

Analysing Open Birth Interval Distributions*

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(excerpt)

This paper is concerned with the relationship between open and closed birth interval distributions. We regard women with a given number of children ever born as a population which women enter by having a birth of the given order and leave either by having a birth of the next order or by dying.¹ A women's duration in parity is then analogous to age, and open birth interval distributions, which are distributions of women by duration in parity, are analogous to age distributions.² We exploit this analogy to obtain explicit formulae for the relationship between open and closed birth interval distributions. This in turn allows us to identify conditions under which open birth interval distributions may be used to estimate closed birth interval distributions. The ideas are illustrated with an application to open interval data from the 1976 Indonesian Intercensal Population Survey, Stage II (SUPAS-II).

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¹ This idea seems to have been first put forward by L. Henry, 'Fertility of marriage: a new method of measurement' (translated from the French by Nita Lery). *Population Studies Translation Series*, no. 3 (New York: United Nations, 1980; French ed., 1953). For recent developments see N. B. Ryder, 'Progressive fertility analysis', typescript, July 1981, and G. Feeney, 'Population dynamics based on birth intervals and parity progression', *Population Studies*, **37** (1983), pp. 75–89.

² The analogy between open birth interval distributions and age distributions is noted by Mindel C. Sheps and Jane A. Menken, *Mathematical Models of Conception and Birth* (Chicago: The University of Chicago Press), p. 192.