

HOW TO CALCULATE AAI WHEN DATA ARE SCARCE

THE GUIDELINES

<https://statswiki.unece.org/display/AAI/VI.+Documents+and+publications>

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VI. Documents and publications

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NEW! Active Ageing Index (AAI) in non-EU countries and at subnational level: Guidelines

Policy briefs and other documents

Active Ageing Index 2014. Analytical report (2015)

Summary of the Analytical report in English, French, German, Russian

AAI 2014: Active Ageing Index for 28 European Union Countries (2014)

Introducing Active Ageing Index (2013)

Study reports

Analysis of AAI results for different population groups in Germany, 2017: [Report](#)

Analysis of AAI results for different population groups in Poland, 2017: [Report](#)

Pilot study at local level in Germany, 2016: [Report](#)

Pilot study at national level for Serbia and Turkey, 2015–

Papers and articles on AAI (under development)

2017

> [Click to view 2017 papers](#)

2016

> [Click to view 2016 papers](#)

Up to 2015

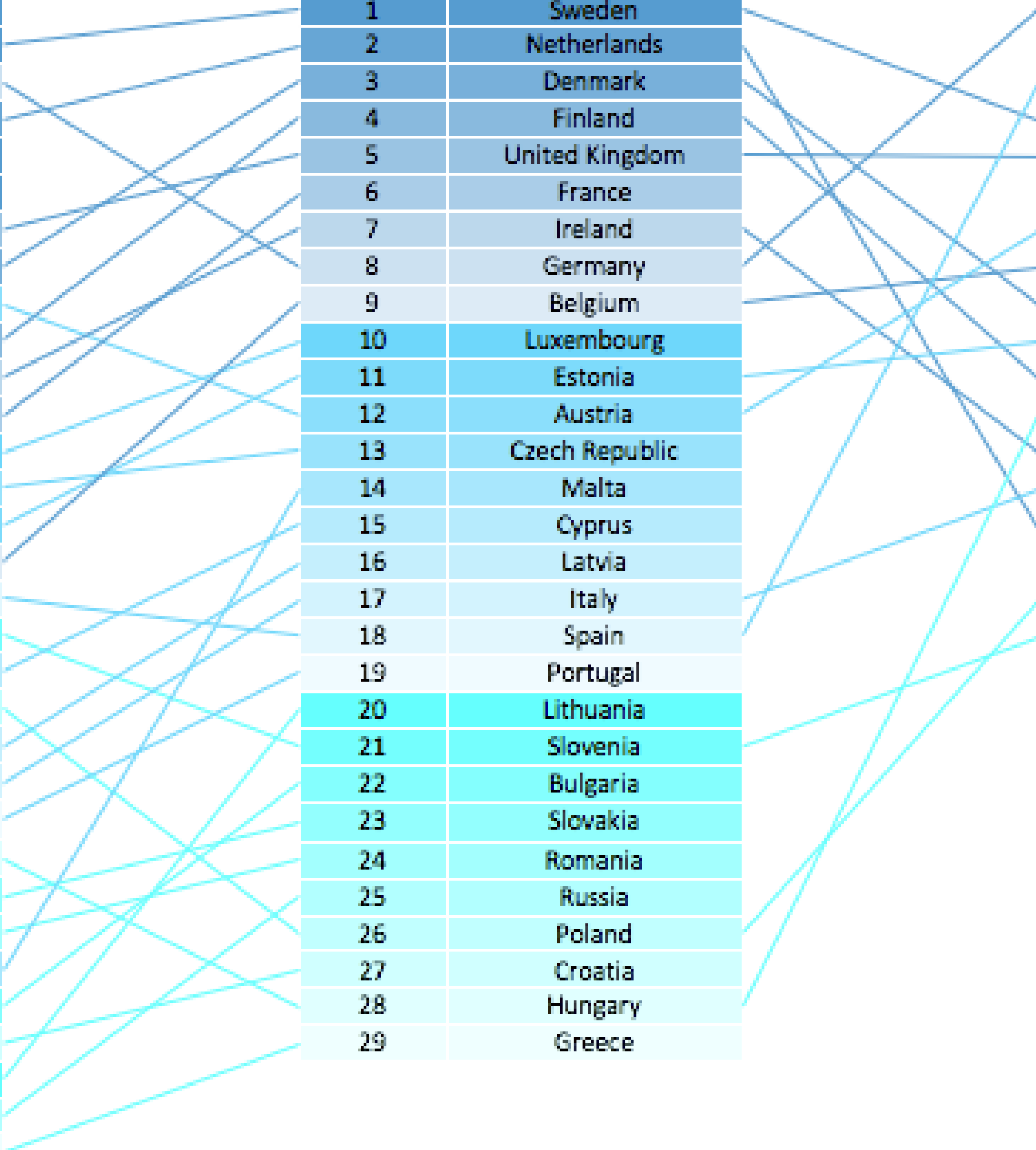
> [Click to view papers from up to 2015](#)

Different tools for different purposes

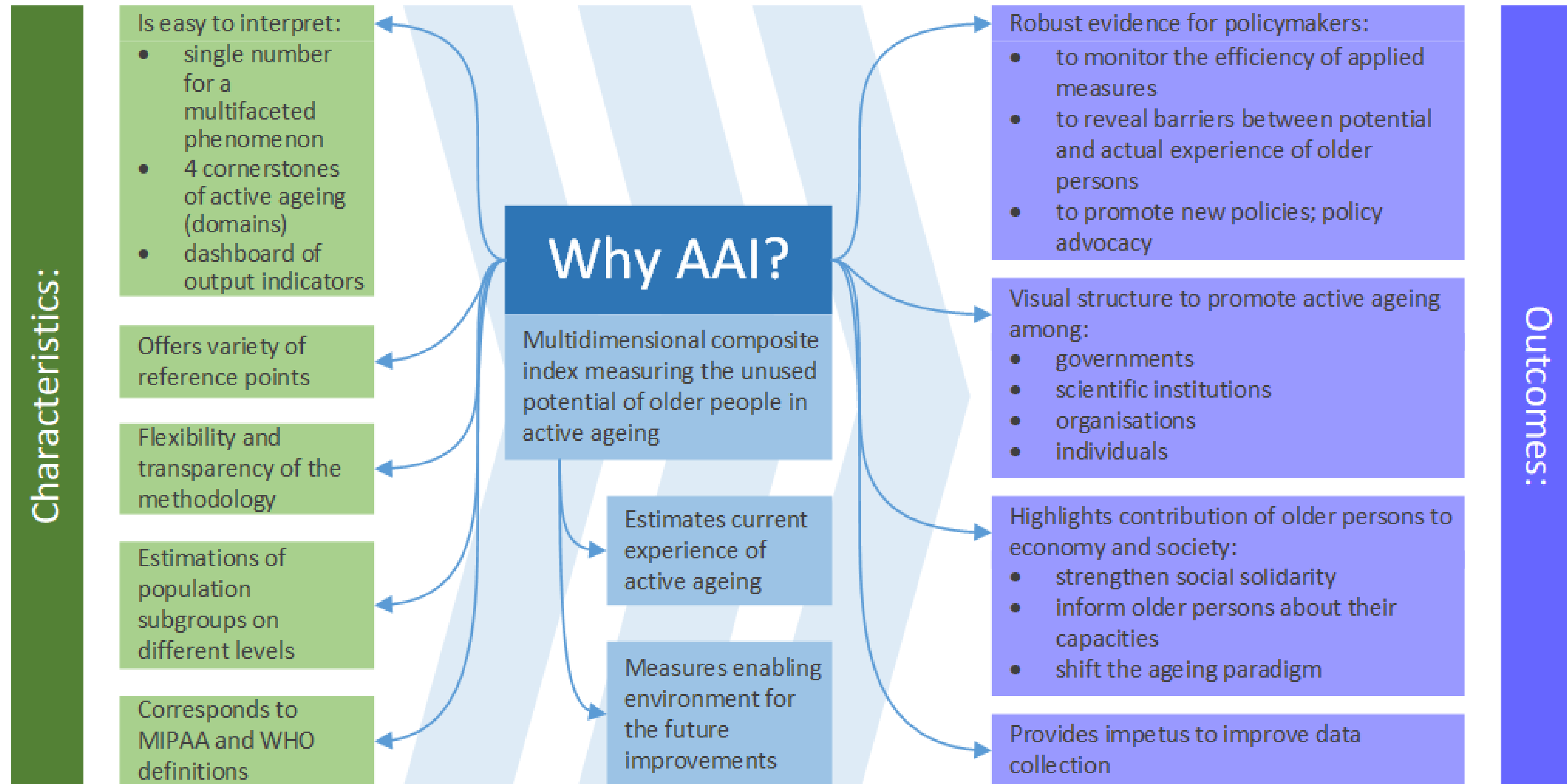
Agewatch	
Rank	Country
2	Norway
3	Sweden
4	Germany
6	Netherlands
8	Japan
9	United States
10	United Kingdom
11	Denmark
13	Austria
14	Finland
15	Ireland
16	France
19	Luxembourg
22	Czech Republic
23	Estonia
24	Belgium
25	Spain
26	Slovenia
30	Cyprus
32	Poland
35	Latvia
37	Italy
38	Portugal
39	Hungary
40	Slovakia
45	Romania
47	Malta
49	Bulgaria
61	Croatia
63	Lithuania
65	Russia
79	Greece

AAI	
Rank	Country
1	Sweden
2	Netherlands
3	Denmark
4	Finland
5	United Kingdom
6	France
7	Ireland
8	Germany
9	Belgium
10	Luxembourg
11	Estonia
12	Austria
13	Czech Republic
14	Malta
15	Cyprus
16	Latvia
17	Italy
18	Spain
19	Portugal
20	Lithuania
21	Slovenia
22	Bulgaria
23	Slovakia
24	Romania
25	Russia
26	Poland
27	Croatia
28	Hungary
29	Greece

Hartford Aging Index	
Rank	Country
1	Germany
2	Japan
3	Spain
4	Sweden
5	United Kingdom
6	United States
7	Austria
8	Belgium
9	Denmark
10	Estonia
11	Finland
12	Hungary
13	Ireland
14	Italy
15	Netherlands
16	Norway
17	Poland
18	Slovenia



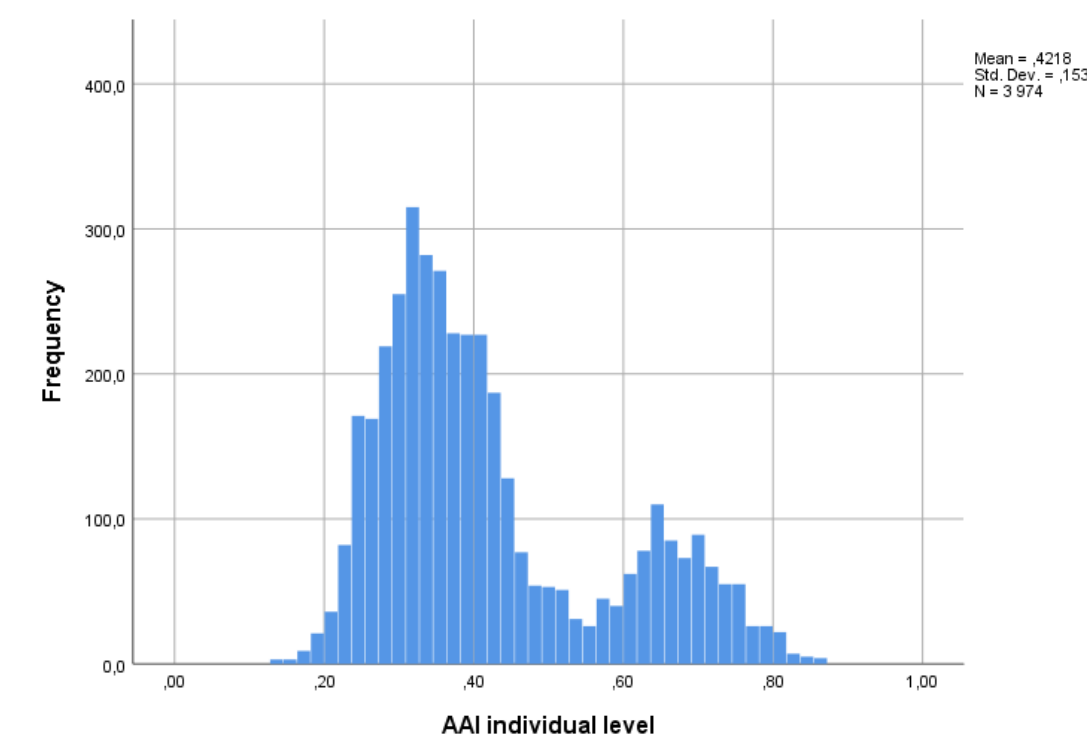
WHY AAI?



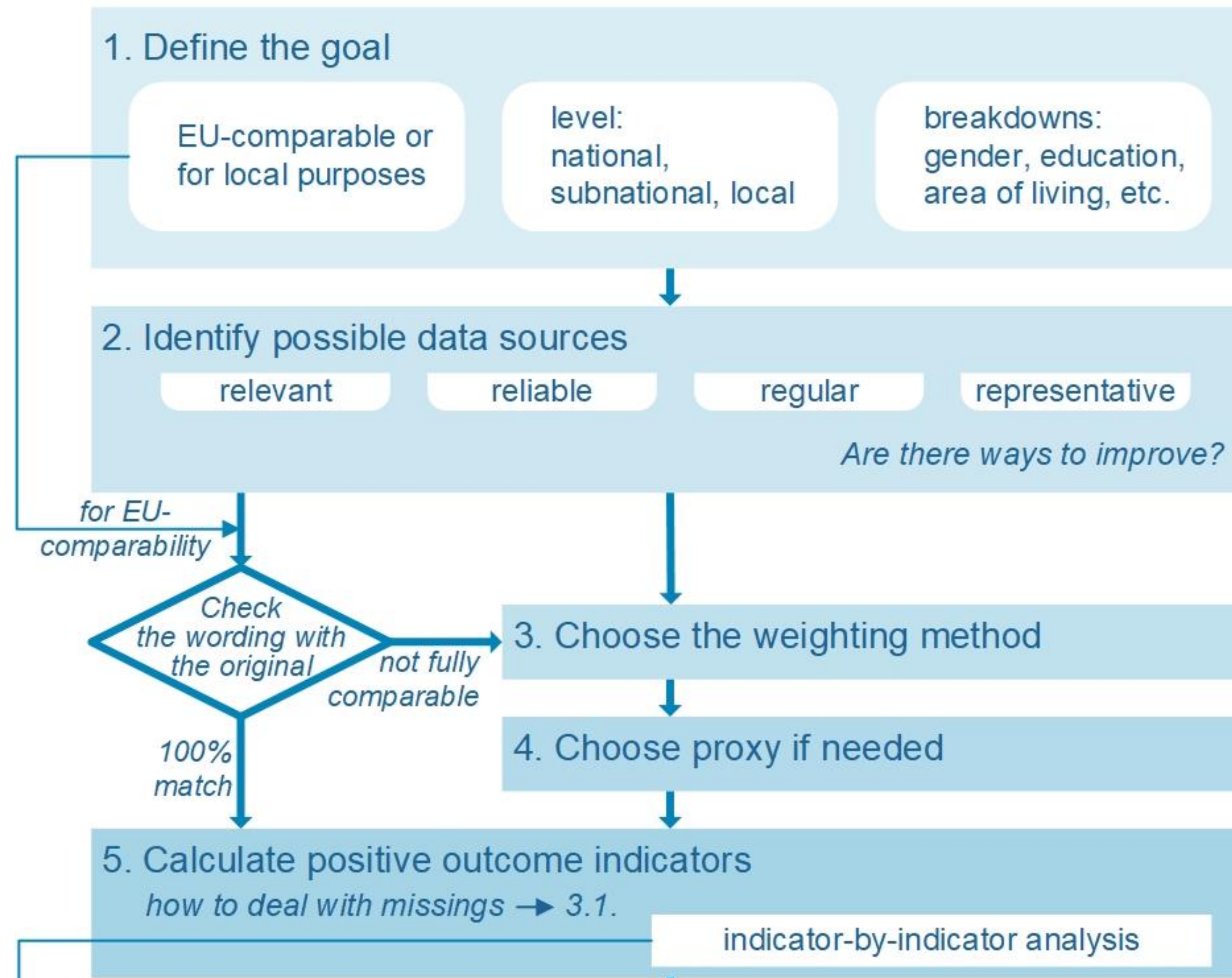
WHAT IS THE PURPOSE?

- Raising awareness
 - International comparison with EU-28
 - Comparison with neighbors
 - Defining groups with highest and lowest potential within the country
- Investigating inequalities and their factors
- Finding targets for designing and redesigning social policy
- Measuring the effectiveness of policy measures
- Improve data collection
- Using as a frame work for national-level concepts
- Promoting the contribution of older adults and intergenerational solidarity
- Individual check-list of social and economic activities and capacities

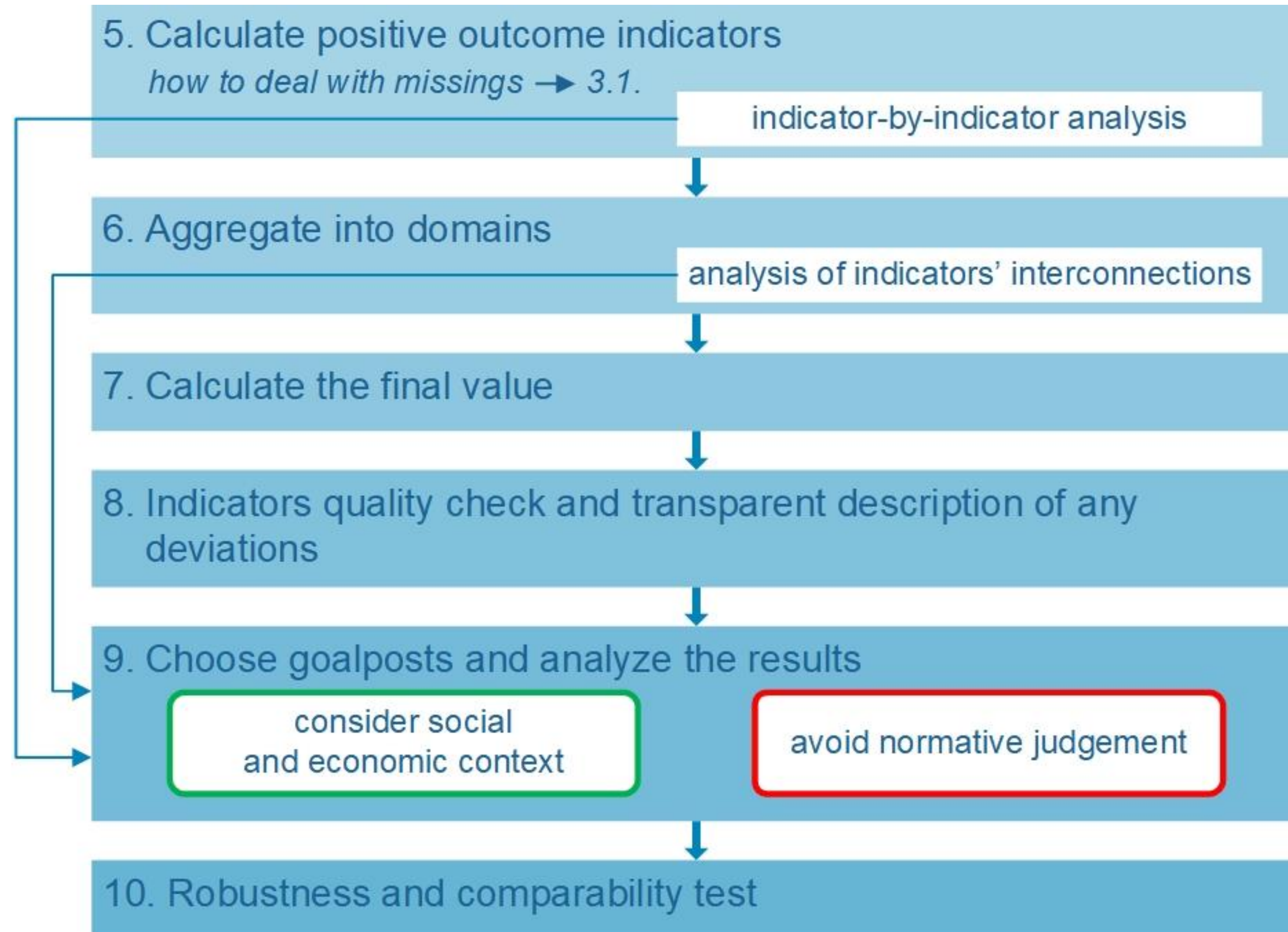
realization of potential, not well-being



THE AAI STEP-BY-STEP CALCULATION



THE AAI STEP-BY-STEP CALCULATION



GOALS

If the goal is international comparison ➡ follow the original methodology as accurately as possible, including the weighting of the indicators and operations with missing values.

In any case ➡ detailed description of deviations and potential consequences.

Be aware of data manipulation!

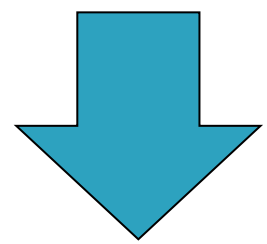
If the index is calculated for the purposes of development / monitoring of local policies ➡ preserve the global meaning of the index and the definitions of the domains, although the methodology and data sources can be adjusted as long as they meet the criteria of relevance, replicability, accuracy and comparability (if the AAI is calculated for several territorial entities).

The keystone is to maintain a consistent methodology through years.

how much of older men and women's potential to contribute to the economy and society is realized and how much their environment enables them to do so

DATA SOURCES

- EU-LFS
- EQLS
- EU-SILC
- ESS
- EHLEIS



don't cover non-EU countries

often insufficient sample starting from NUTS-2

The main problem – lack of harmonized data sources

Search for most relevant subtitles (comparable among localities over time):

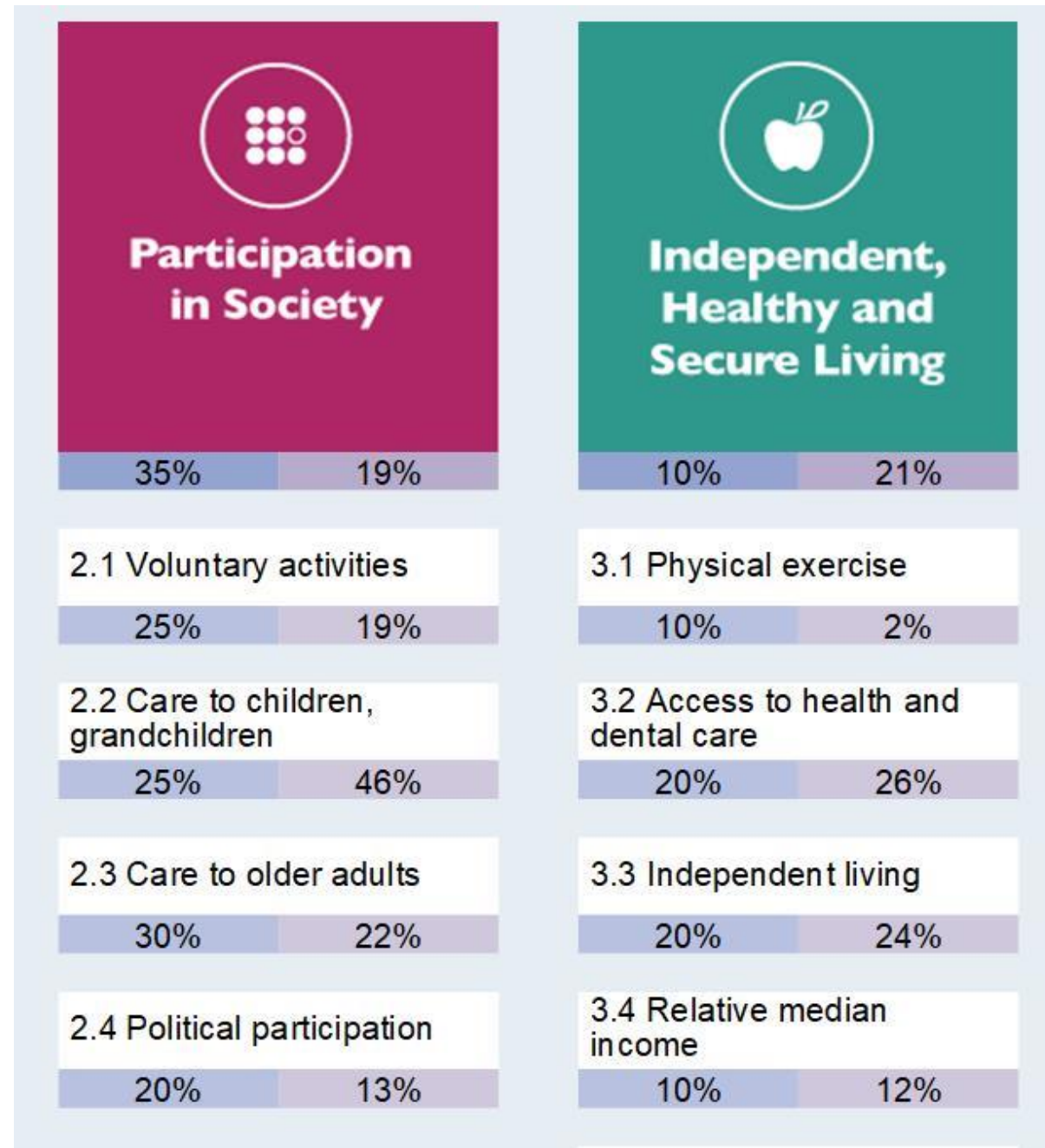
- mono-base
- multi-base

Output indicators!

relevant, replicable, accurate and comparable

- International surveys (ESS, SHARE, HMD)
- National surveys
 - Microcensus
 - Time Use Surveys
 - Special purpose national surveys (LFS, Statistics on Income and Living Conditions, National Household (Budget) Surveys, ICT Use Surveys, Surveys of Social Needs, Health Surveys)
 - Socio-demographic surveys (DEAS, RLMS, Social Diagnosis)
- Registers
- Special data collection cases (RLMS, telephone survey in Biscay Province)

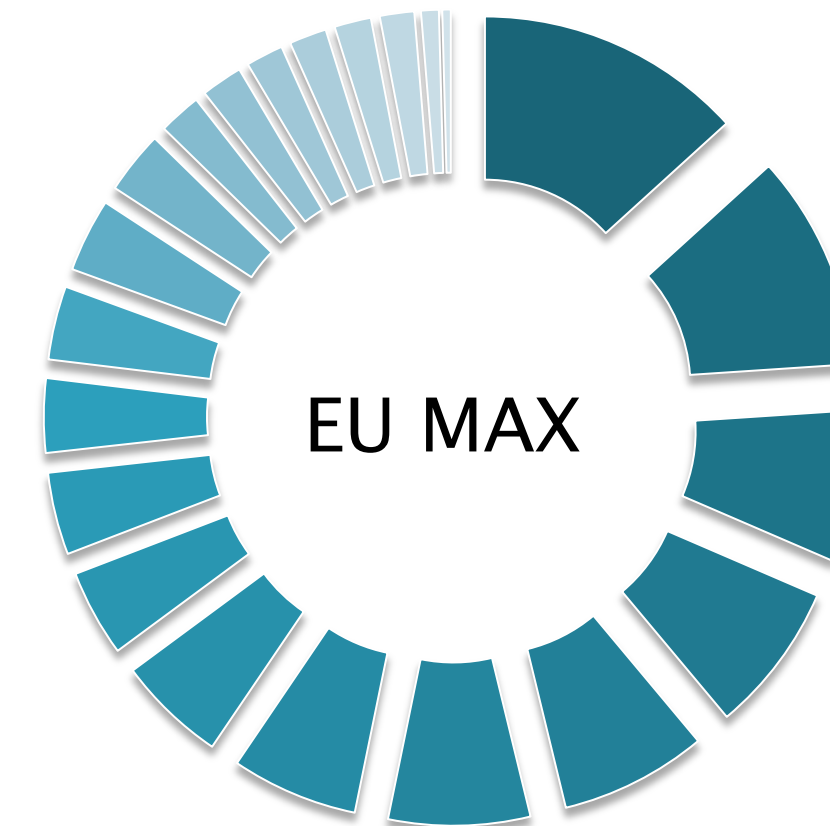
DEALING WITH WEIGHTS



Implicit weights are the expert assessment of the significance of the spheres in the overall index. Explicit weights are introduced to compensate the difference in the magnitude of values of the indicators and domains. Explicit weights are developed in the way that would make the proportion of the average final values in the total index close to those proposed by the experts.

Political priorities and the level of values for countries outside the EU can differ significantly, affecting the distribution of weights within the domains and within the final index

- Bottom 5
- 3.8 Lifelong learning
 - 3.1 Physical exercise
 - 3.7 Physical safety
 - 3.5 No poverty risk
 - 3.6 No severe material deprivation



- Top 5
- 1.1 Employment rate 55–59
 - 1.2 Employment rate 60–64
 - 2.2 Care to children, grandchildren
 - 4.1 RLE achievement of 50 years at age 55
 - 2.3 Care to older adults
 - 4.2 Share of healthy life years in the RLE at age 55

DEALING WITH WEIGHTS

If cross-country comparisons are important, the original methodology should be followed as closely as possible. For domestic policy purposes the original methodological framework might be adjusted **if needed**.



- correction of weights taking into account the priorities of social development or/and the average value of the indicators.
- express positive indicators in “normalized” terms
“normalized indicator = (actual value - minimum value) / (maximum value - minimum value) times 100” (same normalization boundaries for all years) + implicit weights
- use the indicator system separately, without the weighting and aggregation procedures **BUT NO** advantages of an integrated comprehensive picture provided by composite indicator

AAI DOMAINS AND INDICATORS: RATIONALE AND SUGGESTED ALTERNATIVE VARIABLES

Key definition, rationale, important aspects

Suggested data sources

Examples of possible alternative variables

The indicator “**Voluntary activity**” measures non-market unpaid productive activities of the older population offered in the form of organized voluntary activities. The original question does not include the informal voluntary activities. This may undervalue the contribution on territories with a lack of voluntary structures. The original AAI question is based on the EQLS and is defined as the share of persons aged 55+ doing unpaid voluntary work through the organizations at least once a week in the last 12 month including organizations helping older people, young people, disabled or other people in need, educational, cultural, sports or professional associations, social movements and charities and other voluntary organizations.

Data for this question could be found in national social surveys, special research studies on voluntary works, broad longitudinal surveys and Time Use Surveys. The same wording is used in the ESS-2012 and quite close – in the SHARE.

Examples of possible alternative variables:

Proxy	Survey question	Answer categories ¹	Impact of the proxy use
Organized voluntary activity with a different scale of answers	Social Survey (Israel)	More than five hours per month Less than five hours per month Not on a regular basis	Close to the original, provided that the comparison of the time scales is done correctly
	How often in the past twelve months did you do voluntary or charity work? SHARE-2016	Almost daily Almost every week Almost every month Less often	
Organized voluntary activity without intensity; organized and informal voluntary activity combined	Have you in the last year done any voluntary work for people outside the family or for a social organisation? SD (Poland)	Frequently Rarely No	Overestimates the value of the indicator, could be corrected through reweighting with lower coefficient
	Did you perform any unpaid work on a voluntary basis or in the interests of other persons who are not members of your household during the past year? Statistical Survey of Income and Participation in Social Programs (the Russian Federation)	Yes, I have done this type of work in the interests of an organization, a foundation (the collective in an organization, a foundation) Yes, I have done this type of work in the interests (at the request of) private individuals No, I have not done this type of work	

¹ Here and afterwards — in bold are the categories the authors recommend to use for the calculations.

Survey question

Answer categories

Impact of the proxy used

Proxy	Survey question	Answer categories ¹	Impact of the proxy use
	Which of the activities listed on this card - if any - have you done in the past twelve months? SHARE -2014	Voluntary or charity work	
Membership in voluntary organizations	Are you a member of any public, voluntary or charitable organizations (movements)? CMLC (the Russian Federation) ²	Yes No	The effect is not clear. The indicator may be overestimated for countries with a wide distribution of volunteer organizations and underreported for regions where it is not the case. The fact of being a member of a voluntary organization does not necessarily mean being an active volunteer and vice versa.
Percentage of people aged 55+ who is engaged insocial (voluntary) activities	Percentage of people aged 55+ who spend at least some time on social (voluntary) activities Time Use Surveys		Only activities carried out during two random days could be monitored – it is recommended to consider participation in voluntary activity regular if volunteer activity is shown at least in one of the days of the survey

The values in the EU range from 1 for Hungary to 25.2 in the Netherlands with a median value of 5.8, meaning that 14 EU countries have less than 5.8 per cent of population actively engaged in voluntary activities. Men on average are more active than women, but 10 EU countries show inverse results.

EU values as reference point

MISSING VARIABLES AND VALUES

Missings are not substantial

- a reweighting procedure, as in the original methodology **BUT** implicit imputation, recommend to compare reweighted areas
- regression modelling or as a median of the neighbouring observations (mono-base approach only).
- average arithmetic or median **BUT** worsens greatly the distribution of the investigated factor.



introduce complexity in the calculation and need for assessing impact on the AAI comparison

If the international comparability is not the goal any method of treating missing values can be used as it affects ranking rather than overall results. In the original AAI, missing values are not explicitly imputed to raise credibility and comparability across space and over time.

detailed description of deviations and potential consequences

USE OF PROXIES

- If one (or more) indicator is replaced by a proxy → the comparison is limited, depending on the degree of differences between the proxy and the original question.
- If the survey is international → check the accuracy by calculating the proxy values for the countries already participating in the AAI and compare the results with the original ones.
- If not → decisions can be made based on experts' opinions.
- If more than one proxy for the indicator can be calculated and none of them are close enough to the original:
 - select one that is derived from a more reliable survey/ with a bigger sample/available for more years
 - combine several proxies of one indicator into a single number **BUT** hinders clear interpretation of the results

detailed description of deviations and potential consequences

ANALYSIS OF RESULTS

AAI measures untapped potential of older people to contribute to economy and society, and **NOT** well-being or happiness.

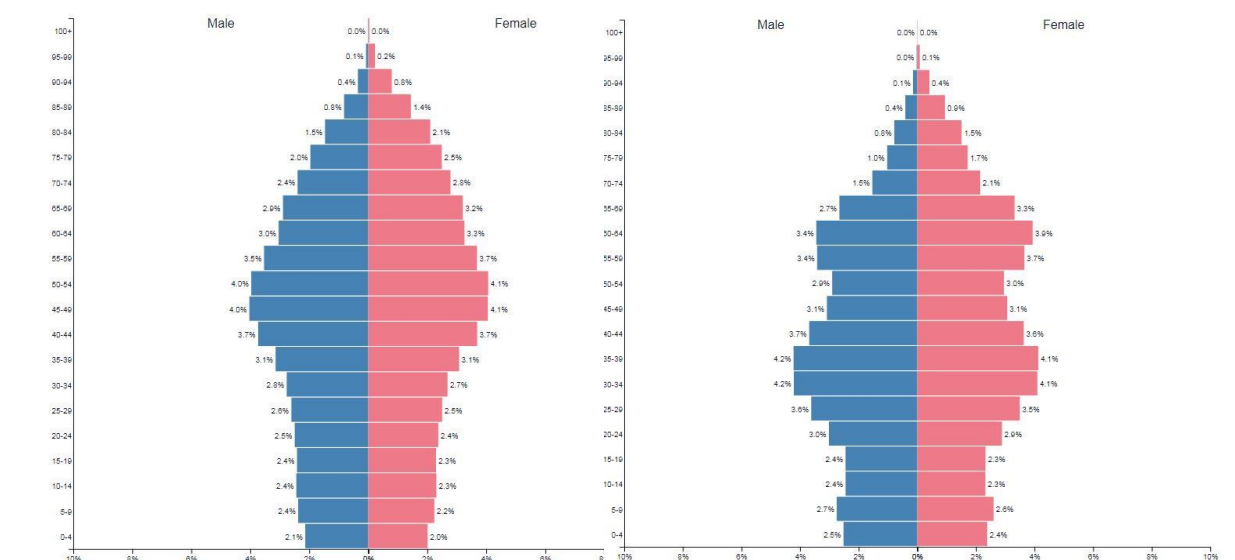
- ➔ normative judgement should be avoided
- ➔ higher means more active, not “better”

AAI uses outcome indicators and **NOT** process indicators or descriptive information about institutional arrangements

- ➔ points to problematic areas, but does not provide the policy advice per se
- ➔ need to be supplemented by additional qualitative contextual research to reveal underlying processes

Relative position of a country (ranking) is not a priority

- ➔ changes of about 3 percentage points are significant
- ➔ social, economic and demographic context



index shows the situation of the current generation of people aged 55 and older, being partly the consequence of the environment supporting or restraining this activity

POSSIBLE GOALPOSTS

100 points is not the target to be achieved

- the highest AAI in the area or over a given time period – so-called best practice,
- mean or median of AAI results of a country (in case of subnational calculations) or a group of countries/region (in case of cross-country comparison),
- results of a neighbouring country or a country with a similar level of socio-economic development,
- an expert opinion that takes into account the speed of potential changes of this indicator in the conditions of a given country,
- proportionally defined goal (e.g. +25 per cent to the results of a base year).

fixed

flexible

ROBUSTNESS

To test the reliability of the AAI for non-EU countries or at a subnational level, the following approaches could be recommended:

- estimation of the indicators in dynamics,
- calculation of the indicators based on different data sources and comparison of the ranking results and obtained values,
- computation of proxy indicators for the EU-28 countries and comparison of discrepancies with the original results.

Results of these need to be integrated into the dissemination, as potential users need to be aware of the quality of the data and the reliability of the comparisons.

The AAI is a stable and easy-to-use **tool** for carrying out comparisons at national and subnational levels, observing active ageing trends over time and monitoring implementation of active ageing measures and policies

