

Composite indicators

- Inputs from the UNECE task force on leading, composite and sentiment (LCS) indicators



Outline

STATISTICS



- **Background**
- **Typology of LCS indicators**
- **Composite indicators**
 - with and without reference series
 - pros and cons
 - constructing
- **Opportunities and risks**

Background

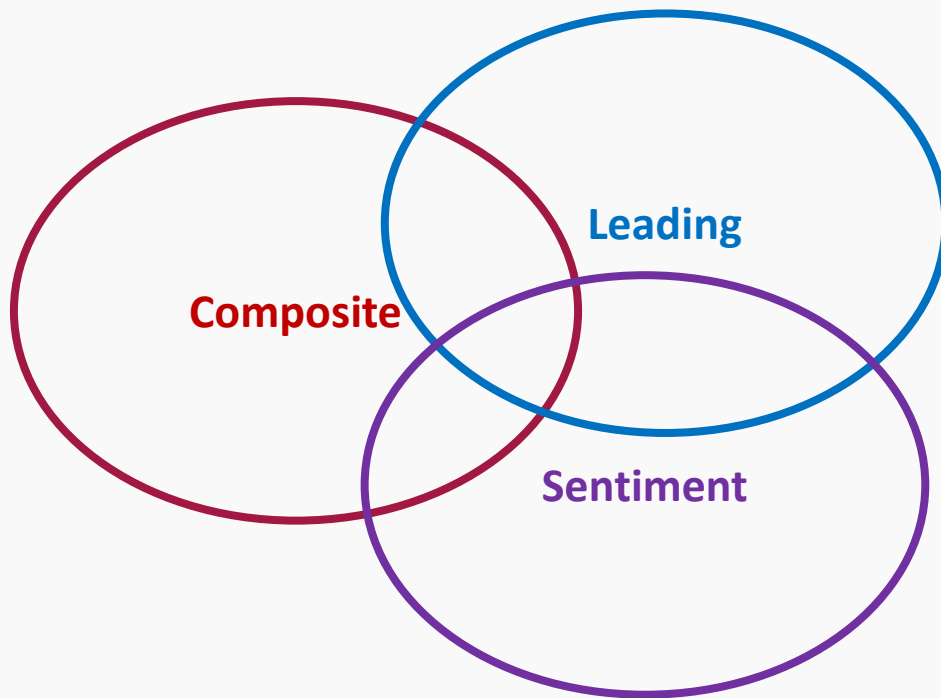
STATISTICS



- Increasing use and media coverage of LCS indicators
 - Different practices among countries
 - Lack of international guidelines
- => CES Bureau established task force to develop guidelines for NSOs that produce or consider producing LCS indicators**

Typology

STATISTICS



dimensions

Single – multidimensional

Sentiment – non-sentiment

leading, coincident or lagging

Composite indicators

STATISTICS



- **Composite indicator** is formed when individual indicators are compiled into a single measure, on the basis of an underlying model of the multi-dimensional concept that is being measured (OECD)

With and without reference series

STATISTICS



Composite indicators with reference series

- leading, coincident or lagging relationship with reference series
- Examples: OECD Composite Leading Indicators (CLIs), Conference Board's Lagging Economic Indexes (LAGs)

Composite indicators without reference series

- Mostly used in socio-economic areas, e.g. well-being, "happiness", safety, health etc.
- Examples: UN Human Development Index, OECD Better Life Index

Pros and cons of composite indicators

STATISTICS



Pros	Cons
<ul style="list-style-type: none">• Summarise complex, multi-dimensional phenomena• Easier to interpret than a battery of indicators• Asses progress over time• Reaching out to (new) user groups	<ul style="list-style-type: none">• May be misleading if poorly constructed• May invite simplistic policy conclusions• May disguise failings in dimensions and lead to inappropriate policy decisions• Selection of indicators, dimensions and weights may be questioned

Steps for constructing composite indicators

STATISTICS



- 1. Setting up conceptual model**
- 2. Selecting dimensions and variables**
- 3. Data processing**
- 4. Weighting and aggregation**
- 5. Checking robustness and sensitivity**
- 6. Communication**

It is necessary to go through all steps!

Data processing

STATISTICS



- **Normalisation and scaling of data**
 - bring indicators to similar measurement unit
 - scaling – z-scores, log values – may be necessary
- **Missing observations**
- **Treatment of outliers**

Weighting and aggregation

STATISTICS



Typically, the aggregation consists of two steps:

1. From indicators to dimensions
2. From domains to composite indicator

Some weighting approaches

- Equal weighting
- Principal Component Analysis (PCA)
- Factor Analysis (FA),
- Experts' judgement (e.g. based on research)
- Public opinion (e.g. from surveys)

Weighting and aggregation

STATISTICS



Problems with weighting and aggregation

1. Input data need to be brought on the same form
2. Scaling/smoothing may be necessary
3. No international consensus
4. Particularly difficult to weight dimensions together
5. How to assess the quality of indicators without reference series

Developing indicators is a normative process (Filomena Maggino)

Opportunities and risks

STATISTICS



Opportunities	Risks
<ul style="list-style-type: none">• Measure what matters• Meet user needs• Demonstrate relevance of official statistics• Give visibility to NSOs groups	<ul style="list-style-type: none">• Indicators may be misused or misunderstood• May show results difficult to explain• Critique of being based on subjective/political choices, which may harm overall trust in the NSO

- If not produced by NSOs the indicators may be produced by others
- NSOs are in a good position to produce LCS indicators
- LCS indicators for a period can be produced as experimental statistics