

Studia Ekonomiczne 62

BADANIA OPERACYJNE. METODY I ZASTOSOWANIA

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STRESZCZENIA

THE TIME-COST TRADE-OFF PROBLEM IN PROJECT WITH A WORK AMOUNT BUFFER

Summary

The goal of this paper is to develop a general model for project on the basis of the Critical Chain approach. The described model assumes different approach to main overestimations in project planning. In this proposal workers' safety is hidden in work amount (effort) estimations and it is a next result of the research on multi-dimensional project buffering. Presented approach is supported by motivating mechanism which was primarily developed in the time-cost trade-off problem in the project with duration and financial buffers.

NON-LIFE CLAIM SETTLEMENT AS AN ISSUE OF ALLOCATION

Summary

Allocating claim settlement specialists in any insurance company is now one of the most important issues to be dealt with by means of optimisation methods. Problems to be solved in this context include qualifications of insurance company employees and time required to perform particular claim settlement procedures. Application of optimisation methods seems to allow for more effective share of responsibilities to be taken by those employed in claim settlement departments of insurance companies.

MULTI-CRITERIA DECISION AID UNDER INCOMPLETE INFORMATION: CREDIT CARD SELECTION PROBLEM

Summary

The problem of incomplete information is very often connected with practical applications of Multi-Criteria Decision Aiding methods. As a result very often we eliminate decision alternatives or we eliminate decision criteria.

In this paper we propose the procedure which help us in problems with incomplete information. Proposed procedure uses deciles distributions to create some artificial decision alternatives. This proposal is illustrated by credit card selection problem in the polish consumer market. We applied the Analytical Hierarchy Process (AHP) to determine the criteria weights and we use Promethee II method to sort decision alternatives.

VALUATION OF RISKY ALTERNATIVE BASED ON DECISION THEORY

Summary

All human activity are based on decision making. Simple everyday decisions are made in a routine way and they don't need complicated analysis, but decisions connected with activities of a firm require to carry out some analysis and should be aided by appropriate numerical methods.

The expected utility theory is a well known normative theory which indicates the best rational decisions. However people don't act rationally always. The prospect theory and the cumulative prospect theory belong to the group of descriptive theories, which try to explain the way people make decisions. The behavioral theories originate from paradoxes of decision theory, which couldn't be explained based on the expected utility theory.

Decisions concerning investments in stocks or portfolios may be considered as a risky alternatives. Methods for valuation of individual stocks and portfolios based on cumulative prospect theory were proposed in this work.

SOME METHODS OF MEASUREMENT OF INVESTMENT RISK

Summary

Every investment is connected with some risk. Explicit definition of risk not exist so risk can be perceived in different way by different people. As a measure of investment risk we can use many different methods.

Some of these methods such as variance, Value at Risk or Conditional Value at Risk will be presented in this article. All measures will be compared according to their properties.

Advantages and disadvantages of application of these measures will be also discussed. The last part of article will be concerned the Ginie's Mean Difference. The definition, properties of this measure and relations with the other measures of the investment risk will be presented.

RISK AVERSION MEASURE BASED ON DECISION THEORY

Summary

The decisions maker attitude towards the risk has the fundamental importance in the decision process. Three types of behaviors in the risky situations are considered: risk preference, aversion to risk and neutrality (indifference) in the face of the risk. Several various conceptions of the definition of the risk aversion (preference) are presented in the literature but most of them are based on the utility function in the sense of von Neumann-Morgenstern. The properties of the utility function characterizing the preferences of the individual reflect the attitude towards risk and the curvature of this function contains all information about the risk attitude. In this paper the possibility of the extension of existing Arrow-Pratt measures will be considered. The situation, when the initial wealth of the individual and the size of the possible loss have the influence on the strength of the aversion to the risk is discussed.

THE REVIEW OF DECISION METHODS FOR THE IMPLEMENTATION OF INNOVATIONS IN THE COMMERCIAL ORGANIZATIONS

Summary

Innovations play an important role in building competitive position of a firm and make significant contribution to firm's growth and profitability. A wide academic literature in innovation management covers a broad spectrum of issues concerning the innovations development process: starting from initial idea, through R&D project pursuing, and finishing with production phase and launching. In all phases of innovation development the tough strategic decisions come out. In this paper, against the background of innovations management systems, the review of decision methods of theoretical and practical importance was presented. The analysis shown that the complicated criteria structure is the main problem in decision-making and that the decision methods widely used so far are not sufficient for effective choices.

STOCHASTIC DOMINANCE AND UNCERTAIN DECISION MAKING

Summary

The results of many decisions depend on states of nature. The article discusses decision making under a situation that the probabilities of states of nature are not precisely known but linear constraints on the probabilities are known. Moreover, the paper presents algorithms for three levels of stochastic dominance, first, second and third degree stochastic dominance under conditions of linear partial information.

SELECTION OF A MORTGAGE LOAN USING AHP METHOD

Summary

Easy access to mortgage loans is essential for efficiency of real-estate market, and especially residential properties market. As the offer of the bank sector is abundant, so the selection of a loan satisfying the requirements of a borrower is not easy. Proposals of banks differ in interest rate, maximal length of repayment period, ways in which the repayment of a credit can be guaranteed, and the requirements for the mortgage insurance.

The main goal of this work is to present how multicriteria methods can be used in mortgage loan selection. The problem of a borrower is formulated as a discrete multicriteria decision making problem. Proposals of eight banks operating on a local market are analyzed. A hierarchical structure of criteria considered in the problem is presented, and a solution of the problem using Analytical Hierarchy Process is proposed.

APPLICATION OF NEURAL NETWORKS FOR IDENTIFICATION OF NEGOTIATION PROFILE

Summary

In the paper we propose to apply a neural network for automatic identification of negotiation profile of negotiators taking part in bilateral negotiation. As a negotiation profile we perceived a bundle of five individual characteristics of negotiators described by Thomas-Kilmann conflict mode instrument, that determine their behavior in negotiations (in process of solving problems in general). Deriving from some research works in the field of psychology of conflict we identify the set of demographic and psychological characteristics that may influence negotiation behavior and which we use as an income data for the neural network under construction.

As neural network's outcome a profile description will be defined. The data required for neural network learning process was gathered by means of questionnaires filled by Inspire electronic negotiation system users. We will build, teach and test the neural network using a software tool Neuronix, which is a neural network simulator. As a result we obtain a software tool that could be use by mediators to recognize the negotiators' profiles and stimulate negotiators positive, cooperative behaviors or reduce the negative ones.

AN APPLICATION OF CRITICAL CHAIN APPROACH TO IMPLEMENTATION OF MRP SYSTEM

Summary

This paper includes a new proposal of using the Critical Chain Project Management (CCPM) approach by real IT company during their software implementation projects. The procedure described below was created on the basis of formal CCPM principles and observations of realization processes in ERP/MRP II system implementation for one of company customers. Achieved results imply the effectiveness of CCPM approach in similar projects.

DESCRIPTION OF UNCERTAINTY IN INTEGRATED OPTIMIZATION ENVIRONMENTS

Summary

Increased competition involves the need for making better decisions. In their selection can help mathematical methods. The complexity of modern economic environment, leads to the complexity of the models in the Operations Research. To solve the tasks of optimization are necessary specialized software packages called Integrated Optimization Environments. Short description of them is given.

This paper discuss two type of uncertainty of probabilistic and linguistic nature. Second of them is implemented in chosen Integrated Optimization Environments.