

FERTILITY FUNCTIONS

(Source:Petrioli Luciano,"PRODEMOG 3.0-Demographic software for Windows", EMMECI-SIENA-ITALY,(2000).

LOGISTIC



Age-specific fertility rates: Italy, year 1931

The Logistic distribution is:

$$F(X) = \frac{C}{1 + e^{-AX-B}} \quad [1]$$

and the density function is:

$$f(x) = A.C / \left[\left(e^{-Ax-B} + 1 \right)^2 \cdot e^{Ax+B} \right]. \quad [2]$$

Mean and variance are respectively:

$$MED = -\left(B\sqrt{3.DS} \right) / \pi \quad ; \quad DS = \pi^2 / 3A^2 \quad [3]$$

$$\text{from which results: } A = \pi / \sqrt{3.DS} \quad ; \quad B = -\left(\pi . MED / \sqrt{3.DS} \right). \quad [4]$$