Modeling and forecasting healthy life expectancy with Compositional Data Analysis

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The Interdisciplinary Centre on Population Dynamics - University of Southern Denmark

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Room Benvenuti and live Zoom
Department of Statistical Sciences

Will the extra years of life gained by the increase in life expectancy be lived in good or poor health? As forecasts support social, economic and medical decisions, as well as individuals' choices, there is a clear rationale for forecasting healthy life expectancy (HLE). However, only a limited number of models is available to forecast HLE. We here suggest two models to forecast health and mortality simultaneously and coherently. One model is based on the Sullivan method to estimate HLE and the second one on the multistate life table method. Both models use Compositional Data Analysis (CoDA) to account for the coherence between health and mortality. Mortality and health at age 50 and above is forecast for Spanish and Swedish females. Both models provide similar estimates and forecasts of HLE. For Sweden, a reduced number of years lived with disability is expected, supporting the compression of morbidity theory. For Spain, both models predict less years lived with severe disability but more with mild-disability, supporting the dynamic equilibrium theory.

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