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Fertility Levels and Differentials in Informal Settlements in South Africa: Evidence from the 2001 South African Population Census.

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Appendix: Indirect Method of Fertility estimation: Computations.

1. BRASS P / F RATIO METHOD.

NB.: fi/f2 is used as multiplier for the first 3 age groups and mean age for the remaining age groups (30 to 49).

$\frac{f1}{f2} = \frac{0.1049}{0.1259} = 0.833$, **which value falls between 0.764 and 0.939** see Brass multiplier Table for fertility estimation, UN (1983), Manuel X.

Using the table of multipliers and interpolating, $\frac{0.833 - 0.764}{0.939 - 0.764} = 0.4$

Therefore, interpolation factors are 0.4 and 0.6.

Using the notation f1b + f2a, multipliers for the first 3 age groups are computed as follow:

$K_{15\text{-}19}$ = (0.4 * 3.170) + (0.6 * 2.925) = 3.023

$K_{20\text{-}24}$ = (0.4 * 2.985) + (0.6 * 2.960) = 2.970

$K_{25\text{-}29}$ = (0.4 * 3.095) + (0.6 * 3.075) = 3.083

Mean age (m)
=

$$\frac{(17*0.1049)+(22*0.1259)+(27*0.1129)+(32*0.0963)+(37*0.0729)+(42*0.0339)+(47*0.0173)}{0.5641}$$

= 27.69, which value falls between 26.7 and 27.7 (See Brass multiplier table for fertility estimation).

Using the outlined table above and interpolating $\frac{27.69 - 26.7}{27.70 - 26.7} = 0.99$. Therefore, the interpolation factors are 0.99 and 0.01.

Using the notation m1a +m2b, multipliers for age groups 30 to 49 have been computed as follow:

$K_{30\text{-}34}$ = (0.99 * 3.140) + (0.01 * 3.165) = 3.14025

K_{35-39} = (0.99 * 3.285) + (0.01 * 3.325) = 3.2854

K_{40-44} = (0.99 * 3.610) + (0.01 * 3.740) = 3.6113

K_{45-49} = (0.99 * 4.630) + (0.01 * 4.840) = 4.6321.

These calculations have been incorporated in the table 4.3 above (See Table 4.3, chapter 4).

2. COALE AND TRUSSEL METHOD

1. Computation of $F_{(i)}$

F_i = $\boldsymbol{\Phi_{i-1}}$ **+ a(i)f(i) + b(i)f(i+1) + c(i)** $\boldsymbol{\Phi(7)}$**.**

This is the estimation of the average parity equivalents for a period, where parameters a, b, and c are

Values of coefficients of interpolation obtained from the Coale Trussel table of multipliers (See UN, 1983, Manuel X).

F1 = 0 + (2.531 * 0.1049) + (-0.188 * 0.1259) + (0.0024 * 2.8205) = 0.2486

F2 = 0.5245 + (3.321 * 0.1259) + (-0.75 * 0.1129) + (0.0161 * 2.8205) = 0.902897

F3 = 1.1540 + (3.265 * 0.1129) + (-0.627 * 0.0963) = (0.0145 * 2.8205) = 1.503117

F4 = 1.7185 + (3.442 *0.0963) + (-0.563 * 0.0729) + (0.0029 * 2.8205) = 2.0171

F5 = 2.200 + (3.518 * 0.0729) + (-0.763 * 0.0339) + 9 0.0006 * 2.8205) = 2.432286

F6 = 2.5645 + (3.862 * 0.0339) + (- 2.481 * 0.0173) + (-0.0001 * 2.8205) = 2.65222

F7 = 2.7340 + (3.828 * 0.0173) + (0.016 * 0.0339) + (-0.0002 * 2.8205) = 2.8002027

These values have been incorporated in the table 4.4, and P2 / F2 has been used as an adjustment factor. (See Table 4.4, chapter 4).