

## **The Robust Ordinal Regression and the constructive approach of Multiple Criteria Decision Aiding**

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Multiple Criteria Decision Aiding (MCDA) is constituted by a set of concepts, techniques and procedure aiming to provide a recommendation in complex decision contexts. MCDA is based on a constructive approach that aims to build a preference model in cooperation between the analyst and the Decision Maker. A typical MCDA methodology is the ordinal regression aiming to define a decision model in a given class (an additive value function, a Choquet integral, an outranking model such as ELECTRE or PROMETHEE and so on) representing the preference information provided by the DM. Recently ordinal regression has been extended and generalized through Robust Ordinal Regression taking into account the idea that there is a plurality of decision models in a given class compatible with the preferences expressed by the decision maker. Originally, the set of compatible decision models was used to define the necessary and possible preference relations holding when the preference holds for all value functions or for at least one value function, respectively. After, a probability distribution on the set of compatible decision model was introduced to define probabilistic preferences. ROR has been also fruitfully applied to interactive optimization procedures. In this talk I shall present the basic concepts, the principal models, the main applications and the recent developments of Robust Ordinal Regression taking into consideration its advantages in the context of an MCDA constructive approach.