

## Patterns of Fertility

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@reference book: John. I .Clarke

## Introduction

*The comparison among countries and how this phenomenon is occurring with economic, social, political conditions etc.*

Important for understanding past, current and future trends of

- Population size
- Growth and
- Composition

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## Fertility, Fecundity and Reproduction

- ***Fertility is reproductive performance, its occurrence of live births.*** (Clarke, 1965, pg.109)
- ***“Fecundity constitutes biological ability to have children, where as fertility is case-by-case physical realization of fecundity.”*** (Mueller, 2000, p.61)
- ***Reproduction is the degree of replacement of individual by others of the same age in the following generation.*** (Clarke, 1965, p.109)

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## Measures of Fertility patterns

- Crude birth rate
- Child women ratio
- General fertility rate
- Total fertility rate
- Gross reproduction rate
- Marital fertility rate
- Age specific fertility rate

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## Crude birth rate

- Gives brief review about the additions to the population
- **Ratio of the number of live births in a period of time usually one year to the total population is called crude birth rate.** Mathematical expression of crude birth rate is;

$$CBR = (b/p) * 1000$$

Example. In 2007, there were 3,250 births in a city with population of 223,000. Calculate

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## Child women Ratio

- Indirect measure of fertility
- Used to estimate fertility in situations where birth records are deficient or nonexistent, mainly in under developed countries

- $P_{0-4}/F_{15-49} * 1000$

Where,

P= the number of children under five years of age

F= the total number of females between 15 to 49 years of age

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## General Fertility rate

- It's refined fertility measure. It's same as CBR but it considers women in their reproductive years only. It can be calculated by:

- $GFR = B/F_{15-49} * 1000$

Where,

B= Total number of live births in a year

F=total number of females aged 15-49 years (adult)

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## Total fertility rate

- TFR is the most powerful and useful measure
- It represents the number of children the typical woman in that population will have over her childbearing years, based on 2 assumptions:
  - Women will have the same birth rates over their lifetimes as women in different age cohorts in that same population.
  - Women will survive through their childbearing years."

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## Gross reproduction rate

- Average number of daughters that would be born to a woman during her lifetime is gross reproduction rate
- $GRR = TFR * \text{number of female births} / \text{number of male births}$

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## Net reproduction rate

- It refers to the average number of female births born to women aged 15-49, that would survive to the end of their reproductive period after experiencing the prevailing fertility and mortality levels.

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## Marital Fertility Rate

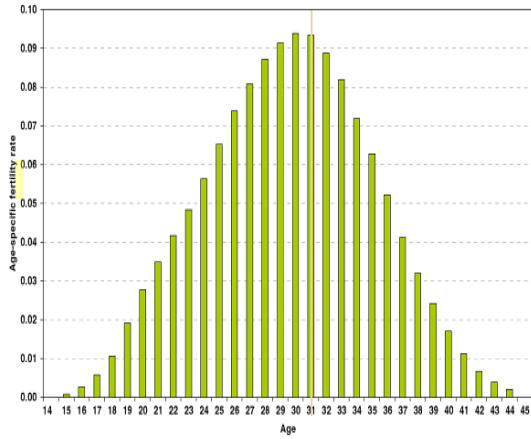
- Number of live births to married women per 1,000 married women ages 15-44 or 15-49 in a given year

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## Age specific fertility rate

- Fertility rate obtained for specific age groups
  - $ASFR = Ba / Fa * 1000$
- Where,
- Ba= Total live births in a year to women in specified age group
- Fa= total number of women in that specified age group.

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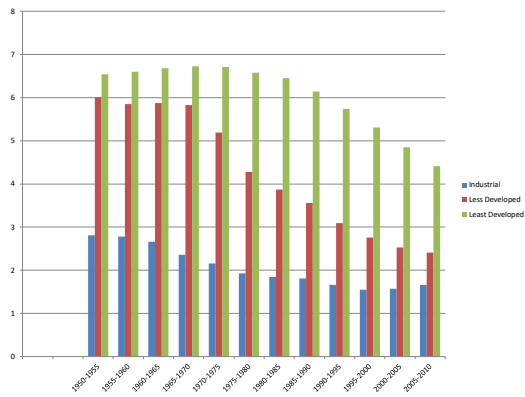
### Fertility Trend

Significant decreases in world fertility rates

- High Fertility in under developed
- Decline Fertility developing
- Long Term decline fertility developing
- Stable low Fertility developed

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World Population Milestones		
Billions	Year Reached	Years Between Billions
	<b>Estimated or Projected</b>	
1	1804	
2	1927	123
3	1960	33
4	1974	14
5	1987	13
6	1999	12
7	2011	12
8	2025	14
9	2043	18
10	2083	40

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