

Sex Ratio among the Oldest Old. The Effect of Differential Mortality between Italian Regions.

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Research Issue

So far studies have explained the centenarian sex ratio by assessing separately the male and female mortality instead of evaluating how they jointly contribute.

The study aimed to fill this gap by decomposing a difference in female ratio at age 99 in sex differentials in mortality. The analysis was carried out on cohorts 1891-1892 and involved two Italian regions with a low female ratio (Calabria and Sicily) and two regions with a high one (Veneto and Lombardy).

The variation in female ratio was explained through the male and female mortality from age 79 to age 99.

Data

Data were represented by population figures of cohorts 1891-1892 and their probability of dying from age 60 to age 99.

Methodology

The female ratio used for the decomposition was given by the product of female ratio at baseline and person-years ratio at age 99. The comparison between the predicted female ratios and those observed at age 99 indicated that the estimates were very close to the real ones when the analysis started from age 79. Indeed, from age 60 to age 79 there were still migration dynamics affecting the sex composition of regional population. As consequence, the model was run on data from age 79 onwards.

The decomposition method, which was applied on each difference between the southern and northern regions, provided the effect due to the sex composition at baseline and sex differentials in mortality between ages 79 and 99.

Outcomes

Although the difference in female ratio between the southern and northern regions is pretty similar, distinct factors account for the deviation of Calabria and Sicily from Lombardy and Veneto. While the lower sex ratio in Calabria is mostly due to the higher survival of men, the magnitude of Sicilian ratio is also attributable to the female mortality. In particular, when comparing Sicily to Veneto, the higher mortality of Sicilian women represents the main factor lowering the difference.

The decomposition proposed appears to be a relevant instrument to explain how sex ratios with similar magnitude might result from opposite dynamics.