Spatial methods become more and more popular technic describing economic phenomena mainly due to increasing availability of point data. Examples of such data are locations of firms or real estate. Nonetheless models using for analysis point data and considering not only locations, but also features of several points of space are not so popular nowadays. First, it is connected with unavailability of so-called covariates (these are explanatory data which preserve their meaning in the whole study region and are usually represented as spatial function). Secondly, to estimate model parameters time-consuming and memory-intensive simulations are needed. Nevertheless, in contrast to regional (aggregated) data, point data allow not only to observe individual features of certain phenomena, but also to capture their spatial behavior, e.g. interactions.

Previous attempts of new location modelling use mainly aggregated data (e.g., number of firms in a given industry of a study region). One of the reasons for emergence of such models was low availability of point data. Outcome of such models was either number of newborn enterprises or indication of area (not an exact point) where new firm can locate. Taking into account the fact that the same number of points in two different regions can have other spatial distribution, usage of such models seems to be ineffective.

Aim of proposal project is development a method of forecasting for a new business location, considering spatial structure around the point and features of both neighbor points and terrain. Innovative element of the project is use of models, which take into account existence of interaction between points within radius. Sometimes when estimating such models, we have a small size sample and/or aim to optimize computation time, thus results and conclusions may differ depending on available data. Therefore, another aim of the project is development of method which will produce stable outcomes for sample and whole population.

Above described objectives will be implemented using already existing point data of business locations and collected data of other firms' features, region structure etc. Sample will be divided into study data and training data. Study data will be used to model estimation – this model will be a base of developing forecasting method. Training data will be used to test forecast quality. Developed method may be used for description of other point-like phenomena.