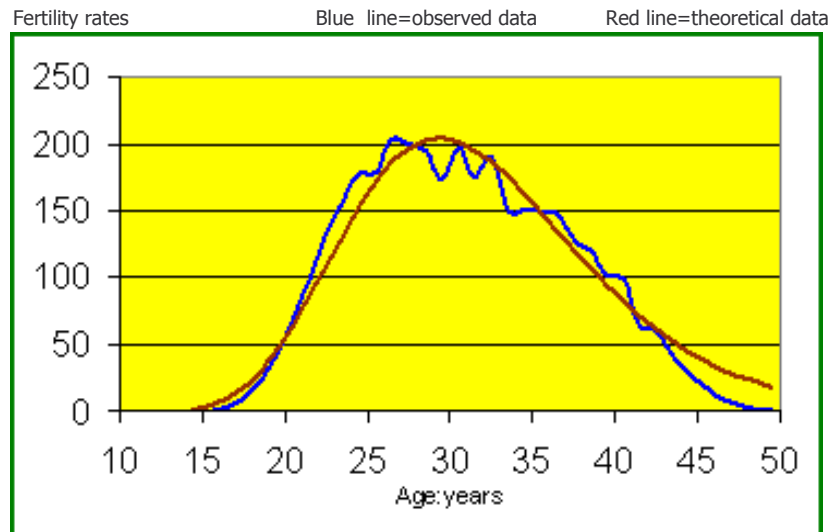


# FERTILITY FUNCTIONS

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

## INVERSE-GAUSSIAN



**Age-specific fertility rates: Italy, year 1930**

The density function for this distribution is:

$$f(X) = C \sqrt{A/2 \cdot \pi} \cdot X^{-3/2} \cdot e^{-\left[ \frac{A(X-B)^2}{2XB^2} \right]} \quad [1]$$

with the parameters A, B and C (which equals the total fertility rate).

In the Inverse-Gaussian, the relationship between mean, variance and the parameters of the function is:

$$\begin{aligned} MED &= B ; & DS &= B^3 / A \\ \text{from which follows: } & B = MED ; & A &= (MED)^3 / DS \end{aligned} \quad [2]$$