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MEASURING THE MULTIDIMENSIONAL DEMOGRAPHIC CONVERGENCE BY NORMALIZED INDICES OF MULTIPLE VARIABILITY

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ABSTRACT:
We aim to test empirically the demographic convergence of the populations towards a common pattern, according to the demographic transition theory. In literature, many studies have used different statistical indices of variability. However, they have only focused on a one-dimensional perspective, that is testing separately the convergence of each variable at time. Instead, each population is characterized by the set of all its different demographic phenomena; then it could be interesting to test the convergence in a multidimensional perspective, that is considering simultaneously together all variables. Here, we propose a statistical method useful for this aim. We consider the crude birth rate, the crude death rate, the infant mortality rate and the aging index. We define suitably absolute indices of multiple variability and, in aim to evaluate the magnitude of the convergence, the corresponding normalized ones with values comprised between 0 and 1. We test the demographic convergence of the populations belonging to the European Union, considering all the years from 1960 to 2007.

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