MCDA Index Tool

An interactive software to develop indices and rankings

Introduction

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Dr. Marco Cinelli[1,2,*]

Dr. Matteo Spada[3,1]

Yiwen Zhang[1]

Wansub Kim[1]

Dr. Peter Burgherr [3,1]

[1]*Future Resilient Systems (FRS), Swiss Federal Institute of Technology (ETH) Zürich, Singapore-ETH Centre (SEC), Singapore*

[2]*Institute of Computing Science, Poznań University of Technology, Poznań, Poland*

[3]*Technology Assessment Group, Laboratory for Energy Systems Analysis, Paul Scherrer Institute (PSI), Villigen PSI, Switzerland*

[*]Corresponding author: Marco Cinelli; email: marco.cinelli@put.poznan.pl

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Program description

The MCDA Index Tool (http://www.mcdaindex.net/) is a web software that provides a practical and straightforward guide for the construction of indices and rankings. In particular, it contains a set of steps that can help developing indices by learning and assessing the quality of the outputs. Key features include robustness assessment of the outcomes and a wide range of results visualization.

It allows users to:

1. **Import data** (in CSV format) of the alternatives to be evaluated with respect to the chosen criteria.
2. **Define the polarity of each indicator** (positive polarity = the higher the value of the criterion the better; negative polarity = the lower the value of the criterion the better for the evaluation).
3. **Choose the weights** with a simple sliding bar. The user could also use the so-called SWING method (Riabacke et al. 2012) to assign weights.
4. **Select** the **normalization methods** and **aggregation functions** to build the indices. **31 combinations** are available, by accounting for multiple compensation levels and approaches to render the indicators on a comparable measurement scale.
5. Obtain the **normalized indicators** and **directly compare the alternatives** with respect to one or more criteria.
6. Obtain the **raw and normalized scores** as well as the **rankings to identify the overall performance of the alternatives**.
7. **Visualize** the proportion (in %) of **indices** which **rank** alternative *x* at the *k*-th position
8. **Compare** the **indices** according to the normalization methods or the aggregation functions.
9. **Select and compare the rankings** according to the chosen combinations.

This tool was developed in connection to a novel index – the Electricity Supply Resilience Index (ESRI), established within the Future Resilient Systems (FRS) program, at the Singapore-ETH Centre (SEC) [1]; see Gasser et al. (2017), Lindén (2018) and Suter (2018) for further details.

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[1] Cluster 2.1: Assessing and Measuring Energy Systems Resilience, http://www.frs.ethz.ch/research/energy-and-comparative-system/energy-systems-resilience.html

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