



MCDA  
MULTIPLE CRITERIA  
DECISION AIDING



TECHNICAL  
UNIVERSITY  
OF CRETE

**94th EWG on MCDA 2022**

**September 15-17, 2022**

**Elounda Town, Agios Nikolaos, Crete, Greece**

**Prof. Constantin Zopounidis**

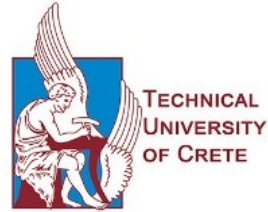
**Technical University of Crete, Greece**

**Audencia Business School, France**

**Assist. Prof. Christos Lemonakis**

**Hellenic Mediterranean University, Greece**

**Crete, Greece, 2022**



## **Organizing Committee**

### **Christos Floros-Vice-Rector, Professor**

Hellenic Mediterranean University / Department of Accounting and Finance, Heraklion, Crete, Greece.

### **Stylianos Papadakis, School Dean of Management Sciences, Professor**

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### **Konstantinos Panagiotakis, Associate Professor**

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### **John Fanourgiakis, Assistant Professor**

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## **94 EWG on MCDA, Elounda, Crete, Greece. CONFERENCE PROGRAM**

### **Venue:**

Aegean Conference Hall – Porto Elounda Golf & Spa Resort, Elounda Town, Agios Nikolaos, Crete, Greece

**The meeting will be held exclusively on site**

### **Directions (Google Maps)**

1. 94 EWG venue, see the following link:

<https://goo.gl/maps/FTvwwjkZHW3vBTNL9>

2. The route from Heraklion International Airport to the conference venue (Porto Elounda Golf & Spa Resort) can be found at the following link:

<https://goo.gl/maps/t7kzWKKPdux75zFw7>

3. The route from the Port of Agios Nikolaos (Bus start/end route) to the conference venue (Porto Elounda Golf & Spa Resort) can be found at the following link:

<https://goo.gl/maps/GnYcmXNUA9UQ5z3U6>

## CONFERENCE PROGRAM

### Thursday, September 15, 2022

**12.00 – 13.00** Registration

**13.00 – 13.30** Conference opening

**Opening session – Organizers:** Constantin Zopounidis, Christos Lemonakis

**13.30 – 14.30** Session I

**Chair:** Yannis Siskos

*The first session on Thursday is devoted to the Bernard Roy Award, where the laureate presents a 45min lecture.*

#### Discussion papers

*I.1.D.1. Multicriteria assessment of future scenarios for the implementation of agroforestry in cereal systems*

Odile Phelpin, Francis Macary, Laurence Denaix

*I.1.D.2. Determinants of Foreign Direct Investments: Empirical Evidence from the Global Developing Economies*

Manolis I. Skouloudakis

*I.1.D.3. Time-Driven activity-based management in ecotourism (A hotel implementation model)*

Ioannis Karagiannis

*I.1.D.4. Exploring the behavioral intentions of food tourists who visit Western Crete*

Georgios Angelakis, Christos Lemonakis, Constantin Zopounidis, Periklis Drakos, Georgios Baourakis

**14.30 – 15.00** Coffee break

**15.00 – 16.30** Session II

**Chair:** Salvatore Greco

*II.1.1. Intelligent Decision Support Systems Combining Operations Research and Artificial Intelligence*

S. Greco, V. Mousseau, J. Stefanowski, C. Zopounidis

*II.1.2. Active learning with additive value models*

Grzegorz Miebs, Matteo Brunelli, Jonas Gehrlein, Miłosz Kadziński

*II.1.3. Regularization and Aggregation of Multiple Recommendations in Multicriteria Decision Problems with Reference Sets*

Andrzej M.J. Skulimowski

**Discussion papers**

*II.1.D.1. APOLLO: A Decision Support System for Climate Change Policy Making*

Álvaro Labella, Diego García-Zamora, Bapi Dutta, Luis Martínez

*II.1.D.2. Agricultural water management decisions in the context of water-energy-land-food nexus using an enriched UTASTAR method*

Alexandros Psomas, Isaak Vryzidis, Athanasios Spyridakos, Maria Mimikou

*II.1.D.3. Programs for optimal development of disadvantaged young children: Vulnerability evaluation and budget allocation using MCDA*

Irène Abi-Zeid, Roxane Lavoie, Jérôme Cerutti, Morgane Bousquet, Sophie Métivier

**16.30 – 18.00 Session III**

**Chair:** Andrej M.J Skulimowski

*III.1.1. Modelling optimism and pessimism in Stochastic Multicriteria Acceptability Analysis*

Salvatore Greco, Sally Giuseppe Arcidiacono, Salvatore Corrente

*III.1.2. Consistent approximations of pairwise comparisons*

Jacek Szybowski, Waldemar W. Koczkodaj, Ryszard Smarzewski

*III.1.3. A multicriteria approach for building sustainability composite indicators*

António Xavier, Maria de Belém Costa Freitas, Rui Manuel de Sousa Fragoso

**Discussion papers**

*III.1.D.1. An interactive mathematical programming approach for buildings' energy efficiency-related decisions*

Christina Diakaki, Evangelos Grigoroudis

*III.1.D.2. Time-varying firm cash holding and economic policy uncertainty nexus: a quantile regression approach*

Konstantinos Gkillas, Chistos Floros, Efstathios Magerakis

*III.1.D.3. A Multiobjective Approach to Collaborative Facility and Fleet Sharing Among Suppliers in Horizontal Supply Chain Collaboration*

Mirna Abou Mjehed, Fouad Ben Abdelaziz, Hussein Tarhini

## 20.30 Gala dinner

The Gala dinner will be held on Thursday, September 15, 2022. The dinner will be organised in a traditional Cretan restaurant in Plaka, a fishing village on the bay of Elounda, see the following link (<https://www.giorgos-plaka.gr/#>). The restaurant is 10 minutes from the conference venue (by bus) and about 25 minutes from the port of Agios Nikolaos (by bus). There will be a bus available to take participants from the port of Agios Nikolaos to the restaurant and back (free of charge).

**The Gala dinner is optional and has a fee which is paid by the participants (50€ per person)**

## Friday, September 16, 2022

### 09.30 – 11.00 Session IV

**Chair:** Jean-Philippe Waaub

*IV.2.1. Parametric and non-parametric models to induce a probability distribution in the space of compatible value functions*

Salvatore Corrente, Sally Giuseppe Arcidiacono, Salvatore Greco

*IV.2.2. MCDA methods used in different approaches to find optimal corridors and paths for linear infrastructure projects*

Jean-Philippe Waaub

*IV.2.3. Rating Ecosystemic design actions to plan urban projects*

Alessandra Oppio, Marta Dell'Ovo

### Discussion papers

*IV.2.D.1. Ensemble decision making tool in sustainable logistic system*

Morteza Yazdani

*IV.2.D.2. Applications of different multicriteria analysis methods for water resources management – A case study for Crete*

Constantin Zopounidis, Christos Lemonakis, Alexandros Garefalakis, Petros Asmargiannakis

IV.2.D.3. *A multi-criteria approach for optimizing the placement of electric vehicle charging stations in Egnatia highway*

Panagiotis Skaloumpakas, Vangelis Spiliotis, George Stravodimos, Dimitris Sarigiannis, Alexis Lekidis, Ioanna Makarouni, Vangelis Marinakis, John Psarras

**11.00 – 11.30 Coffee break**

**11.30 – 13.00 Session V**

**Chair:** Salvatore Corrente

V.2.1. *Location of radioactive waste deposit according to ministerial directives*

Antonino Scarelli, Vincenzo Piscopo

V.2.2. *Is random pricing useful for policy aiding process for Health*

Christine C Huttin

V.2.3. *A decision-making toolbox for climate mitigation and adaptation at municipal level in Greece*

George Stravodimos, Apostolos Arsenopoulos, Nektarios Matsagkos, Anastasia Spanou, Sofoklis Strompolas, Ioannis Georgizas, Savvas Louzidis, Andrinopoulou Theodora

**Discussion papers**

V.2.D.1. *Evaluating the Performance of Local Municipalities on Sustainable Development Goals: An Application to France*

Michalis Doumpos, Alexis Guyot, Emiliios Galariotis, Constantin Zopounidis

V.2.D.2. *Financial literacy and economic decisions supported by MCDA models*

Elżbieta Kubińska, Magdalena Adamczyk-Kowalczyk, Anna Macko

V.2.D.3. *Firms' Credit Assessment using the fuzzy set Qualitative Comparative Analysis method*

Evangelia Krassadaki, Constantin Zopounidis, Christos Lemonakis

**13.00 – 14.30 Lunch**

Lunch will be organized at the balcony of the Conference Hall, with the view of Mirabello Bay

**14.30 – 15.10 Group activities**

## 15.10 – 16.00 Session VI

**Chair:** Evangelos Grigoroudis

*VI.2.1. Multi-Criteria Decision Analysis to support masterplan scheduling: an application of ELETRE TRI-B for sorting regeneration activities for an industrial area in Northern Italy*

Marta Bottero, Federico Dell'Anna

*VI.2.2. Multicriteria evaluation of new agricultural practices scenarios in field crops to reduce pesticide use and associated risks*

Francis Macary, Elisa Jurine

### Discussion papers

*VI.2.D.1. A Multi-Criteria Methodology for Market Segmentation based on the Criteria Analysis*

Nikolaos Matsatsinis, Fotini Kalafati, Garyfallia Matsatsini, Efstathios Gerampinis

*VI.2.D.2. Reputation multi criteria rating system for users of EV charge point applications*

Christos Stefanatos, George Stravodimos, Dimitris Sarigiannis, Alexis Lekidis, Ioanna Makarouni, John Psarras

*VI.2.D.3. Application of Multi Criteria Optimal Stopping Theory to Pandemic Policies*

Noura El Hassan, Bacer Maddah, Fouad Ben Abdelaziz

*VI.2.D.4. A decision support system (DSS) for the design and selection of ICS devices using fuzzy logic*

Nektarios Arnaoutakis, Christos Lemonakis, Manolis Souliotis, Spyridon Papaefthymiou

## 16.00 – 16.30 Coffee break

## 16.30 – 18.00 Session VII

**Chair:** Michalis Doumpos

*VII.2.1. How tertiary education can explain the differences in GDP per capita among EU NUTS2? Portugal as a case study.*

Marco Marto, João Lourenço Marques, Mara Madaleno

*VII.2.2. A Management Procedure to take Advantage of Minorities*

Artsidakis Stylianos, Liapis Konstantinos, Rozakis Stelios

*VII.2.3 Applying MCDA Disaggregation – Aggregation Approaches to the assessment of a global Products*



*Environmental footprint Index: The case study of Refractory products*

Athanasios Spyridakos, Nikolaos Tsotsolas, Dimitrios Alexakos, Isaak Vryzidis, George Varelidis, Euthimios Kagiaras, Spyros Aggellis

**Discussion papers**

*VII.2.D.1. Accelerating Power Purchase Agreements: A valuable tool for managing corporate green energy needs*

Marios Stanitsas, Konstantinos Kirytopoulos

*VII.2.D.2. Maximizing benefit of doubt through the lens of MCDA*

Takis Varelas, Dimitris Kaklis, Artemis Flori

*VII.2.D.3. Public health interventions in the face of pandemics: Network structure, social distancing, and heterogeneity*

Mohammad Ghaderi

*VII.2.D.4. Modeling the economic impact of COVID-19*

Moawia Alghalith, Christos Floros, Konstantinos Gkillas

**Saturday, September 17, 2022**

**10.00 Vai Palm Beach Day Trip**

The meeting will be at 09:45 and the bus will be waiting at the harbor of Agios Nikolaos. The first visit will be to the town of Ierapetra. From Ierapetra we will drive to the eastern part of the island via Makrigialos. Then we will visit Sitia, a town on the beach where you can enjoy your coffee and observe the local street market and buy local products. Our third stop is Toplou Monastery, where you will have the opportunity to visit this magnificent monument, take photos and taste the famous local wine. Our trip ends at Vai Palm Beach with its beautiful scenery and crystal-clear waters.

Estimated return time: 19:30'-20:00'

**The tour is optional and has a fee which is paid by the participants (60€ per person)**