Włodzimierz Okrasa

Analysis of local development trajectories: patterns and determinants of differentiation

Problem: The research problem is twofold – substantive and methodological. The first question focuses on patterns in gminas' development paths (trajectories), defined in terms of reductions In the multidimensional index of local deprivation (WIDL), from 2004 to 2016, with particular emphasis on differentiation between parts of the Mazowieckie Voivodeship, distinguished conventionally, after Eurostat, into "capital" and "region." The second question concerns the determinants of these differentiations in a "diachronic" spatio-temporal approach, by presenting relevant variables in Functional Data version.

Methods: Identification of determinants of variation between local development patterns/municipalities involves spatial analysis methods (using BDL data)—including autocorrelation of the FD version of the WIDL index, by deprivation/development domains ('FD-clusters'). The impact of development funds ('subsidies' for municipalities per person) is evaluated first from the perspective of 'spatial equity' (descriptively, by comparison with the distribution simulated using the 'development needs' function), and then 'parametrically' using Marginal Benefit Incidence Analysis (MBIA) to verify the hypothesis about an effective 'targeting' policy. Moreover, the question of whether this policy shows any tendency - in the sense of spatial co-occurrence (clusters) of municipalities with a similar deviation of actual subsidies from expected ones (based on the aforementioned 'equity' principle) is the subject of visualization for selected years: 2004-08-10-12-16. The importance of other influencing factors, apart from subsidies, including selected characteristics of municipalities and variables derived from household surveys (residents of some municipalities participating in SILC_UE), such as income and education of the household head, is estimated in a (multinomial) logistic regression model in a comparative manner - for municipalities with a generally 'increasing' vs. 'decreasing' pattern of changes over time (municipal development trajectory).

Results: The patterns of change ("increasing " and "decreasing" trajectories) for parts of the Mazovian proved to be relatively most different. While subsidies generally go to the "needy" gminas, also confirmed by the MBIA results, the emerging "convergence" pattern is characterized by a tendency toward decreasing spatial inequalities, which dominates among the least developed gminas (a "downward" rather than "upward" equation). The profiles of factor impacts differ more between gminas characterized by a predominantly increasing vs. decreasing development pattern than between municipalities in both parts of the voivodeship – apart from the growth-friendly internal migration balance (in the 'capital' voivodeship) the fraction of the working-age people among the gminas with dwit declining pattern.

Conclusions: Despite the limitations of the information contained in the Local Data Bank, they allow for the use of numerous analytical tools offered in the literature for assessing development processes. Both at the level of planned distribution of development funds (it is possible to estimate the objective "development demand" ex ante) and evaluation from the perspective of "spatial equity" and the effectiveness of the applied allocation scheme (ex post). Adopting a "diachronic" perspective (thanks to the FD-version of variables) allowed for the identification of the "contribution" of each of the 11 deprivation domains to the municipal development trajectory specific to each voivodeship.

Key words: Local development patterns - local deprivation measurement - Marginal Benefit Incidence Analysis/MBIA - spatial analysis - Functional Data application.