Variable Models for prediction and adjust of multivariate data

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At least since Marshall's classic book (1890), is known about the tendency to cluster in certain areas of industry. This trend has captivated economists, geographers and politicians recently. The existence of these clusters has attracted attention as a possible magic formula to achieve development of certain regions, as has happened in the success of Silicon Valley. This has led to the study of spatial statistical models, such as the right tool for addressing the problem from the scientific point of view. The study of statistical models that explain the clustering location companies engaged in the manufacture of different items, resulting in the identification of variables, statistical test based on distances, to differentiate if the distribution of firms is caused by obeys or random if a particular model based on the covariates, Kang and Cressie (2011). Is intended the study of different existing tests and are suitable for these situations.

Basically the study of these problems is to introduce a class of Markov point processes that simultaneously measure the spatial trend and interaction between elements. These tests can be treated both from an frequency approximation Sweeney Gomez-Antonio (2011), and from the Bayesian approach Li and Shepherd (2010), this work is focus in the Bayesian approach to study the problem of clusters. In fact the first empirical application of statistical spatial models points in the field of industrial location, analyze the distribution of the electronics industry in Madrid.