Episode 2.
Standard P/F Ratios Method

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Module 4. Episodes

- Episode 1. Introduction
- **Episode 2. Standard P/F ratios using data from one census**
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- Annex 1. Details on Standard P/F Ratios method
- Annex 2. Details on Synthetic P/F Ratios method

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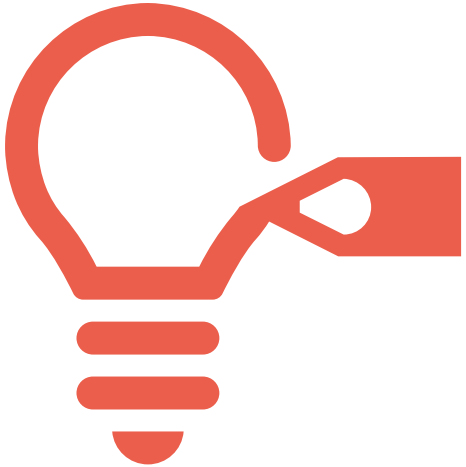
Goal

To describe the Standard P/F Ratio Method for evaluating coverage of births recordings from one census.



Road Map

- Data Requirements.
- Assumptions of the Standard P/F Ratios Method.
- Logic Behind Standard the P/F Ratios Method.
- Description of the Standard P/F Ratios Method.
- Estimation of Adjustment Factor.
- Advantages and Limitations.
- Learning Assessment.

Data Requirements from a Single Census

- Number of children ever born alive by 5-year age groups of mother of reproductive age.
- Number of births during the year preceding the census classified by 5-year age groups of mother of reproductive age.
- Number of women in five-year age groups.

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Assumptions

- Fertility is not changing over time.
- Reporting of average parity (P), is essentially accurate among women 20 to 35 years of age, for whom there are typically fewer recall errors and omissions compared to older women.
- The number of births can be distorted, but the age pattern of births is not distorted.

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.

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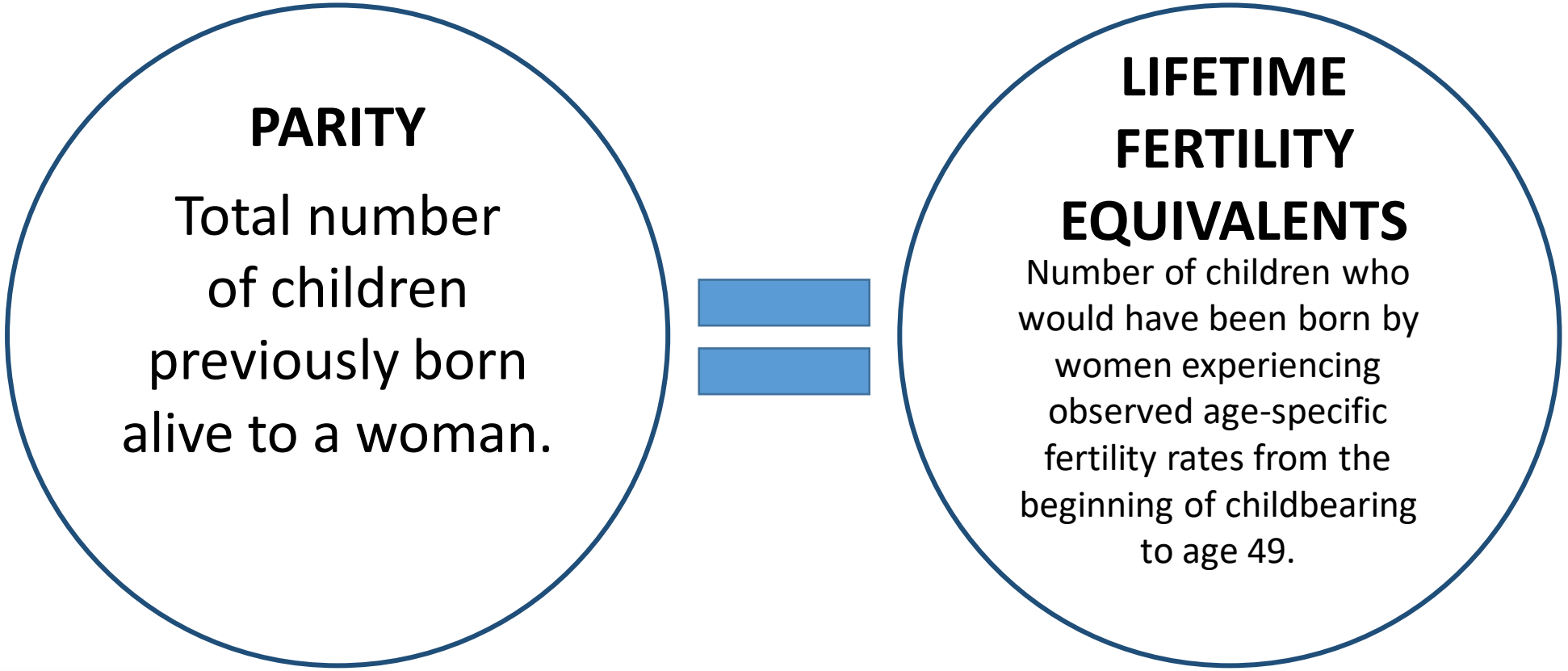
Logic Behind Standard P/F Ratios

- If fertility has not changed, fertility rates estimated from numbers of recent births can be cumulated to obtain measures equivalent to average parities.

Core Concepts: Parity and Lifetime Fertility



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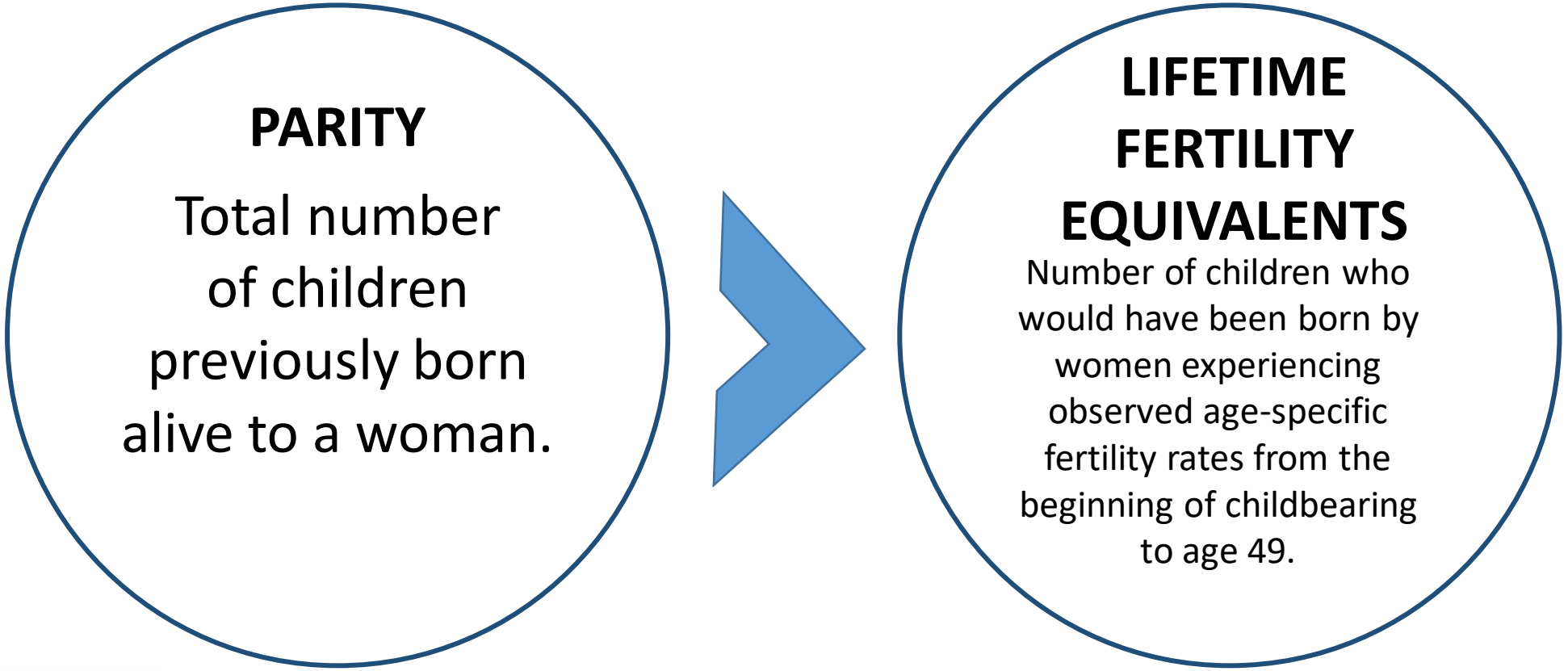
Core Concepts: Parity and Lifetime Fertility (Con.)



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Logic Behind Standard P/F Ratios

- If the recent births are not completely recorded, these lifetime fertility equivalents (*F*) will be smaller than reported average parities (*P*).

Logic Behind the Standard P/F Ratios Method

- Based on empirical observation, average parity estimated from children ever born alive by age of the mother often exceed the cumulative age-specific fertility rates.
- Reported children ever born is assumed to better reflect actual fertility levels, particularly for mothers between 20 and 34 years of age.

Logic Behind the Standard P/F Ratios Method (Con.)

- In the P/F ratios method the difference between average parity and lifetime fertility equivalents reflects relative underreporting of births.
- The P/F ratios method produces a set of factors for adjusting reported age-specific fertility rates (based on births in the 12 months prior to a census or survey) to the presumed actual level of fertility.

Logic Behind the Standard P/F Ratio Method (Con.)

- The adjustment factors are determined by comparing data on average parity (Pi) to lifetime fertility equivalents (Fi) at specific ages of women.

Description of the Standard P/F Ratio Method

- Estimate Average Parity (Pi).
  - Reported children ever born alive to a woman by the number of women in the age group.
- Estimate Lifetime Fertility Equivalents (Fi).
  - Cumulated and interpolated current period fertility up to a certain age.
- Once you have calculated Pi and Fi, then estimate the ratio Pi/Fi.
- See Annex 1 in this module for more details on this method.

Estimation of P/F Ratios

$$\frac{P}{F}Ratio(i) = \frac{P(i)}{F(i)} = \frac{Average\ Parity\ (i)}{Lifetime\ Fertility\ Equivalents\ (i)}$$

These ratios should be fairly similar across age groups.

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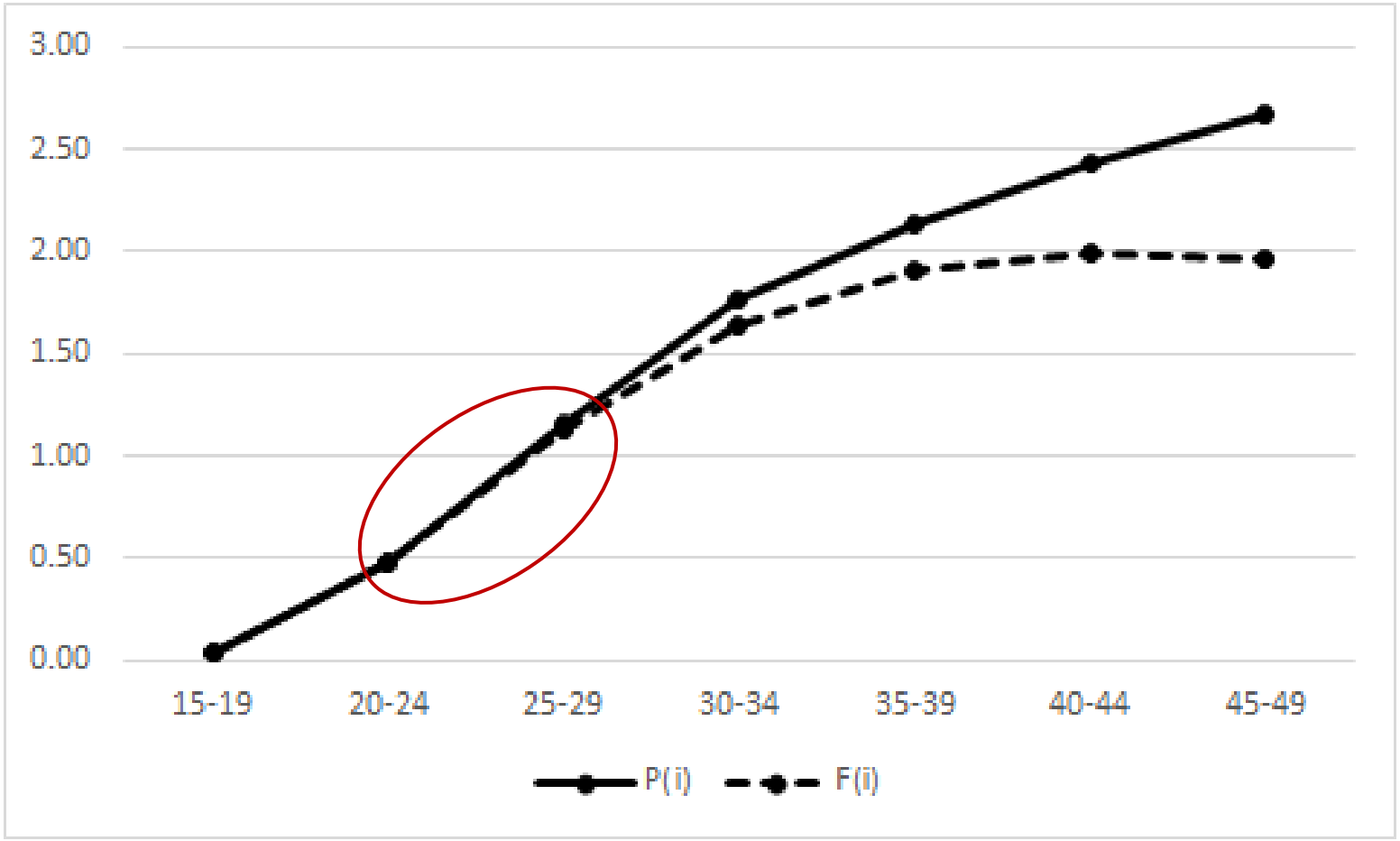
P(i) vs. F(i)



Source: US Census Bureau with data from the Vietnam 2009 census.

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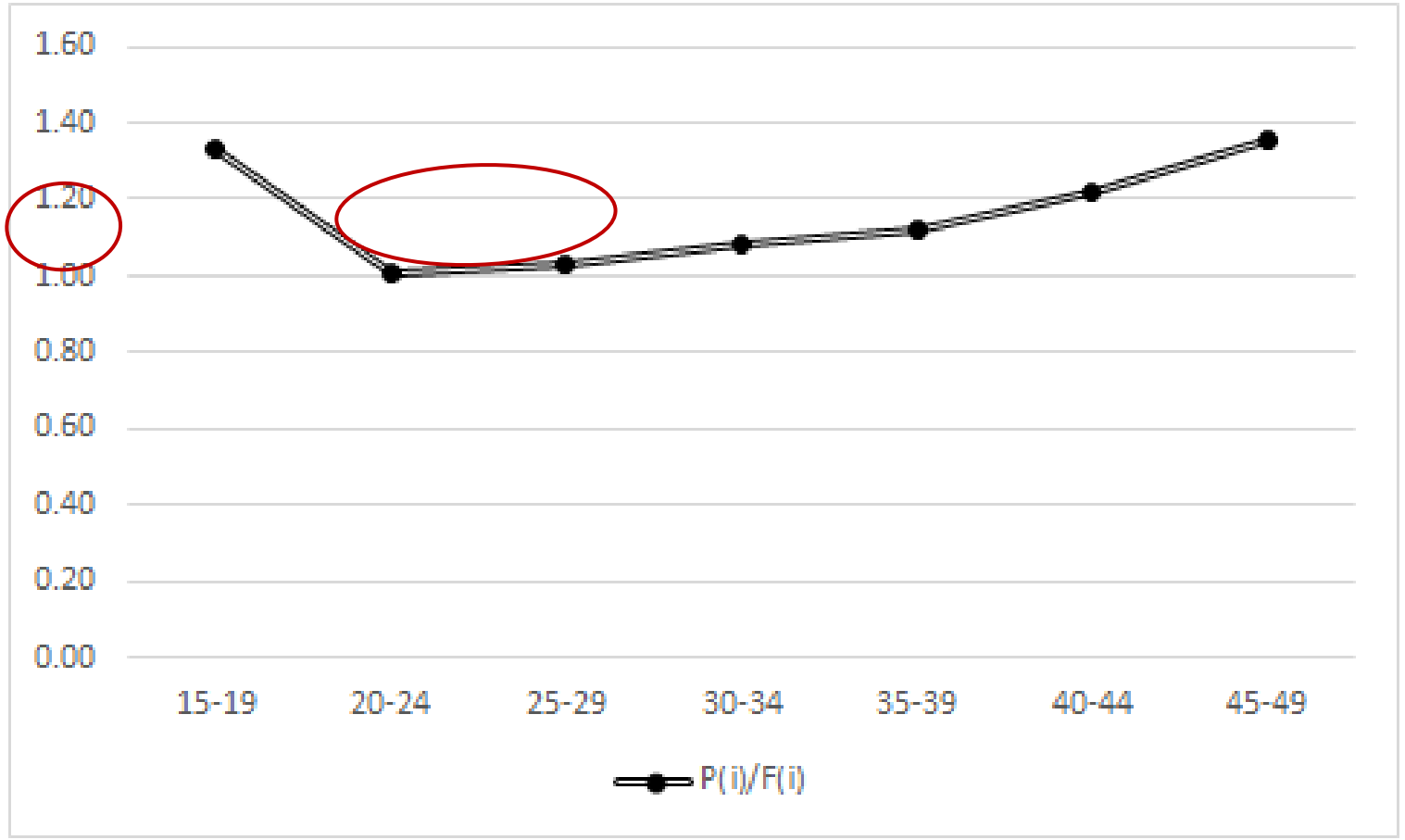
P(i)/F(i) Ratios



Source: US Census Bureau with data from the Vietnam 2009 census

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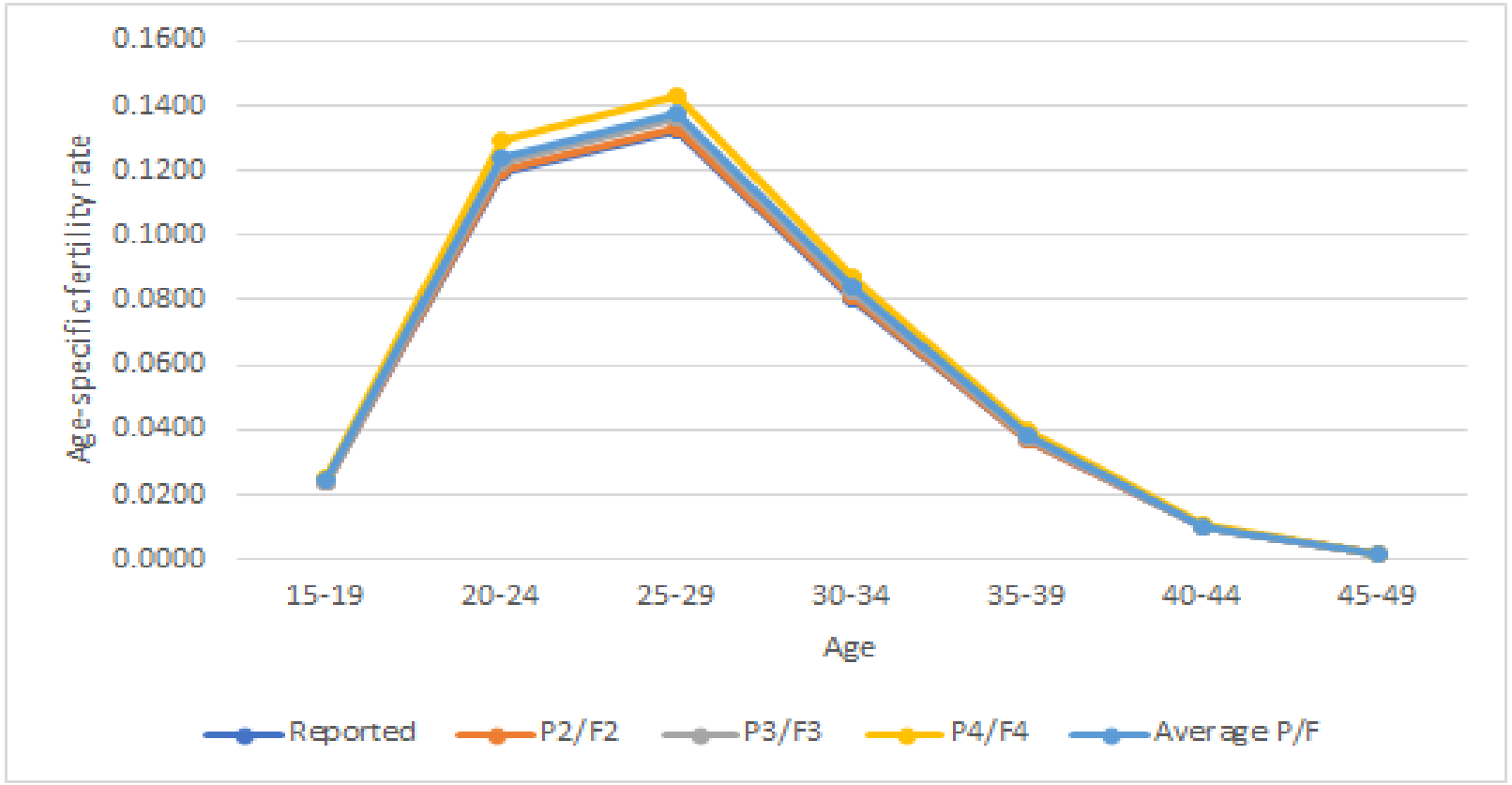
Estimation of Adjustment Factor K

Depending on how consistent the P/F ratios are by age of mother, the adjustment factor K can be:

- P/F ratio for ages of mother 20 to 24 years.
- Or the average of the of P/F ratios for ages of mother 20 to 24 and 25 to 29.
- Or the average of the of P/F ratios for ages of mother 20 to 24, 25 to 29 and 30-34.

Interpretation: Adjusted ASFRs Based on Alternative P/F ratios



Adjusted age-specific fertility rates:

$$ASFR_{adj}(i) = K * ASFR\ (i)$$

Advantages and Limitations

- The method requires a relatively small amount of information from a single census, which is often available from fertility questions in a survey or census.
  - If census is not the best source of data for fertility, you could use fertility data from a survey.
- The standard P/F ratios model assumes that the level and age pattern of fertility have not changed in the recent past (15 to 20 years prior to the census or survey.)
- However, if fertility has been falling, the application of the method might result in over-estimation of fertility.

Learning Assessment

- True or False

One of the principles of the P/F ratio method is that reported children ever born are assumed to poorly reflect actual fertility levels, particularly for mothers between 20 and 34 years of age.

- True or False

One of the assumptions behind the P/F ratio method is that the level and age pattern of fertility have not changed in the last 15 to 20 years prior to the census or survey.

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Learning Assessment

- False

One of the principles of the P/F ratio method is that reported children ever born are assumed to poorly reflect actual fertility levels, particularly for mothers between 20 and 34 years of age.

- True

One of the assumptions behind the P/F ratio method is that the level and age pattern of fertility have not changed in the last 15 to 20 years prior to the census or survey.

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