

Eliciting, applying and exploring multidimensional welfare weights: evidence from the field

Discussion of the Lucio Esposito and Enrica
Chiappero-Martinetti (E C-M) paper

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IARIW, Seoul, April 26, 2017

Overview of Paper

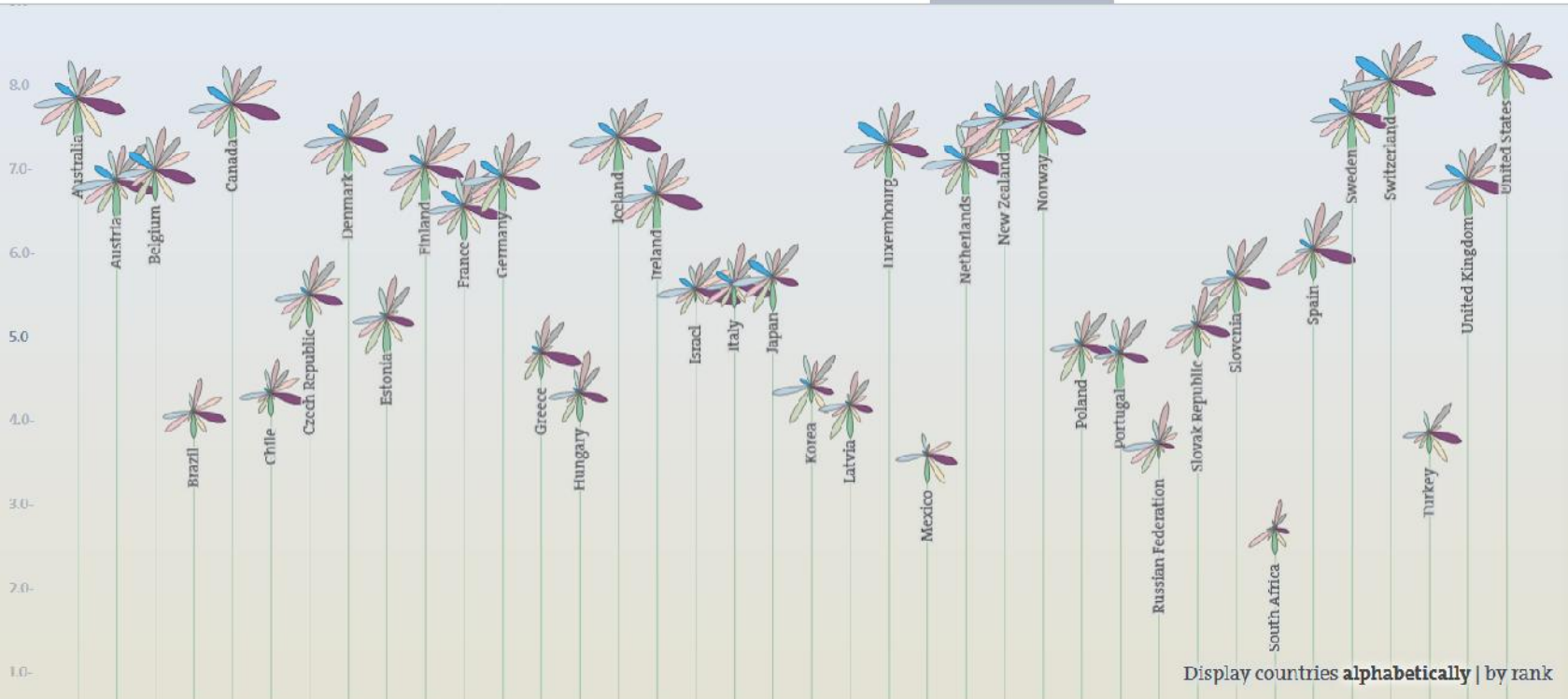
- very nice study; extensive references to a range of strands in the literature
- presumes index is based on multiple dimensions, with weighted aggregation into single summary measure
- addresses two main questions
 - what happens when samples of several groups are asked about how they would weight the various dimensions?
 - if there is variation in the resulting dimension weights, what difference does this make to the aggregate index?

Main Steps in Constructing a Summary Index

- choose a topic, e.g. population well-being
- select domains that are the key “constituents” or determining factors
 - e.g. education, health, housing, personal safety
- within each domain, select one or more indicators
 - e.g. for health: health status, infant mortality, health-adjusted life expectancy
- for each indicator, select a measure
 - e.g. for health status: self-reported, a generic measure like HUI or EQ-5D
- for the resulting set of measures, select an aggregation formula

or give up and use a “dashboard” (or flower petals per OECD)

OECD's Flower Petals – Visualizing a Dashboard



Create Your Better Life Index

Rate the topics according to their importance to you:

Housing	<input type="range"/>
Income	<input type="range"/>
Jobs	<input type="range"/>
Community	<input type="range"/>
Education	<input type="range"/>
Environment	<input type="range"/>
Civic Engagement	<input type="range"/>
Health	<input type="range"/>
Life Satisfaction	<input type="range"/>
Safety	<input type="range"/>
Work-Life Balance	<input type="range"/>

Reset Help

Display countries **alphabetically** | by rank

E C-M Focus – Relative Weighting of Domains (I)

- choice of dimensions and measures – “convenience sample”, in order to apply weights to an existing pair of surveys
- distinguish “direct” and “indirect” approaches
 - focus on direct approaches using representative population samples
- direct sample methods discussed
 - Likert scale on each domain, one at a time
 - is the domain a “necessity”, one domain at a time
 - series of pairwise domain comparisons of “importance”, including scaling
 - “budget allocation technique” – consider all domains together and distribute a fixed budget of “importance” points

E C-M Focus – Relative Weighting of Domains (II)

- elicit weights from 3 distinct sample populations+++
 - students, “development experts”, and general population
- questionnaire design **pre-tested** +++
- 96% **response rate** for students +++
- post- questionnaire **follow-up** re comprehension +++
- student sample split for “poverty” versus “well-being” **framing** +++
- novel and careful approach to weight elicitation in general “heterogeneous” sample, using pictorial **flashcards** +++

What Was Found Eliciting Weights (Students)

- (implicit) individuals' weights are heterogeneous
- framing as “wellbeing” versus “poverty” matters / highly significant
 - if wellbeing rather than poverty framing health ↑, education & housing ↓
- results are robust to two different specifications (i.e. added controls)
- most controls statistically insignificant – age, gender, experiences of victimization and illness, several socio-economic status variables
- unpublished: only control strongly significant = “perceived income”
 - being from a higher (???) income background → health ↑, education & housing ↓

The American Statistician

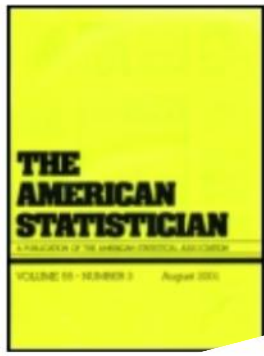


Table A.1. Weight Factors That Will Cause Each City to Rank First

City	Climate	Housing	Health	Crime	Transp.	Educ.	Art	Recr.	Econ.
Abilene, TX	5								
Albany, NY	0	31							
Albuquerque, NM	23	15							
Alton, IL	0	25							
Altoona, PA	11	29							
Amarillo, TX	16	33							
Anaheim, CA	60	28							
Anderson, SC	6	4							
Asheville, NC	18	82							
Atlanta, GA	18	24							
Atlanta City, NJ	18	14							
Augusta, GA	17	12							
Baltimore, MD	2	35							
Beaver County, PA	0	11							
Bellingham, WA	12	0							
Bergen, NJ	41	7							
Biloxi, MS	9	0							
Binghamton, NY	12	34							
Boston, MA	0	20							
Boulder, CO	14	0							
Bremerton, WA	12	0							
Brownsville, TX	78	9							
Buffalo, NY	0	2							
Burlington, NC	0	6							
Burlington, VT	3	1							
Charleston, SC	0	21							
Charlotte, NC	0	0							
Charlottesville, VA	0	4							
Chicago, IL	21	9							
Cincinnati, OH	17	21							
Cleveland, OH	0	31							
Cumberland, MD	0	2							
Dallas, TX	7	4							
Danbury, CT	5	22							
Danville, VA	15	15							
Daytona Beach, FL	0	24							
Denver, CO	0	12							
Albany, NY	13	0							

*There are many ties using the optimist ranking scheme.

“Dimension Paradox”

- considerable discussion of possibility that individuals with differing weights and differing levels on component dimension measures could place themselves in opposite rank order
- authors reject idea that paradox is merely a theoretical issue; it is real
- propose instead that weights do vary systematically with “achievements” =? socio-economic position
- i.e. aggregation across dimensions at individual level = individual preference function is **non-linear** within dimensions

But Think Maslow's Hierarchy of Needs

- suppose the domains for well-being are
 - air to breathe
 - water to drink
 - clothing and shelter to maintain body temperature
 - food to eat
 - people with whom to converse
- linear aggregation implies that when there is no air to breathe, but lots of convivial friends, we can have quite high levels of well-being

Ridiculous!

unless all measures have values in a part of the space where non-linearities are unimportant, e.g. (maybe) CPI, where variations in expenditure baskets may be ignorable, and/or price changes all highly correlated

Dealing With Individual Heterogeneity and Non-Linearity

- yes, individuals are heterogeneous, both in multi-dimensional status, and in their weights
- “that’s life in the big city” / welcome to the real world
- if anything, this observation is akin to an “impossibility theorem” for acceptable aggregation and “construct validity” for summary index
- so back to dashboard (e.g. OECD flower petals) + “drill down” (easy with clickable user interfaces) + visualization for distributional detail

OECD's Flower Petals – Visualizing a Dashboard



English

Español

Français

Русский

Deutsch

Português

Italiano

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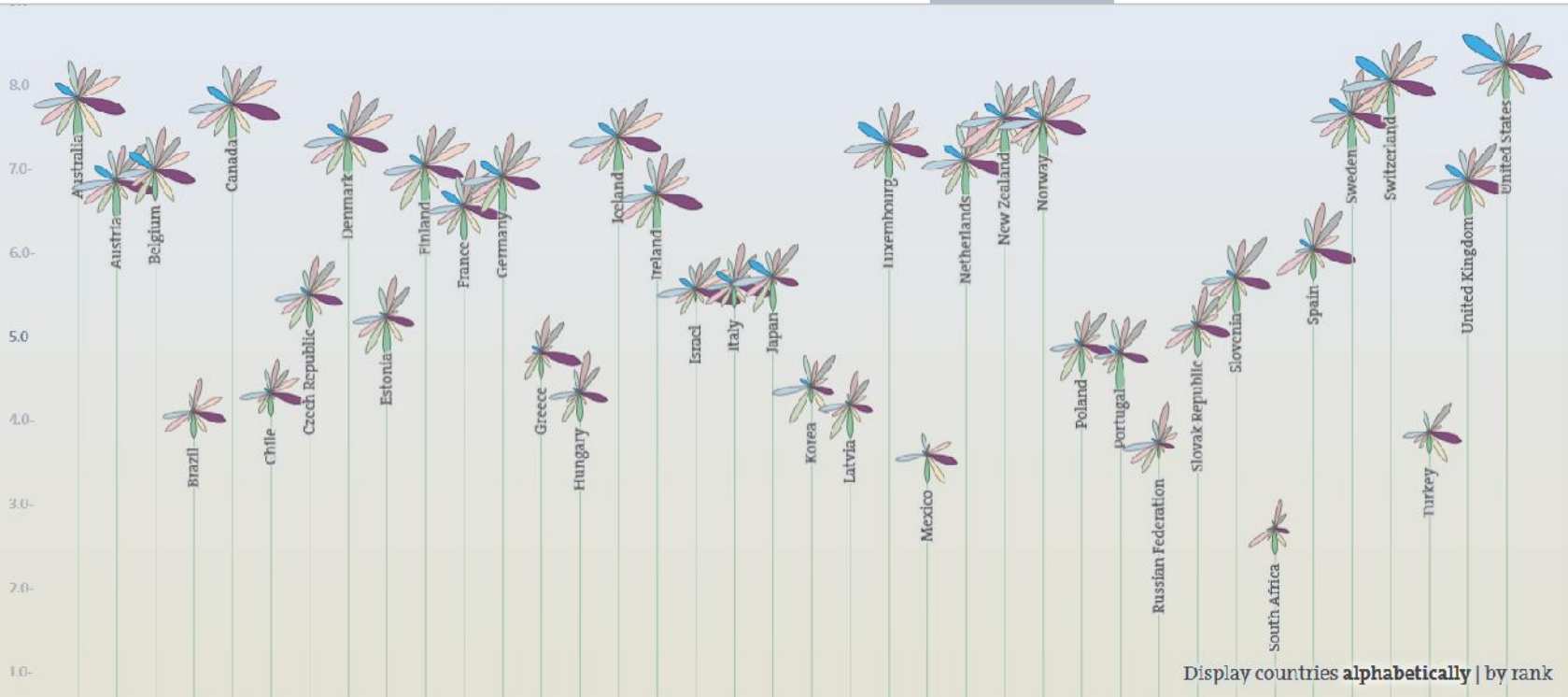
Index

Responses

Countries ▾

Topics ▾

FAQ



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