■ TB-30

Tuesday, 10:40-12h00
8.2.13

MCDA II: Group Decision

Stream: MCDA II: Axiomatic Basis, Meaningfulness, and other Issues
Invited session

Chair: *Juan Carlos Leyva-Lopez*, Departamento de Investigación y Posgrado, Universidad de Occidente, Carr. a Culiacancito Km. 1.5, 80020, Culiacan, Sinaloa, Mexico, jleyva@culiacan.udo.mx

1 - A Model of Consensus in Group Multicriteria Decision Aiding

Juan Carlos Leyva-Lopez, Departamento de Investigación y Posgrado, Universidad de Occidente, Carr. a Culiacancito Km. 1.5, 80020, Culiacan, Sinaloa, Mexico, jleyva@culiacan.udo.mx

This paper presents an order-based consensus model in group multicriteria decision aiding that proceeds from consistency to consensus. It is based on the use of valued outranking relations to model individual and group preferences. A consensus measure and proximity measure are defined, the first one, guides the consensus process and the second one supports the group discussion phase of consensus process. The consensus degrees indicate how far a group of individuals is from the maximum consensus, and the proximity measure indicates how far each individual is from current consensus.

2 - An approach for group decision with incomplete information

Paula Sarabando, ESTGV and INESC Coimbra, Rua Antero de Quental, Nº199, 3000 - 033, Coimbra, Portugal, psarabando@mat.estv.ipv.pt, *Luis C. Dias*

We address the problem in which a group of decision makers is not able to provide complete information about their individual preferences. In the context of additive multi-criterion aggregation, we consider problems with ordinal information, namely considering a ranking of the criterion weights. The approach we presented has as objective to inform decision-making by checking if there are optimal alternatives and if there are alternatives that can be eliminated due to dominance

3 - A Group Multicriteria Decision Support System for Rank a Finite Set of Alternatives

Pavel Alvarez Carrillo, Universidad de Occidente, 80020, Culiacán, pavel@uas.uasnet.mx, *Alfonso Duarte*, *Juan Carlos Leyva-Lopez*

This paper presents an Internet-based Group Decision Support System (GDSS) prototype built around MCDA models, which provides support to collaborative decision makers in reaching a consensus when they try to solve a ranking problem in an asynchronous and distributed environment. It includes the sequential and parallel coordination modes. The first is processed with the ELECTRE III — MOEA methodology and the second is processed with the ELECTRE GD — MOEA methodology.

■ TB-31

Tuesday, 10:40-12h00
8.2.15

OR and Ethics II

Stream: OR and Ethics
Invited session

Chair: *Haavard Koppang*, Gimle Terrasse 3,, 0264, Oslo, Norway, haavard.koppang@bi.no

1 - Modeling Distributive Justice

John N. Hooker, Tepper School of Business, Carnegie Mellon University, 15213, Pittsburgh, PA, United States, john@hooker.tepper.cmu.edu

This talk describes mathematical programming models for distributive justice. It derives sometimes surprising structural properties of optimal distributions that result from utilitarian and Rawlsian (lexmax) objectives. It investigates the extent to which they require egalitarianism when some individuals are more productive than others. It shows that mixed integer modeling of combined utilitarian and Rawlsian criteria can be highly nontrivial, and indicates how models can nonetheless be constructed using disjunctive modeling principles.

2 - The compromise efficiency vs. egalitarianism among generations with an infinite horizon

José Carlos R. Alcantud, Universidad de Salamanca, Facultad de Economía y Empresa, Campus Unamuno, E37007, Salamanca, Spain, jcr@usal.es

This work concerns ethical aggregation of infinite utility streams. Position i is typically interpreted as the endowment of generation i. We analyze the broad question: In order for the social welfare to increase, the interest of how many generations can be respected if we intend to be ethical? Here "ethical" refers to verifying adequate equity axioms, and case-studies cover: Hammond Equity-related principles; or extensions of restricted non-substitution; together with the usual Anonymity axiom.

3 - In bed with the military: Ethics dilemmas for humanitarian organizations

Bent Erik Bakken, St. Georgs vei 4, 0280 OSLO, 0280 OSLO, Norway, Oslo, beerikba@online.no

Humanitarian organizations and military organizations sometimes cooperate, such as in current Afghanistan. A System Dynamics model is built to investigate the interrealtionships between such cooperation and the degree to which humanitarian organizations might cross boundaries for ethical behavior. It is shown that using a consequentialist framework for ethics, humanitarian organizations should cooperate with military organizations. Using other frameworks lead to different conclusions.

4 - A Reflection on OR, Freedom and Responsibility

João Clímaco, Faculdade de Economia da Universidade de Coimbra and INESC-Coimbra, 3004-512, Coimbra, Portugal, jclimaco@fe.uc.pt, *José Antonio Peixoto*

There is an increasing interest in integrating OR in global and local sustainable development directives for assessments. This demands a public/democratic validation of the ways relations between Humanity and Nature are realized, namely, to model the interaction between theoretical and practical knowledge. We discuss the ethical tradition of the classical OR paradigm and the actual demands, arguing that, constrained by the "imperative of performance', the analysts should critically update references and criteria for evaluations from a new perspective of freedom and responsibility.

■ TB-32

Tuesday, 10:40-12h00
8.2.17

OR in Agriculture

Stream: OR in Agriculture and Forest Management
Invited session

Chair: *Marcela Gonzalez*, Departamento de Modelación y Gestión Industrial, Universidad de Talca, Merced 437, s/n, Curicó, Región del Maule, Chile, mgonzalez@utalca.cl

1 - Effects of Education and Investment in Research in Agricultural Production in Brazil

Eliane Gomes, Brazilian Agricultural Research Corporation, Parque Estação Biológica, W3 Norte final, Asa Norte, 70770901, Brasília, DF, Brazil, eggomes@yahoo.com.br, *Geraldo Souza*, *Rosaura Gazzola*, *Antonio Flavio Avila*

We use census data (1996 and 2006) to model the agricultural production at state level in Brazil. Cost efficiency measurements are computed using data envelopment analysis and the response is assessed via censored regressions. We study the effects of region, education and investment in agricultural research on the economic efficiency. Education has a strong significant effect, as well as investment in research. The intensity of the effects varies over regions for education, and is statistically the same for investment in research.