

# Common mortality modeling and coherent forecasts

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## Abstract

A common and coherent mortality modeling is presented for analyzing mortality dynamics from a pool of countries, under the framework of the generalized linear models (GLM). The countries are firstly classified by fuzzy c-means cluster analysis, to construct the *common sparse age-period model* structure for the post-war mortality experience. Next, we propose a method to create the *common sex difference age-period model* structure. Accordingly, we produce the *residual age-period model* structure for each country and sex. The time related principal components are extrapolated using dynamic linear regression (DLR) models and coherent mortality forecasts is investigated. We make use of mortality data from the “Human Mortality Database”.

Keywords: Fuzzy c-Means Cluster; Generalized Linear Models; Sparse Principal Component Analysis; Dynamic Linear Regression; Mortality Forecasting; Residuals; Coherent;

## References

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