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Expanding an abridged life table

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Abstract
A question of interest in the demographic and actuarial fields is the estimation of the age-specific mortality pattern when data are given in age groups. Data can be provided in such a form usually because of systematic fluctuations caused by age heaping. This is a phenomenon usual to vital registrations related to age misstatements, usually preferences of ages ending in multiples five. Several techniques for expanding an abridged life table to a complete one are proposed in the literature. Although many of these techniques are considered accurate and are more or less extensively used, they have never been simultaneously evaluated. This work provides a critical presentation, an evaluation and a comparison of the performance of these techniques. For that purpose, we consider empirical data sets for several populations with reliable analytical documentation. Departing from the complete sets of qx-values, we form the abridged ones. Then we apply each one of the expanding techniques considered to these abridged data sets and finally we compare the results with the corresponding complete empirical values.

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