Título

Deriving rankings from incomplete Information: A comparison of different approaches

Ponente

Rudolf Vetschera

Fecha y hora

30 de octubre de 2014, 13h

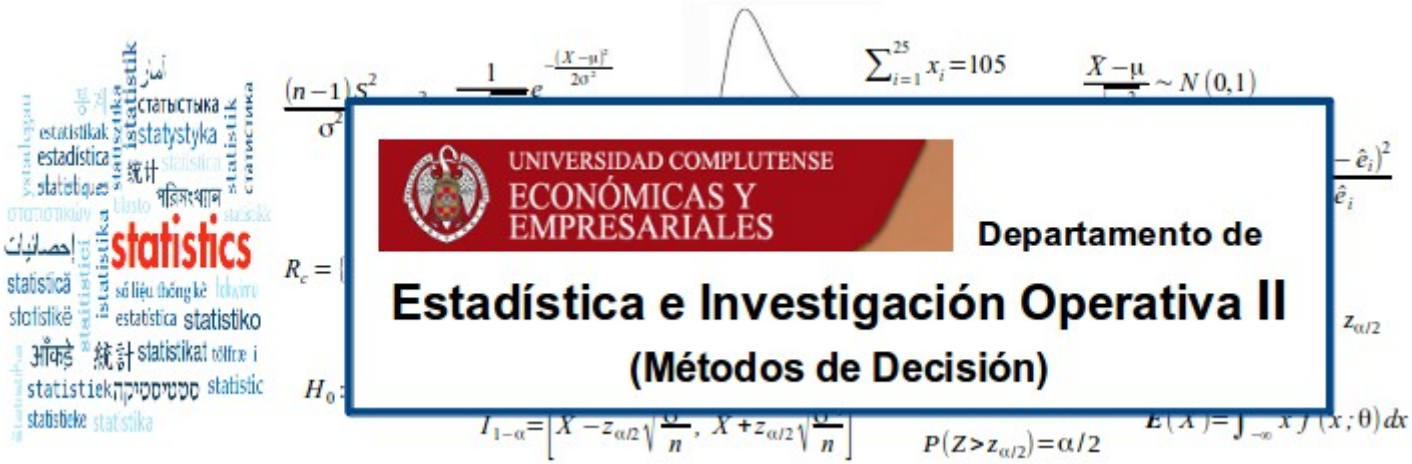
Lugar

Facultad de Ciencias Económicas y Empresariales, Edificio 1, Planta 2ª, Aula 237

Universidad Complutense de Madrid, Campus de Somosaguas

Pozuelo de Alarcón (Madrid) Metro ligero A, H

Ciclo de Conferencias



Web del Departamento

Resumen / Abstract

In many cases, information required for a decision model is not available exactly. Decision makers could be unable to specify exact weights for different attributes, or do not know exact probabilities of different states in a decision problem under risk. Critical parameters for a decision problem can be specified only imprecisely, e.g. in the form of intervals, or implicitly, via a comparison of alternatives from which conditions on these parameters can be derived. Existing literature has developed many different methods to make decisions in such situations of incomplete information. These include:

1) Dominance-based methods, which try to establish relations between alternatives that hold for all possible parameter values
2) Methods that try to estimate one "best" parameter vector
3) Volume-based methods, which consider the size of different regions in parameter space and provide probabilistic statements about best alternatives or rankings or relations of alternatives.

While methods based on single parameter vectors will create a complete ranking of alternatives, this is not the case for the other two classes of methods. Dominance based methods usually only lead to a partial relation among alternatives, and volume-based methods provide only stochastic information.

In the present paper, we introduce models to derive a complete ranking of alternatives from the information generated by volume-based methods. We then compare these models in a computational study to single parameter methods and analyze how well these methods can incorporate additional information that might become available. This leads to the identification of an "information paradox", i.e. situations in which more information might lead to worse decisions.

Datos del ponente / de la ponente

Rudolf Vetschera studied Economics and Computer Science at the University of Vienna and Technical University of Vienna, Austria, where he also received his PhD. 1990-1996, he was full professor in Business Administration at the University of Konstanz, Germany. Since 1996, he is full professor of Business Administration with a focus on organization and planning at the University of Vienna. He has held visiting positions at the Wharton School, the University of Bielefeld (Germany), and the University of Sarajevo. He has published three books and about one hundred peer reviewed papers in journals and collective volumes. He received the Informs GDN section award in 2012, and in the same year was ranked #8 among the university professors in Business Administration in German speaking countries in terms of lifetime research output. His main research interests are group decisions and negotiations, in particular the analysis of negotiation process, multicriteria decision analysis and decision models under incomplete information.

Página web

Presentación