THE PRINCIPLE OF COGNITIVE HIERARCHY IN MAKING INDIVIDUAL AND COLLECTIVE DECISIONS

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The purpose of this study was to analyze the methods of *k*-levels and cognitive hierarchy, their approbation and application to solve various problems of an individual and collective nature with the help of an applied experiment. The task was to conduct the analysis several times and in different time frames, in several iterations. Effects such as cooperation and additional information were additionally investigated since in addition to individual decision-making under conditions of asymmetric information, a second attempt was also offered, after everyone heard the winners and heard the results of the first attempt, i.e., the information was symmetrical and available to everyone. At the third attempt, it was suggested to join any groups and make collective decisions. The experiment was conducted on the basis of differently formed groups. Students of specialized fields of education of various years of study, and scientific and pedagogical workers with professional education (candidates and doctors of economic, technical, physical and mathematical sciences) were selected. Two models for k-levels, k-LR and cognitive hierarchy (CH), were chosen and built for the study. Although the models are similar, they have some differences. The goal was to compare the indicators of the models with those that will be obtained in practice, and to prove or disprove the relevance of their use in decision-making evaluation. An experiment was conducted, data were collected, and their analysis was carried out by calculating and comparing experimental and model data. As a result, it was established that the experimental results were close to the CH model and not to the k-LR model. Factors such as awareness and cooperation increased the number of higher (deeper) level players at the expense of lower-level players. Changes due to awareness or cooperation occurred, but were not significant, and only brought the experimental results closer to the point of convergence with the model ones, which once again emphasized the possibility of using this model in different circumstances. Under circumstances such as information or cooperation, no optimal solution (saddle point) was found under pure strategies, according to Nash and Pareto. This finding is especially promising for the future economic analysis since it proves that even with an obvious solution to the model, it cannot always be solved according to "classical" theories and equilibrium, and people's behavior is described by more complex cognitive processes in decision-making and operations research.

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