Description for the general public

Non-market goods valuation is a topic of major interest in many branches of economics such as environmental, cultural or transportation. It provides necessary information about distribution of benefits from given public good, which allows for its more efficient allocation. In order to value some non-market good researcher must choose one of the preference elicitation method and apply proper econometric models to data. One of the main objectives of such process is finding factors, which influence individual preferences. Nowadays, there is a growing realization in relevant literature that "soft information" variables such as perceived attributes of a public good (e.g. perceived cleanness of the lake), attitudes, knowledge, experience or some psychological factors are of major importance. As suggested by behavioral sciences these factors may have a significant impact on preference formation, which seems to be acknowledged by many empirical studies. Main problem with such variables is that they are not straightforward to measure and therefore not easy to include in the statistical model. In his Noble lecture, Daniel Kahnemann highlighted that there is still the gap between cognitive and decision-making models with an in-depth understanding agent behavior. Hybrid choice models have a prospect to fill this gap. It is a very flexible class of models allowing for incorporation of "soft information" variables directly into choice model by applying so called latent variables framework. There are also other extensions in these models such as e.g. preference heterogeneity. Growing number of their application in empirical research suggest that there is a belief among researchers that they can provide more valuable insight into individuals preferences by allowing for more behavioral approach.

The main objective of this research project is a further development of hybrid models. It is motivated by growing need of usage of more behaviorally adequate models in public goods valuation to provide high quality of estimated welfare measures. Basic research conducted in this project will consist of two parts. First of them will be more theoretical and focused on betted understanding of hybrid models. Although their growing popularity they are frequently treated as a "black box" and relatively little attention is devoted to understanding their results and inference based on them. Due to their complicated structure different effects can be easily confounded if the model is not specified properly. Using Monte Carlo simulation we want to address this issue by investigating how the choice of model specification can influence the obtained results and inference. The second problem, which we will also address by simulation, is the prospect of hybrid models to deal with bias caused by endogeneity of so called indicator variables. Answers to these research questions will provide us with better understanding of hybrid models, especially on correct interpretation of results and influence of "soft information" variables on individuals decisions.

Second part of basic research aims to expand hybrid models to other valuation method such as travel cost method. It is a non-market good valuation method which can be used to estimate benefits from goods usually used for recreational purposes such as forests, seas or lakes. In this method econometric models are used to investigate influence of various factors on recreation demand (defined as number of visits to given site during given period of time). Hybrid count data models, proposed by us, will allow for analysis of influence of "soft information" variables as well. To date these factors are omitted or included incorrectly. Benefits of our new approach will be presented by conducting valuation of public good with travel cost method. Obtained results will be compared with traditional, simpler approach in which behavioral factors are omitted.