

COMBINING INFORMATION OBTAINED FROM DIFFERENT SPATIAL CLUSTERING METHODS

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Several statistical methods have been suggested to assess the location of spatial clustering of disease cases or other phenomenon of interest. However, there is relatively little in the literature devoted to comparison of the results obtained by different methods. We chose to compare different methods proposed for examining spatial disease patterns and based on a local test for clustering that scans the entire study region searching for local excesses and/or reductions of risk. Our proposal consist in a novel procedure that combine the results obtained by these different methods based on multigraph theory.

We applied the proposed procedure to investigate the spatial distribution of longevity cases in the population of the Emilia Romagna region in Italy. The growingly rapid increase of the frequency of extreme longevity cases is a recent phenomenon, rapidly evolving and still mostly unknown. The frequency of longevity cases has been booming over the last years, even if with remarkable differences between sexes and across diverse geographical contexts. We have analysed the phenomenon in this region through the construction of suitable indicators for the period from 1994 to 2004 and comparing the results obtained by different spatial scan statistic methods, then we have obtained a combined solution that could provides insight to identify possible longevity “clusters”; this constitute the starting point for further research related to the bio-demographical characteristics featured by localities of particular interest for this phenomenon.