Graduate School of Information Science, University of Hyogo
15th International Research Seminar

MULTI-CRITERIA SORTING METHODS FOR AHP

Thu. 7 Aug. 2025 (13:00 ~ 14:00) JST

IN-PERSON/ONLINE SEMINAR

Six problem formulations exist in multi-criteria decision analysis (MCDA): choice, sorting, ranking, description, elimination and design problems. The Analytic Hierarchy Process (AHP) is a useful and widespread method for solving choice and ranking problems. However, it is not adapted for sorting problems. Moreover, another practical limitation of AHP is that a high number of alternatives imply a large number of comparisons.

The first part of the talk presents AHPSort I, a new variant of the AHP, used for the sorting of alternatives into predefined ordered categories. Furthermore, AHPSort I requires far less comparisons than AHP, which facilitates decision making within large scale problems. In the second part of the talk, Incomparable AHPSort will be introduced. Incomparable AHPSort improves AHPSort because it makes the distinction between indifferent and incomparable alternatives in the same class.

AHPSort I will be illustrated with a supplier selection problem. Incompable AHPSort will be illustrated with a risk classification problem.

Guest Speaker

Alessio Ishizaka
Distinguished Professor,
Neoma Business School, France

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Alessio Ishizaka is Distinguished professor at Neoma Business School (France). He was Head of the Information Systems, Supply Chain and Decision-Making department. He was also research lead and Deputy Director of the Centre of Operational Research and Logistics at the University of Portsmouth (UK). Alessio received his PhD from the University of Basel (Switzerland). He worked successively for the University of Exeter (UK), University of York (UK) and Audencia Grande Ecole de Management Nantes (France). He has been visiting professor in several universities in Italy, France and Germany. His research is in the area of decision analysis, where he has published more than 160 papers. He is regularly involved in large European funded projects. He has been the chair, co-organiser and guest speaker of several conferences on this topic, especially the international conference in MCDM 2022. He is associate editor for OMEGA, Expert Systems with Applications, International Transactions in Operational Research and Journal of Knowledge Management. He wrote the indispensable textbooks Multicriteria Decision Analysis: methods and software and Multi-Criteria Decision-Making Sorting Methods

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