Rural Development Indicators for Regions with Different Degrees of "Rurality": an Statistical Study for Italy.

Edoardo PIZZOLI[1]

Nowadays data from statistical offices allow the calculation of indicators related to several accounts of national development and, typically, economic, social and environmental characteristics can be highlighted. The key limitation of the same data is their territorial detail that, normally, do not match with rural and urban areas as defined by the theory.

The paper, based on available data for Italy, would like to investigate the statistical interaction among: (1) multidimentionality of rural development and related indicators (that can be approached, for example, alternatively with principal components analysis or composite indicators); (2) multidimentionality in the definition of "rurality"; (3) the degree of rurality of administrative areas (that is the level at which most of the surveys are designed, official statistics are calculated and statistical data are provided also to professional users). In Italy, the standard administrative level of disaggregation for national accounts and other main statistics is "Regions" (NUTS2 in EU classification).

In detail, the relationships between previous indicated dimensions in the definition of "rurality" and in the description of development (and vice versa) will be studied within the principal components framework. After that, the correspondence analysis approach will be considered to explore overlapping and links between different degree of rurality of regions and indicators previously selected to describe rural development.

The degree of rurality has been studied in OECD working papers and in several papers by the author (2007 – 2010). This is also part of a FP7 research project coordinated by Istat: Blue-Ets (2010-2013). A UN manual (2005) is dedicated to Rural Development Statistics (and related issues) that will be implemented in the near future in EU and other areas. A Wye city group of the UN Statistical Division is also working on the same topic. Finally, the specific issue of multidimentionality of indicators and composite indicators has been studied in statistical terms by OECD (2008).

To conclude, the paper would like to test the different multivariate techniques and solutions on the previously indicated issues, based on different statistical packages and on Italian data available at NUTS2 level.

[1] Edoardo Pizzoli, pizzoli@istat.it
Central Directorate of National Accounts
Italian National Institute of Statistics (ISTAT)
Via Depretis 84/b, 00183 Rome, Italy

References

Benzécri, J.-P. et Coll. (1986) *Pratique de l'analyse des données*, Economie, Dunod, Paris, France.
Greenacre, M. and Blasius, J. (2006) *Multiple Correspondence Analysis and related techniques*, eds, Chapman and Hall, London, UK.
Husson, F., Lê S., et Pagès J. (2009) *Analyse de données avec R*, Presses Universitaires de Rennes, Rennes Cedex, France.
Lebart, L., Morineau , A. and Warwick, K. (1984) *Multivariate Descriptive Statistical Analysis*, John Wiley and sons, New-York, USA.
Lebart, l., Morineau a. et Fénelon, J.P. (1986) *Traitement des Données Statistiques*, Dunod, Paris, France.
Moreau, J., Doudin, P-A. et Cazes, P. (2000) *L'analyse des correspondances et les techniques connexes*, Mathématiques et Applications, Springer, Berlin, Germany.
Pizzoli, E. and Palmegiani, G. (2007) *Rural Development Statistics (RDS) for Policy Monitoring: a Rural-Urban Territorial Classification and Farmers' Income Data*, African Commission on Agricultural Statistics (AFCAS), Alger, Algeria www.fao.org/es/ess/meetings
Pizzoli, E. and Gong, X. (2007) *How to Best Classify Rural and Urban?*, Forth International Conference on Agriculture Statistics (ICAS-4), National Bureau of Statistics of China, Beijing, China www.stats.gov.cn/english/icas
Pizzoli, E. (2008) *Rural Area Definition*, First Wye City Group Meeting, York, UK www.fao.org/fileadmin/templates/ess/pages/rural/wye_city_group/2008/index.htm
Pizzoli, E., Pianura, P. and Piersante, A. (2009) *Implications of Rural Areas Definition on Households Income Analysis: the Mediterranean Area*, Società Italiana degli Economisti Agrari (SIDEA), Napoli, Italy www.depa.unina.it/sidea2008
Pizzoli, E., Gianfaldoni, V. (2009) *Social Well-Being, Economic Development and Sustainability in Rural and Urban Areas: a Comparison of Indicators*, Third Wye City Group Meeting, Washington, USA
typo3.fao.org/fileadmin/templates/ess/pages/rural/wye_city_group/2010/3rd_Wye_Conference.html
Pizzoli, E. (2010) *Implications of spatial aggregation on economic variables: probability distribution forms and bias*, 10th Vilnius Conference on Probability Theory and Mathematical Statistics, Vilnius, Lithuania www.vilniusconference10.com
OECD (2008) *Handbook on Constructing Composite Indicators: Methodology and User Guide*, Paris, France. http://www.oecdbookshop.org/oecd/display.asp?K=5KZN79PVDJ5J&DS=Handbook-on-Constructing-Composite-Indicators-Methodology-and-User-Guide
Rizzi, A (1995) *Analisi dei dati. Applicazioni dell'informatica alla statistica*, La Nuova Italia Scientifica, Roma, Italy.
UN (2005*) Rural Households' Livelihood and Well-Being. Statistics on Rural Development and Agriculture Household Income*, Geneva, Switzerland
www.fao.org/fileadmin/templates/ess/pages/rural/index.htm