

An Improved Regression Model of Group Rationality by Member Rationality and Characteristics: Group Decision-making under Limited Rationality by Problem-solving and Persuasion

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The purpose of this experiment is to present the regression model which describes the relation between group rationality and group member traits, especially group member characteristics. There are many problems to be solved in the world but our rationality to challenge them is limited. If problem-solving or decision-making within groups is an important part of our lives and if group rationality which determines the problem-solving or decision-making level depends on group member traits, it is essential to estimate the relation between group rationality and group member traits.

Although a large number of studies have been made in this field, there has been only limited success. But this experiment shows that member traits have a statistically strong relation to group decision-making or group rationality.

This study analyzed the data from 587 university students in 2, 3, 4 or 5 person groups that made 175 groups in total. Rationality of a group member and a group was measured by a questionnaire. And characteristics of a group member were assessed by Maudsley Personality Inventory (MPI), Japanese edition.

The preceding model developed by GOTO (2002) succeeded in structuring the relation between group rationality and member traits namely, member rationality and member characteristics. But because of poor R^2 , the model was not useful for prediction.

In this experiment, as a result of making an effort to find dummy variables we succeeded in raising accuracy of the model. The new regression model developed here could offer useful information for improvement in group rationality and in effective personnel management. And this model proved that MPI was useful. Furthermore, by using MPI and dummy variables, we can expect to raise group rationality.