



 **Tomas Bata University in Zlín**
Faculty of Management and Economics

ADVANCES in ECONOMICS, RISK MANAGEMENT, POLITICAL and LAW SCIENCE

**Proceedings of the 1st WSEAS International Conference on
Economics, Political and Law Science (EPLS '12)**

**Proceedings of the 1st WSEAS International Conference on Risk
Management, Assessment and Mitigation (RIMA '12)**

**Tomas Bata University in Zlin, Czech Republic
September 20-22, 2012**

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Preface

This year the 1st WSEAS International Conference on Economics, Political and Law Science (EPLS '12) and the 1st WSEAS International Conference on Risk Management, Assessment and Mitigation (RIMA '12) were held at the Tomas Bata University in Zlin, Czech Republic, in September 20-22, 2012. The conferences provided a platform to discuss organisational behaviour, financial management, project management, human resources, manufacturing and logistics, risk management, assessment evaluation, mitigation contributions etc with participants from all over the world, both from academia and from industry.

Their success is reflected in the papers received, with participants coming from several countries, allowing a real multinational multicultural exchange of experiences and ideas.

The accepted papers of these conferences are published in this Book that will be sent to international indexes. They will be also available in the E-Library of the WSEAS. Extended versions of the best papers will be promoted to many Journals for further evaluation.

Conferences such as these can only succeed as a team effort, so the Editors want to thank the International Scientific Committee and the Reviewers for their excellent work in reviewing the papers as well as their invaluable input and advice.

The Editors

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Plenary Lecture 1

Second Order Decision Analysis



Professor Love Ekenberg

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Abstract: I will discuss some aspects of risk analysis and decision making in practice. In such, the probabilities and utilities of consequences are often vague and imprecise. Furthermore, the support methods must allow for decision modelling with respect to different preferences and views, which further can be adjusted in an interactive fashion when considering calculated decision outcomes. There are several models for handling the natural impreciseness in such situations, e.g., based on intervals probabilities or more elaborated approaches. I will discuss how second-order calculations add information, in a computational meaningful way, when handling imprecise representations, as is the case of decision trees or probabilistic networks. If time permits, I will also discuss some real life cases, when such methods significantly would have enhanced the analyses and why.

Brief Biography of the Speaker: Love Ekenberg is head of Department of Computer and Systems Sciences, Stockholm University. He has a PhD in Computer and Systems Sciences as well as a PhD in Mathematics from Stockholm University. He is currently professor in Computer and Systems Sciences at Stockholm University and visiting professor at KTH Royal Institute of Technology, Stockholm. He has been working with various aspects of risk and decision analysis for a number of years and is former adviser to the Swedish Ministry of Foreign Affairs, Centre International de Déminage Humanitaire Genève, member of the Swedish advisory group to the UN ICT Task Force, WHO, World Bank and others. He has published well over 150 articles, books, etc, on formal methods, risk, decision analysis and eGovernment and has been member of numerous journal editorial boards and program committees.

Plenary Lecture 2

Multiple Criteria Decision Making: Analysis of the Selection Process of the Regions with State Support



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Abstract: Multiple criteria decision-making models are an important type of operations research models that explicitly consider multiple criteria in decision-making process. In personal or professional live there are present conflicting criteria that need to be evaluated in making decisions. It is necessary to explicitly evaluate multiple criteria as well as to properly structure the problem. In making the decision of e.g. whether to build a nuclear power plant or not, and where to build it, there are not only very complex issues involving multiple criteria, but there are also multiple parties who are deeply affected from the consequences. In government policy, support and satisfaction of different social group, and the cost of providing of proper social policy are two conflicting criteria that should be considered.

The aim of the regional policy is to reduce disparities among regions and to ensure their development. There are two main concepts of regional policy. The first concept is a policy of creating conditions for overall economic growth. The second concept is based on helping directly the economically weak regions. Therefore the Government and the Ministry for Regional Development and the Ministry of Industry and Trade of the Czech Republic select regions with concentrated state support (structurally challenged regions, economically weak regions and regions with high unemployment) which are less developed in many socioeconomic indicators.

Region evaluation process includes criteria (indicators) as unemployment rate, number of applicants per one job place, income tax rate, number of private entrepreneurs and purchasing power. The set of criteria and their relative preferences during the years 1991 – 2010 were changing.. Thus we examine trend of the criteria weights. Two approaches are discussed for evaluation of criteria weights. The first approach is based on the method of multiple attributes analysis – the Analytic Network Process. Results of this method show the continuity of the whole process of selection of supported regions. The second approach is based on the Data Envelopment Analysis. This model allows analyzing practical efficiency of the regions also in the time series. The analysis of the criteria weights can be made using input and output weights calculated for individual regions. The selection of regions with state support is also multiple criteria process and analysis of used method of selection of the best one is very important problem. The problem is also the efficiency of state support of selected regions, which can be evaluated using the Data Envelopment Analysis.

Brief Biography of the Speaker: Helena Brožová, Assoc. Prof. She obtained her Master Degree in Operations Research and Management Theory at the Faculty of Mathematics and Physics, Charles University in Prague, Ph.D. Degree in Economics at the Faculty of Economics and Management, Czech University of Life Sciences (DSE FEM CULS). She is the Associate professor in Systems Engineering. She works at the DSE FEM CULS (former University of Agriculture). She teaches many subjects as Mathematical Methods in Economics, Supply Chains Management, Multiple Criteria Decision-making, System Theory and Applied System Science, and Decision Support Systems. Her research area consists of practical implementation of Operations Research and System Sciences, and especially concerns of processes of Multiple Criteria Decision Making and Decision-Making models. She is a member of Czech Society of Operation Research and International Society of Multiple Criteria Decision Making. She is a member of the project team for the scientific project “Information and Knowledge Support of Strategic Management”.

Plenary Lecture 3

Mathematical Models for the Creation of Legal Values



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Abstract: This paper focuses on some aspects of a mathematical model for the creation of legal values, still in progress. The cycle of axiological genesis is to be analyzed as composed of two phases: the pretention of the subject towards an object; the feedback of acknowledgment, qualifying and vesting the pretention. The synthesis of those two moments gives birth to a legal entitlement, associated with a certain axiological potential. Such entitlement can be challenged by another person, hence triggering an adjudication process. The engineering of the legitimacy to emit the feedback signal leads the way to social and political issues. As a conclusion for this paper, we call upon a new approach for the Economic Analysis of Law, applying economic methods, tools and criteria directly to legal values, and not just on economic values affected by law.

Brief Biography of the Speaker: Massimiliano Ferrara is Professor of Mathematical Economics at "Mediterranea" University of Reggio Calabria where he was also Dean of the degree in Economics. Actually he is the Director of Culture, Education, Research and University Department at Regione Calabria. He was the Founder and Director of MEDAlics and Vice Rector at "Dante Alighieri" University of Reggio Calabria. He was also Visiting Professor at Harvard University, Cambridge (USA), Morgan State University in Baltimore (USA), Western Michigan University (USA), New Jersey Institute of Technology in Newark (NJ) (USA). He was a speaker at several WSEAS international conferences. He is editor of several international journals: Advances in Management and Applied Economics (AMAE), African Journal of Science, Technology, Innovation and Development Applied Sciences (APPS), International Journal of Functional Analysis, Operator Theory and Applications (IJFAOTA), Far East Journal of Mathematical Sciences (FJMS), Journal of Indian Academy of Mathematics (Jiam), Journal of the Calcutta Mathematical Society and Universal Journal of Mathematics and Mathematical Sciences. His main research interests are: dynamical systems, patterns of growth and sustainable development, mathematical economics, game theory, optimization theory, applied Economics.

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