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Title : Comparison of Three Methods for Estimating Complete Life Tables

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Abstract : A question of interest in the demographic and actuarial fields is the estimation of the complete sets of $q(x)$ values when the data are given in age groups. When the complete life tables are not available, estimating it from abridged life tables is necessary. Three methods such as King's Osculatory Interpolation, Six-point Lagrangian Interpolation and Heligman-Pollard Model are compared using data on abridged life tables for Malaysian population. Each of these methods considered was applied on the abridged data sets to estimate the complete sets of $q(x)$ values. Then, the estimated complete sets of $q(x)$ values were used to produce the estimated abridged ones by each of the three methods. The results were then compared with the actual values published in the abridged life tables. Among the three methods, the Six-point Lagrangian Interpolation method produces the best estimates of complete life tables from five-year abridged life tables.

Subject : King's Osculatory Interpolation; Six-point Lagrangian Interpolation; Heligman Pollard Model

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