Spatial Econometric Approaches for Count Data: An Overview and New Directions

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Abstract : This paper reviews a number of theoretical aspects for implementing an explicit spatial perspective in econometrics for modelling non-continuous data, in general, and count data, in particular. It provides an overview of the several spatial econometric approaches that are available to model data that are collected with reference to location in space, from the classical spatial econometrics approaches to the recent developments on spatial econometrics to model count data, in a Bayesian hierarchical setting. Considerable attention is paid to the inferential framework, necessary for structural consistent spatial econometric count models, incorporating spatial lag autocorrelation, to the corresponding estimation and testing procedures for different assumptions, to the constrains and implications embedded in the various specifications in the literature. This review combines insights from the classical spatial econometrics literature as well as from hierarchical modeling and analysis of spatial data, in order to look for new possible directions on the processing of count data, in a spatial hierarchical Bayesian econometric context.
Keywords : spatial data analysis, spatial econometrics, Bayesian hierarchical models, count data
Conference Title : ICSEM 2016 : International Conference on Statistics, Econometrics and Mathematics
Conference Location : Paris, France
Conference Dates : January 21-22, 2016