THE EU REGIONAL SPI:

A MEASURE OF SOCIAL PROGRESS IN THE EU REGIONS

METHODOLOGICAL PAPER[1]

Table of Contents

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1. INTRODUCTION

The EU-SPI is a three-year collaborative project carried out by the Social Progress Imperative, Orkestra (a research institute on competitiveness in the Basque region) and the Directorate-General for Regional and Urban Policy of the European Commission. The Index builds on the global Social Progress Index developed by the Social Progress Imperative, a non-profit, non-governmental organisation based in Washington, DC. The regional EU-SPI aims at providing consistent, comparable and actionable measures of social and environmental issues for the regions in the 28 EU Member States (272 regions in total).

2. WHAT IS THE SOCIAL PROGRESS INDEX?

The Social Progress Imperative defines 'social progress' as the capacity of a society to meet the basic human needs of its citizens, establish the building blocks that allow citizens and communities to enhance and sustain the quality of their lives, and create the conditions for all individuals to reach their full potential. The definition alludes to three broad elements of social progress, referred to as dimensions: Basic Human Needs, Foundations of Wellbeing, and Opportunity. Each of these dimensions is further broken down into four underlying components (see Figure 1).
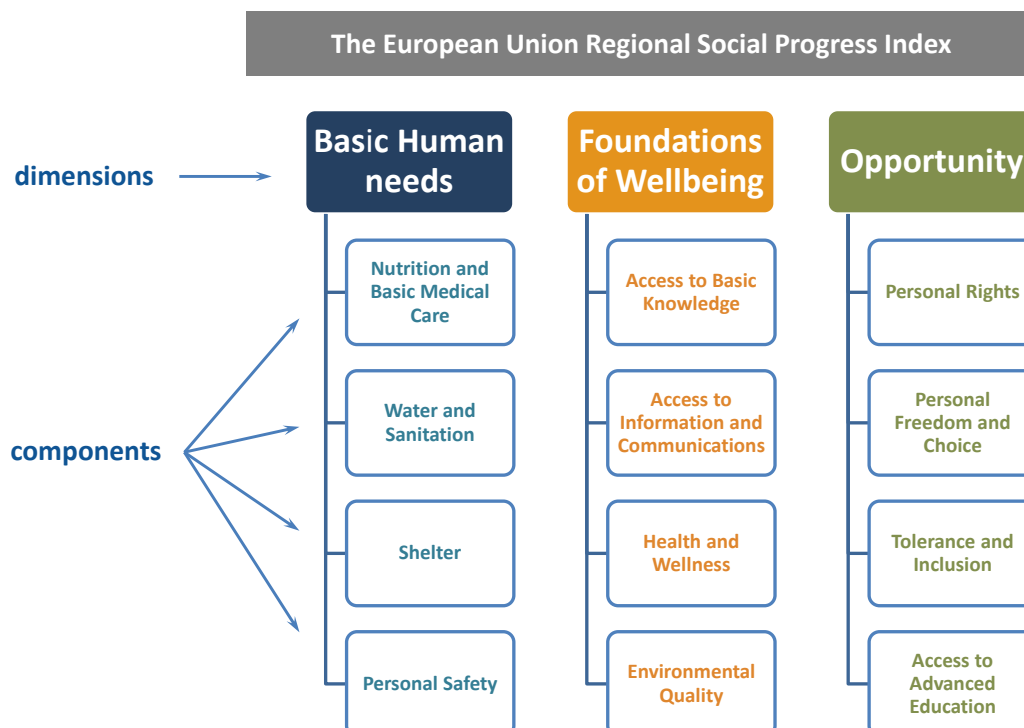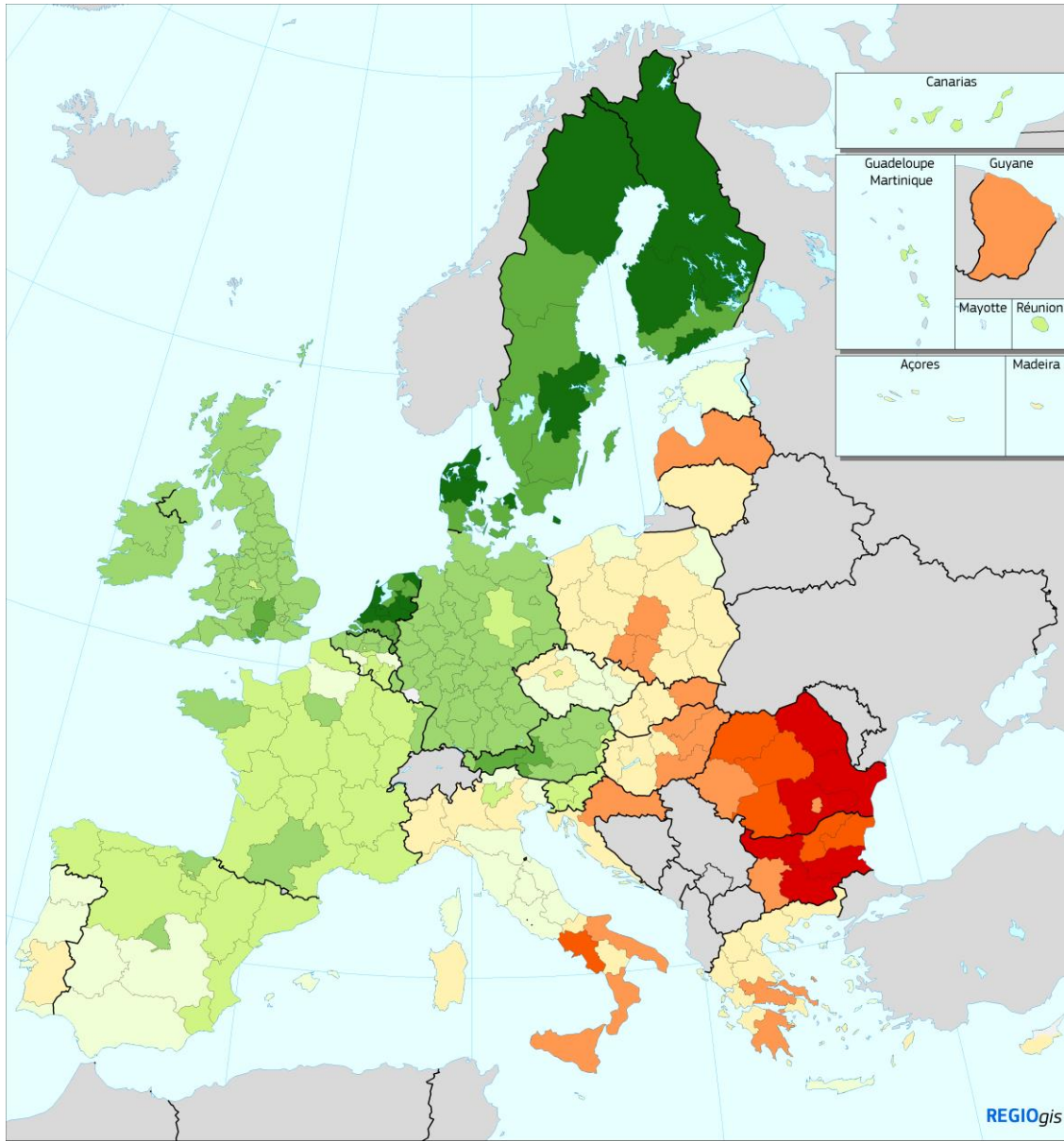
Figure 1: EU-SPI framework

The European Union Regional Social Progress Index is an aggregate index of 50 social and environmental indicators that capture three dimensions of social progress and their underlying twelve components. The Index framework is identical to that of the global Social Progress Index.

Each component is measured through several indicators. Four key principles guided the initial selection of the indicators exactly as for the global Social Progress Index: 1. they are exclusively social and environmental indicators (no economic measure is included); 2. they measure outcomes and not inputs; 3. they are relevant to all the regions and 4. they cover matters that can be directly addressed by policy intervention.
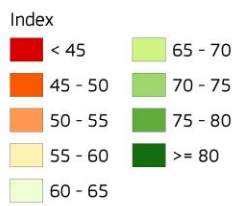
The Index is also outcome-based rather than input-based. Both input indices and outcome indices can help regional entities benchmark their progress, but in very different ways. Input indices measure policy choices or investments believed or known to lead to an important outcome, while outcome indices directly measure the outcomes of investments. As powerfully articulated by Amartya Sen in his development of the capability approach, a constructive way to move "beyond GDP" is to measure how well a particular society helps individuals realize particular capabilities and activities. Following this logic, the Social Progress Index has been designed as an outcome index.

The Index has been constructed to be relevant and comparable for all the regions (Figure 2). While the overarching framework is parallel to that of the global Social Progress Index, the EU Regional Social Progress Index includes indicators that are contextual and uniquely related to regional strategies within the EU 28. The significance of these measurements is further discussed below.

Finally, one of the key differences with other wellbeing indexes is that the EU-SPI, by mirroring the global Social Progress Index, includes social and environmental indicators and excludes GDP or an income-based indicator. The aim is in fact to measure social progress directly, rather than utilize economic proxies. By excluding economic indicators, the index can systematically analyse the relationship between economic development (measured for example by GDP per capita) and social development. Measures that mix social and economic indicators, such as the Human Development Index used by the United Nations, make it difficult to disentangle cause and effect. The Social Progress Index has been designed to complement GDP in a way that it can be used as a robust, comprehensive and practical measure of inclusive growth. This does not mean that the Index is not related to GDP. Comparing SPI to GDP per head, a measure of economic activity shows a strong and positive link between the two, but many regions lie around the main curve showing that at every level of economic performance there are opportunities for more social progress but also risks for less (Figure 3). For poor regions the relation is clear and steep but for rich regions each extra euro of GDP per capita buys less and less social progress. This effect is particularly clear for capital regions. For example Bucharest, Bratislava, Prague, Brussels, Luxembourg and London all have a relatively low level of SPI relative to their GDP per head. Other regions instead outperform their economic level as they score higher than their GDP per head would imply. This is the case for example of the Nordic and most Dutch regions.

Figure 2: The EU Regional SPI index (0-100 scale)
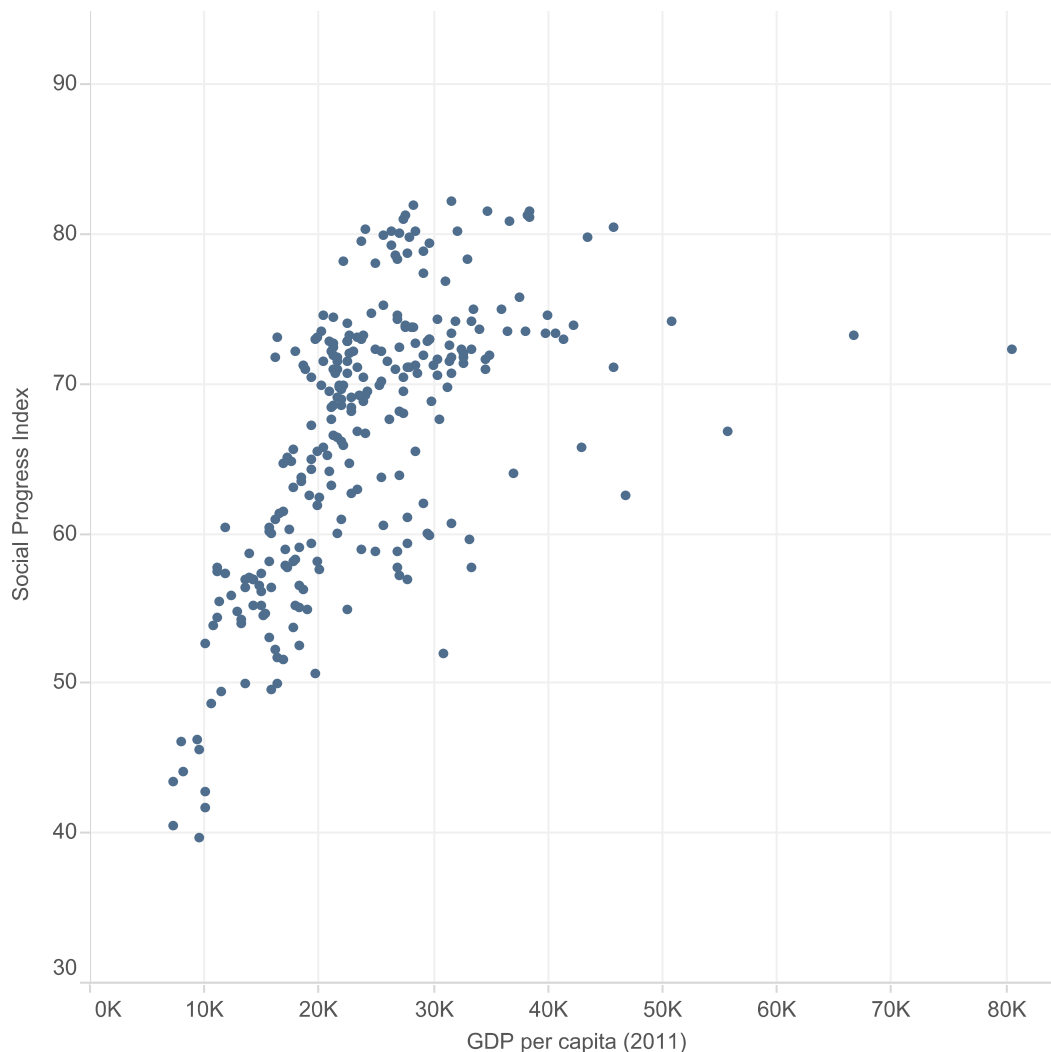
Figure 3: Relation between the EU regional SPI and GDP per capita (2011).

3. WHY AN EU REGIONAL SOCIAL PROGRESS INDEX?

All the twelve components included in the Index cover issues that show significant variations within EU Member States. We are used to observing sometimes radical differences across the EU regions (especially between rural and urban areas) in terms, for example, of access to health care, quality and affordability of housing, personal safety, access to higher education and ICT or environmental pollution. EU Cohesion Policy is focussed on the least developed regions and supports regional strategies to promote economic, social and territorial cohesion.

This new regional index may:

▪ help regions to identify peers, at any level of economic development, from whom they could learn and, if applicable, prioritise issues they want to address with their Cohesion Policy Programme[2];

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[2] It is recognised here, in agreement with Article 174 of the Treaty on the Functioning of the European Union, that ultra-peripheral regions have peculiar characteristics and require particular attention. For comparability reasons the regional EU-SPI was not designed to explicitly take into account these

- serve as a sounding board for the European Commission to assess whether the 2014-2020 programmes address the right issues in the right places;

- allow DG REGIO to make an contribution to the GDP and *beyond debate*.

It is important to note that this index shall not be used for Cohesion Policy funding allocation. It is a composite index consisting of indicators derived from different sources, with different margins of error and a complex aggregation structure.

4. HOW IS THE EU REGIONAL SOCIAL PROGRESS INDEX CONSTRUCTED?

The global Social Progress Index has been published in 2014 and 2015 by the Social Progress Imperative for over 130 countries in the world. Some globally important indicators, such as primary school enrolment or household access to electricity, are important factors worldwide but less pressing issues in the EU. The EU-SPI is therefore based on a different set of indicators but with the identical set of dimensions and components.

A list of candidate indicators for each of the 12 components was first assembled. Besides the four key criteria mentioned above, the availability of a time series and the credibility of the data source have been the additional conditions used for indicator selection. About two-thirds of the indicators (36 out of 50) come from EUROSTAT, either directly from the web-site or from ad ad-hoc extraction from the module on well-being of the EU Survey on Social and Living Conditions – EU-SILC. Other sources are the European Environmental Agency (EEA), the Gallup World Poll, the Quality of Government Institute of the University of Gothenburg and Eurobarometer.

Whenever possible, the indicators have been averaged over three years, 2011-2013, to smooth out erratic changes and limit missing values problems. For consistency across the indicators, the reference period is 2011-2013 even when more recent data are available. In the case of ICT indicators, which are rapidly moving, the latest year is taken as reference.

Table A.1 in the Appendix lists all the candidate indicators, each with a short description. From this list, 50 indicators have been retained for the draft version of the EU- SPI.

A step-wise approach was followed to compute the index: (i) assessing of the best possible geographical coverage given data availability and reliability (section 4.1); (ii) checking for statistical internal consistency within each component (section 4.2); (iii) normalizing (section 4.3) and (iv) aggregating indicators (section 4.4); (v) anchoring regional scores to purely national ones (section 4.5) and (vi) testing scores and rankings through an extensive robustness analysis (section 5).

4.1. Geographical coverage

One of the major challenges of the project is reaching the sub-national, NUTS2 level for such a wide set of indicators from many different sources. The regional coverage depends

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features. This should be taken into account when analysing SPI results for these regions and comparing them to continental ones.

on both the indicator and the country and follows a variable-geometry pattern across the components. A simple rule was adopted within and across the components. The geographical coverage that a certain component can reach for a certain country is the one reached by at least half of the indicators for that country. For instance, if at least 50% of the indicators in the Nutrition and Basic Care are observed at the NUTS2 level for Austria, then Austria is considered to be described at the NUTS2 level for that component. If some of the indicators are not actually observed at the NUTS2 level but at a less disaggregated level for Austria, the NUTS1 or national values are assigned to all the NUTS2 regions within the country. This means that the within-country variability of the Index and sub-indexes is underestimated.

Table A.2 in the Appendix shows the resulting final coverage for all the countries in each of the components. The "50%-rule" allowed us to reach the NUTS2 level (with the limitations mentioned above) in almost 90% of the cases, the NUTS1 in 6% of the cases and the national level in 5% of the cases.

The same 50%-rule is then reiterated across the components included in each dimension. Given that more than 50% of the components are measured at the NUTS2 level for all the cases, regional NUTS2 scores are provided for all the countries in all the dimensions.

4.2. Components Internal consistency

The issue of aggregating indicators into a single, composite index is a widely debated topic in socioeconomics, especially when measuring social aspects like poverty and quality of life (Decancq and Lugo 2013; Lustig 2011; Ravallion 2011; Wagle 2008). The aggregation process always implies, explicitly or implicitly, the choice of weights to be assigned to different, suitably selected and scaled indicators and the aggregation method. Both issues play a crucial role in determining the trade-offs between the different aspects measured. Although we are aware that multi-criteria methods are analytical instruments to study these kinds of problems, like the counting method proposed by Alkire and Foster (2011a) or the purely multi-criteria approaches based on partial order (Annoni 2007; Annoni and Bruggemann 2009; Bruggemann and Carlsen 2012), within each EU-SPI component we opt for a classical aggregation technique, as we assume, test and confirm the internal consistency of each component.

Internal consistency is verified by a classical multivariate method, Principal Component Analysis (PCA), which is a dimensionality reduction technique designed to capture all relevant information into a small number of transformed dimensions. PCA is used to identify the set of indicators describing a particular component that show an acceptable level of internal consistency. Consistency is related to the level of multivariate correlation among indicators and, if verified, mitigates the effect of different weighting schemes on the final, aggregated measure (Decancq and Lugo, 2013; Foster et al., 2013; Hagerty and Land, 2007; Michalos, 2011). Within each component, high correlation levels reduce the compensability across indicators, understood as the undesirable offsetting of low scores in some indicators with high scores in others. In the ideal situation each component should show a unique, most relevant PCA factor accounting for most part of the variability. Moreover, all the indicators should contribute roughly to the same extent and with the same orientation to the most relevant factor, and this can be assessed by analysing PCA loadings (Morrison, 2005). Non-influencing indicators, or indicators describing something else than what they are supposed to, are easily found by the analysis.

PCA allowed for detecting 11 misfitting indicators in the initial set of candidates for the EU-SPI which have been discarded from the analysis (Table 1). The Environmental Quality component proved to be the most critical one with three indicators not showing enough consistency with the others. A variety of reasons generally cause misfit. Indicators can be affected by measurement errors, or questions can be misunderstood in survey-based indicators, or the indicator simply describes something different from what expected. In the revised framework, which excludes misfitting indicators, all the components show a unique, underlying factor with a well-balanced contribution of each indicator.

Table 1: Indicators discarded as not fitting their respective component

Dimension	Component	Indicator name	Indicator description
Basic Human Needs	Nutrition and Basic Medical Care	Infectious diseases	Standardised death rate rates for less than 65 years old due to certain infectious and parasitic diseases (A00-B99) by 100 000 inhabitants. The standardisation adjusts the death rate to a standard age distribution (EUROSTAT).
	Shelter	Housing quality	Percentage of people declaring of suffering of housing deficiencies: lack of basic sanitary facilities in the dwelling (bath or shower or indoor flushing toilet), problems in the general condition of the dwelling (leaking roof or dwelling being too dark) (EU-SILC).
	Personal Safety	Crime	Percentage of people who declared having faced the problem of crime, violence or vandalism in the local area (EU-SILC).
Foundations of wellbeing	Access to Basic Knowledge	Pre-primary enrolment	Percentage of the age group between 4-years-old and the starting age of compulsory education participating in early childhood education (EUROSTAT).
	Access to Information and Communication Technology	Mobile phone users	Percentage of mobile phone users (Gallup World Poll survey).
	Environmental Quality	CO2 consumption	National consumption of CO_2 (World Input/Output Database).
		Noise pollution	Percentage of people declaring having experienced noise from neighbours or from the street (EU-SILC).
		Land-use efficiency	Land-use efficiency measured as built-up area in square meters per inhabitant (European Commission Global Human Settlement Layer - GHSL).
Opportunity	Personal Rights	Citizen Engagement	Percentage of people who agree with the statement: "My voice counts in the EU" (STANDARD EUROBAROMETER 79).
	Tolerance and Inclusion	Intercultural Relations	Relations in (YOUR COUNTRY) between people from different cultural or religious backgrounds or nationalities (evaluation of the current situation) (Special Eurobarometer 418 on Social Climate).
		Trust in Others	The trust in others does not refer to a specific group of people. On a scale fro 0 to 10, o means "You do not trust any other person" and 10 means that "Most people can be trusted" (EUROSTAT)

4.3. Normalization

In line with the Global SPI, the EU-SPI scores at the overall, dimension, and component levels are all based on a 0-100 scale. This scale is determined by identifying the best and worst global performance on each indicator by any region. To set these boundaries we sometimes use: 1. theoretical utopian and dystopian values, when meaningful; 2. maximum and minimum values across a time series, when available[3], or 3. guidelines or projection data. Table A.3 in the Appendix shows the boundary values for the draft version of the EU-SPI.

This type of normalization allows the EU-SPI scores to benchmark against realistic rather than abstract measures and to track absolute, not just relative, performance of the regions on each component of the model.

All the indicators are oriented in order to have high values representing high levels of social progress. Once the minimum (x_{min}) and maximum (x_{max}) values for indicator x have been set, the transformation adopted is then:

$$x_{transformed} = \begin{cases} \dfrac{100 \cdot (x - x_{\min})}{(x_{max} - x_{min})} & \text{if x is positively oriented} \\ \dfrac{-100 \cdot (x - x_{\min})}{(x_{max} - x_{min})} + 100 & \text{if x is negatively oriented} \end{cases}$$

4.4. Aggregation

Two types of aggregating operators are used: the arithmetic mean within each component and the generalized mean across components and across dimensions.

Within the components, good internal consistency and a balanced set of loadings verified through PCA (section 4.2) guarantee that the simple arithmetic mean is a proper way to aggregate because the compensability effect across the indicators is limited.

Across the components and, even more, across the dimensions the effect of compensability is generally more accentuated. An inequality-adverse type of aggregation is then adopted to mitigate this effect. It is a well-known principle that deficiency in one component should lead to a general failure, given that acceptable social progress levels are ensured if a region performs well enough across all the different social aspects. This implies that a shortage in one component should be fully compensated with surpluses in another one (Munda, 2008).

Full compensability can be avoided, or at least mitigated, by adopting a type of aggregation which stands in between an arithmetic and the geometric average, the generalised weighted mean (Annoni and Weziak- Bialowolska, 2016; Decancq and Lugo 2013; Ruiz 2011).

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[3] In some cases a 0.95 or 1.05 correction factor is applied to the worst/best value across the time series to allow for a margin of deterioration/improvement (buffer).

Let x_{ij} denote the score of component j ($j = 1,…, q$) for region i ($i = 1,…, n$). For each region all the scores $\{x_1,…, x_q\}$ have by construction a positive orientation with respect to the level of social progress. The (un-weighted) generalized mean of order β of the set of scores q is defined as:

$$I_j = \begin{cases} \left(\left(\frac{1}{q}\sum_{i=1}^{q} x_i^{\beta}\right)^{1/\beta}\right) & \beta \neq 0 \\ \left(\prod_{i=1}^{q} x_i\right)^{1/q} & \text{for } \beta = 0 \quad \text{(geometric mean)} \end{cases}$$

where I_j is the score for region j on the dimension including components $\{x_1,…, x_q\}$. For β=1, I_j is clearly the arithmetic mean.

Under this assumption that $0 < \beta < 1$, the generalised mean is said to be inequality-adverse: a rise in the level of one component in the lower tail of the distribution will increase the mean value by more than a similar rise in the upper tail, thus giving more importance to low levels (Ruiz 2011). The closer β is to 0, the higher this effect will be. Consequently, the order β plays the important role of balancing the achievements between two components.

Reference values for EU-SPI scores and rankings are based on the generalised mean of power $\beta = 0.5$. The influence on final scores and ranks of different values of β, randomly sampled from a Normal distribution centred in 0.5, is tested through a Monte-Carlo simulation, discussed shortly below (Section 5).

4.5. Regional scores anchored to national ones

For each country, component scores are computed at the regional level, when indicators are available at the regional level, but also at the national level from national indicators. In order for the regional and national scores to be consistent, regional component scores are rescaled and anchored to the national component scores, that is:

$$z_{ij} = y_i + \left(x_{ij} - x_i\right)$$

where z_{ij} is the final component score for region j in country i, y_i is the component score for country i computed from national indicators, x_{ij} is the un-anchored regional scores and x_i is the population-weighted average of x_{ij} for country i.

In this way, population weighted averages of regional scores are equal to national scores for all the components.

5. STATISTICAL ASSESSMENT

The EU-SPI is a composite indicator and shares advantages and disadvantages with all the other aggregated measures of latent phenomena. A composite indicator is by definition a summary metric which quantifies with a single number what is otherwise not directly measurable, in this case the level of social progress of a region. Yet the underlying phenomenon remains intrinsically multidimensional. The EU-SPI is a combination of quite a

large set of indicators which are observed, sometimes at different geographical levels, statistically treated and finally aggregated. The Index is therefore the final outcome of a long list of subjective, often questionable, choices. The lively debate within the scientific community on the pitfalls of summarising a multi-dimensional concept into a single index – see for example Stiglitz's Commission Report (Stiglitz et al, 2009) – is not the goal of this project. The goal of this project is instead to provide an empirical measure of the level of regional social progress under two guiding principles: simplicity and transparency.

Simplicity is driven by the necessity of the composite to be easily understood by a non-technical audience – policy makers, stakeholders and, most of all, citizens. It addresses issues most of the people care the most, so citizens are and shall be the main audience and final users. But simplicity has not prevailed over technical soundness: appropriate statistical analyses steered the development of the EU-SPI.

Transparency refers to the clear communication of the list of subjective choices taken during the Index construction. Various choices must be made when setting-up a composite indicator: type of framework, indicator selection, weighting scheme, aggregation, and many others. Some have been driven by solid conceptual and statistical justifications; others have been tested through the robustness analysis described in this Section. The aim of a robustness analysis is to assess the stability of region scores/ranking with respect to the changes of the parameters of the Index. The robustness analysis of an index is therefore an essential ingredient for validating its message by anticipating criticism.

To this aim the following steps are covered: first the Index framework is verified, second a Monte-Carlo experiment is run to check the effect of different types of aggregation on final scores and ranks, third the importance of each component is assessed and, eventually, the presence of compensability effects is tested.

5.1. Assessing the Index framework

The EU-SPI framework is the same as the global Social Progress Index one, **Error! Reference source not found.** (http://www.socialprogressimperative.org/data/spi/methodology). The EU-SPI framework is then populated by a set of the best available indicators describing the European Union context. The question is then to what extent EU indicators fit the global SPI framework. Similarly to what was done for the internal consistency check (Section 4.2), exploratory PCA on components and dimensions is used to provide the answer.

Results of the PCA on the 12 components are shown in Figure 4. The left side of Figure 4 shows the value of the component eigenvalue, that is the variance accounted for by each PCA dimension. Eigenvalues higher than 1 correspond to significant underlying sub-dimensions and, in the EU-SPI case, three sub-dimensions are expected to be found. PCA results show that almost 3 sub-dimensions can be spotted out. PCA loadings (Figure 4, right-hand side) indicate how much a certain component contributes to each single PCA dimension (only the first 3 most important dimensions are shown in the Figure). Most of the components contribute, with the same orientation, to the first, most important sub-dimension except for Access to Basic Knowledge and Environmental Quality which instead contribute to the second sub-dimension but with opposite signs. That is Access to Basic Knowledge is positively contributing to second component, while Environmental Quality is negatively contributing to that same component. This is a signal of a sort of criticality shown by the two components.

PCA on the SPI 12 components: Scree plot

PCA loadings, model including all 12 components			
	1st component	2nd component	3rd component
Nutrition_Care	0.32	-0.21	-0.28
Water_Sanitation	0.30	0.07	-0.36
Shelter	0.35	-0.03	0.02
Personal_Safety	0.29	-0.12	-0.20
Basic_Knowledge	0.08	0.65	0.17
ICT_Access	0.32	0.20	0.01
Health_Wellness	0.32	-0.24	-0.21
Environmental_Quality	0.08	-0.53	0.56
Personal_Rights	0.29	0.22	0.27
Personal_Freedom_Choice	0.34	0.23	0.03
Tolerance_Inclusion	0.34	-0.18	0.13
Advanced_Education	0.24	0.07	0.52

Figure 4: PCA on the 12 components

To better understand what happens in each EU-SPI dimension, PCA is separately run for Basic Human Needs, Foundations of Wellbeing and Opportunity dimensions. Results (Figure 5) show that the Basic Human Needs and Opportunity dimensions describe a single, clear aspect of social progress measured in a balanced way by the ensemble of components included in the dimension. The Foundations of Wellbeing dimension is instead more problematic (Figure 5, b) because it measures two different aspects: one composed by Access to Information and Communications and Health and Wellness, the other by Access to Basic Knowledge and Environmental Quality but with opposite signs. This indicates that Access to Basic Knowledge and Environmental Quality are two anti-correlated concepts of social progress[4]. Observed data at the EU level show that good levels of Basic Knowledge, certainly an important element of social progress, do not correspond to high levels of environmental quality. A possible explanation can be found in the rural/urban division: living in urban areas allows for an easier access to education with the trade-off of lower quality of the environment (like for example more noise and pollution).

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[4] The simple analysis of bivariate correlation shows that there is a significant negative correlation between Access to Basic Knowledge and Environmental Quality (ρ = -0.28 with p-value=0.00).

a.
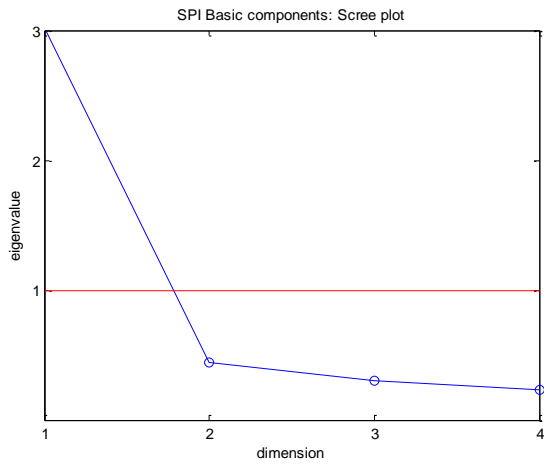
| PCA lodings, BASIC components | | | |
	1st component	2nd component	3rd component
Nutrition_Care	0.52	-0.14	-0.16
Water_Sanitation	0.50	-0.42	0.72
Shelter	0.51	-0.24	-0.66
Personal_Safety	0.47	0.86	0.14

b.
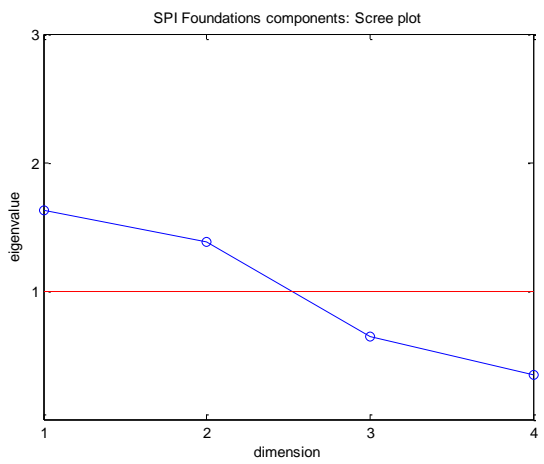
| PCA loadings, FOUNDATION components | | | |
	1st component	2nd component	3rd component
Basic_Knowledge	0.14	0.69	0.66
ICT_Access	0.67	0.27	-0.17
Health_Wellness	0.69	-0.18	-0.22
Environmental_Quality	0.24	-0.64	0.70

c.
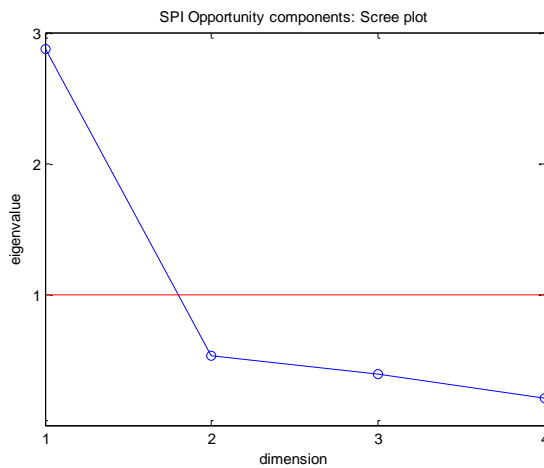
| PCA loadings, OPPORTUNITY components | | | |
	1st component	2nd component	3rd component
Personal_Rights	0.51	-0.34	-0.64
Personal_Freedom_Choice	0.53	-0.33	0.03
Tolerance_Inclusion	0.51	-0.09	0.75
Advanced_Education	0.45	0.88	-0.16

Figure 5: PCA on the three EU-SPI dimensions: a. Basic Human Needs; b. Foundations of Wellbeing; c. Opportunity

5.2. The effect of the order of the mean

As the second step of the Index assessment, a Monte-Carlo simulation is carried out to assess the effect of different order values β of the generalized mean used to aggregate across components and dimensions (described in Section 4.4). Values of β are sampled from a Normal distribution centred in the β reference value, 0.5, with a standard deviation of 0.2 and censored at 0 and 1. The generalized mean is close to a geometric mean as β approaches 0, and is close to an arithmetic mean as it approaches 1. This means that varying β in the [0,1] interval corresponds to continuously moving from a geometric mean, that is fully non-compensatory, to an arithmetic mean, fully compensatory. A total number of 1000 values of β are sampled from the Normal distribution. Figure 6 shows the distribution of values of β actually used for the simulation.

Distribution of the sampled values of the order of the generalized mean
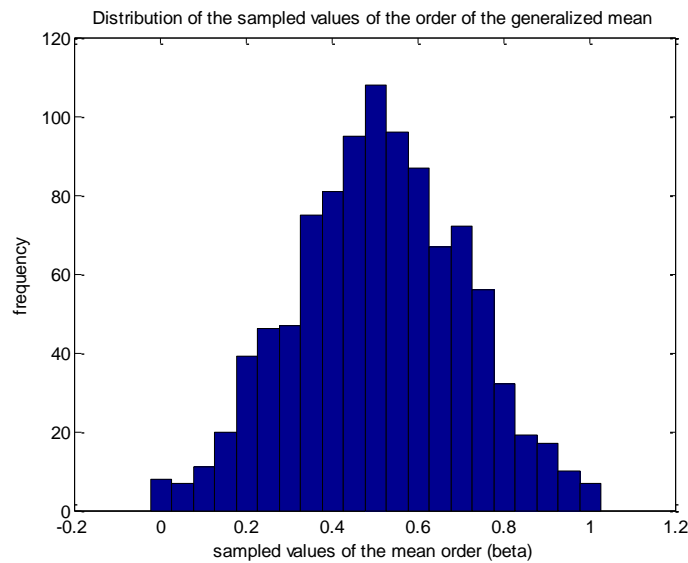
Figure 6: Distribution assumed for the mean order β

For each Monte-Carlo run, the difference between the reference rank, computed with β=0.5, and the modified rank is computed for all the regions. The distribution of the shift in ranks for the three dimensions is shown for each region in Figure 7, where the scale of the *y*-axis is the same across the three sub-figures for comparison purposes. For each region the whole distribution of the rank difference is shown[5].

Even if the absolute maximum rank shift is never above 25, which corresponds to slightly less than a 10% shift in the regional rank, it is clear that the rankings in the Foundations of Wellbeing dimension are the most affected by changes in β. One of the reasons is the simultaneous presence of the components Access to Basic Knowledge and Environmental Quality that has been detected as problematic by the PCA analysis as well. For the Basic Human Needs and Opportunity dimensions, the shift in ranking is negligible, always within the band ±5 positions for first (P25%) and third quartiles (P75%).

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[5] Rank distributions are displayed as boxplots with P25 and P75 percentiles as box edges. The whiskers extend to the most extreme data points not considered as outliers, that is belonging to the interval [P25-(P75-P25); P75+(P75-P25)]. Outliers are plotted as individual points.

Table 2 lists the most affected regions. The warning message corresponds to those regions where either the first quartile of the rank difference distribution is below -5 or the third quartile is above +5. Not surprisingly, the Foundations of Wellbeing ranks are the most volatile.

Table 2: Effect of the order β, most affected region rankings

country_code	region_code	region name	region_ID	Basic Human Needs	Foundations of Wellbeing	Opportunity	European Union Regional Social Progress Index
BE	BE24	Prov. VlaamsBrabant	14		WARNING		
CZ	CZ01	Praha	28		WARNING		
DE	DE22	Niederbayern	41		WARNING		
DE	DE23	Oberpfalz	42		WARNING		
DE	DE24	Oberfranken	43		WARNING		
DE	DE60	Hamburg	50		WARNING		
DE	DE94	WeserEms	58		WARNING		
DE	DEA1	Düsseldorf	59		WARNING		
DE	DEA2	Köln	60		WARNING		
DE	DEA3	Münster	61		WARNING		
DE	DEA4	Detmold	62		WARNING		
DE	DED4	Chemnitz	69		WARNING		
ES	ES41	Castilla y León	101		WARNING		
FR	FR81	LanguedocRoussillon	136		WARNING		
SI	SI02	Zahodna Slovenija	231			WARNING	
UK	UKC1	Tees Valley and Durham	236		WARNING		
UK	UKD4	Lancashire	240		WARNING		
UK	UKE3	South Yorkshire	245		WARNING		
UK	UKE4	West Yorkshire	246		WARNING		
UK	UKF3	Lincolnshire	249		WARNING		

Figure 8 shows the rank instability for the overall Index. The aggregation of the three dimensions has the effect of smoothing out the ranking instability as the rank shift is always in between the ±5 band.

A closer look at the best, top-ten, and worst, bottom-ten, regions shows a clear stability in the ranks (Table 3). Most of the top and bottom regions are firmly anchored to their positions and, if not, the shift is very limited. This is a typical phenomenon when dealing with aggregated measures like composite indicators: regions with a balanced performance across the different aspects included in the measure, either good or bad, are by construction firmly located at the extremes.

Table 3: Effect of the order β on the ranking top and bottom 10 regions

| | Region Code | Region | Country | RELEVANT STATISTICS OF THE DISTRIBUTION OF THE DIFFERENCE IN RANKS | | | | | EU-SPI rank |
				median	P25%	P75%	minimum	maximum	EU Regional Social Progress Index ranks
top 10 regions	SE33	Övre Norrland	Sweden	0	0	0	0	0	1
	DK01	Hovedstaden	Denmark	0	0	0	0	0	2
	FI1B	HelsinkiUusimaa	Finland	0	0	0	0	0	3
	DK04	Midtjylland	Denmark	0	-1	0	-1	0	4
	FI20	Åland	Finland	0	0	1	0	1	5
	DK05	Nordjylland	Denmark	0	0	0	0	0	6
	NL31	Utrecht	Netherlands	0	0	0	0	0	7
	NL22	Gelderland	Netherlands	0	0	0	0	0	8
	NL11	Groningen	Netherlands	0	0	0	-2	0	9
	FI19	LänsiSuomi	Finland	0	0	0	-1	1	10
bottom 10 regions	RO11	NordVest	Romania	0	0	0	0	0	263
	RO41	SudVest Oltenia	Romania	0	0	0	0	0	264
	BG32	Severen tsentralen	Bulgaria	0	0	0	0	0	265
	BG33	Severoiztochen	Bulgaria	0	0	0	0	0	266
	BG42	Yuzhen tsentralen	Bulgaria	0	0	0	0	0	267
	RO21	NordEst (RO)	Romania	0	0	0	0	0	268
	RO22	SudEst	Romania	0	0	0	0	0	269
	RO31	Sud Muntenia	Romania	0	0	0	0	0	270
	BG31	Severozapaden	Bulgaria	0	0	0	0	0	271
	BG34	Yugoiztochen	Bulgaria	0	0	0	0	0	272

Overall, the EU-SPI proved to be robust with respect to changes in the order of the aggregation. Still, more investigation is needed in the Foundations of Wellbeing case.
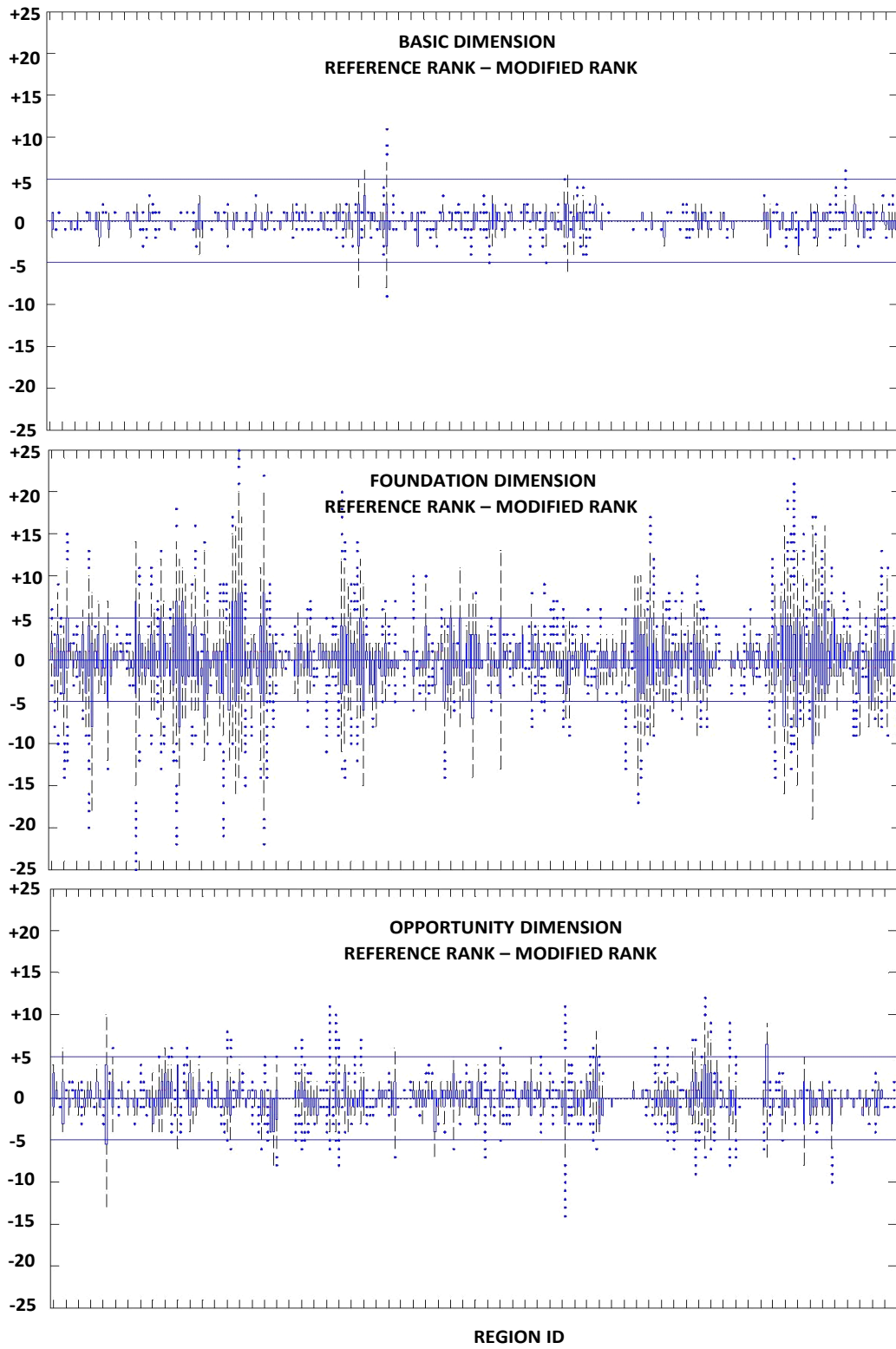
Figure 7: Robustness analysis on β: effect on ranks separately on the three dimensions
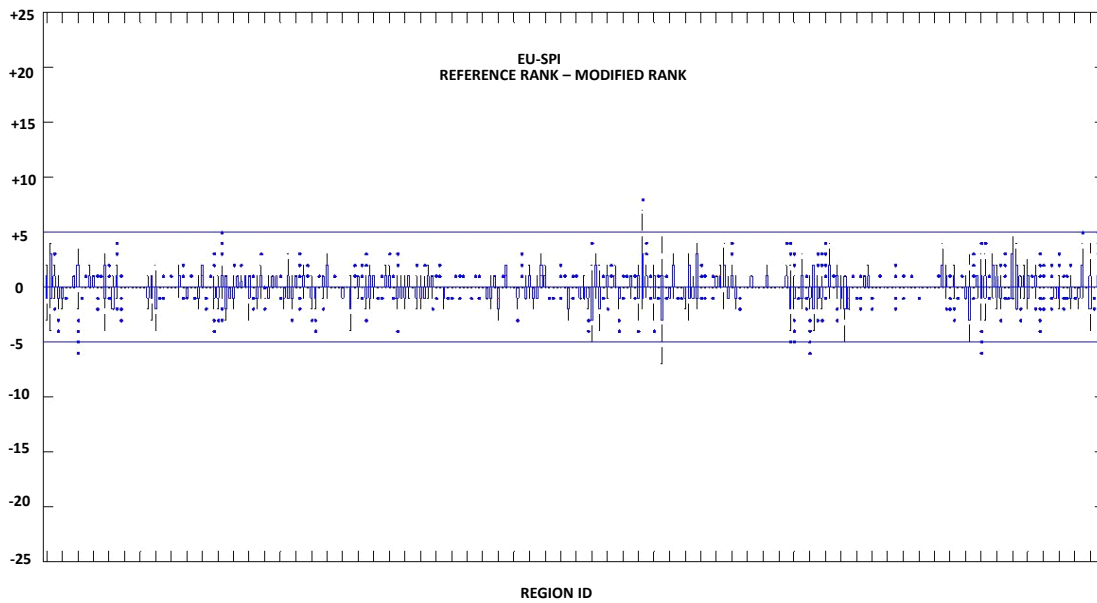
Figure 8: Robustness analysis on β: effect on ranks on the final EU-SPI

5.3. The effect of excluding one component at-a-time

The effect of each single component on EU-SPI scores and ranks has been assessed by computing the region scores discarding one component at a time. High differences between the reference rank and the modified rank are then an indication of the contribution of the component to the overall score.
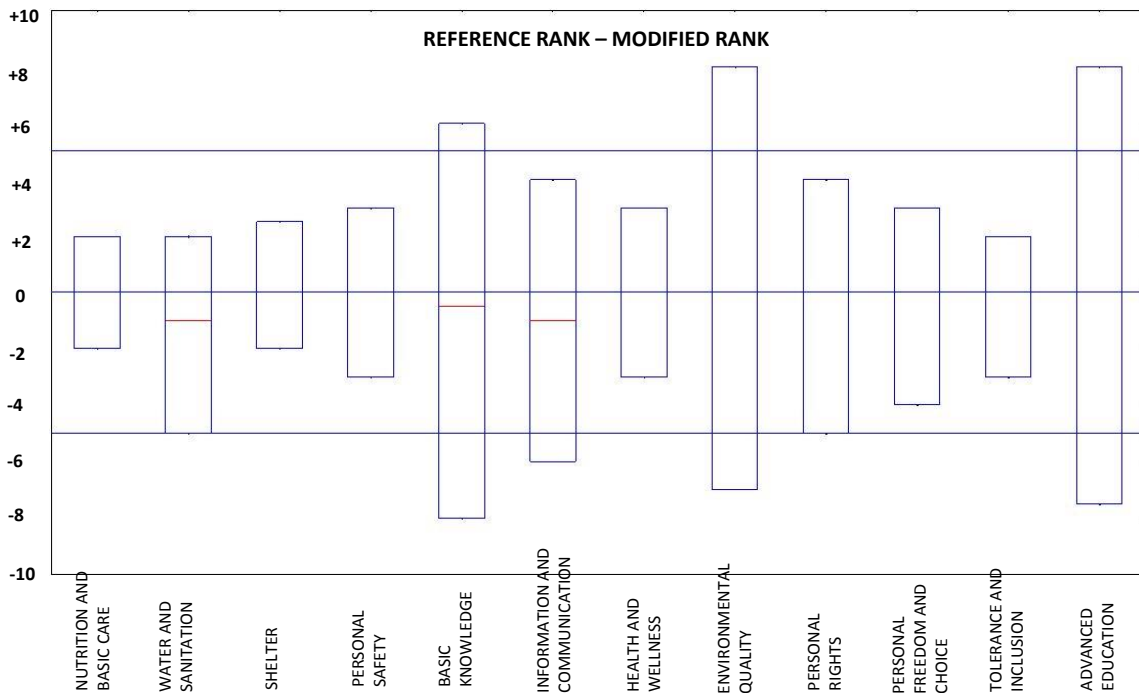
Figure 9: Effect of discarding one component at-a-time on EU-SPI ranks

Figure 9 summarizes the results of this analysis. The boxplots display the interquartile range of the distribution of the rank difference. All the interquartile ranges lie well within the band -8 and +8, meaning that, for all the simulations, most of the times the maximum shift of the region rank is less than 8 positions. This indicates a quite balanced role of the components. The most influencing components are: Access to Basic Knowledge, Environmental Quality and Access to Advanced Education.

5.4. The effect of compensability across components

The EU-SPI has the mathematical form of stepwise (linear and non-linear) aggregations. PCA analysis helped in reducing the effect of compensability within each component and the generalized mean mitigates it across components and dimensions but it is unrealistic to believe that the index is free from compensability.

To what extent is EU-SPI affected by compensability? Various approaches may be used to assess the level of compensability of composite indicators. The Ordered Weighted Averaging (OWA) approach, initially proposed by Yager (1988 and 1996) is the one adopted for the EU-SPI (see Dijkstra et al, 2011 or Lagas et al. 2015 for recent applications of OWA to test compensability in composite indicators). The OWA method consists of a family of operators which, for any given unit (the region in this case), map a set of k real values – indicators observed for that unit – into a single weighted index:

$$f_{\mathrm{OWA}}(x_1, x_2, ..., x_k) = \sum_{i=1}^{k} w_i x_{(i)} \quad w_i \in [0,1] \qquad \sum_{i=1}^{k} w_i = 1$$

where $x_{(i)}$ is the i-th largest x_i, that is $\{x_{(1)}, x_{(2)}, ..., x_{(k)}\}$ is the series of x_i reordered in descending order. The benefit of OWA operators is that they embed many different types of aggregations depending on the weights w_i. A number of special cases can be defined for the OWA operators. Among these, the following three have a special role: 1. 'or' operator; 2. 'and' operator; 3. average operator.

The 'or' uses the set $\{1, 0, ..., 0\}$ as weights and assigns to region i the highest scored value, so that a good performance in at least one indicator is enough for the region to perform well. The 'and' operator is at the opposite side and uses $\{0, 0, ..., 1\}$ as weights. It assigns unit i the lowest score, implying no compensation at all across indicators. The 'and' operator considers a region a good performer only if it is good across all the indicators. The 'and' operator is therefore the most demanding. In other words, the 'or' operator is the fully compensable, while the 'and' one is fully non compensable. The operator used for composite indicators lies almost always between these two extremes, the simple arithmetic mean being an OWA operator with weights $\left\{\dfrac{1}{k}, \dfrac{1}{k}, ..., \dfrac{1}{k}\right\}$.

Two scenarios are computed within each dimension: the Basic Human Needs, Foundations of Wellbeing and Opportunity scores are computed for each region using both the 'or' and the 'and' operators across the components. The dimension scores are then aggregated using the generalized mean of order $\beta=0.5$, as in the reference scenario.
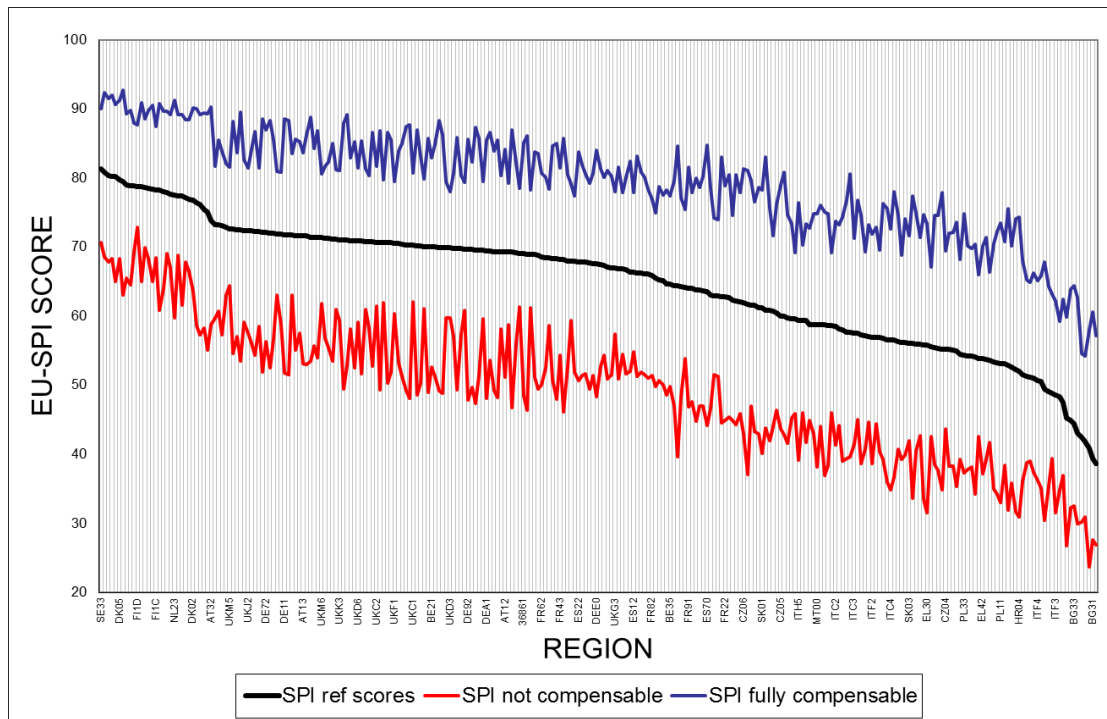
Figure 10: OWA results, regions reordered according to the reference EU-SPI score

Figure 10 compares the reference EU-SPI scores to the ones obtained by the fully compensable OWA ('or' operator on the upper, blue line) and the fully non compensable OWA ('and' operator on the lower, red line) for each region. Scores from the 'or' operator are always higher than the reference score while those from the 'and' operator are always lower than the reference. The difference between the 'or' and the 'and' scores gives an indication of the extent of the compensability effects for that region. Regions with very low 'and' scores generally have very high 'or' scores as well.

To better navigate through OWA results, we classify regions as stable (unstable) if the difference between their non-compensable and compensable ranks is lower (higher) than the P10 (P90) percentile of the rank difference distribution across all the regions (Table 4, stable regions in the upper half, unstable ones in the lower half). It is interesting to note that the most stable regions are generally located at the extreme of the EU-SPI scale. As already noted (Section 5.2), regions with a balanced profile across the index components firmly occupy either the top or the bottom positions. On the contrary, unstable regions most frequently occupy intermediate positions and are those most affected by a change in the composite setting up. The list of unstable regions includes most of the regions detected as the most affected by a change in the mean order β (Table 2). Twelve regions (CZ01, DE22, DE23, DE24, DE94, DEA3, DEA4, DED4, SI02, UKE3, UKE4 and UKF3) appear in both lists and should be therefore considered 'under surveillance'.

Table 4: OWA results, most stable and unstable regions

region	SPI ref ranks	SPI non compensable	SPI fully compensable	difference between non-compensable and compensable	difference <P10 = stable	region name	country
DK05	6.0	9.0	6.0	3.0	stable	Nordjylland	Denmark
NL33	18.0	22.0	18.0	4.0	stable	ZuidHolland	Netherlands
AT22	48.0	70.0	66.0	4.0	stable	Steiermark	Austria
AT13	56.0	91.0	88.0	3.0	stable	Wien	Austria
BE21	91.0	97.0	97.0	0.0	stable	Prov. Antwerpen	Belgium
FR92	145.0	101.0	99.0	2.0	stable	Martinique	France
ES62	164.0	160.0	160.0	0.0	stable	Región de Murcia	Spain
ES43	167.0	165.0	163.0	2.0	stable	Extremadura	Spain
ES61	175.0	171.0	174.0	-3.0	stable	Andalucía	Spain
ITI1	188.0	203.0	202.0	1.0	stable	Toscana	Italy
PL34	197.0	187.0	189.0	-2.0	stable	Podlaskie	Poland
ITF2	211.0	224.0	228.0	-4.0	stable	Molise	Italy
PL41	218.0	206.0	206.0	0.0	stable	Wielkopolskie	Poland
PL31	220.0	211.0	211.0	0.0	stable	Lubelskie	Poland
PL51	232.0	230.0	227.0	3.0	stable	Dolnoslaskie	Poland
PL43	233.0	229.0	226.0	3.0	stable	Lubuskie	Poland
EL42	241.0	237.0	239.0	-2.0	stable	Notio Aigaio	Greece
ITF3	261.0	263.0	265.0	-2.0	stable	Campania	Italy
RO41	264.0	271.0	267.0	4.0	stable	SudVest Oltenia	Romania
BG32	265.0	259.0	261.0	-2.0	stable	Severen tsentralen	Bulgaria
BG33	266.0	258.0	259.0	-1.0	stable	Severoiztochen	Bulgaria
RO21	268.0	267.0	271.0	-4.0	stable	NordEst (RO)	Romania
RO31	270.0	272.0	269.0	3.0	stable	Sud Muntenia	Romania
BG31	271.0	269.0	266.0	3.0	stable	Severozapaden	Bulgaria
BG34	272.0	270.0	270.0	0.0	stable	Yugoiztochen	Bulgaria

region	SPI ref ranks	SPI non compensable	SPI fully compensable	difference between non-compensable and compensable	difference >P90 = unstable	region name	country
UKM6	61.0	30.0	131.0	-101.0	unstable	Highlands and Islands	United Kingdom
DE27	67.0	137.0	38.0	99.0	unstable	Schwaben	Germany
UKM3	78.0	29.0	147.0	-118.0	unstable	South Western Scotland	United Kingdom
UKF1	81.0	41.0	150.0	-109.0	unstable	Derbyshire and Nottinghamshire	United Kingdom
DE24	84.0	143.0	43.0	100.0	unstable	Oberfranken	Germany
DE23	85.0	154.0	41.0	113.0	unstable	Oberpfalz	Germany
DEA4	87.0	147.0	47.0	100.0	unstable	Detmold	Germany
UKD1	89.0	35.0	146.0	-111.0	unstable	Cumbria	United Kingdom
DED4	93.0	144.0	34.0	110.0	unstable	Chemnitz	Germany
UKL2	95.0	44.0	152.0	-108.0	unstable	East Wales	United Kingdom
UKD3	96.0	43.0	171.0	-128.0	unstable	Greater Manchester	United Kingdom
UKL1	100.0	38.0	153.0	-115.0	unstable	West Wales and The Valleys	United Kingdom
DEA3	103.0	158.0	44.0	114.0	unstable	Münster	Germany
UKD7	105.0	46.0	151.0	-105.0	unstable	Merseyside	United Kingdom
UKF3	112.0	52.0	154.0	-102.0	unstable	Lincolnshire	United Kingdom
DE22	113.0	164.0	46.0	118.0	unstable	Niederbayern	Germany
UKE4	115.0	33.0	162.0	-129.0	unstable	West Yorkshire	United Kingdom
DE94	117.0	167.0	56.0	111.0	unstable	WeserEms	Germany
UKE3	118.0	34.0	166.0	-132.0	unstable	South Yorkshire	United Kingdom
UKG2	123.0	54.0	164.0	-110.0	unstable	Shropshire and Staffordshire	United Kingdom
SI02	127.0	168.0	58.0	110.0	unstable	Zahodna Slovenija	Slovenia
UKE1	129.0	48.0	156.0	-108.0	unstable	East Yorkshire and Northern Lincolnshire	United Kingdom
UKG3	141.0	64.0	169.0	-105.0	unstable	West Midlands	United Kingdom
CZ01	158.0	212.0	77.0	135.0	unstable	Praha	Czech Republic
FR94	160.0	85.0	193.0	-108.0	unstable	Réunion	France
ES70	166.0	184.0	76.0	108.0	unstable	Canarias	Spain
EE00	168.0	110.0	210.0	-100.0	unstable	Eesti	Estonia
ES63	177.0	238.0	119.0	119.0	unstable	Ciudad Autónoma de Ceuta	Spain

6. REGIONS' RELATIVE STRENGTHS AND WEAKNESSES

The normalized 0-100 scale shows a region's performance relative to the best and worst possible score. But in some cases, it is also helpful to compare a region's performance to other regions at a similar level of economic development. For example, a lower-income region may have a low score on a certain component, but could greatly exceed typical scores for regions with similar per capita incomes. Conversely, a high-income region may have a high absolute score on a component, but still fall short of what is typical for comparably wealthy regions.

For this reason, we have developed a methodology to present a region's strengths and weaknesses on a relative rather than absolute basis, comparing a region's performance to that of its economic peers. Within the group of peer regions, yellow signifies that a region's performance is typical for regions at its level of economic development, green signifies that the region performs substantially better than its peer group, and red signifies that the region performs substantially worse than its peer group.

We define the group of economic peers as the 15 regions closest in GDP PPP per capita. Each region's GDP per capita is compared to every other region and the 15 regions with the smallest difference on an absolute value basis are selected for the comparator group. After significant testing, we found that groupings larger than 15 resulted in a wider range of typical scores and therefore too few relative strengths and weakness. Smaller groupings become too sensitive to outliers.

Once the group of comparator regions is established, the region's performance is compared to the median performance of regions in the group. The median is used rather than the mean, to minimize the influence of outliers. If the region's score is greater than (or less than) the average absolute deviation from the median of the comparator group, it is considered a strength (or weakness). Scores that are within one average absolute deviation are within the range of expected scores and are considered neither strengths nor weaknesses. A floor is established so the thresholds are no less than those for poorer regions and the minimum distance from median to strength or median to weakness is 1 point.

Example scorecard for Brussels BE10, Belgium

	Score/value	Rank
EU Regional Social Progress Index	66.85 🔴	153/272
GDP PPP per capita (2011)	€55,600	3/272

Région de BruxellesCapitale / Brussels Hoofdstedelijk Gewest

Belgium

Basic Human Needs	Score/value	Rank	
Basic Human Needs	74.73	182	🔴
Nutrition and Basic Medical Care	80.47	197	🔴
Mortality rate before age 65	0.13	139	🔴
Infant mortality	3.10	91	🟡
Unmet medical needs	3.42	207	🔴
Insufficient food	12.54	209	🔴
Water and Sanitation	86.02	143	🔴
Satisfaction with water quality*		227	🔴
Lack of toilet in dwelling	3.03	221	🔴
Uncollected sewage	0.00	1	🟡
Sewage treatment	78.00	125	🔴
Shelter	65.05	169	🔴
Burdensome cost of housing	54.28	230	🔴
Satisfaction with housing	43.34	97	🔴
Overcrowding	8.37	155	🟡
Lack of adequate heating	16.39	230	🔴
Personal Safety	68.38	239	🔴
Homicide rate	3.35	259	🔴
Safety at night*		226	🔴
Traffic deaths	24.78	24	🟡

Foundations of Wellbeing	Score/value	Rank	
Foundations of Wellbeing	56.48	212	🔴
Access to Basic Knowledge	60.52	221	🔴
Secondary enrolment rate	0.92	177	🔴
Lower secondary completion only	32.27	202	🔴
Early school leaving	18.90	225	🔴
Access to Information and Communications	68.76	118	⭕
Internet at home	78.00	150	🔴
Broadband at home	76.00	135	🔴
Online interaction with public authorities	52.00	68	🟡
Health and Wellness	66.63	204	🔴
Life expectancy	80.45	167	🔴
General health status	72.84	91	🟡
Premature deaths from cancer	86.10	167	🔴
Premature deaths from heart disease	39.40	119	🔴
Unmet dental needs	4.60	149	🔴
Environmental Quality	33.94	245	🔴
Satisfaction with air quality*		258	🔴
Air pollution-pm10	25.96	214	🔴
Air pollution-pm2.5	18.63	214	🔴
Air pollution-ozone	104.17	78	🟡
Pollution, grime or other environmental problems	28.36	269	🔴
Protected land (Natura 2000)	14.10	167	🔴

Opportunity	Score/value	Rank	
Opportunity	70.04	68	🟡
Personal Rights	53.27	80	🟡
Trust in the political system	45.94	129	🟡
Trust in the legal system	37.36	78	🟡
Trust in the police	67.45	91	⭕
Quality and accountability of government services	0.74	43	🟡
Personal Freedom and Choice	70.90	144	🔴
Freedom over life choices*		102	🔴
Teenage pregnancy	1.19	162	🔴
Young people not in education, employment or training	18.90	227	🔴
Corruption	0.75	102	🟡
Tolerance and Inclusion	70.42	154	🔴
Impartiality of government services	-0.36	188	🔴
Tolerance for immigrants*		110	🔴
Tolerance for minorities*		154	🔴
Attitudes toward people with disabilities	7.60	128	🔴
Tolerance for homosexuals*		96	🟡
Gender gap	-9.87	118	⭕
Community safety net*		199	🔴
Access to Advanced Education	87.70	35	🟡
Tertiary education attainment	42.20	1	🟡
Tertiary enrolment	0.09	1	🟡
Lifelong learning	9.60	119	🔴

🔴 Underperforming   ⭕ Less than one point under neutral   🟡 Neutral   🟢 Less than one point over neutral   ● Overperforming

Strengths and weaknesses are relative to 15 regions of similar GDP per capita: Hamburg, Luxembourg, Bratislavský kraj, Île de France, Groningen, Praha, Stockholm, Wien, Oberbayern, North Eastern Scotland, Darmstadt, Utrecht, HelsinkiUusimaa, Bremen, Hovedstaden

*Raw data cannot be shown for Gallup indicators

7. EXTERNAL FEEDBACK AND REVISION OF THE DRAFT INDEX

The European Union Regional Social Progress Index builds on feedback from public and experts in the field alike. The draft version of the European Union Regional Social Progress Index was released in February 2016 for public review. Prior to this release, DG Regio and Social Progress Imperative co-hosted a committee meeting of experts in the field of wellbeing and social indicators, with representatives from OECD, Eurostat, Bertelsmann Stiftung, DG Employment, and a number of academic institutions. From both of these activities, we collected feedback that we have since researched and addressed in the final version of the Index.

Based on the expert committee's feedback, we have changed the name of the environmental component from Ecosystem Sustainability to Environmental Quality. This change was made to better describe the concept of measuring a person's present, local environmental rather than its sustainability. We have also addressed questions regarding the coherence of the structure of the Social Progress Framework. Our sensitivity analysis shows that Basic Human Needs and Opportunity each describe a single, clear aspect of social progress with balanced components within each dimension. In Foundations of Wellbeing, there are two different underlying aspects: Access to Information and Communications and Health and Wellness in one; Access to Basic Education and Environmental Quality in another. They are nonetheless conceptually linked in demonstrating whether building blocks are in place for individuals and communities to enhance and sustain their wellbeing.

From our expert committee and in-person meetings with interested stakeholders, we also received feedback on indicators. Many requested that measures of access to services such as public transportation and social services be included in the Index. However, for some of these aspects, no comparable data are yet available for all the EU NUTS 2 level regions. We were also asked to consider incorporating material deprivation and indicators related to unemployment. While the EU Regional Social Progress Index includes some social aspects of unemployment, like young people not in employment, education or training and gender gap in employment rates, it is important for the Index to remain conceptually separate from economic measures and provide a complementary tool to examine social progress alongside such measures.

Some experts have commented on our use of weighting, suggesting that either all aspects of the framework, the three dimensions, the twelve components, and the fifty indicators, should be weighted equally or that users should be able to choose the weighting of each aspect themselves. While there are pros and cons to each weighting methodology, it is the aim of the Index to be a robust and rigorous review of the condition of social progress, with a consistent numerical figure that is comparable across regions. Our sensitivity analysis shows that overall, the European Union Regional Social Progress Index proves to meet these criteria.

In addition to the abovementioned feedback, the technical team has reviewed the values used for best- and worst-case scenarios, which determine the normalization and scaling of the indicators to scores of 0-100. Since the draft release, only three of these values have changed – tertiary education attainment, tertiary enrolment, and lifelong learning. All three indicators have been capped at their observed 90th percentile (P90%) to limit the influence of outliers. The best-case scenario values for tertiary enrolment

and lifelong learning are set to their respective P90% values. For tertiary education attainment, the best-case scenario value is set to the current Europe 2020 target for tertiary education attainment.

8. REGIONAL INTEREST IN THE INDEX

The Social Progress Imperative has engaged with a core group of EU regions to promote the EU Regional Social Progress Index and translate its principles into practical solutions. This work has identified a group of European regions interested in piloting the Regional Social Progress Index as a tool for informing and supporting regional development strategies and, if applicable, prioritising issues within Cohesion Policy Programmes.
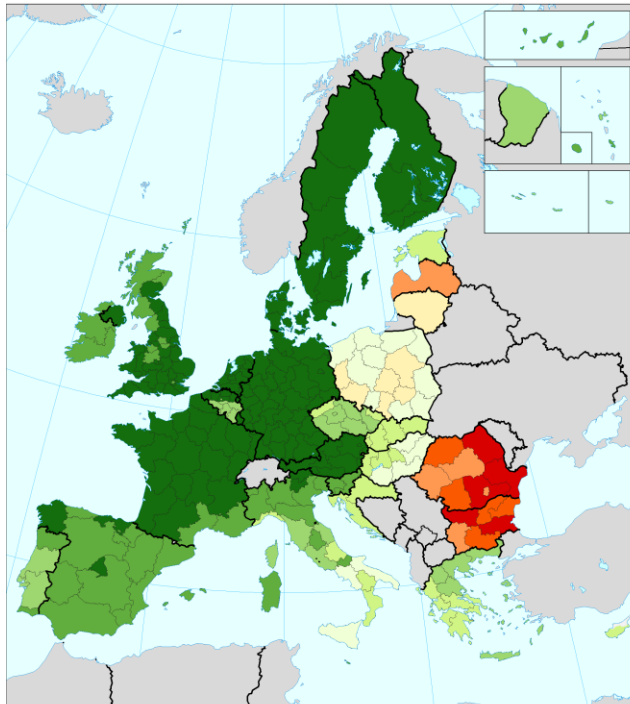
Regional interests include:

• Exploring how the Social Progress Index in Helsinki-Uusimaa Region, Finland could complement the regional strategy and development plan, smart specialization, and the Helsinki Smart Region, a project by the Regional Council focusing on technology, wellbeing, clean tech and digitalisation.

• Deploying the Social Progress Index in Lower Silesia, Poland as an important tool for monitoring the impact of public interventions and the wider territorial dimension of development policies.

• Using place-based analyses in Bratislava, Slovakia to support and monitor the regional operational programme and subsequent progress in infrastructure, environmental protection, education, health, and social care.

• The Index has been used as a reference document for the national/regional project coordinated by the Swedish Agency for Economic and Regional growth (Tillväxtverket) with the involvement of Västerbotten region. It has also been discussed within the framework of the Swedish national Meeting place on social sustainability, where the city of Umeå is represented in the national reference group.

• Using the Social Progress Index in Cornwall, United Kingdom to support wider research and analysis around improving productivity, skills, and job creation.

The pilot exercise in some of these regions will be taking place from October 2016 onwards.

9. EU-SPI SUB-INDICES MAPS

EU Social Progress Index – sub-indices

Basic sub-index
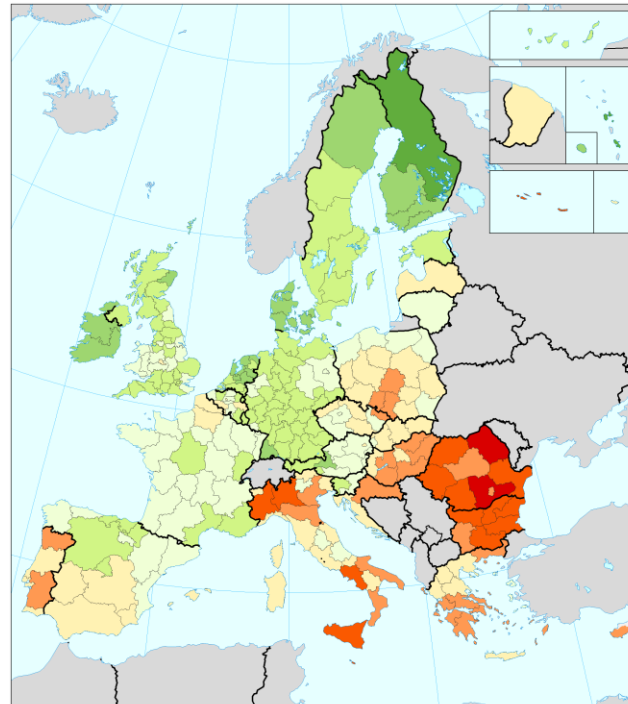
Foundation sub-index

Opportunity sub-index

Index

- < 45
- 45 - 50
- 50 - 55
- 55 - 60
- 60 - 65
- 65 - 70
- 70 - 75
- 75 - 80
- >= 80

Source: DG REGIO

Index

- < 45
- 45 - 50
- 50 - 55
- 55 - 60
- 60 - 65
- 65 - 70
- 70 - 75
- 75 - 80
- >= 80

Source: DG REGIO

Index

- < 45
- 45 - 50
- 50 - 55
- 55 - 60
- 60 - 65
- 65 - 70
- 70 - 75
- 75 - 80
- >= 80
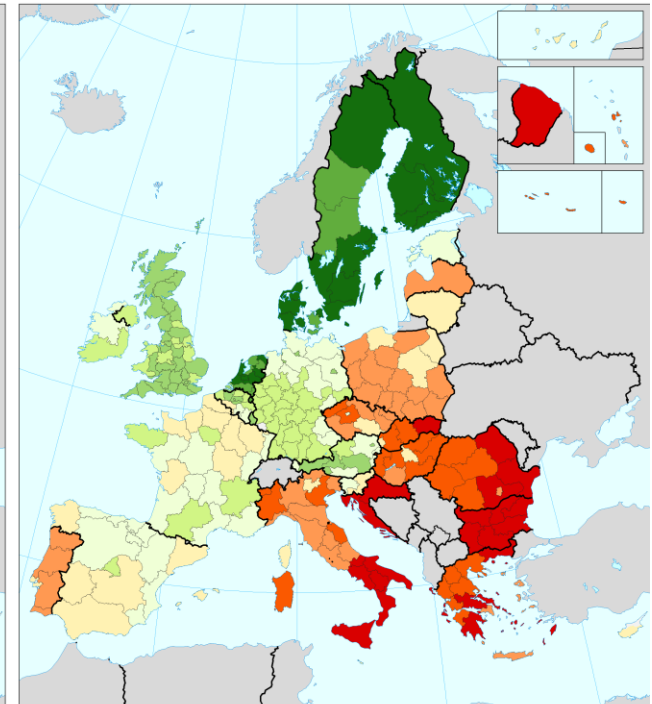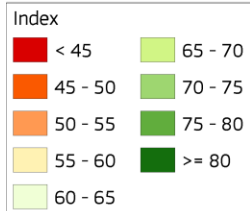
Source: DG REGIO

0   1,000 Km

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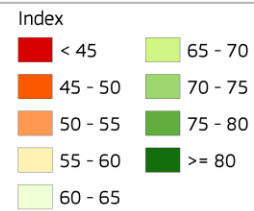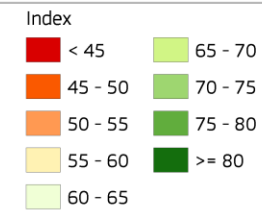Foster, J. E.; McGillivray, M. & Seth, S. Composite indices: rank robustness, statistical association, and redundancy Econometric Reviews, 2013, 32, 35-56

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Table A.1: List of all candidate indicators for the regional EU-SPI

component name	indicator #		Indicators	source	geographical level	description and unit of measurement	reference period	included (I)/ discarded (D)	reason for discarding
Nutrition and Basic care	1	1	Premature mortality (<65)	EUROSTAT	NUTS2 all countries	Percentage of deaths before age 65	average 2011 2012	I	
Nutrition and Basic care	1	2	Infant mortality	EUROSTAT	NUTS2 all countries	Ratio of the number of deaths of children under one year of age during the year to the number of live births in that year. The value is expressed per 1000 live births	average 2011 2012	I	
Nutrition and Basic care	1	3	Infectious diseases death rates	EUROSTAT	NUTS2 all countries	Standardised death rate rates for less than 65 years old due to certain infectious and parasitic diseases (A00-B99) by 100 000 inhabitants. The standardisation adjusts the death rate to a standard age distribution.	average 2008 2010	D	not fitting based on multivariate statistical analysis
Nutrition and Basic care	1	4	Unmet medical needs	EU-SILC	NUTS0 FOR: AT, BE, DE, FR, HR, PT, UK NUTS1 FOR: EL, HU, NL, PL NUTS2 for all the other countries	Percentage of people declaring having experienced unmet medical needs because: cannot afford (affordability) or long waiting list (efficiency) or too far (accessibility) or didn't know a good doctor (trust/quality)	average 2011 2013	I	
Nutrition and Basic care	1	5	Insufficient food	EU-SILC	NUTS0 FOR: AT, DE, FR, HR, PT, UK NUTS1 FOR: BE, EL, HU, NL, PL NUTS2 for all the other countries	Percentage of people declaring their inability to afford a meal with meat, chicken, fish (or vegetarian equivalent) every second day	average 2011 2013	I	
Water and Sanitation	2	1	Satisfaction with water quality	Gallup	NUTS1 FOR: BE, DE, EL, NL, UK NUTS2 for all the other countries	Share of people who declared of being satisfied with water quality	multiple latest years	I	
Water and Sanitation	2	2	Lack of toilet in dwelling	EU-SILC	NUTS0 FOR: AT, DE, FR, HR, PT, UK NUTS1 FOR: BE, EL, HU, NL, PL SE missing NUTS2 for all the other countries	Share of total population not having indoor flushing toilet for the sole use of their household	average 2011 2013	I	
Water and Sanitation	2	3	Uncollected sewage	European Environment Agency	NUTS2 all countries	Urban wastewater not collected by collecting systems nor treated by individual or other appropriate systems as a % of generated load	2010	I	
Water and Sanitation	2	4	Sewage treatment	European Environment Agency	NUTS2 all countries HR missing	Urban wastewater with more stringent treatment as a percentage of collected wastewater	2010	I	
Shelter	3	1	Burdensome cost of housing	EU-SILC	NUTS0 FOR: AT, DE, FR, HR, PT, UK NUTS1 FOR: BE, EL, HU, NL, PL NUTS2 for all the other countries	Percentage of people living in a dwelling where housing costs (mortgage repayment or rent, insurance and service charges) are a financial burden	average 2011 2013	I	
Shelter	3	2	Satisfaction with housing	EU-SILC	NUTS0 FOR: AT, BE, DE, EL, FR, HR, HU, NL, PL, PT, UK NUTS2 for all the other countries	Percentage of people who feel satisfied with the dwelling they live in	2012	I	
Shelter	3	3	Overcrowding	EU-SILC	NUTS0 FOR: AT, DE, FR, HR, PT, UK NUTS1 FOR: BE, EL, HU, NL, PL NUTS2 for all the other countries	Percentage of people living in an overcrowded dwelling, as defined by the number of rooms available to the household, the household's size, as well as its members' ages and family situation	average 2011 2013	I	
Shelter	3	4	Housing quality	EU-SILC	NUTS0 FOR: AT, DE, FR, HR, PT, UK NUTS1 FOR: BE, EL, HU, NL, PL NUTS2 for all the other countries	Percentage of people declaring of suffering of housing deficiencies: lack of basic sanitary facilities in the dwelling (bath or shower or indoor flushing toilet), problems in the general condition of the dwelling (leaking roof or dwelling being too dark)	average 2011 2013	D	not fitting based on multivariate statistical analysis
Shelter	3	5	Lack of adequate heating	EU-SILC	NUTS0 FOR: AT, DE, FR, HR, PT, UK NUTS1 FOR: BE, EL, HU, NL, PL NUTS2 for all the other countries	Percentage of people who are in the state of enforced inability to keep home adequately warm	average 2011 2013	I	
Personal Safety	4	1	Homicide rate	EUROSTAT	NUTS0 FOR: HR, IE NUTS1 FOR: EL, NL NUTS2 for all the other countries	Rate of homicides per 100 thousand inhabitants (homicide is defined as the intentional killing of a person, including murder, manslaughter, euthanasia and infanticide. It excludes death by dangerous driving, abortion and assisted suicide)	average 2008 2010	I	
Personal Safety	4	2	Crime	EU-SILC	NUTS0 FOR: AT, DE, FR, HR, PT, UK NUTS1 FOR: BE, EL, HU, NL, PL NUTS2 for all the other countries	Percentage of people who declared having faced the problem of crime, violence or vandalism in the local area	average 2011 2013	D	not fitting based on multivariate statistical analysis
Personal Safety	4	3	Safety at night	Gallup	NUTS1 FOR: BE, DE, EL, NL, UK NUTS2 for all the other countries	Share of people who declared they feel safe when walking at night alone	multiple latest years	I	
Personal Safety	4	4	Traffic deaths	EUROSTAT	NUTS0 FOR: HR NUTS2 for all the other countries	Number of road traffic accident fatalities per million inhabitants	average 2011 2013	I	

component name		indicator #	Indicators	source	geographical level	description and unit of measurement	reference year	included (I)/ discarded (D)	reason for discarding
Access to basic Knowledge	5	1	Pre-primary enrolment	EUROSTAT	NUTS0 FOR: HR NUTS1 FOR: DE, UK NUTS2 for all the other countries	Percentage of the age group between 4-years-old and the starting age of compulsory education participating in early childhood education	2013	D	not fitting based on multivariate statistical analysis
Access to basic Knowledge	5	2	Upper-secondary enrolment rate	EUROSTAT and DG Regio own computations	NUTS0 FOR: HR NUTS1 FOR: DE, UK NUTS2 for all the other countries	Enrolment rates of age group 12-18 in upper-secondary or post-secondary non-tertiary education (ISCED 3-4) corrected for commuting patterns (capped at 1)	average 2011 2012	I	
Access to basic Knowledge	5	3	Lower-secondary completion only	EUROSTAT	NUTS2 all countries	Percentage of people aged 25 to 64 who have successfully completed at most lower secondary education (ISCED 0-2)	average 2011 2013	I	
Access to basic Knowledge	5	4	Early school leavers	EUROSTAT	NUTS2 all countries	Percentage of people aged 18-24 with at most lower secondary education (ISCED 0-2) and who were not in further education or training during the last four weeks preceding the survey	average 2011 2013	I	
Access to basic Knowledge	5	5	Gender-gap in early school leavers	EUROSTAT and DG Regio own computations	NUTS0 FOR: HR NUTS1 FOR: UK MIXED NUTS1/NUTS2 for: DE NUTS2 for all the other countries	Difference between female and male rates of early-school leavers. The indicator is capped to 0.	average 2011 2013	D	not an EU issue as drop-out levels almost always less for girls than for
Access to ICT	6	1	Internet at home	EUROSTAT	NUTS0 FOR: SI NUTS1 FOR: DE, EL, FR, PL, UK NUTS2 for all the other countries	Percentage of households with access to the internet at home	2013	I	
Access to ICT	6	2	Broadband at home	EUROSTAT	NUTS0 FOR: SI NUTS1 FOR: DE, EL, FR, PL, UK NUTS2 for all the other countries	Percentage of households with broadband connection	2013	I	
Access to ICT	6	3	Online intearction with public authorities	EUROSTAT	NUTS0 FOR: SI NUTS1 FOR: DE, EL, FR, PL, UK NUTS2 for all the other countries	Percentage of individuals who used the Internet for interaction with public authorities	2013	I	
Access to ICT	6	4	Buying online	EUROSTAT	NUTS0 FOR: SI NUTS1 FOR: DE, EL, FR, PL, UK NUTS2 for all the other countries	Percentage of individuals who ordered goods or services over the Internet for private use	average 2011 2013	D	not as relevant as the others
Access to ICT	6	5	Mobile phone users	Gallup	NUTS1 FOR: BE, DE, EL, NL, UK NUTS2 for all the other countries	Percentage of mobile phone users	multiple latest years	D	not fitting based on multivariate statistical analysis
Health and Wellness	7	1	Life expectancy	EUROSTAT	NUTS2 all countries	Life expectancy at birth is the mean number of years that a newborn child can expect to live if subjected throughout his life to the current mortality conditions (age specific probabilities of dying)	average 2011 2012	I	
Health and Wellness	7	2	General health status	EU-SILC	NUTS0 FOR: AT, DE, FR, HR, PT, UK NUTS1 FOR: BE, EL, HU, NL, PL NUTS2 for all the other countries	Proportion of persons who assess their health to be very good or good to the question on self-perceived health ('How is your health in general?')	average 2011 2013	I	
Health and Wellness	7	3	Standardized cancer death rate	EUROSTAT	NUTS1 FOR: DK, HR NUTS2 for all the other countries	Standardised death rate rates for less than 65 years old due to cancer (code C) by 100 000 inhabitants. The standardisation adjusts the death rate to a standard age distribution. The standardised death rates are calculated on the basis of a standard European population, as defined by the World Health Organization	average 2008 2010	I	
Health and Wellness	7	4	Standardized heart disease death rate	EUROSTAT	NUTS1 FOR: HR NUTS2 for all the other countries	Standardised death rate for less than 65 years old due to ischaemic heart diseases (code I) by 100 000 inhabitants. The standardisation adjusts the death rate to a standard age distribution. The standardised death rates are calculated on the basis of a standard European population, as defined by the World Health Organization	average 2008 2010	I	
Health and Wellness	7	5	Unmet dental needs	EU-SILC	NUTS0 FOR: AT, DE, FR, HR, PT, UK NUTS1 FOR: BE, EL, HU, NL, PL NUTS2 for all the other countries	Percentage of people declaring having experienced unmet dental needs because: cannot afford (affordability) or long waiting list (efficiency) or too far (accessibility) or didn't know a good doctor (trust/quality)	average 2011 2013	I	
Health and Wellness	7	6	Satisfaction with air quality	Gallup	NUTS1 FOR: BE, DE, EL, NL, UK NUTS2 for all the other countries	Share of people havig declared being satisfied with the air quality	multiple latest years	I	
Environmental Quality	8	1	CO2 consumption	World Input/Output Database	NUTS0 all countries	Consumption of CO2	2009	D	not fitting based on multivariate statistical analysis
Environmental Quality	8	2	Air pollution pm10	European Environmental Agency and DG Regio own computations	NUTS2 all countries	Population weighted average of a 10 by 10km of air concentration ($\mu g/m^3$) of particle matter of size 10 micrometers (big particles) interpolated on a grid created by the EEA. Capped to 40 $\mu g/m^3$ = limit yearly value of the EU Ambient Air Quality Directive	2011	I	
Environmental Quality	8	3	Air pollution pm2.5	European Environmental Agency and DG Regio own computations	NUTS2 all countries	Population weighted average of a 10 by 10km of air concentration ($\mu g/m^3$)of particle matter of size 2.5 micrometers (small particles) interpolated on a grid created by the EEA. Capped to 25 $\mu g/m^3$ = limit yearly value of the EU Ambient Air Quality Directive	2011	I	
Environmental Quality	8	4	Air pollution ozone	European Environmental Agency and DG Regio own computations	NUTS2 all countries	Population weighted average of a 10 by 10km of air Ozone O_3 concentration ($\mu g/m^3$) interpolated on a grid created by the EEA. Capped to 120 $\mu g/m^3$ = limit value of the EU Ambient Air Quality Directive	2011	I	
Environmental Quality	8	5	Pollution, grime, or other environmental issues	EU-SILC	NUTS0 FOR: AT, DE, FR, HR, PT, UK NUTS1 FOR: BE, EL, HU, NL, PL NUTS2 for all the other countries	Percentage of people declaring having experienced pollution, grime or other environmental problems	average 2011 2013	I	
Environmental Quality	8	6	Noise pollution	EU-SILC	NUTS0 FOR: AT, BE, DE, FR, HR, PT, UK NUTS1 FOR: EL, HU, NL, PL NUTS2 for all the other countries	Percentage of people declaring having experienced noise from neighbours or from the street	average 2012 2013	D	not fitting based on multivariate statistical analysis
Environmental Quality	8	7	Natura2000	European Environmental Agency and DG Regio own computations	NUTS2 all countries	Share of area covered by Natura 2000, an European Union wide network of nature protection areas established under the 1992 Habitats Directive. The indicators has been capped to a maximum value of 40% which is above the P90% of the original indicator.	2012	I	
Environmental Quality	8	8	Landuse efficiency	European Commission Global Human Settlement Layer (GHSL)	NUTS2 all countries	Land-use efficiency measured as built-up area in square meters per inhabitant	2012	D	not fitting based on multivariate statistical analysis

component name		indicator #	Indicators	source	geographical level	description and unit of measurement	reference year	included (I)/ discarded (D)	reason for discarding
Personal rights	9	1	Trust in the political system	EU-SILC ad-hoc Quality of Life module	NUTS0 FOR: AT, BE, DE, FR, HR, PT, UK NUTS1 FOR: EL, HU, NL, PL NUTS2 for all the other countries	Percentage of people having low trust in the Political System	2013	I	
Personal rights	9	2	Trust in the legal system	EU-SILC ad-hoc Quality of Life module	NUTS0 FOR: AT, BE, DE, FR, HR, PT, UK NUTS1 FOR: EL, HU, NL, PL NUTS2 for all the other countries	Percentage of people having low trust in the Legal System	2013	I	
Personal rights	9	3	Trust in the police	EU-SILC ad-hoc Quality of Life module	NUTS0 FOR: AT, BE, DE, FR, HR, PT, UK NUTS1 FOR: EL, HU, NL, PL HR missing NUTS2 for all the other countries	Percentage of people having low trust in the Police	2013	I	
Personal rights	9	4	Citizen engagement (my voice counts)	Standard Eurobarometer 79	NUTS0 all countries	Percentage of people who agree with the statement: "My voice counts in the EU"	2013	D	national level only and unclear pattern
Personal rights	9	5	Quality and accountability of government services	European Quality of Institutions Index and DG Regio own computations	NUTS1 FOR: BE, DE, EL, HU, SE, UK NUTS0 for SI NUTS2 for all the other countries	Quality of the Institutions. The Index is measured in z-scores	2013	I	
Personal freedom and choice	10	1	Freedom over life choices	Gallup	NUTS1 FOR: BE, DE, EL, UK NUTS2 for all the other countries	Share of respondents answering satisfied to the question, "Are you satisfied or dissatisfied with your freedom to choose what you do with your life?"	multiple latest years	I	
Personal freedom and choice	10	2	Freedom of religion	Pew Research Centre	NUTS0 all countries	A 1 to 10 point index assessing the country's government policies on religion and what private religious groups and organizations do in the public sphere. Lower numbers imply less religious freedom restrictions from the government	2013	D	unclear orientation and low variability
Personal freedom and choice	10	3	Teenage pregnancy	EUROSTAT	NUTS2 all countries	Ratio between births from mothers 15-19 and the female population of the same age cohort	average 2011 2013	I	
Personal freedom and choice	10	4	Young people not in education, employment or training (NEET)	EUROSTAT	NUTS2 all countries	Young people, aged between 15 and 24, neither in employment nor in education and training	average 2011 2013	I	
Personal freedom and choice	10	5	Corruption Index	European Quality of Institutions Index and DG Regio own computations	NUTS1 FOR: BE, DE, EL, HU, SE, UK NUTS0 for SI NUTS2 for all the other countries	Perceived level of Corruption. The Index is measured in z-scores	2013	I	
Tolerance and Inclusion	11	1	Impartiality of government services	European Quality of Institutions Index and DG Regio own computations	NUTS1 FOR: BE, DE, EL, HU, SE, UK NUTS0 for SI NUTS2 for all the other countries	Level of impartiality of government services. The Index is measured in z-scores	2013	I	
Tolerance and Inclusion	11	2	Intercultural relations	Special Eurobarometer 418 on Social Climate	NUTS0 all countries	Relations in (YOUR COUNTRY) between people from different cultural or religious backgrounds or nationalities (evaluation of the current situation)	2014	D	not fitting based on multivariate statistical analysis
Tolerance and Inclusion	11	3	Tolerance for immigrants	Gallup	NUTS1 FOR: BE, DE, EL, NL, UK NUTS2 for all the other countries	Share of people who declared that they live in good place for immigrants	multiple latest years	I	
Tolerance and Inclusion	11	4	Tolerance for minorities	Gallup	NUTS1 FOR: BE, DE, EL, NL, UK NUTS2 for all the other countries	Share of people who declared that they live in good place for minorities	multiple latest years	I	
Tolerance and Inclusion	11	5	Attitudes toward people with disabilities	Special Eurobarometer 393 on discrimination	HR missing NUTS0 for all the other countries	Attitude towards a person with a disability in the highest elected political position in your country. On a scale from 1 to 10 with 1 meaning "totally uncomfortable" and 10 meaning "totally comfortable"	2012	I	
Tolerance and Inclusion	11	6	Tolerance for homosexuals	Gallup	NUTS1 FOR: BE, DE, EL, NL, UK NUTS2 for all the other countries	Share of people who declared that they live in good place for homosexuals	multiple latest years	I	
Tolerance and Inclusion	11	7	Gender employment gap	EUROSTAT and DG Regio own computations	NUTS2 all countries	Difference between female and male employment rates	average 2011 2013	I	
Tolerance and Inclusion	11	8	Community safety net	Gallup	NUTS1 FOR: BE, DE, EL, NL, UK NUTS2 for all the other countries	Community safety nets	multiple latest years	I	
Tolerance and Inclusion	11	9	Trust in others	EU-SILC ad-hoc Quality of Life module	NUTS0 FOR: AT, BE, DE, FR, HR, PT, UK NUTS1 FOR: EL, HU, NL, PL NUTS2 for all the other countries	The trust in others does not refer to a specific group of people. On a scale fro 0 to 10, o means "You do not trust any other person" and 10 means that "Most people can be trusted"	2013	D	not fitting based on multivariate statistical analysis
Access to advanced education	12	1	Tertiary education attainment	EUROSTAT	NUTS2 all countries	Percentage of population aged 25-64 with tertiary education (ISCED 5-6) attainment. Capped at its P90%=38.80	average 2011 2013	I	
Access to advanced education	12	2	Tertiary enrolment	EUROSTAT	NUTS2 all countries	Ratio of tertiary students (ISCED 5-6) to the total population. Capped at its 90%=0.055	average 2011 2012	I	
Access to advanced education	12	3	Lifelong learning	EUROSTAT	NUTS2 all countries	Percentage of persons aged 25 to 64 who stated that they received education or training in the four weeks preceding the survey with respect to the total population of the same age group. Capped at its P90%=17.42	average 2011 2013	I	

Table A.2: Sub-national coverage by country and by component (NUTS2=white; NUTS1=grey; NUTS0=dark grey)

Legend: D = dark grey (NUTS0); G = grey (NUTS1); blank = white (NUTS2)

	Basic Human Needs				Foundations of Wellbeing				Opportunity			
	Nutrition and Basic Medical Care	Water and Sanitation	Shelter	Personal Safety	Access to Basic Knowledge	Access to Information and Communications	Health and Wellness	Environmental Quality	Personal Rights	Personal Freedom and Choice	Tolerance and Inclusion	Access to Advanced Education
AT			D						D			
BE			G						D		G	
BG												
CY												
CZ												
DE			D			G			D		G	
DK												
EE												
EL			G	G		G			G		G	
ES												
FI												
FR			D			G			D			
HR			D	D			D		D			
HU			G						G			
IE												
IT												
LT												
LU												
LV												
MT												
NL			G	G					G		G	
PL		G				G			G			
PT			D						D			
RO												
SE												
SI						D						
SK												
UK			D			G			D		G	

Table A.3: Utopian and dystopian values for normalization

Dimension	Component	Indicator name	Inverted?	Utopian value	Dystopian value	Utopian type	Dystopian type
Basic Human Needs	Nutrition and Basic Medical Care	Mortality rate before age 65	Yes	0.07	0.36	best + buffer	worst since 2008
Basic Human Needs	Nutrition and Basic Medical Care	Infant mortality	Yes	0.00	15.80	best possible	worst since 2008
Basic Human Needs	Nutrition and Basic Medical Care	Unmet medical needs	Yes	0.00	21.62	best possible	worst since 2008
Basic Human Needs	Nutrition and Basic Medical Care	Insufficient food	Yes	0.00	68.00	best possible	worst since 2008 + buffer
Basic Human Needs	Water and Sanitation	Satisfaction with water quality	No	1.00	0.00	best possible	worst possible
Basic Human Needs	Water and Sanitation	Lack of toilet in dwelling	Yes	0.00	62.00	best possible	worst since 2008 + buffer
Basic Human Needs	Water and Sanitation	Uncollected sewage	Yes	0.00	69.00	best possible	worst since 2008 + buffer
Basic Human Needs	Water and Sanitation	Sewage treatment	No	100.00	0.00	best possible	worst possible
Basic Human Needs	Shelter	Burdensome cost of housing	Yes	0.00	100.00	best possible	worst possible
Basic Human Needs	Shelter	Satisfaction with housing	No	100.00	0.00	best possible	worst possible
Basic Human Needs	Shelter	Overcrowding	Yes	0.00	67.00	best possible	worst since 2008 + buffer
Basic Human Needs	Shelter	Lack of adequate heating	Yes	0.00	100.00	best possible	worst possible
Basic Human Needs	Personal Safety	Homicide rate	Yes	0.00	9.49	best possible	worst since 2008
Basic Human Needs	Personal Safety	Safety at night	No	1.00	0.00	best possible	worst possible
Basic Human Needs	Personal Safety	Traffic deaths	Yes	0.00	258.48	best possible	worst since 2008
Foundations of Wellbeing	Access to Basic Knowledge	Secondary enrolment rate	No	1.00	0.77	best possible	worst since 2008
Foundations of Wellbeing	Access to Basic Knowledge	Lower secondary completion only	Yes	0.00	82.00	best possible	worst since 2008
Foundations of Wellbeing	Access to Basic Knowledge	Early school leavers	Yes	0.00	45.80	best possible	worst since 2008
Foundations of Wellbeing	Access to ICT	Internet at home	No	100.00	0.00	best possible	worst possible
Foundations of Wellbeing	Access to ICT	Broadband at home	No	100.00	0.00	best possible	worst possible
Foundations of Wellbeing	Access to ICT	Online interaction with public authorities	No	100.00	0.00	best possible	worst possible
Foundations of Wellbeing	Health and Wellness	Life expectancy	No	86.02	71.70	UN projections for EU in 2030-2035	worst since 2008
Foundations of Wellbeing	Health and Wellness	General health status	No	100.00	0.00	best possible	worst possible
Foundations of Wellbeing	Health and Wellness	Premature deaths from cancer	Yes	0.00	169.10	best possible	worst since 2008
Foundations of Wellbeing	Health and Wellness	Premature deaths from heart disease	Yes	0.00	217.40	best possible	worst since 2008
Foundations of Wellbeing	Health and Wellness	Unmet dental needs	Yes	0.00	24.60	best possible	worst since 2008
Foundations of Wellbeing	Health and Wellness	Satisfaction with air quality	No	1.00	0.00	best possible	worst possible
Foundations of Wellbeing	Environmental Quality	Air pollution-pm10	Yes	0.00	40.00	best possible	EU guidelines
Foundations of Wellbeing	Environmental Quality	Air pollution-pm2.5	Yes	0.00	25.00	best possible	EU guidelines
Foundations of Wellbeing	Environmental Quality	Air pollution-ozone	Yes	70.00	120.00	best + buffer	EU guidelines
Foundations of Wellbeing	Environmental Quality	Pollution, grime or other environmental problems	Yes	0.00	49.00	best possible	worst since 2008 + buffer
Foundations of Wellbeing	Environmental Quality	Protected land (Natura 2000)	No	40.00	0.00	EU guidelines	worst possible
Opportunity	Personal Rights	Disrust in the political system	Yes	0.00	100.00	best possible	worst possible
Opportunity	Personal Rights	Distrust in the legal system	Yes	0.00	100.00	best possible	worst possible
Opportunity	Personal Rights	Distrust in the police	Yes	0.00	100.00	best possible	worst possible
Opportunity	Personal Rights	Quality and accountability of government services	No	3.00	-3.00	best + buffer	worst + buffer
Opportunity	Personal Freedom and Choice	Freedom over life choices	No	1.00	0.00	best possible	worst possible
Opportunity	Personal Freedom and Choice	Teenage pregnancy	Yes	0.00	9.80	best possible	worst since 2008
Opportunity	Personal Freedom and Choice	Young people not in education, employment or training	Yes	0.00	35.90	best possible	worst since 2008
Opportunity	Personal Freedom and Choice	Corruption	Yes	3.00	-3.00	best + buffer	worst + buffer
Opportunity	Tolerance and Inclusion	Impartiality of government services	No	3.00	-3.50	best + buffer	worst + buffer
Opportunity	Tolerance and Inclusion	Tolerance for immigrants	No	1.00	0.00	best possible	worst possible
Opportunity	Tolerance and Inclusion	Tolerance for minorities	No	1.00	0.00	best possible	worst possible
Opportunity	Tolerance and Inclusion	Attitudes toward people with disabilities	No	10.00	0.00	best possible	worst possible
Opportunity	Tolerance and Inclusion	Tolerance for homosexuals	No	1.00	0.00	best possible	worst possible
Opportunity	Tolerance and Inclusion	Gender gap	No	0.00	-33.00	best possible	worst since 2008
Opportunity	Tolerance and Inclusion	Community safety net	No	1.00	0.00	best possible	worst possible
Opportunity	Access to Advanced Education	Tertiary education attainment	No	40.00	0.00	EU2020 target for Tertiary ed. attainment	worst possible
Opportunity	Access to Advanced Education	Tertiary enrolment	No	0.055	0.00	censored to P90%	worst possible
Opportunity	Access to Advanced Education	Lifelong learning	No	17.42	0.00	censored to P90%	worst possible