# The Well-Being Impact of Community Development: Issues in Modelling the Cross-level Interaction Effect

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**Abstract**

The analyses of the relationships between objective and subjective well-being at community and individual level , respectively, cry out for multilevel modelling and spatial contextualization to assess the direct environment effect (of a 'place', 'locality', neighborhood) taking into account the influence of cross-level operating factors, i.e., interaction effect. This paper aims to empirically validate the adequacy and efficiency of alternative approaches to this task – the static one, using spatial cross-sectional data, and the dynamic approach, using spatio-temporal panel data (for years 2013-2016). Within each of these two approaches – the major methodological distinction is the way of using the Functional Data framework. Three types of measures are employed in calculations: multidimensional index of local deprivation (data from Local Data Bank maintained by each of 2478 communes, country-wide); household income variables (from EU-SILC); and individual (subjective) well-being (based on either Social Diagnosis survey or Time Use Survey). The paper is structured according to the research tasks implied by the above sketched problem, as follows: The conceptual and methodological systematization of the relevant modeling strategies – focusing on distinction between cross-sectional (static) vs. panel data (hierarchical / multilevel data) – is followed by exploration of spatial patterns (clusters) of community and individual well-being (spatial autocorrelation), along with checking for spatial dependence of the well-being measures. This is done in parallel By multivariate Functional Data approach using data for both commune and household (individual) level variables (income or well-being). Multilevel modelling for both types of approaches - cross-sectional and panel data – is attempted to explicitly assess the spatial interaction effect, and compare its significance within each of the two approaches. In the results summarizing section, research and policy consequences of such alternative methodologies are compared, and possible recommendations for their suitability for the design and evaluation strategy of the geographical allocation of public resources are briefly discussed.

***Keywords****: community development/ well-being; Functional Data; multilevel modelling; geospatial analysis*

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