



SIS 2014

47th Scientific Meeting
of the Italian Statistical Society

Cagliari - June 11/13, 2014

PROCEEDINGS

Editors:
S. Cabras, T. Di Battista and W. Racugno

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Tel. e Fax 070271573
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info@cuec.eu

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Bell shaped fuzzy numbers associated with the normal curve

Fabrizio Maturo⁽¹⁾, fabmatu@gmail.com, Francesca Fortuna⁽²⁾, francesca.fortuna@unich.it

(1) Università di Chieti-Pescara (Italy), (2) Università di Chieti-Pescara (Italy)

Abstract Fuzzy regression models often consider triangular or trapezoidal membership functions. Of course this kind of fuzzy numbers has the advantage that they are much easy to use; nevertheless several doubts arise about the appropriateness of the triangular shape. As known, the fuzzy sets are very useful when there are imprecise data and in particular when, within an interval, the degree of truth of the values is not always the same. Fuzzy numbers are also useful to translate terms of human language into numbers. Triangular fuzzy numbers offer a good solution for dealing with this kind of data. However in this paper it is proposed an alternative membership function which appears to be much more appropriate; it has been called "fuzzy number associated with the normal curve". In this framework it will be justified the introduction of this membership function as a valid substitute for triangular fuzzy numbers.

Full paper: [3149.pdf](#)

Material deprivation among foreigners in Italy

Daria Mendola⁽¹⁾, daria.mendola@unipa.it, Annalisa Busetta⁽²⁾, annalisa.busetta@unipa.it, Philippe Van Kerm⁽³⁾, philippe.vankerm@ceps.lu, Anna Maria Milito⁽⁴⁾, annamaria.milito@unipa.it

(1) Università di Palermo (Italy), (2) Università di Palermo (Italy), (3) CEPS/INSTEAD (Luxembourg), (4) Università di Palermo (Italy)

Abstract In all European countries, migrant populations tend to have worse living conditions than native; this is particularly true for those born outside the EU. This paper proposes a new way to look at the relative living conditions of foreigners by looking at non-monetary indicators of material deprivation in Italy. In particular, we discuss differences in material deprivation among groups of foreigners once we control for the demographic and socioeconomic characteristics of each group using a flexible standardization methodology. Our results show that, in Italy, foreigners from African and Mediterranean countries and, to a lesser extent, from South Asia are most deprived and that the construction of the counterfactual distributions only marginally explain the gap between different foreigner groups.

Full paper: [2890.pdf](#)

Local Spatial Analysis of Cardiovascular Diseases in Canadian Health Regions

Eugenia Nissi⁽¹⁾, nissi@unich.it, Annalina Sarra⁽²⁾, asarra@unich.it

(1) Università di Chieti-Pescara (Italy), (2) Università di Chieti-Pescara (Italy)

Abstract Cardiovascular diseases are one of the major worldwide health concerns, responsible for premature death and disability all over the world. The present analysis has as its primary intention in assessing the extent to which the association between cardiovascular disease prevalence in the Canadian Health Regions and some well-established risk factors vary spatially. We adopt the GWR to explore if the effects of some cardiovascular disease predictors are heterogeneous across space and hence vary from place to place. Since GWR amplifies the negative effects of correlation in the weighted explanatory variables, in this study we also employ a GWR model where a ridge regression parameter has been incorporated to reduce model complications arising from collinearity.

Full paper: [3151.pdf](#)