

Multi-Person Multi-Criteria Decision Making

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Thesis Summary

A general methodology of solution of Multi-person Multi-criteria Decision Making problems has been suggested. The problem has been conceived in the context of two potential areas.

- (i) In complex Corporate Policymaking, where the Board of Directors takes a group decision.
- (ii) Complex problems in the Social/Public domain where the decisions makers almost invariably represent the various affected and/or interest groups. In the following the contents of the thesis has been briefly summarised.

A brief survey of the existing methodologies to solve Multi-criteria problems is carried out in Chapter 1. The methods are classified into four distinct areas, each of which is discussed to bring out the relative strengths and weaknesses of the methods.

Chapter 2 represents the formulation of the specific problems under consideration in the thesis viz., the Multi-person Multi-criteria Decision Making problem with a discrete set (finite) of alternatives.

Chapter 3 discusses the various aspects of problem under consideration and brings out the difficulty in the solution methodologies of such problems. It then evolves a general method of solution to such problems. The method takes off from an interactive method of solution for a single decision maker as a starting point, uses the concepts of indifference and finally formulates a gaming situation for the group problem. The game is played to achieve a consensus solution.

The method is then applied to an actual Urban Planning problem of Calcutta, to test the applicability of the method suggested. Chapter 4 describes in detail the problem and views it as a Multi-person Multi-criteria Decision Making problem. It is then formulated in the specified framework in Chapter 5 and experimented with a few groups of individuals in Chapter 6. The experiments showed encouraging results.

A second example involving the Energy Planning situation in India is described, formulated and tested in Chapter 7, again with encouraging results.

The thesis finally concludes with a list of possible directions for further research.