

# Module 4. Methods for Evaluating Fertility Data from Censuses

# Module 4. Episodes

- **Episode 1. Methods for assessment of completeness of fertility data from censuses**
- Episode 2. Standard P/F ratios using data from one census
- Episode 3. P/F ratios for synthetic cohorts using data from two censuses
- Annex 1. Details on Standard P/F Ratios method
- Annex 2. Details on Synthetic P/F Ratios method



# Episode 1. Introduction



# Goal

- To introduce two methods for evaluating and adjusting coverage of births recordings from censuses:
  - Standard P/F ratios, also called Brass P/F ratios.
  - P/F ratios for Synthetic Cohorts.



# Road Map

- Review on data completeness and reasonableness.
  - Potential problems of birth recording reported by households.
  - Data evaluation for completeness.
- Methods to evaluate reported births.
  - Standard P/F ratios.
  - P/F ratios for Synthetic Cohorts.
- Comparison of methods to evaluate births.
- Learning Assessment.



# Data Completeness and Reasonableness of Fertility Data from Censuses

- Data users should assess completeness and reasonableness of census fertility data before estimating maternal mortality because maternal mortality ratio is measured as maternal deaths per birth.
- Maternal mortality ratio should reflect obstetric risk which is related to overall levels of fertility.



# Potential of Bias on Census Births Data

These errors lead to biases in reporting of births:

- Omitting some children from the total number of children ever born.
- Recording childless women as having no response.
- Inaccurate date of birth of last child born alive.
- Missing the first delivery for women who had two deliveries during the past 12 months.



# Data Evaluation

- Compare estimations using the data being evaluated with estimations using data from other sources (e.g., DHS).
- As mentioned in episode 1 of module 3, you should evaluate data on age misreporting and missing data.
- If possible, check for the proportion of cases with imputed data.





# Data Evaluation (Con.)

- Check for improbable parity by age of the mother.
  - Very young women having lots of children.
  - If average parity seems inflated, childless women may have been recorded as having non-response.
    - El-Badry method should be applied.



# Main Questions for Evaluating the Number of Births Recorded

- What is the coverage of birth recording?
- Should we adjust fertility data for data deficiencies while reflecting the population's true fertility conditions?



# Core Concepts: Parity and Lifetime Fertility

## **PARITY**

Total number  
of children  
previously born  
alive to a woman.

## **LIFETIME FERTILITY**

### **EQUIVALENTS**

Number of children who  
would have been born by  
women experiencing  
observed age-specific  
fertility rates from the  
beginning of childbearing  
to age 49.



# Logic Behind the Parity and Fertility Ratio

- P/F ratios methods compare the age trajectories of two different measures of fertility:
  - Average Parity: estimated from the question on the number of children ever born alive (CEB).
  - Lifetime Fertility Equivalent: estimated from the question on the number of births in the 12/24 months previous to the census date.
- These trajectories should be similar if there are no errors of coverage or consistency in the data.



# Methods to Evaluate Reported Births

- Data on CEB and births during the prior year are used to estimate parity (P) and lifetime fertility equivalent (F) measures.
- These measures are used in the P/F ratios methods to evaluate completeness of birth records from census.



# Methods to Evaluate Reported Births (Con.)

- There are two methods to evaluate completeness of birth records on CEB and births during the prior year:
  - P/F ratios standard method (for a single census).
  - P/F ratios for synthetic cohorts (for two censuses).



# Learning Assessment



- True/False

Parity is the total number of children previously born alive to a woman.

- True or False

P/F ratios methods compare the age trajectories of three different measures of fertility.



# Learning Assessment



True or False

- Parity is the total number of children previously born alive to a woman.

True or False

- P/F ratios methods compare the age trajectories of three different measures of fertility.

