

POPULATION ESTIMATES ACCORDING TO URBAN AREAS TYPOLOGY - FROM THE RELEVANCE OF PRODUCTION TO THE DISSEMINATION OF NEW STATISTICAL INFORMATION

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Abstract:

The aim of this paper is to present the underlying working process that resulted in the dissemination of new statistical population indicators according to Urban Areas Typology, by focusing on the methodological quality assessment approach that supported this process. The presentation will start by showing how resident population estimates according to Urban Areas Typology were possible to obtain, by focusing on the input information and on the principles of the cohort component method applied to LAU 2 level ; next, it will present the methodological approach followed to develop a quality measurement study to assess the viability of disseminating new statistical indicators; and lastly it will present the set of new statistical indicators published by NUTS III and according to the Urban Areas Typology.

Statistics Portugal disseminates annual resident population estimates since 1940 and by municipality level (LAU 1) since 1981. Nevertheless, there has been an increase demand for new territorial segmentation of annual resident population estimates, namely for spatial planning by the central and local administration. However, data on annual resident population at LAU 2 level is needed to obtain population data for territorial levels that result from the aggregation of LAU 2 units, namely using the Urban Areas Typology, which classifies LAU 2 units according to three levels of urbanization - predominantly urban areas (APU), medium urban areas (AMU) and predominantly rural areas (APR).

Based on these premises, Statistics Portugal developed a study to estimate annual resident population at LAU 2 level to obtain resident population estimates by Urban Areas Typology.

This study took into account the need to have a consistent model and results that need to be coherent with resident population estimates at LAU 1 level.

The model follows the cohort component method currently used to estimate annual resident population by LAU 1, encompassing the demographic change components - births, deaths and migration (international and internal migration). Data on births and deaths is collected administratively up to LAU 2 level. Data for the migration component at LAU 1 level needs to be estimated, since no statistical data is available for this territorial dimension.

For this purpose a series of resident population data at LAU 2 level was estimated between 2001 and 2010 (having the 2001 population census as the base population) and the results were compared with Census 2011 data. A set of measures (Bryan, 1999; Coleman and Swanson, 2007; Swanson et al, 2000) were used to calculate the differences between the resident population estimates and 2011 Census results (defined as the reference population), namely percent errors (PE), absolute percent errors (APE), mean algebraic percent errors (MALPE) and mean absolute percent errors (MAPE). A multi scale assessment perspective was carried out - results obtained for these measures were compared between the different territorial levels, with special focus between the differences obtained for LAU 1, LAU 2 and NUTS III by Urban Areas Typology population estimates.

Based on the results of the quality assessment study it was possible to conclude that resident population estimates were consistent to be used at NUTS III level and by Urban Areas Typology (corresponding to aggregations of LAU 2 units). Therefore, ten additional statistical demographic indicators by Urban Areas Typology have been disseminated (2011 data series) according to the new NUTS version (NUTS 2013).