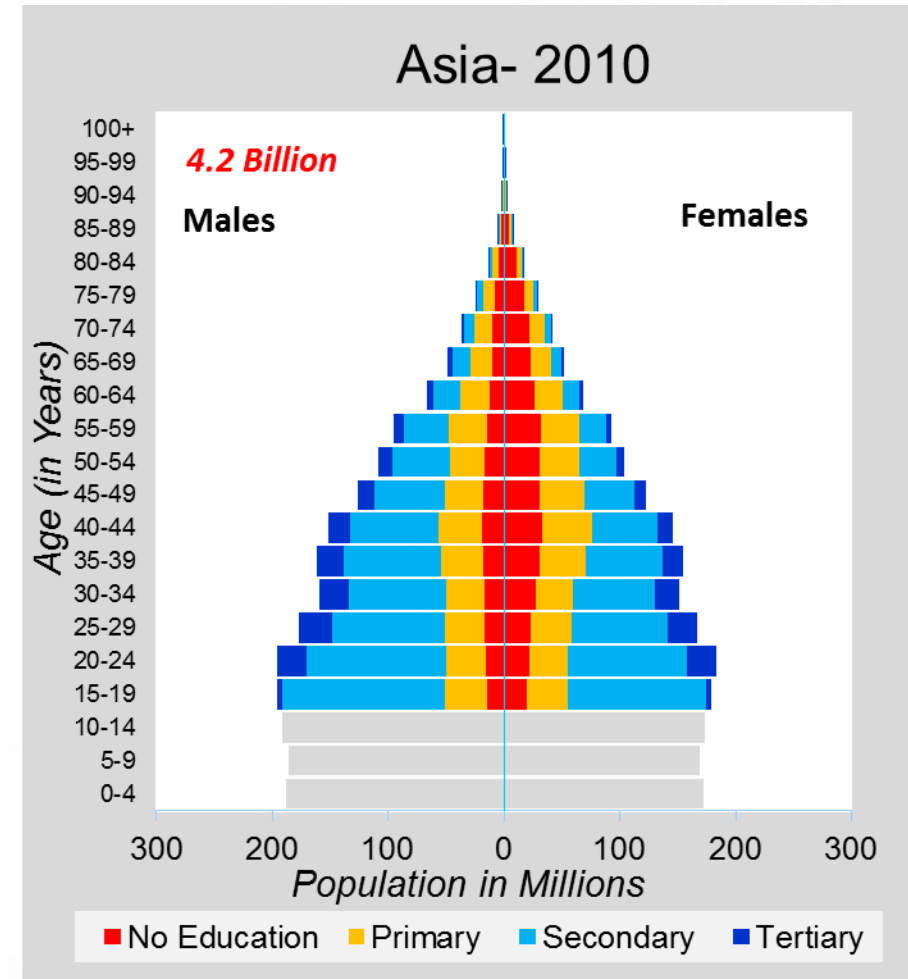
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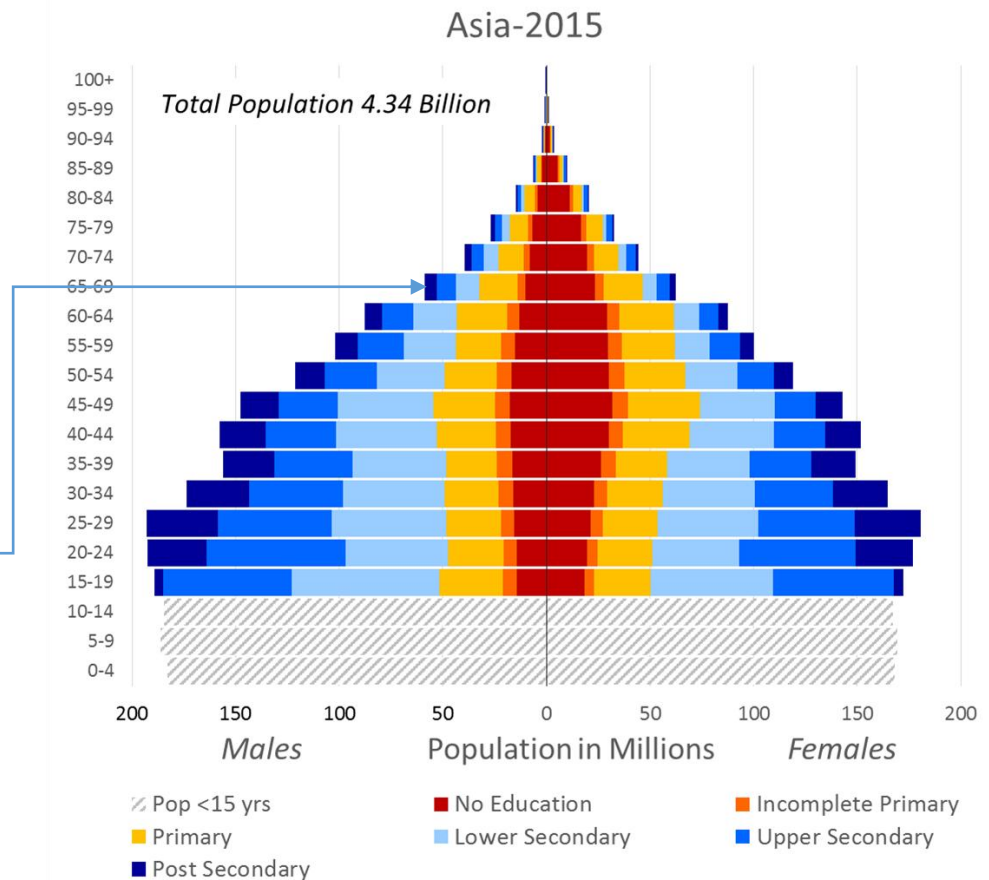
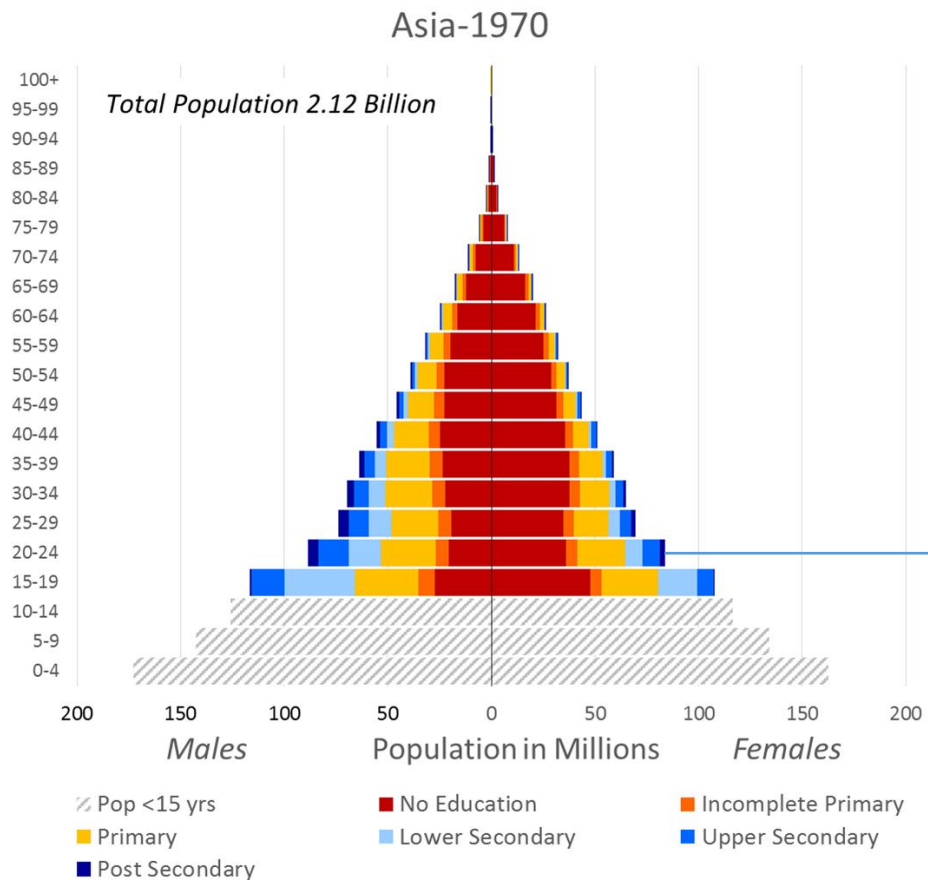


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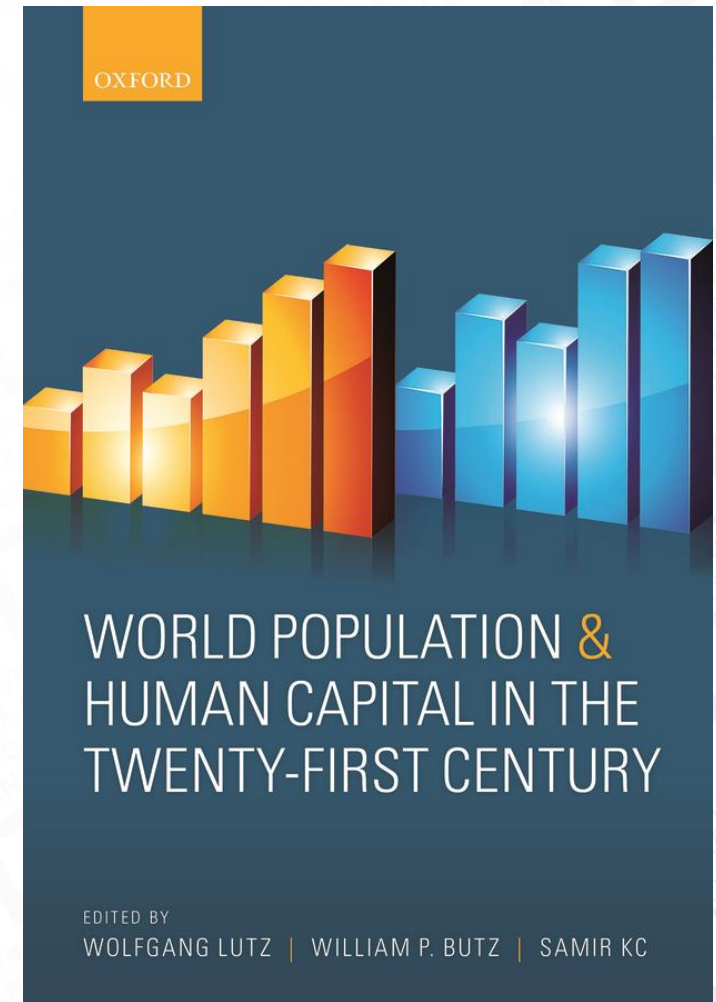
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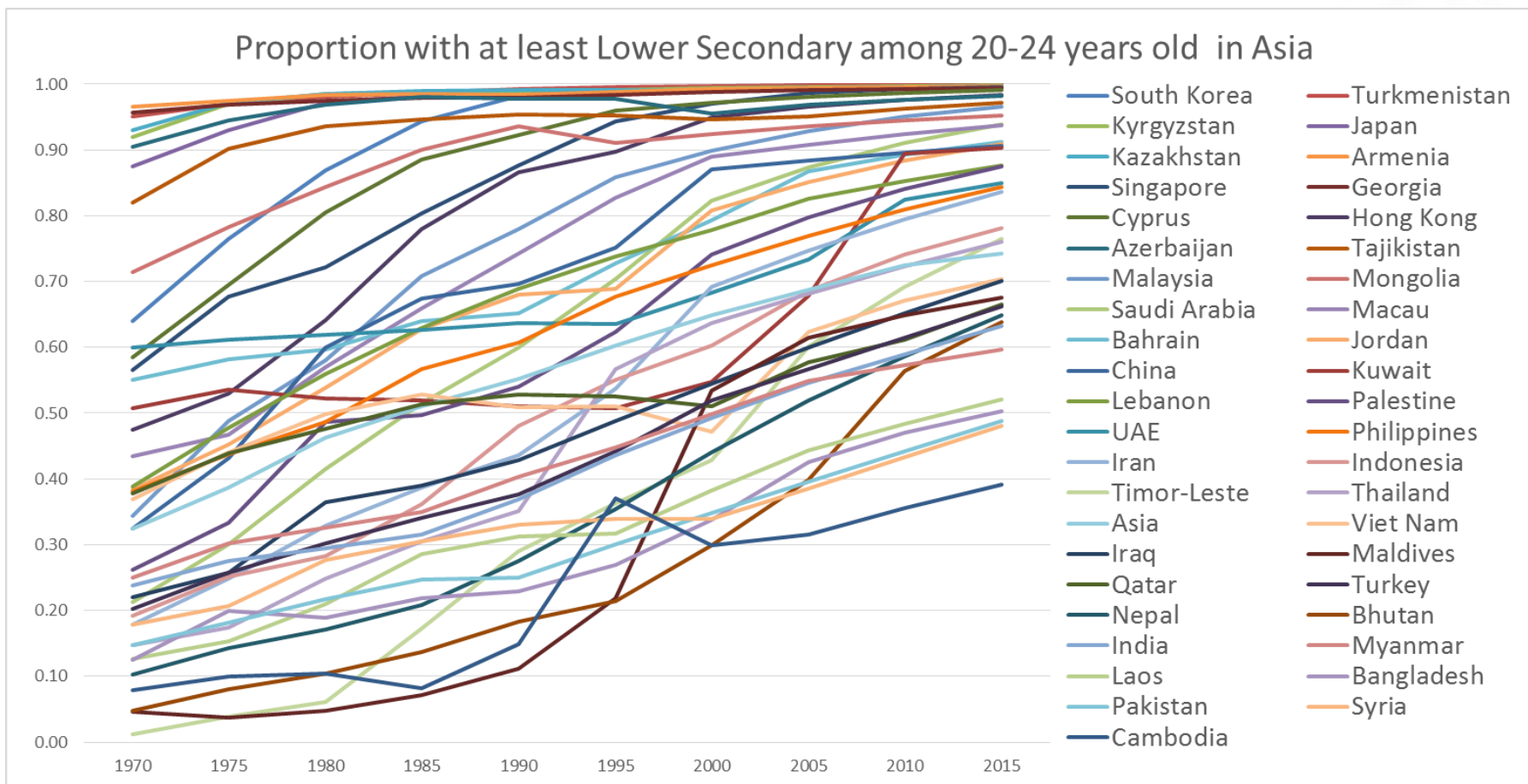
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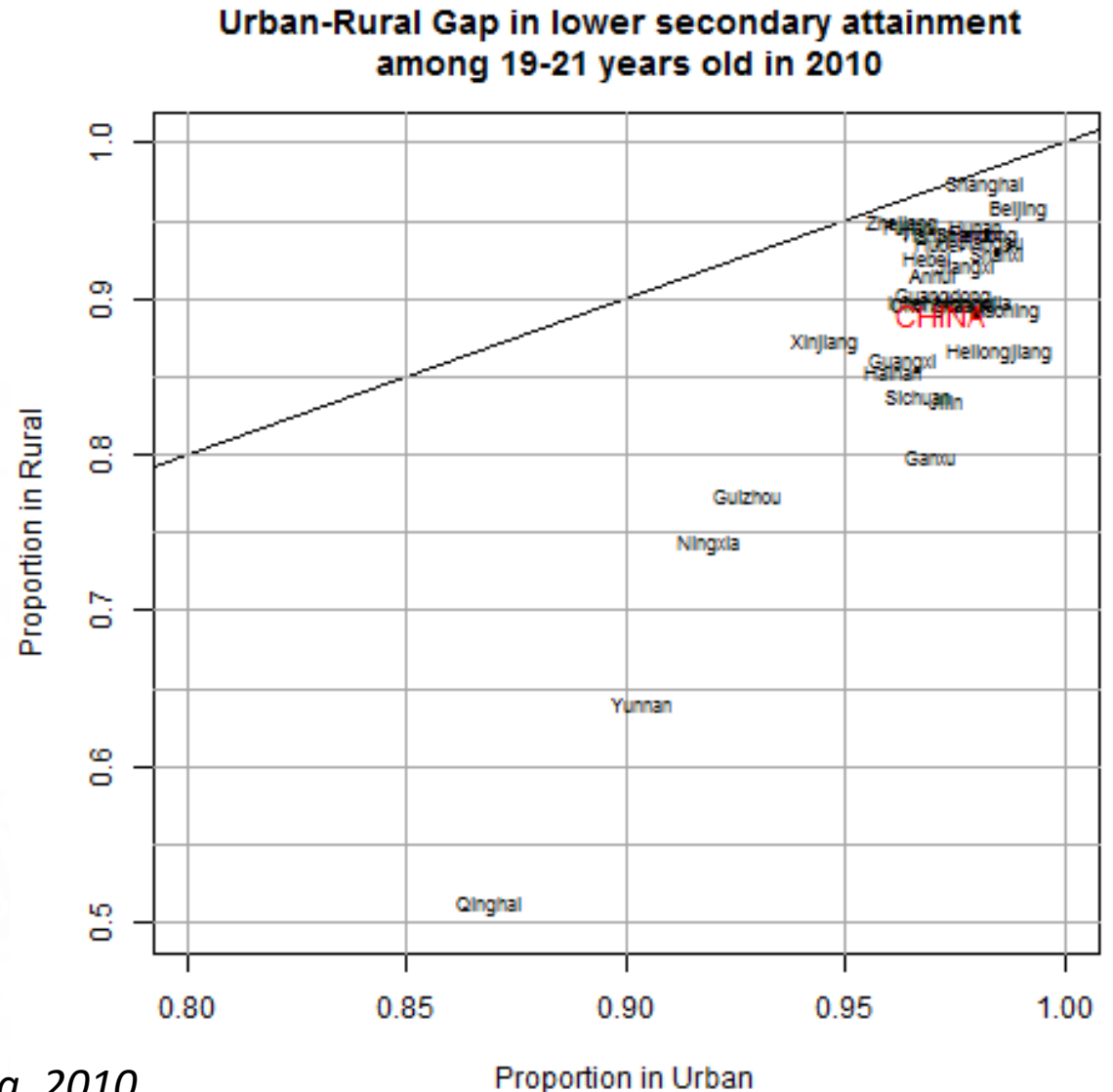
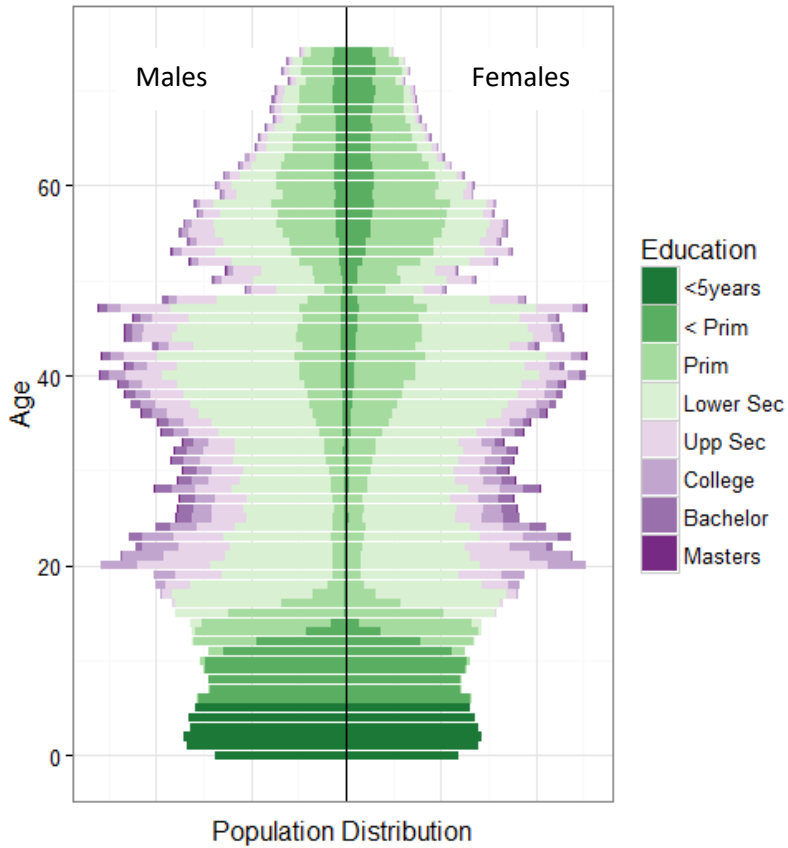
“A Harmonized dataset on global educational attainment between 1970 and 2060 – an analytical window into recent trends and future prospects in human capital development”. Anne Goujon, KC Samir et al. Journal of Demographic Economics, 82, 3 (2016)

Education in Asia: significant level of inter-country variation exists



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