Households in potential economic distress. A geographically weighted regression model for Italy, 2001–2011

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ABSTRACT

The potential economic distress of households is a phenomenon bound up with a very broad set of economic, demographic and social factors. This paper is concerned with the identification of these factors and of how their spatial variability influences the spatial variability of the Share of Households in Potential Economic Distress (SHED). To this end, a model of geographically weighted regression (GWR) is calculated for the SHED observed in the 110 Italian provinces at the time of the last two censuses (2001 and 2011). The results show that the SHED and its determinants present a sharply defined geographical pattern that varies over the ten-year interval.

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1. Introduction[1]

This study examines the determinants of the share of households in potential economic distress in Italy and in particular their spatial variability with respect to two points in time: 2001 and 2011.

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[1] The views expressed by the authors in this paper are personal and do not necessarily reflect the views of their Institution.

Using data from the Italian demographic censuses and carried out at the provincial level (NUTS 3),[2] Geographically Weighted Regression (GWR) was run in which the share of households in potential economic distress (hereafter SHED), a statistical indicator recently proposed by the Italian National Institute of Statistics (Istat), is regarded as a linear combination of a set of explicative demographic and socio-economic variables.

The scientific community, as well as official statistics, has recently focused increasing attention on the subjects of well-being, poverty and inequality in general. In particular, the field of quantitative sciences has seen a proliferation of approaches and measurements in an attempt to both overcome the limitations displayed by the traditional methods of measurement and to provide useful policy tools for geographical areas and the various regional and supra-regional economies.

The recent economic and social crisis affecting most western societies has increased media's and politicians' attention on these themes and the problems connected with their correct measurement and interpretation. The spatial dimension of phenomena related to social inequality and economic hardship becomes an element of primary importance in this perspective. The SHED indicator, constructed as the ratio of the number of households with children in which the head of the household is of working age and no one works to the total number of households, is significantly influenced by the characteristics of the various local economies. This is because the propensity to have children, age structure, propensity for transition to adulthood state and receptiveness of the labour market are variables closely related to the competitiveness of territories and their degree of liveability and development. These aspects are affected not only by factors with demographic and economic characteristics in the broad sense but also the local dimension, which unquestionably includes the structure of demand and supply for labour, human capital and territorial attractiveness as well as strictly spatial characteristics such as proximity to or distance from areas of a particularly receptive and competitive nature. This is particularly true during periods of economic recession, as not all territories react in the same way in light of, among other things, their differences in demographic and economic structures and geographical position with respect to the driving forces of a supra-regional economic system.

The paper is organised as follows. Section 2 presents the statistical methodology employed and the reasons for its choice, while Section 3 presents the theoretical model adopted and the variables selected to carry out the analysis. The results are discussed in Section 4 and the conclusions are presented in Section 5.

2. Material and methods

The data used are drawn from the Italian population and housing censuses of 2001 and 2011 carried out and published by the Italian National Institute of Statistics (Istat). In particular, the indicators used are from the online *8milaCensus* information system, which presents a selection of indicators related to the Italian censuses from 1951 to 2011 at various levels of territorial detail.[3] It is important to note that the data are perfectly comparable in geographical terms because the boundaries of the territorial units are reconstructed in accordance with those in 2011 so as to eliminate any variation. The census is taken as the source of data here because it is the only official statistical survey capable of producing a very broad set of variables for households that are also homogeneous in terms of units of measurement and detailed at the territorial level. Moreover, the census data are perfectly comparable both in time (as the criteria of definition and units of surveying have remained the same) and in space (as all the territorial units are reconstructed to correspond with the 2011 boundaries). The provincial level was chosen for the analysis here because it makes it possible to work on an adequate number of cases (110) and, at a geographical and administrative level, broad enough to provide significant indications for actions of territorial planning and regional development.

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[2] As defined by Eurostat, the Nomenclature of Territorial Units for Statistics or Nomenclature of Units for Territorial Statistics (NUTS) is a geocode standard for referencing the subdivisions of countries for statistical purpose. Italy's regions are its first-level administrative divisions, constituting its second NUTS administrative level (NUTS 2). There are 20 regions, each of which is divided into provinces (NUTS 3) for a total of 110 provinces.

[3] http://ottomilacensus.istat.it/.