



# **The Global State of Democracy Indices**

## Technical Procedures Guide

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International IDEA  
Strömsborg  
SE-103 34 STOCKHOLM  
SWEDEN  
Tel: +46 8 698 37 00, fax: +46 8 20 24 22  
Email: [info@idea.int](mailto:info@idea.int)

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Original design concept: Phoenix Design Aid  
Layout: KPR Group + Santángelo Diseño

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## **Methodology and data set development (Global State of Democracy Indices)**

Svend-Erik Skaaning, Professor at the Department of Political Science at Aarhus

University, Co-Principal Investigator of the Varieties of Democracy (V-Dem) project

Claudiu Tufis, Associate Professor, University of Bucharest, Political Science

Department

## **Expert Advisory Board (Global State of Democracy Indices)**

Michael Bernhard, Raymond and Miriam Ehrlich Chair, Professor at the Department of Political Science at the University of Florida

Michael Coppedge, Professor at the Department of Political Science and Faculty Fellow at the Kellogg Institute of International Studies at the University of Notre Dame, Co-Principal Investigator of the Varieties of Democracy (V-Dem) project

Carl-Henrik Knutsen, Professor at the Department of Political Science at the University of Oslo, Co-Principal Investigator of the Historical Varieties of Democracy (V-Dem) project

Staffan Lindberg, Professor at the Department of Political Science at the University of Gothenburg, Director of the Varieties of Democracy (V-Dem) Institute

Gerardo Munck, Professor at the School of International Relations at the University of Southern California

# The Global State of Democracy Indices

## Technical Procedures Guide

Claudiu D. Tufis\*

*The Global State of Democracy Indices: Technical Procedures Guide* is the second in a series of documents prepared by International IDEA to present the Global State of Democracy (GSoD) indices. It outlines the technical aspects of constructing the indices, and complements *The Global State of Democracy Indices Methodology: Conceptualization and Measurement Framework* (Skaaning 2017), which presents the theoretical framework that guided the construction of the indices, and *The Global State of Democracy Indices Codebook* (Tufis 2017), which presents information about the data set, including variables, attributes of democracy, subattributes, subcomponents and indicators.

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The Global State of Democracy (GSoD) indices depict democratic trends at the country, regional and global levels across a broad range of different attributes of democracy in the period 1975–2015 but do not provide a single index of democracy. The indices produce data for 155 countries. The data underlying the indices is based on 98 indicators developed by various scholars and organizations using different types of source, including expert surveys, standards-based coding by research groups and analysts, observational data and composite measures.

*The Global State of Democracy 2017: Exploring Democracy's Resilience* (International IDEA 2017) aims to provide policymakers with an evidence-based analysis of the state of global democracy, supported by the GSoD indices, in order to inform policy interventions and identify problem-solving approaches to trends affecting the quality of democracy around the world. It explores the conditions under which democracy can be resilient and how to strengthen its capacity as a system to overcome challenges and threats.

The full publication, as well as the GSoD Indices Database, can be accessed online: <http://www.idea.int/gsod>.

\* Claudiu D. Tufis is an Associate Professor in the Political Science Department at the University of Bucharest.

## Introduction

This Guide outlines the process of constructing the Global State of Democracy (GSoD) indices, which form part of *The Global State of Democracy* (International IDEA 2017a). It is written for readers who want a better understanding of the indices, as well as researchers who may wish to use and build on the data contained within them. This Guide builds upon the GSoD Indices Methodology. For a detailed outline of the conceptual and measurement framework see *The Global State of Democracy Indices Methodology: Conceptualization and Measurement Framework* (Skaaning 2017).

For each component of the construction of the GSoD indices, the Guide provides information about the procedures followed, outlined in a step-by-step description to allow the interested reader to understand the research process. The eight steps can be summarized as follows:

1. Identifying the data sources (see Chapter 1);
2. Preparing the data sources for merger (see Chapter 2);
3. Preparing the indicators for merger (see Chapter 3);
4. Assessing the unidimensionality of the indices (see Chapter 4);
5. Aggregating the indicators into indices (see Chapter 5);
6. Scaling the indices (see Chapter 6);
7. Computing the confidence intervals (see Chapter 7); and
8. Conducting validity checks (see Chapter 8).

After a brief description of the theoretical structure that guided this project, the Guide presents the data sources, the coverage of the data set, the indicators used to construct the main attributes of democracy, the procedures used to compute these attributes and the structure of the complete data set.

## Background

The main objective of the GSoD indices is to identify systematic data that captures trends at the global, regional and national levels for different aspects of International IDEA's comprehensive understanding of democracy. The indices turn a broad range of empirical indicators from various data sets into measures of different aspects (attributes, and subattributes; see Figure I.1) of democracy that can be used to evaluate the state of democracy at the global, regional and national levels. The indices can also help stakeholders, such as policymakers, researchers and civil society actors, in their analysis of trends related to different aspects of democracy and to identify priority policy areas. *The Global State of Democracy 2017: Exploring Democracy's Resilience* (International IDEA 2017a) is an example of how the GSoD indices can be used to track trends in democratic development.

The GSoD indices, which were constructed for the first time in 2017, cover the 155 independent countries with a population of more than one million that existed in the period 1975–2015. The indices are composite measures based on 98 indicators from different kinds of extant data sources. These indicators are assigned to the different subattributes in the conceptual framework and combined into the GSoD indices using either item-response theory (IRT) modelling, Bayesian factor analysis (BFA) or mathematical operations such as multiplication and averaging. A key feature of the methodology is that it generates uncertainty estimates for each index, which allows users of the data set to assess whether the differences in scores over time and across countries are significant.

The GSoD indices were produced by a team of International IDEA staff and two external experts. The construction of the indices was supervised by an Expert Advisory Board consisting of five leading experts in the field of democracy measurement. To ensure consistency, transparency and high levels of measurement validity and reliability, careful justification and documentation of the conceptual distinctions and methodological choices made, and the use of state-of-the-art procedures were emphasized at all stages of the construction of the indices.

### Conceptual structure

The GSoD indices build on an elaborate conceptual framework that is rooted in International IDEA's State of Democracy (SoD) Assessment Framework (Beetham et al. 2008). The SoD Assessment Framework is defined by two principles (popular control and political equality), seven mediating values (participation, authorization, representation, accountability, transparency, responsiveness and, solidarity), and four pillars (citizens, law and rights; representative and accountable government; civil society and popular participation; and democracy beyond the state). For more details, see the SoD Assessment framework (Beetham et al. 2008) and the GSoD indices methodology (Skaaning 2017).

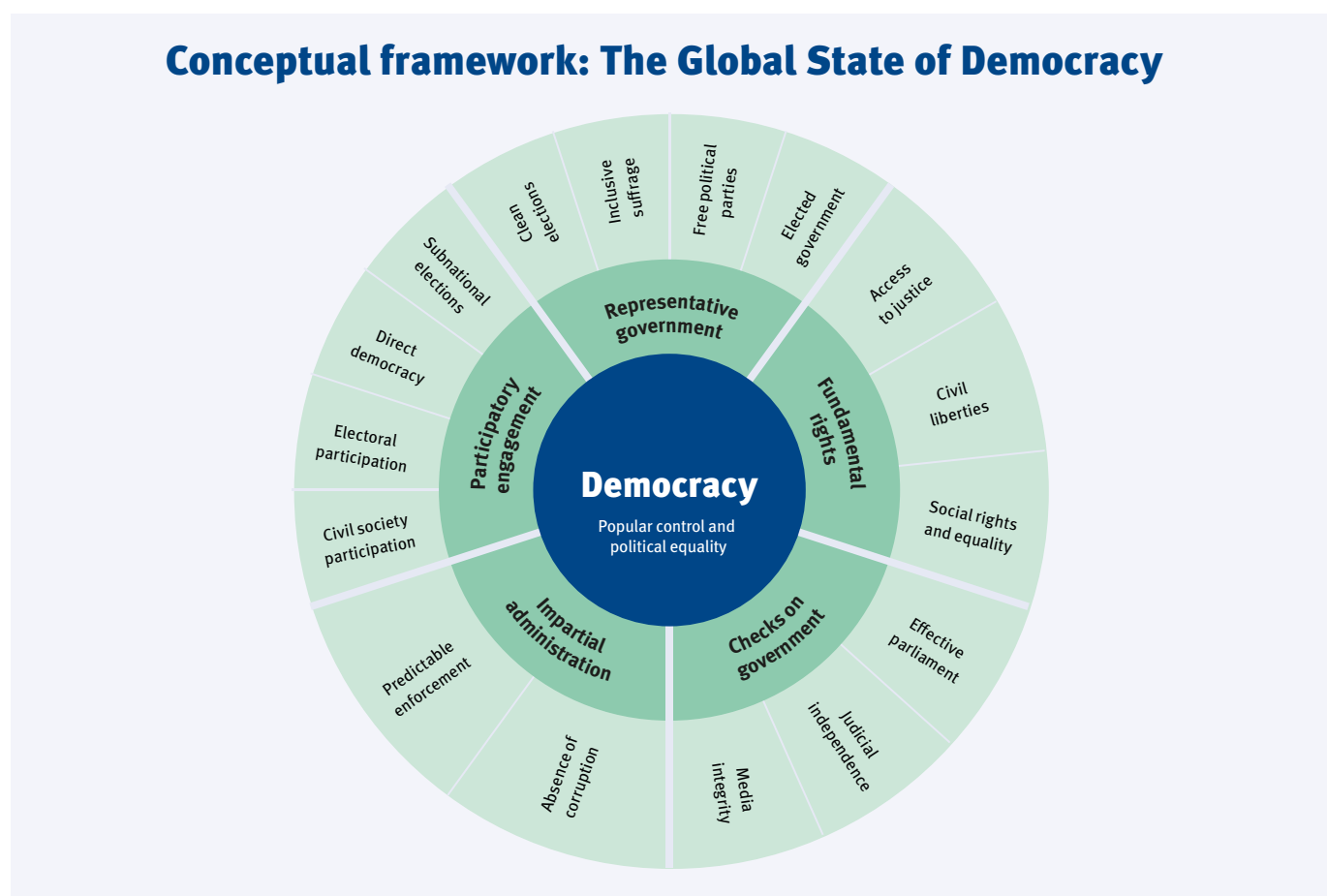
The democratic principles underpinning the SoD framework—popular control and political equality—are also at the core of the GSoD indices. In order to construct the GSoD indices, however, the SoD conceptual framework was modified to transform it into a systematic, cross-national and cross-temporal quantitative measurement tool (Skaaning 2017).

The GSoD indices aim to capture the extent to which (a) there is effective popular control over public decision-makers, or vertical accountability; (b) citizens have politically relevant freedoms and power resources; (c) executive power is checked effectively by other powers, or horizontal accountability; (d) public authorities are impartial and predictable in implementing the law; and (e) people have and make use of various opportunities for political participation at different levels (Skaaning 2017).

The GSoD data set therefore contains separate, fine-grained indices and subindices related to five attributes of democracy (see Beetham 1999: 154–57; Beetham et al. 2008: 27–28):

1. Representative Government (free and equal access to political power)
2. Fundamental Rights (individual liberties and resources)
3. Checks on Government (effective control of executive power)
4. Impartial Administration (fair and predictable public administration)
5. Participatory Engagement (instruments for and realization of political involvement)

FIGURE 1.



In addition, the GSoD conceptual framework contains, at lower levels of abstraction, 16 subattributes and an additional five subcomponents of civil liberties and three subcomponents of social rights and equality. Figure 1 presents a schematic overview of the GSoD conceptual framework.

Separate GSoD indices are constructed for each attribute and subattribute (see Table I.1). The only exception is the fifth attribute, participatory engagement. This theoretical dimension is conceptually and empirically multidimensional and there are no obvious ways to aggregate its subattributes.



TABLE 1.1.

## Attributes, subattributes and general assessment questions of the GSoD conceptual framework

Attribute	Subattribute	Assessment question
<b>1</b> <b>Representative Government</b> (free and equal access to political power)	1.1. Clean Elections	To what extent are elections free from irregularities?
	1.2. Inclusive Suffrage	To what extent do all adult citizens have voting rights?
	1.3. Free Political Parties	To what extent are political parties free to form and campaign for office?
	1.4. Elected Government	To what extent is access to government determined by elections?
<b>2</b> <b>Fundamental Rights</b> (individual liberties and resources)	2.1. Access to Justice	To what extent is there equal, fair access to justice?
	2.2. Civil Liberties	To what extent are civil liberties respected?
	2.3. Social Rights and Equality	To what extent are there basic welfare, and social and political equality?
<b>3</b> <b>Checks on Government</b> (effective control of executive power)	3.1. Effective Parliament	To what extent does parliament oversee the executive?
	3.2. Judicial Independence	To what extent are the courts independent?
	3.3. Media Integrity	To what extent are there diverse, critical media sources?
<b>4</b> <b>Impartial Administration</b> (fair and predictable public administration)	4.1. Absence of Corruption	To what extent is the exercise of public authority free from corruption?
	4.2. Predictable Enforcement	To what extent is the enforcement of public authority predictable?
<b>5</b> <b>Participatory Engagement</b> (instruments of and for the realization of political involvement)	5.1. Civil Society Participation	To what extent do people participate in civil society organizations?
	5.2. Electoral Participation	To what extent do people participate in national elections?
	5.3. Direct Democracy	To what extent are mechanisms of direct democracy available and used?
	5.4. Subnational Elections	To what extent are there free regional and local elections?

**Source:** The Global State of Democracy Indices Methodology: Conceptualization and Measurement Framework (Skaaning 2017)

## 1. Data sources

No original data collection was carried out in connection with the construction of the GSoD indices. International IDEA's GSoD indices are composite measures based on 98 indicators collected from 14 different data sets.

A number of criteria guided the selection of the data sets to be used for collecting the indicators. First, only those data sets that provided transparent and credible information on data-generating processes were selected. Second, data sets were needed with extensive coverage both spatially (at least 140 countries) and temporally (at least 30 years in the period 1975–2015). Third, data sets were also needed that have been and will continue to be updated on a regular basis. Fourth, priority was given to open access data sets.

Four different types of source were used to collect data for these data sets:

1. Expert surveys (ES), for which country experts generate data based on their assessment of the situation regarding particular issues in a given country;
2. Standards-based in-house coding (IC), which is used by researchers to generate data based on an evaluative assessment of country-specific information collected through desk research from various reports, academic publications, reference works or news sources;
3. Observational data (OD) on features that are directly observable and do not need the interpretation of experts or researchers, such as infant mortality rates or the representation of women in parliament; and
4. Composite measures (CM), which generate data based on a number of variables from different existing data sets rather than on original data collection.

For a more detailed discussion of the advantages and disadvantages of the various types of data used see *The Global State of Democracy Indices Methodology: Conceptualization and Measurement Framework* (Skaaning 2017). Table A.1 (see Annex A) lists the 14 data sets used, the type of data they offer and the number of indicators collected from each of them.

### STEP 1: GATHERING THE DATA SOURCES

The first step was to gather the data sources for use in constructing the GSoD Indices. For each data set, the most recent version of the data was downloaded, together with the corresponding codebook or other supporting documents required to understand the content of the data set.

Version 7 of the Varieties of Democracy (V-Dem) data set, released in May 2017, was used. Updated versions of the Civil Liberties Dataset (CLD) and the Lexical Index of Electoral Democracy (LIED) were obtained direct from the authors. The International Country Risk Guide (ICRG) data set was purchased in September 2016. For the remaining 10 data sets (see Table A.1), the versions available online were downloaded at the end of April 2017. A copy of the downloaded data was archived for future reference. The next step in the procedure was to prepare the data to enable the indicators to be consolidated into a single data set.

**Note:** Examples of the syntax (code) included in this Guide are provided only for those steps that involve the actual computation of the GSoD indices. The data cleaning procedure can be carried out in multiple ways using various combinations of software, depending on preference and/or experience. In this case, data cleaning was completed using a combination of Excel, SPSS and R, depending on the task.

## 2. Coverage

The unit of observation for International IDEA's Global State of Democracy Indices is the country–year. The 2017 release of the data set contains data for 155 countries for up to 41 years, giving a total of 5894 country–years. Details of the spatial and temporal coverage of the data set are presented in the following sections.

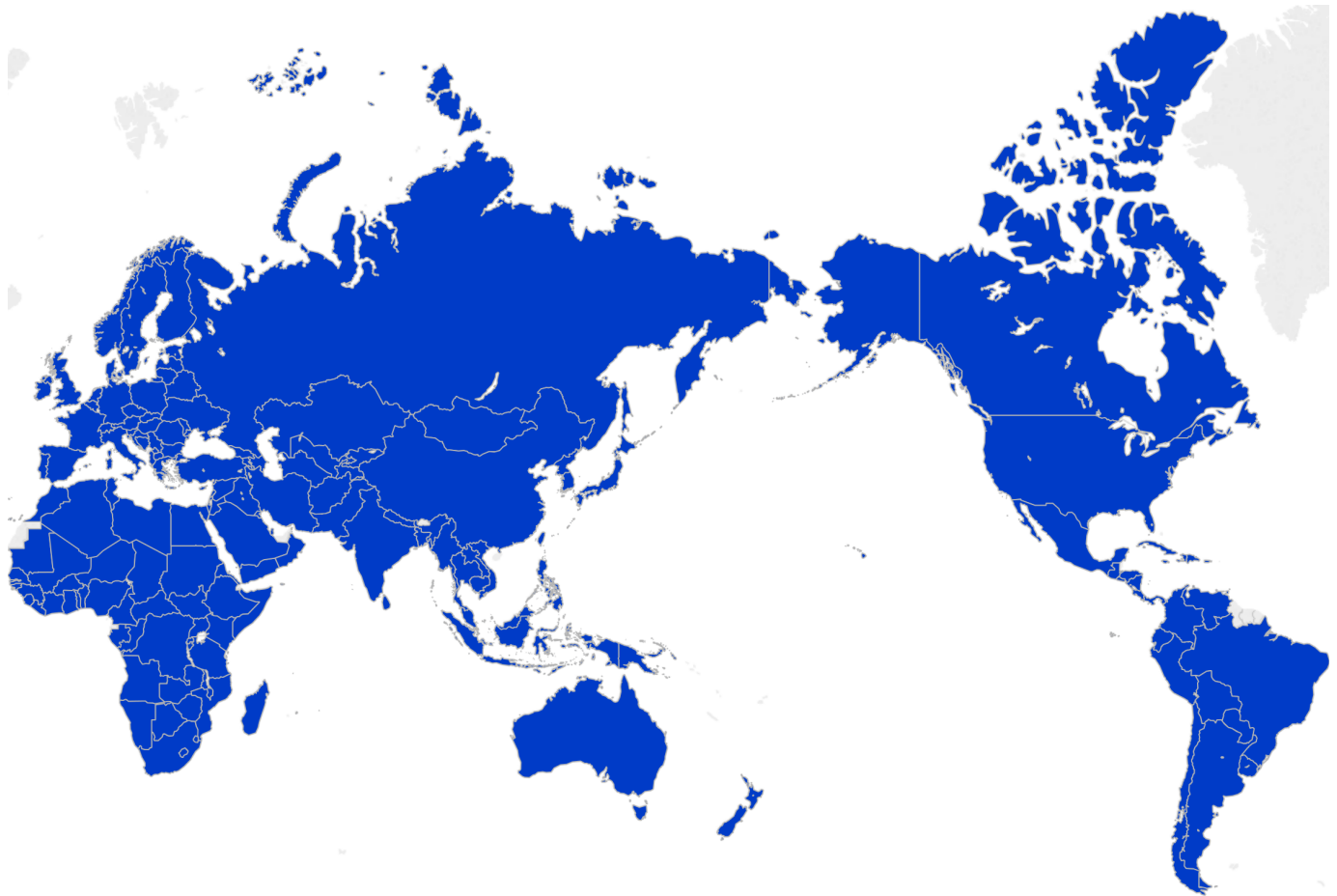
### Spatial coverage

International IDEA's GSoD indices provide data for all the independent countries in the world with a population of at least one million people. Countries are included in the data set from 1975 or, if the country was not independent in 1975, the year it gained independence (see Step 2). The data set does not include semi-sovereign units such as Palestine/Gaza, Palestine West Bank or Somaliland. Countries that have been dissolved remain in the data set until they cease to exist. Using these inclusion rules, the data set is composed of 155 countries. The only country that has exited the data set is the German Democratic Republic, which was dissolved in 1990 after unification with the Federal Republic of Germany.

The spatial coverage of the GSoD indices for the most recent year in the data set (2015) is shown in Figure 2.1. A complete list of the 155 countries included in the GSoD indices data set is provided in Table B.1 (see Annex B).

FIGURE 2.1.

**Spatial coverage of International IDEA's Global State of Democracy indices, 2015**



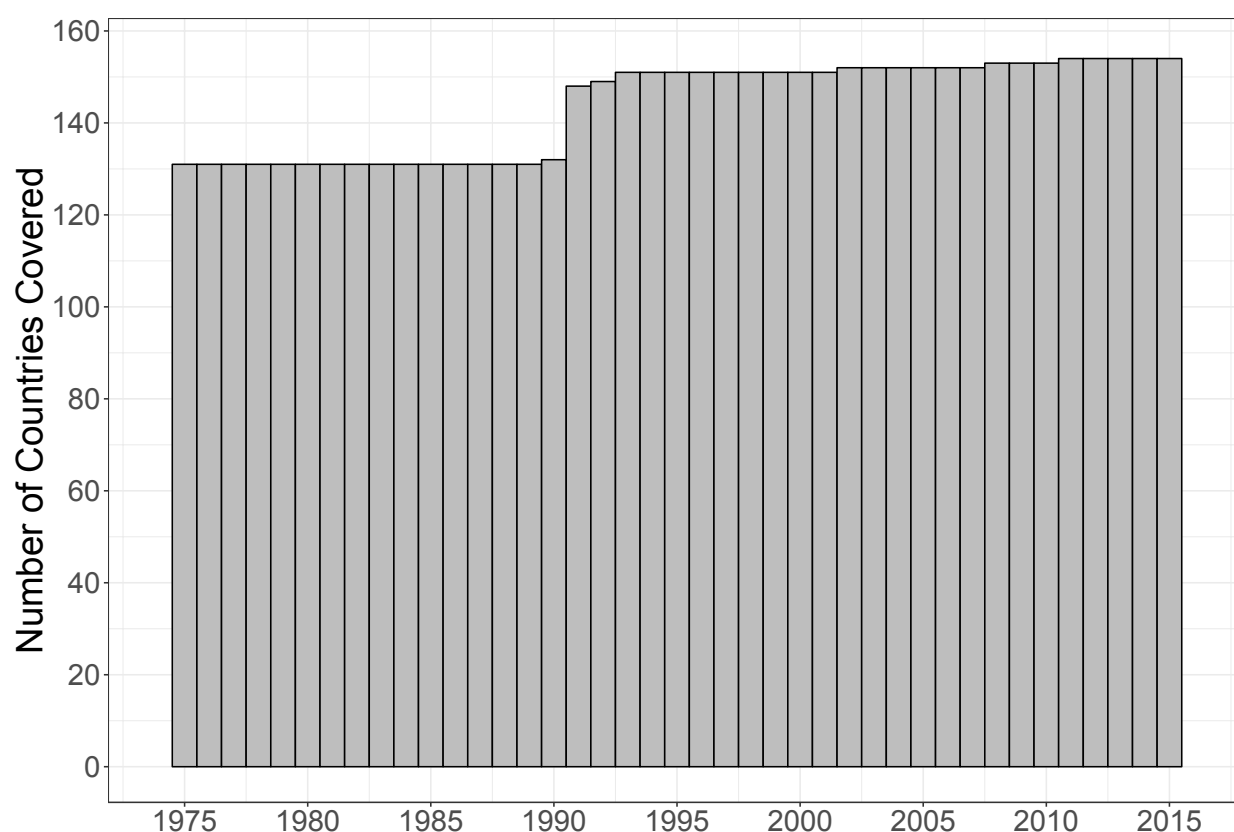
## Temporal coverage

The first edition of International IDEA's GSoD indices covers the period 1975–2015. The data set covers the period since the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights took effect in 1976, using 1975 as a reference point. Moreover, the data set starts with a period that is often called 'the third wave of democratization' (Huntington 1991) in the democratization literature.

The number of countries covered each year by the GSoD indices is shown in Figure 2.2. Table B.1 (see Annex B) indicates the temporal coverage for each of the 155 countries included in the data set.

FIGURE 2.2.

### Temporal coverage of International IDEA's Global State of Democracy indices, 2015



## Geographical regions

International IDEA's GSoD indices also include aggregated values at the regional and subregional levels. The regional definitions follow closely those developed by International IDEA for *The Global State of Democracy* (see International IDEA 2017b), which creates regions based on a geographical criterion while also taking account of the cultural and historical links among countries that belong to the same subregion or region. In total, aggregated values are presented for six regions and 17 subregions:

- Africa (East Africa, Central Africa, Southern Africa, West Africa and North Africa)
- Latin America and the Caribbean (the Caribbean, Central America and Mexico, and South America)
- North America
- Asia and the Pacific (Central Asia, East Asia, South Asia, South East Asia, and Oceania)
- Middle East and Iran
- Europe (East-Central Europe, Eastern Europe/Post-Soviet Europe, South Europe, and North and West Europe)

It should be noted that the values in the data set are aggregated without using population weights. Table B.2 (see Annex B) contains a complete list of the regions and subregions, as well as their membership.

### Regional organizations

International IDEA's GSoD indices also contains aggregated values for five regional organizations: the African Union (AU), the Association of South East Asian Nations (ASEAN), the European Union (EU), the Organization for Economic Co-operation and Development (OECD) and the Organization of American States (OAS).

As in the case of the geographical regions, the values in the data set are aggregated without using population weights. A complete list of the regional organizations and their membership is given in Table C.1. (see Annex C).

## STEP 2: PREPARING THE DATA SOURCES FOR MERGER

Once the coverage of the GSoD Indices had been established (155 countries with a population of over one million, and the period 1975–2015), the next step was to prepare the various data sources used to be merged into a single data set.

An initial country–year matrix was created containing 6355 country–years (155 countries over 41 years). However, not all the countries were in existence for the entire period. The German Democratic Republic ceased to exist during the period so the country–years after its dissolution were deleted. In other cases, such as the former Soviet republics, the countries were formed during the period covered. The country–years before these countries gained independence were therefore deleted. After excluding all these country–years, the country–year matrix contained 5894 country–years. In all cases, a standard procedure was followed. Czechia is the successor of Czechoslovakia, Russia is the successor of the Soviet Union, Serbia is a successor of Yugoslavia and so on. For a detailed description of this procedure see Coppedge et al. (2016b).

Since the different data sources came in different forms, a common set of identifying variables was created for each of the 14 data sources: the year, the country name, the country code and the country–year. The codes from the Correlates of War (COW code) were used for the country code variable. Some data sources, such as V-Dem, already included this variable but it had to be created for other data sources based on the name or abbreviation of the country. The country–year variable was created by concatenating the values from the country-code variable (of between 2 and 920) with the values for the year variable (from 1975 to 2015). This resulted in a country–year variable with a value from 21975 to 9202015, which uniquely identifies each combination of country and year in the data set.

In some cases, the data sources also had to be put into country–year format. The National Elections across Democracy and Autocracy (NELDA) data set, for instance, only has data for years in which elections are held. The missing years had to be added to complete the 1995–2015 period. The International Country Risk Guide (ICRG) data set comes in a wide format that had to be transformed into the long format by transposing the variable years into country–years.

The GSoD indices data set also includes geographical regions and subregions. To keep things simple, codes for the regions and subregions were added to the variable indicating the country codes. These are additional to the country codes based on the COW codes. The codes from 971 to 989 were reserved for the geographical subregions, while the codes from 991 to 996 were reserved for the geographical regions and code 999 reserved for the whole world. The same approach was used for the regional organizations included in the data set. Codes 961 to 965 were reserved for them. Unique country–year identifiers were also constructed for these additional regions and regional organizations by concatenating their codes and the years. For more details about the codes reserved for the geographical regions and subregions and for the regional organizations see the GSoD Codebook (Tufis 2017).

### 3. Indicators

The GSoD indices conceptual framework guided selection of the indicators to be included in the data set. The indicators rely on various types of sources and are collected from extant data sets compiled by different organizations and researchers. The main priority in the selection of indicators was a high level of concept–measure consistency, or the extent to which the indicators really capture the core meaning of the particular concepts in question. In addition, the aim wherever possible was to select multiple indicators for each subattribute—especially where an adequate observable indicator was not available.

Assuming the selection of high-quality indicators, a cumulative approach to measurement generally improves confidence in the scores since it utilizes the combined efforts of various data providers in order to make the resulting measures more nuanced and reliable. The use of different indicators enables the capture of related, but nonetheless distinct, aspects of the features to be measured. It also tends to reduce the influence of idiosyncratic measurement errors associated with individual indicators. Finally, drawing on several indicators makes it possible to assess the level of agreement between indicators and use this information to calculate uncertainty estimates for the indices (see Pemstein, Meserve and Melton 2010; Fariss 2014).

Each of the 98 indicators selected from the 14 data sources corresponds to one of the subattributes or attributes of democracy developed for International IDEA's GSoD indices. Table D.1 links a complete list of the indicators to the attributes and subattributes. Table D.2 presents information about the source for each indicator. Finally, Table D.3 summarizes the coverage and missing data for each indicator (see Annex D). There is an extensive discussion on the selection of indicators in *The Global State of Democracy Indices Methodology: Conceptualization and Measurement Framework* (Skaaning 2017), while detailed information on each of the indicators is available in the GSoD Codebook (Tufis 2017).

### STEP 3: PREPARING THE INDICATORS FOR MERGER

All the indicators selected for inclusion in International IDEA's GSoD indices have been put through a process of data cleaning to ensure that the data is correct and follows the country-year format. The GSoD codebook indicates for each indicator whether it was changed in any way from the original data and, if so, lists the specific changes.

Only the types of changes made to prepare the indicators are set out below. These can be grouped into three main categories: (a) recoding the data; (b) interpolation of data; and (c) computing the data for geographical regions and subregions, and regional organizations included in the data set.

Different types of recoding procedures were used for different indicators in order to prepare them for calculating the GSoD indices. First, in some cases, the original data included specific codes for missing values. All the specific codes for missing values were recoded as system missing, indicating that the value for that variable for the particular country-year is not available.

Second, for all those variables that were measured on an interval-level scale or that were aggregated using item response theory (IRT) models, the original variables were recoded into ordinal-level variables. For more details about the aggregating procedures used see *The Global State of Democracy Indices Methodology: Conceptualization and Measurement Framework* (Skaaning 2017, section 3.4). The recoding was done by grouping the original data into 20 categories, each of five percentiles. In this way, interval-level variables ranging from approximately -3.5 to approximately 3.5 were recoded into ordinal-level variables ranging from 1 (the first category, comprised of the bottom five percentiles) to 20 (the last category, comprised of the top five percentiles).

Third, some indicators had a number of categories with a very low number of cases (country-years). As a general rule, categories with less than 1 per cent of the data were recoded into adjacent categories (specific cases are indicated in the codebook).

Fourth, in some cases the scale was inversed so that all the indicators included in an index run in the same direction, with low values indicating the absence or low levels of an attribute and high values indicating the presence or high levels of an attribute.

With respect to interpolating the data, that is, replacing missing values with reasonable estimates of values in order to increase the coverage of an indicator, different approaches were used, depending on the characteristics of the specific indicator being analysed.

The indicators used from the NELDA data sets had multiple values for a country in the years in which there were multiple rounds of elections organized in that country. Rather than selecting only a particular type of elections and/or using some other selection criterion, the scores of the different country-year elections were averaged into a single country-year score.

Two different types of interpolation were used for indicators from data sources that did not code the data every year. For indicators related to electoral processes, the values from the election year were duplicated for the remaining years in the electoral cycle. For instance, the value observed for voter turnout in a particular country in 1976 was used for the remaining years in the electoral cycle, 1977, 1978 and 1979, until a new election was held with a new observed value for voter turnout in 1980. For other indicators, which were measured at various time intervals and where the phenomenon being measured is likely to change only slowly, linear interpolation was used from one measurement to the next, assuming a linear process of change over time. For example, the percentage of women in ministerial positions was coded by the Inter-Parliamentary Union in 1987, 1994, 1998 and 2005, and then every two years from 2008 until 2014 and again in 2015. Starting from the observed values in those years, values were linearly imputed for the missing years using the closest surrounding years.

Finally, the values for all the indicators had to be computed for the geographical regions and subregions, and the regional organizations included in the GSoD indices data set. Data for



these additional units was not available from the original data sources. A simple approach was used, taking averages for each country–year of the values of the indicator for all the countries belonging to the region (or subregion) and regional organization. It should be noted that population weights were not used during the averaging, so each country is weighted equally.

#### 4. Assessing the unidimensionality of the indices

Both this step and the following step translate the theoretical links between the attributes and subattributes, and between the subattributes and indicators, into corresponding aggregation formulas. The GSoD framework is based on the assumption that the more the principles are met, the more democratic a political system is. Thus, the achievement of these principles is not seen as an either/or matter, but as a matter of degree. The choice made of the measurement process—to construct indices with relative, fine-grained scales and uncertainty estimates but without substantive thresholds—also aligns better with this gradualist perspective than crisp distinctions.

Reflective aggregation models and formative aggregation models were used to combine the various indicators into composite indices. Where indicators of the theoretical constructs reflected a common underlying variable and/or generally showed very high levels of covariation, aggregation based on item response theory (IRT) models or Bayesian factor analysis (BFA) was used. For a detailed discussion of the distinction between formative and reflective indicators, and for detailed descriptions of the aggregation methods used, see *The Global State of Democracy Indices Methodology: Conceptualization and Measurement Framework* (Skaaning 2017).

It should be noted that, regardless of the aggregation method used, the goal in all cases was the same: to use the information contained in multiple indicators that are measuring different facets of the same phenomenon to construct an index that measures better than its composing indicators the phenomenon that is to be measured. Both IRT and BFA are data reduction procedures that combine the various interrelated indicators into a single measure.

Many of the selected indicators were expected to cluster in meaningful ways and to tap into a limited number of overarching concepts. These expectations were based on theoretical grounds and because previous dimensionality analyses of these (and related) indicators have shown that many of them are highly correlated and reflect common latent dimensions (see e.g. Skaaning 2009; Møller and Skaaning 2014a, b; Teorell et al. 2016).

#### Item response theory (IRT)

IRT modelling was used at the lowest level of aggregation (subattribute or subcomponent level) if there were a significant amount of missing data (more than 5%) in any of the indicators used to reflect the concept in question. This allowed use of multiple indicators of the same latent concept ‘to identify and correct for measurement error, and to quantify confidence in the reliability of our estimates’ (Pemstein et al. 2015: 30). A lack of overlap in the coverage of indicators does not result in missing values in estimates for the affected country–years, as would be the case if using factor analysis. Using full information maximum likelihood IRT models means that all the relevant information from the indicators can be used. The missing data in some indicators are then reflected in the uncertainty estimates, which also reflect the level of agreement between indicator



scores, or the extent to which they are correlated. If none of the indicators provides data for a given country–year, no estimate is calculated for this country–year. The *mirt* package developed by Philip Chalmers (2017) was used to conduct the modelling.

### Bayesian factor analysis (BFA)

If there is virtually perfect overlap in the measures, then BFA becomes a more viable option. Like IRT models, BFA provides point estimates for the latent dimension and confidence intervals, but it does so only for country–years with uniform indicator coverage. BFA was therefore used to combine indicators only if all of them had a low level of missing data. Moreover, when applicable, BFA was used to combine subcomponent scores into subattribute scores, and thereafter subattribute scores into attribute scores (i.e. if the measures were expected to reflect the same latent concept in the framework, and when the indicators/indices to be aggregated showed very strong correlations). For BFA the *MCMCpack* package in R was used (Martin, Quinn and Park 2017).

### Formative approach

When indicators are understood as constitutive components of the concept of interest, this means that the indicators are not necessarily highly correlated. Here the use of a formative approach is more plausible. Formative models were used in the GSoD framework when a particular version of the procedure was judged to be more appropriate than purely reflective procedures. Hence, a formative model was used to combine the contestation index with an inclusiveness indicator to create the representative government index, and a formative model used to aggregate indicators related to the presence, and freedom and fairness of subnational elections (see Step 5: Aggregating the indicators into indices).

## STEP 4: ASSESSING THE UNIDIMENSIONALITY OF INDICES

Aggregating multiple indicators into a single index rests on the assumption that the indicators are interrelated, and that they are measuring different manifestations/forms of the same phenomenon. These assumptions, however, have to be tested and confirmed before proceeding with constructing the indices. Four different ways were used to test the assumption or verify that the indicators could be combined into indices.

First, the **bivariate correlations** among all the indicators included were computed in an index for all the indices. There was an expectation that all the indicators included in an index would be interrelated (correlated), which indicates that they are measuring some aspect of the phenomenon that the index is supposed to measure. The correlation tables are presented in Annex F. Most of the indicators are highly to very highly correlated with the other indicators belonging to the same index. The correlations usually range from .6 to .9, and most of them are higher than .8. Some indicators display only medium correlations of around .4 to .5, but these are few in number and there are theoretical reasons for keeping them as part of the construction of the index.

Second, **high correlations** among the indicators are necessary, but not sufficient for constructing the indices. Since the goal is to construct one index for each of the main attributes of democracy, the indicators that are included in an index have to be related in such a way that they measure the same attribute (a single factor). Thus, a number of factor analyses were computed that allow one of up to three factors to be extracted, depending on the number of indicators included in the index (The results of these analyses are not shown but are

available on request). In all cases, the single factor solution was better than possible two- or three-factor solutions, suggesting that the indices can be reduced to a single dimension.

Third, **Bayesian factor analyses** were computed, asking for single factor extraction for all the indices. The results of these analyses (see Annex E) show that the indicators have very high loadings on the indices to which they belong.

Fourth, for each index the **Cronbach's Alpha coefficient** was also computed to assess the internal consistency of the indicators as a group. The smallest value recorded for Cronbach's Alpha was .82, while 19 of the 23 indices computed had a Cronbach's Alpha higher than .90. All the values were above the usually accepted threshold of .80.

All the results discussed above support the argument that the indicators reflect common latent dimensions where they are expected to do so, which justifies aggregating them into a single index.

## 5. Aggregating the indicators into indices

As indicated in Chapter 4, two different methods were used to aggregate indicators into indices: IRT and BFA. The choice between the two methods was determined solely by the proportion of missing values in the indicators included in each index. First, the indicators for the five subattributes belonging to the civil liberties subattribute and for the three belonging to the social rights and equality subattribute were aggregated and the estimates saved in the data set. The indicators for the subattributes of democracy were then aggregated and saved in the data set.

In the case of the two subattributes discussed above—civil liberties, and social rights and equality—which are composed of subcomponents that include indicators, the indicators were first aggregated into subcomponents and the subcomponents then into subattributes.

When using IRT as an aggregating procedure, the scores were estimated using the *mirt* package in R. Box 5.1 is an example of the syntax used to estimate the scores. The *mirt* package gives two estimates for each index—the estimate and its standard error for each country–year that has at least one valid value on the indicators that compose the index. The estimates and their standard errors are saved in an output file and then imported into the data set where they can be used for additional computations if needed.

## BOX 5.1.

## Syntax for aggregating indicators into indices using IRT

```

library(mirt) # load the mirt library

### 1.3. IRT: Free political parties # estimate sub-attribute 1.3

# Select all cases that have values on at least one variable

SD13score <- subset(Scoresv01, !is.na(v_13_01) | !is.na(v_13_02) |
                    !is.na(v_13_03) | !is.na(v_13_04) | !is.na(v_13_05) |
                    !is.na(v_13_06) | !is.na(v_13_07) | !is.na(v_13_08) |
                    !is.na(v_13_09))

nrow(SD13score) # Check the number of cases

# Run the model and compute the scores
SD13irt <- mirt(SD13score[,16:24], 1, itemtype = 'graded', technical =
               list(NCYCLES = 5000))

Scores_SD13 <- fscores(SD13irt, method = 'MAP', full.scores = TRUE,
                       full.scores.SE = TRUE)

# Save the scores
SD13_save <- cbind(SD13score[,1:8], Scores_SD13)

# Export the scores
write.csv(SD13_save, file = "SD13_save.csv")

```

**Note:** Text in *italics* represents the names of the variables and files. For more detail on the options for the procedures used see Chalmers (2017).

When using BFA as an aggregating procedure, the scores were estimated using the MCMCpack package in R, more specifically the MCMCfactanal command. Box 5.2 provides an example of the syntax used to estimate the scores. For each index, the MCMCpack package gives two estimates, the estimate and its standard error, for each country-year that has valid values on all the indicators that compose the index. The estimates and their standard errors are saved in an output file and then imported into the data set, where they can be used for additional computations if needed.

## BOX 5.2.

## Syntax for aggregating indicators into indices using BFA

```
library(MCMCpack) # load the MCMCpack library

# 2.2.A. BFA: Freedom of expression

# Run the model and compute the scores
SD22a <-MCMCfactanal(~v_22_01 + v_22_02 + v_22_03 + v_22_04 + v_22_05 +
                    v_22_06 + v_22_07, factors = 1, lambda.constraints = list(),
                    data = Scoresv01, burnin = 5000, mcmc = 100000, thin = 100,
                    verbose = 1000, seed = NA, lambda.start = NA, psi.start = NA,
                    l0=0, l0=0, a0=0.001, b0=0.001, store.scores=TRUE, std.var =
                    TRUE)

# Save and export the scores
capture.output(summary(SD22a), file = "SD22a_score.txt")

system("Say Oh, most wonderful, your data analysis is complete!")
```

**Note:** Text in *italics* represents the names of the variables and files. For more detail on the options for the procedures used see Martin, Quinn and Park (2017).

The aggregation rules used for each sub-dimension, subattribute and attribute computed are shown in Table 5.1.

TABLE 5.1.

**Aggregation rules for the creation of indices at the attribute and subattribute levels**

Attribute	Aggregation	Subattribute	Aggregation
<b>1</b> <b>Representative Government</b> (free and equal access to political power)	Bayesian factor analysis of clean elections, free political parties and elected government to create contestation index; thereafter, multiplication of contestation and inclusive suffrage	1.1 Clean Elections	Bayesian factor analysis
		1.2 Inclusive Suffrage	NA (only one indicator)
		1.3 Free Political Parties	Item response modelling
		1.4 Elected Government	Item response modelling
<b>2</b> <b>Fundamental Rights</b> (individual liberties and resources)	Bayesian factor analysis	2.1 Access to Justice	Bayesian factor analysis
		2.2 Civil Liberties	First item response modelling or Bayesian factor analysis by subcomponents (i.e. freedom of expression [BFA], freedom of association and assembly [BFA], freedom of religion [BFA], freedom of movement [BFA], and personal integrity and security [IRT]). Thereafter, Bayesian factor analysis of subcomponent indices.
		2.3 Social Rights and Equality	First item response modelling by subcomponents (i.e. social group equality, gender equality, and basic welfare). Thereafter, Bayesian factor analysis of subcomponent indices.
<b>3</b> <b>Checks on Government</b> (effective control of executive power)	Bayesian factor analysis	3.1 Effective Parliament	Item response modelling
		3.2 Judicial Independence	Item response modelling
		3.3 Media Integrity	Bayesian factor analysis
<b>4</b> <b>Impartial Administration</b> (fair and predictable public administration)	Bayesian factor analysis	4.1 Absence of Corruption	Item response modelling
		4.2 Predictable Enforcement	Item response modelling
<b>5</b> <b>Participatory Engagement</b> (instruments for realization of political involvement)	NA (no obvious way to combine the multi-dimensional subattributes)	5.1 Civil Society Participation	Bayesian factor analysis
		5.2 Electoral Participation	NA (only one indicator)
		5.3 Direct Democracy	NA (only one indicator)
		5.4 Subnational Elections	Multiplication of indicators related to regional elections and local elections, respectively. Thereafter, the scores for the two levels are averaged.

**Source:** The Global State of Democracy Indices Methodology: Conceptualization and Measurement Framework (Skaaning 2017)

## STEP 5: AGGREGATING THE INDICATORS INTO INDICES

Due to missing data, two of the subattributes (free political parties and elected government) were aggregated using IRT. The clean elections subattribute is composed of indicators that do not suffer from high levels of missing data, so this was aggregated using BFA. Since there is only one indicator for inclusive elections, this subattribute does not need any aggregation. In a final step, all the country–years without an electoral regime according to V-Dem were scored the minimum value of 0.

The suffrage indicator was combined with the three other subattribute indices to construct an overall representative government index but only after the construction of an ‘intermediate’ index based on the other subattribute indices. Inspired by Dahl’s theoretical distinction between two dimensions of representative government, contestation and inclusion (1971; 1989; see also Coppedge, Alvarez and Maldonado 2008; Miller 2015), the factor scores from a BFA were first used to construct a contestation index. Thereafter a formative aggregation procedure was chosen to combine the contestation index with the suffrage measure. Although contestation and inclusion are not highly correlated, they both constitute necessary conditions for representative government. Accordingly, the representative government index is based on a multiplication of the suffrage scores and the normalized scores for the contestation index.

Since none of the indicators linked to access to justice have significant amounts of missing data, they were combined using BFA. Regarding the second subattribute of fundamental rights, civil liberties, the first four subcomponent indices were constructed using BFA, while the personal integrity and security subcomponent index was constructed using IRT. In the next step, BFA was used to reduce the highly correlated subcomponents into a single index score for the civil liberties subattribute. IRT was used to construct the three subcomponents of the social rights and equality subattribute, which were then combined in the subattribute using BFA. Finally, the three fundamental rights subattributes were aggregated into the fundamental rights index using BFA.

Three reflective indices were created—on effective parliament, judicial independence and media integrity—using IRT in the first two cases (due to the significant gaps in some of the indicators) and BFA in the latter case. These indices were then aggregated into a more general index using BFA, as they tend to reflect a common underlying dimension, which was interpreted as checks on government.

Since the ICRG indicators had substantial deficiencies in coverage, the two indices constructed from the indicators grouped with absence of corruption and predictable enforcement were based on IRT modelling. These were then used to construct an impartial administration index based on BFA scores.

On the participatory engagement subattributes, no aggregation was needed for direct democracy since an existing index was used and there are no viable alternatives; or for electoral participation, since only one indicator was used. The two indicators on civil society participation clearly tapped into a common dimension. They were aggregated into an index based on BFA since the indicators have an almost perfect overlap. For subnational elections, a formative aggregation formula was chosen, which took into account the reinforcing relationship between the mere existence of subnational elections and their freeness and fairness.

A measure of free local level elections was created by multiplying the indicators on elected local government and free and fair subnational elections, and a measure of free regional elections by multiplying the indicators on elected regional governments and free and fair subnational elections. Since free elections at the local level can be considered partially substitutable with free elections at the regional level, the aggregation was completed by calculating the average of these products.

The relationship between the subattributes and the overarching attribute is less evident for participatory engagement. Furthermore, the subattribute indices linked to this attribute are

not highly correlated. This could reflect the fact that they capture fairly distinct phenomena even though they are all conceptually related by being expressions of popular participation. Aggregation through reflective models did not appear to be a plausible solution.

As it is also not clear from extant theory whether the different aspects of popular participation stand in an interactive and/or substitutable relationship with each other, there was no aggregation to the attribute level. Users are encouraged to use the subattribute indices.

## 6. Scaling

All the indices in the data set offer nuanced scores in the form of interval scale measurement. The indices have been normalized (step 6) to range from 0 (lowest achievement among all the country–years) to 1 (highest achievement among all the country–years). A score of 0 generally refers to the worst performance in the whole sample of country–years covered by a particular index, while 1 refers to the best country–year performance in the sample.

For a number of indices, however, 0 also has an absolute meaning as the lowest score that is theoretically possible. The subattribute indices capturing clean elections, elected government, direct democracy and subnational elections all have substantively meaningful minimum values that refer to the total absence of the features in question.

### STEP 6: SCALING THE INDICES

The normalization of the indices was carried out by subtracting for each country–year the minimum score for the index from the value of the country–year and by dividing the result by the difference between the maximum and the minimum value of the index. The formula used for the normalization of the indices was:

$$x'_i = (x_i - \min(x_i)) / (\max(x_i) - \min(x_i))$$

where  $x_i$  represents the value of index  $x$  for country–year  $i$ , while  $x'_i$  represents the normalized value of index  $x$  for country–year  $i$ .

In this way, the lowest value in the population of country–years in the data set becomes 0, while the highest value in the same population of country–years in the data set becomes 1, while all the remaining country–years are given values between these two values.

## 7. Confidence intervals

For most indices, the yearly scores for each country are accompanied by uncertainty estimates, which can be used to assess whether differences between countries and within countries over time are significant. These uncertainty estimates, in the form of confidence intervals or margins of error, reflect the statistically likely range for the country–year index scores based on the indicators used.

The GSoD indices confidence levels refer to one standard deviation below and above the estimated score. This means that about 68 per cent of the ‘true’ values would be found within these intervals. Confidence intervals are only available for those indices that are constructed from multiple indicators. The more the underlying indicators are in agreement

regarding the scoring (high-low) of a particular aspect of democracy, the narrower the confidence intervals. The more the underlying indicators are in disagreement, the wider the confidence intervals.

If the confidence levels overlap when comparing the scores for two or more countries on the same GSoD (attribute) index, the difference between the scores is not statistically significant. Similarly, overlapping confidence intervals for different years when comparing the scores of one country for a particular GSoD index also indicates that the difference is statistically insignificant. More generally, short-term fluctuations are hard to capture and should be interpreted with caution, while it is usually possible to be certain about longer-term trends.

### STEP 7: COMPUTING THE CONFIDENCE INTERVALS

Confidence intervals were computed by subtracting or adding the standard deviation from the estimated score. The lower bound of the 68 per cent confidence interval was computed by subtracting the standard deviation from the estimated score of the index, while the upper bound of the 68 per cent confidence interval was computed by adding the standard deviation to the estimated score of the index. These values were saved in the data set so that each index is represented by three different values: the point estimate and the two limits of the confidence interval. Confidence intervals have been computed for all the attributes and subattributes of democracy with the exception of the inclusive suffrage (1.2), electoral participation (5.2) and direct democracy (5.3) subattributes, which are composed of a single indicator, and the subnational elections (5.4) subattribute, which is aggregated using a formative formula.

## 8. Validity checks

A series of validity checks on the indices was run throughout the process of constructing International IDEA's GSoD indices. These tests were conducted to verify that the indices constructed really measure what they are thought to be measuring. Comparisons with extant measures should indicate a high degree of correspondence between the GSoD measures and existing measures of the same phenomena.

### STEP 8: VALIDITY CHECKS

As discussed in Step 4, the dimensionality of each index was tested by running bivariate correlations for the indicators included in the index, various factor analyses and computing Cronbach's Alpha coefficients. The correlation coefficients are shown in Annex F and the data from the dimensionality tests in Annex E.

In addition to the unidimensionality tests discussed above, a second type of validity check compared extant measures that attempt to capture relatively similar aspects of democracy at the attribute, subattribute or subcomponent levels. These measures were taken from nine large-scale data collection projects: the Bertelsmann Transformation Index (Bertelsmann Stiftung, various years); the CIRI Human Rights Database (Cingranelli, Richards and Clay 2014); the Democracy Index (Economist Intelligence Unit 2016); the Freedom in the World survey (Freedom House 2016); the Perceptions of Electoral Integrity (PEI) data (Norris et al. 2016); Polity IV data (Marshall, Gurr and Jaggers 2016); the Worldwide Governance Indicators



(Kaufmann and Kray 2010); the Rule of Law Index (World Justice Project 2016); and the Varieties of Democracy (Coppedge et al. 2016a, 2016b). For a summary of these data sets see Table G.1.

Assuming that the extant measures are valid, high correlations would indicate that the GSoD indices are also valid. If the extant measures are based on similar or the same information, high correlations would indicate that the GSoD indices are reliable. However, correlations should be interpreted with caution since none of the extant measures are perfect and many of them capture slightly different concepts compared to the GSoD indices.

The correlations between the GSoD indices and existing data sets that measure relatively similar concepts are shown in Annex G. For more information see *The Global State of Democracy Indices Methodology: Conceptualization and Measurement Framework* (Skaaning 2017). Overall, the correlations presented in Annex G offer sufficient evidence that the GSoD indices are characterized by high levels of validity and reliability.

An additional validity check conducted for both the indicators and the indices as constructed at various levels of aggregation was to plot the indicators and indices over time for each country in the data set and visually checking their validity using specific country knowledge and expertise. This method allowed easy identification of whether the indices constructed corresponded to or contradicted team-based knowledge of the situation in a particular country.

Finally, all the countries in each of the indices were sorted at 10-year intervals (1975, 1985, 1995, 2005, and 2015) to check again the face validity of the indices by comparing their relative position at these times, as well as the changes in their relative position over time, to confirm that these conformed with existing knowledge of the evolution of different countries over the period.

## Conclusion

This Guide presents the technical procedures used to construct International IDEA's Global State of Democracy indices to provide a guide for those who want a better understanding of how the indices were constructed and, eventually, for those who want to use, modify or build on the indices. It provides a detailed step-by-step description of the procedures used, allowing the interested reader to follow each step.

It should be noted that this technical methodology only provides information about the method used to construct the indices. The information presented in this document builds on and is complemented by an elaborate discussion of the conceptual background to the indices in the GSoD indices methodology (Skaaning 2017). If the reader is interested in a particular indicator used, more information is available in the GSoD Codebook (Tufis 2017). These three documents taken together provide complete information on the GSoD indices.

The Annexes present additional information that some readers or users of the GSoD indices might find useful, including a complete list of the data sets used as data sources (Annex A); a list of the countries, regions and subregions in the GSoD data set (Annex B); a list of the regional organizations included in the GSoD data set (Annex C); the attributes, subattributes and indicators included in the GSoD data set (Annex D); and the results of the unidimensionality and validity tests performed during the creation of the GSoD data set (Annexes E, F and G).

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## Annex A

### Sources

TABLE A.1.

#### Data sets used for collecting indicators

Data set	Type of data	Number of indicators	Spatial coverage	Temporal coverage
Civil Liberties Dataset (CLD)	IC	5	207 countries	1976–2010
Food and Agriculture Organization (FAO)	OD	1	245 countries	1961–2015
Gapminder	OD	2	Varying	Varying
Global Health Data Exchange (GHDx)	OD	2	195 countries	1970–2015
Human Rights Protection Scores (HRPS)	CM	1	202 countries	1949–2013
International Country Risk Guide (ICRG)	ES	3	140 countries	1984–2015
Inter-Parliamentary Union (IPU)	OD	1	193 countries	1987–2015
Lexical Index of Electoral Democracy (LIED)	IC, OD	4	All independent	1800–2013
Latent Judicial Independence Scores (LJIS)	CM	1	200 countries	1948–2012
Media Freedom Data (MFD)	IC	1	196 countries	1948–2014
National Elections Across Democracy and Autocracy (NELDA)	IC, OD	3	200 countries	1960–2006
Polity IV	IC	4	167 countries	1800–2015
United Nation Educational, Scientific and Cultural Organization (UNESCO)	OD	1	varying	Varying
Varieties of Democracy (V-Dem)	CM, ES, IC, OD	68	177 countries	1900–2015

**Note:** ES = expert surveys; IC = standards-based in-house coding; OD = observational data; CM = composite measures.

## Annex B

## Countries, regions and subregions included in International IDEA's GSoD indices

TABLE B.1.

## List of countries included in International IDEA's GSoD Indices

Country	First Year	Last Year	Country-years
Afghanistan	1975	2015	41
Albania	1975	2015	41
Algeria	1975	2015	41
Angola	1975	2015	41
Argentina	1975	2015	41
Armenia	1991	2015	25
Australia	1975	2015	41
Austria	1975	2015	41
Azerbaijan	1991	2015	25
Bangladesh	1975	2015	41
Belarus	1991	2015	25
Belgium	1975	2015	41
Benin	1975	2015	41
Bolivia	1975	2015	41
Bosnia and Herzegovina	1992	2015	24
Botswana	1975	2015	41
Brazil	1975	2015	41
Bulgaria	1975	2015	41
Burkina Faso	1975	2015	41
Burundi	1975	2015	41
Cambodia	1975	2015	41
Cameroon	1975	2015	41
Canada	1975	2015	41
Central African Republic	1975	2015	41
Chad	1975	2015	41
Chile	1975	2015	41
China	1975	2015	41
Colombia	1975	2015	41
Costa Rica	1975	2015	41
Côte d'Ivoire	1975	2015	41
Croatia	1991	2015	25

Country	First Year	Last Year	Country-years
Cuba	1975	2015	41
Cyprus	1975	2015	41
Czechia	1975	2015	41
Democratic People's Republic of Korea	1975	2015	41
Democratic Republic of the Congo (DRC)	1975	2015	41
Denmark	1975	2015	41
Dominican Republic	1975	2015	41
Ecuador	1975	2015	41
Egypt	1975	2015	41
El Salvador	1975	2015	41
Eritrea	1993	2015	23
Estonia	1991	2015	25
Ethiopia	1975	2015	41
Finland	1975	2015	41
France	1975	2015	41
Gabon	1975	2015	41
Gambia	1975	2015	41
Georgia	1991	2015	25
German Democratic Republic	1975	1990	16
Germany	1975	2015	41
Ghana	1975	2015	41
Greece	1975	2015	41
Guatemala	1975	2015	41
Guinea	1975	2015	41
Guinea-Bissau	1975	2015	41
Haiti	1975	2015	41
Honduras	1975	2015	41
Hungary	1975	2015	41
India	1975	2015	41
Indonesia	1975	2015	41
Iran	1975	2015	41
Iraq	1975	2015	41
Ireland	1975	2015	41
Israel	1975	2015	41
Italy	1975	2015	41
Jamaica	1975	2015	41
Japan	1975	2015	41
Jordan	1975	2015	41

Country	First Year	Last Year	Country-years
Kazakhstan	1991	2015	25
Kenya	1975	2015	41
Kosovo	2008	2015	8
Kuwait	1975	2015	41
Kyrgyzstan	1991	2015	25
Laos	1975	2015	41
Latvia	1991	2015	25
Lebanon	1975	2015	41
Lesotho	1975	2015	41
Liberia	1975	2015	41
Libya	1975	2015	41
Lithuania	1991	2015	25
Macedonia	1991	2015	25
Madagascar	1975	2015	41
Malawi	1975	2015	41
Malaysia	1975	2015	41
Mali	1975	2015	41
Mauritania	1975	2015	41
Mauritius	1975	2015	41
Mexico	1975	2015	41
Moldova	1991	2015	25
Mongolia	1975	2015	41
Morocco	1975	2015	41
Mozambique	1975	2015	41
Myanmar	1975	2015	41
Namibia	1990	2015	26
Nepal	1975	2015	41
Netherlands	1975	2015	41
New Zealand	1975	2015	41
Nicaragua	1975	2015	41
Niger	1975	2015	41
Nigeria	1975	2015	41
Norway	1975	2015	41
Oman	1975	2015	41
Pakistan	1975	2015	41
Panama	1975	2015	41
Papua New Guinea	1975	2015	41
Paraguay	1975	2015	41



Country	First Year	Last Year	Country-years
Peru	1975	2015	41
Philippines	1975	2015	41
Poland	1975	2015	41
Portugal	1975	2015	41
Qatar	1975	2015	41
Republic of Congo	1975	2015	41
Republic of Korea	1975	2015	41
Romania	1975	2015	41
Russia	1975	2015	41
Rwanda	1975	2015	41
Saudi Arabia	1975	2015	41
Senegal	1975	2015	41
Serbia	1975	2015	41
Sierra Leone	1975	2015	41
Singapore	1975	2015	41
Slovakia	1993	2015	23
Slovenia	1991	2015	25
Somalia	1975	2015	41
South Africa	1975	2015	41
South Sudan	2011	2015	5
Spain	1975	2015	41
Sri Lanka	1975	2015	41
Sudan	1975	2015	41
Swaziland	1975	2015	41
Sweden	1975	2015	41
Switzerland	1975	2015	41
Syria	1975	2015	41
Taiwan	1975	2015	41
Tajikistan	1991	2015	25
Tanzania	1975	2015	41
Thailand	1975	2015	41
Timor-Leste	2002	2015	14
Togo	1975	2015	41
Trinidad and Tobago	1975	2015	41
Tunisia	1975	2015	41
Turkey	1975	2015	41
Turkmenistan	1991	2015	25
Uganda	1975	2015	41

Country	First Year	Last Year	Country–years
Ukraine	1991	2015	25
United Kingdom	1975	2015	41
United States	1975	2015	41
Uruguay	1975	2015	41
Uzbekistan	1991	2015	25
Venezuela	1975	2015	41
Viet Nam	1975	2015	41
Yemen	1975	2015	41
Zambia	1975	2015	41
Zimbabwe	1975	2015	41

TABLE B.2.

## Division of countries into regions as covered by the GSoD indices (2017)

Region	Countries
<b>Africa</b>	
<i>East Africa</i>	Burundi, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, Tanzania, Uganda
<i>Central Africa</i>	Cameroon, Central African Republic, Chad, Democratic Republic of the Congo (DRC), Gabon, Republic of Congo
<i>Southern Africa</i>	Angola, Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Zambia, Zimbabwe
<i>West Africa</i>	Benin, Burkina Faso, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo
<i>North Africa</i>	Algeria, Egypt, Libya, Morocco, South Sudan, Sudan, Tunisia,
<b>Latin America and the Caribbean</b>	
<i>Caribbean</i>	Cuba, Dominican Republic, Haiti, Jamaica, Trinidad and Tobago
<i>Central America and Mexico</i>	Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama
<i>South America</i>	Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela
<b>North America</b>	
<i>North America</i>	Canada, United States of America
<b>Asia and the Pacific</b>	
<i>Central Asia</i>	Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan
<i>East Asia</i>	China, Democratic People's Republic of Korea, Japan, Mongolia, Republic of Korea, Taiwan
<i>South Asia</i>	Afghanistan, Bangladesh, India, Nepal, Pakistan, Sri Lanka
<i>South East Asia</i>	Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, Viet Nam
<i>Oceania</i>	Australia, New Zealand, Papua New Guinea

Region	Countries
<b>Middle East and Iran</b>	
<i>Middle East and Iran</i>	Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Yemen
<b>Europe</b>	
<i>East-Central Europe</i>	Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Estonia, German Democratic Republic, Hungary, Kosovo, Latvia, Lithuania, Macedonia, Poland, Romania, Serbia, Slovakia, Slovenia
<i>Eastern Europe/Post-Soviet Europe</i>	Armenia, Azerbaijan, Belarus, Georgia, Moldova, Russia, Ukraine
<i>North and West Europe</i>	Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Netherlands, Norway, Sweden, Switzerland, United Kingdom
<i>South Europe</i>	Cyprus, Greece, Israel, Italy, Portugal, Spain, Turkey

**Note:** Country names in this list do not represent the official position of International IDEA with regard to the legal status or policy of the entities mentioned. The list represents a harmonization of often-divergent lists and practices.

## Annex C

### Regional organizations included in the data set

TABLE C.1.

#### Regional organizations included in the data set

Regional organization	Countries
<b>African Union (AU)</b>	Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Democratic Republic of the Congo (DRC), Egypt, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Republic of Congo, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe
<b>Association of South East Asian Nations (ASEAN)</b>	Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam
<b>European Union (EU)</b>	Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom
<b>Organization for Economic Co-operation and Development (OECD)</b>	Australia, Austria, Belgium, Canada, Chile, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Japan, Latvia, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, Republic of Korea, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States
<b>Organization of American States (OAS)</b>	Argentina, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, United States, Uruguay, Venezuela

## Annex D

## Attributes, subattributes and indicators

TABLE D.1.

## Attributes, subattributes, assessment questions and empirical indicators

Attributes	Subattributes	Assessment questions	No.	Indicators
1. Representative Government	1.1. Clean Elections	To what extent are elections free from irregularities?	1.1.1	EMB autonomy
			1.1.2	Election voter registry
			1.1.3	Election other voting irregularities
			1.1.4	Election government intimidation
			1.1.5	Election free and fair
			1.1.6	Competition
	1.2. Inclusive Suffrage	To what extent do all adult citizens have voting rights?	1.2.1	Suffrage
	1.3. Free Political Parties	To what extent are political parties free to form and campaign for office?	1.3.1	Party ban
			1.3.2	Barriers to parties
			1.3.3	Opposition parties’ autonomy
			1.3.4	Elections multiparty
			1.3.5	Competitiveness of participation
			1.3.6	Multiparty elections
			1.3.7	Was opposition allowed?
			1.3.8	Was more than one party legal?
			1.3.9	Were opposition leaders prevented from running?
	1.4. Elected Government	To what extent is access to government determined by elections?	1.4.1	Elected executive index
			1.4.2	Competitiveness of executive recruitment
			1.4.3	Openness of executive recruitment
			1.4.4	Legislative elections
			1.4.5	Executive elections
2. Fundamental Rights	2.1. Access to Justice	To what extent is there equal, fair access to justice?	2.1.1	Access to justice for men
			2.1.2	Access to justice for women
			2.1.3	Judicial corruption decision
			2.1.4	Judicial accountability
			2.1.5	Fair trial
	2.2. Civil Liberties	To what extent are civil liberties respected?	Subcomponent 2.2.A: Freedom of Expression	
			2.2.1	Print/broadcast censorship effort
			2.2.2	Harassment of journalists
			2.2.3	Media self-censorship
			2.2.4	Freedom of discussion for women
			2.2.5	Freedom of discussion for men
			2.2.6	Freedom of academic and cultural expression
			2.2.7	Freedom of opinion and expression

Attributes	Subattributes	Assessment questions	No.	Indicators
<b>2. Fundamental Rights</b>	<b>2.2. Civil Liberties</b>	To what extent are civil liberties respected?	<b>Subcomponent 2.2.B: Freedom of Association and Assembly</b>	
			2.2.8	CSO entry and exit
			2.2.9	CSO repression
			2.2.10	Freedom of assembly and association
			<b>Subcomponent 2.2.C: Freedom of Religion</b>	
			2.2.11	Freedom of religion
			2.2.12	Religious organization repression
			2.2.13	Freedom of thought, conscience and religion
			<b>Subcomponent 2.2.D: Freedom of Movement</b>	
			2.2.14	Freedom of foreign movement
			2.2.15	Freedom of domestic movement for women
			2.2.16	Freedom of domestic movement for men
			2.2.17	Freedom of movement and residence
			<b>Subcomponent 2.2.E: Personal Integrity and Security</b>	
			2.2.18	Freedom from forced labour for women
			2.2.19	Freedom from forced labour for men
			2.2.20	Freedom from torture
			2.2.21	Freedom from political killings
			2.2.22	Human rights protection scores
			2.2.23	Internal conflict
	<b>2.3. Social Rights and Equality</b>	To what extent are basic welfare and social and political equality realized?	<b>Subcomponent 2.3.A: Social Group Equality</b>	
			2.3.1	Social class equality in respect for civil liberties
			2.3.2	Social group equality in respect for civil liberties
			2.3.3	Power distributed by socio-economic position
			2.3.4	Power distributed by social group
			2.3.5	Representation of disadvantaged social groups
			<b>Subcomponent 2.3.B: Basic Welfare</b>	
			2.3.6	Infant mortality rate
			2.3.7	Life expectancy
			2.3.8	Kilocalories per person per day
			2.3.9	Literacy
			2.3.10	Mean years of schooling
			2.3.11	Educational equality
			2.3.12	Health equality
			<b>Subcomponent 2.3.C: Gender Equality</b>	
			2.3.13	Power distributed by gender
			2.3.14	CSO women's participation
			2.3.15	Female vs. male mean years of schooling
			2.3.16	Lower chamber female legislators
			2.3.17	Proportion of women in ministerial level positions

Attributes	Subattributes	Assessment questions	No.	Indicators
<b>3. Checks on Government</b>	<b>3.1. Effective Parliament</b>	To what extent does parliament oversee the executive?	3.1.1	Legislature questions officials in practice
			3.1.2	Executive oversight
			3.1.3	Legislature investigates in practice
			3.1.4	Legislature opposition parties
			3.1.5	Executive constraints
	<b>3.2. Judicial Independence</b>	To what extent are the courts independent?	3.2.1	High Court independence
			3.2.2	Lower court independence
			3.2.3	Compliance with High Court
			3.2.4	Compliance with judiciary
			3.2.5	Latent judicial independence
	<b>3.3. Media Integrity</b>	To what extent are there diverse, critical media?	3.3.1	Critical print/broadcast media
			3.3.2	Print/broadcast media perspectives
			3.3.3	Media bias
			3.3.4	Media corrupt
			3.3.5	Media freedom
<b>4. Impartial Administration</b>	<b>4.1. Absence of Corruption</b>	To what extent is the exercise of public authority free from corruption?	4.1.1	Public sector corrupt exchanges
			4.1.2	Public sector theft
			4.1.3	Executive embezzlement and theft
			4.1.4	Executive bribery and corrupt exchanges
			4.1.5	Corruption
	<b>4.2. Predictable Enforcement</b>	To what extent is the enforcement of public authority predictable?	4.2.1	Executive respects constitution
			4.2.2	Transparent laws with predictable enforcement
			4.2.3	Rigorous and impartial public administration
			4.2.4	Bureaucratic quality
<b>5. Participatory Engagement</b>	<b>5.1. Civil Society Participation</b>	To what extent do people participate in civil society organizations?	5.1.1	CSO participatory environment
			5.1.2	Engaged society
	<b>5.2. Electoral Participation</b>	To what extent do people participate in national elections?	5.2.1	Election voting age population (VAP) turnout
	<b>5.3. Direct Democracy</b>	To what extent are mechanisms of direct democracy available and used?	5.3.1	Direct popular vote index
			5.4.1	Local government elected
	<b>5.4. Subnational Elections</b>	To what extent are there free regional and local elections?	5.4.2	Regional government elected
			5.4.3	Subnational elections free and fair

TABLE D.2.

## Overview of indicators and sources

No.	Indicator	Description / question	Data set
<b>1. Representative Government</b> (free and equal access to political power)			
<b>1.1. Indicators of Clean Elections</b>			
1.1.1	EMB autonomy (v2elembaut)	ES: Does the election management body (EMB) have autonomy from government to apply election laws and administrative rules impartially in national elections?	V-Dem
1.1.2	Election voter registry (v2elrgstry)	ES: In this national election, was there a reasonably accurate voter registry in place and was it used?	V-Dem
1.1.3	Election: other voting irregularities (v2elirreg)	ES: In this national election, was there evidence of other intentional irregularities by incumbent and/or opposition parties, and/or vote fraud?	V-Dem
1.1.4	Election government intimidation (v2elintim)	ES: In this national election, were opposition candidates/parties/campaign workers subjected to repression, intimidation, violence or harassment by the government, the ruling party or their agents?	V-Dem
1.1.5	Election free and fair (v2elfrfair)	ES: Taking all aspects of the pre-election period, election day and the post-election process into account, would you consider this national election to be free and fair?	V-Dem
1.1.6	Competition (competitive elections)	IC: The chief executive offices and seats in the effective legislative body are filled by elections characterized by uncertainty, meaning that the elections are, in principle, sufficiently free to enable the opposition to gain power if it were to attract sufficient support from the electorate.	LIED
<b>1.2. Indicators of Inclusive Suffrage</b>			
1.2.1	Suffrage (v2elsuffrage)	OD: What percentage (%) of adult citizens (as defined by statute) has the legal right to vote in national elections?	V-Dem
<b>1.3. Indicators of Free Political Parties</b>			
1.3.1	Party ban (v2psparban)	ES: Are any political parties banned?	V-Dem
1.3.2	Barriers to parties (v2psbars)	ES: How restrictive are the barriers to forming a party?	V-Dem
1.3.3	Opposition parties' autonomy (v2psoppaut)	ES: Are opposition parties independent and autonomous of the ruling regime?	V-Dem
1.3.4	Elections multiparty (v2elmpar)	ES: Was this national election multiparty?	V-Dem
1.3.5	Competitiveness of participation (parcomp)	IC: The competitiveness of participation refers to the extent to which alternative preferences for policy and leadership can be pursued in the political arena.	Polity
1.3.6	Multiparty elections (multiparty legislative elections)	IC: The lower house (or unicameral chamber) of the legislature is (at least in part) elected by voters faced with more than one choice. Specifically, parties are not banned and more than one party is allowed to compete or elections are non-partisan (i.e. all candidates run without party labels).	LIED
1.3.7	Was opposition allowed? (NELDA 3)	IC: At least one opposition political party existed to contest the election.	NELDA
1.3.8	Was more than one party legal? (NELDA 4)	IC: Multiple political parties were technically legal	NELDA
1.3.9	Were opposition leaders prevented from running? (NELDA 13)	IC: At least some opposition leaders were prevented from running and contesting the elections; a decision to boycott the election if in response to the government preventing opposition figures from running; or opposition was not allowed.	NELDA



No.	Indicator	Description / question	Data set
<b>1.4. Indicators of Elected Government</b>			
1.4.1	Elected executive index (v2x_accex)	CM: Measure based on 12 variables from the V-Dem expert survey, in-house coding and observational data collected by V-Dem. <sup>1</sup>	V-Dem
1.4.2	Competitiveness of executive recruitment (xrcomp)	IC: Competitiveness refers to the extent that prevailing modes of advancement give subordinates equal opportunities to become superordinates.	Polity
1.4.3	Openness of executive recruitment (xropen)	IC: Recruitment of the chief executive is 'open' to the extent that all the politically active population has an opportunity, in principle, to attain the position through a regularized process.	Polity
1.4.4	Legislative elections (legislative elections)	IC: A legislative body issues at least some laws and does not perform executive functions. The lower house (or unicameral chamber) of the legislature is at least partly elected. The legislature has not been closed.	LIED
1.4.5	Executive elections (executive elections)	IC: The chief executive is either directly or indirectly elected (i.e. chosen by people who have been elected).	LIED
<b>2. Fundamental Rights (individual liberties and resources)</b>			
<b>2.1. Indicators of Access to Justice</b>			
2.1.1	Access to justice for men (v2clacjstm)	ES: Do men enjoy secure and effective access to justice?	V-Dem
2.1.2	Access to justice for women (v2clacjstw)	ES: Do women enjoy equal, secure and effective access to justice?	V-Dem
2.1.3	Judicial corruption decision (v2jucorrdc)	ES: How often do individuals or businesses make undocumented extra payments or bribes in order to speed up or delay the process or to obtain a favourable judicial decision?	V-Dem
2.1.4	Judicial accountability (v2juacct)	ES: When judges are found responsible for serious misconduct, how often are they removed from their posts or otherwise disciplined?	V-Dem
2.1.5	Fair trial (fairtrial)	IC: Extent to which citizens have the right to a fair trial in practice, that is, they are not subjected to arbitrary arrest, detention or exile; they have the right to recognition as a person before the law, the right to be under the jurisdiction of, and to seek redress from, competent, independent and impartial tribunals, and the right to be heard; and they are entitled to trial without undue delay if arrested, detained or charged with a criminal offence.	CLD
<b>2.2. Indicators of Civil Liberties</b>			
<b>2.2.A. Freedom of Expression</b>			
2.2.1	Print/ broadcast censorship effort (v2mecenefm)	ES: Does the government directly or indirectly attempt to censor the print or broadcast media?	V-Dem
2.2.2	Harassment of journalists (v2meharjrn)	ES: Are individual journalists harassed; that is, threatened with libel, arrested, imprisoned, beaten or killed, by governmental or powerful non-governmental actors while engaged in legitimate journalistic activities?	V-Dem
2.2.3	Media self-censorship (v2meslfcen)	ES: Is there self-censorship among journalists when reporting on issues that the government considers politically sensitive?	V-Dem
2.2.4	Freedom of discussion for women (v2cldiscw)	ES: Are women able to openly discuss political issues in private homes and in public spaces?	V-Dem
2.2.5	Freedom of discussion for men (v2cldiscm)	ES: Are men able to openly discuss political issues in private homes and in public spaces?	V-Dem
2.2.6	Freedom of academic and cultural expression (v2clacfree)	ES: Is there academic freedom and freedom of cultural expression related to political issues?	V-Dem
2.2.7	Freedom of opinion and expression (freexp)	IC: The extent to which individual citizens, groups and the media have freedom of opinion and expression, that is, the right of the citizens, groups and press to hold views freely and to seek, obtain and pass on information on political issues as broadly understood without being subject to actual limitations or restrictions.	CLD

No.	Indicator	Description / question	Data set
<b>2.2.B. Freedom of Association and Assembly</b>			
2.2.8	CSO entry and exit (v2cseeorgs)	ES: To what extent does the government achieve control over entry and exit by civil society organizations into public life?	V-Dem
2.2.9	CSO repression (v2csreprss)	ES: Does the government attempt to repress civil society organizations?	V-Dem
2.2.10	Freedom of assembly and association (freass)	IC: The extent to which individuals and groups have freedom of assembly and association, that is, the right of citizens to gather freely and carry out peaceful demonstrations as well as to join, form and participate with other persons in political parties, cultural organizations, trade unions or the like of their choice without being subject to limitations or restrictions.	CLD
<b>2.2.C. Freedom of Religion</b>			
2.2.11	Freedom of religion (v2clrelig)	ES: Is there freedom of religion?	V-Dem
2.2.12	Religious organization repression (v2csrlrgrep)	ES: Does the government attempt to repress religious organizations?	V-Dem
2.2.13	Freedom of thought, conscience and religion (frerel)	IC: The extent to which individuals and groups have freedom of thought, conscience and religion, that is, the right of the citizens to have and change their religion or belief of choice; and alone or in community manifest their religion or belief in practice, worship, observance and teaching, in private or public, as well as to proselytize peacefully without being subject to limitations or restrictions.	CLD
<b>2.2.D. Freedom of Movement</b>			
2.2.14	Freedom of foreign movement (v2clfmov)	ES: Is there freedom of foreign travel and emigration?	V-Dem
2.2.15	Freedom of domestic movement for women (v2cldmovew)	ES: Do women enjoy freedom of movement within the country?	V-Dem
2.2.16	Freedom of domestic movement for men (v2cldmovem)	ES: Do men enjoy freedom of movement within the country?	V-Dem
2.2.17	Freedom of movement and residence (fremov)	IC: The extent to which individuals and groups have freedom of movement and residence, that is, the right of citizens to settle and travel in their country as well as to leave and return to their country of their own volition without being subject to limitations or restrictions.	CLD
<b>2.2.E. Personal Integrity and Security</b>			
2.2.18	Freedom from forced labour for women (v2clslavef)	ES: Are adult women free from servitude and other kinds of forced labour?	V-Dem
2.2.19	Freedom from forced labour for men (v2clslavem)	ES: Are adult men free from servitude and other kinds of forced labour?	V-Dem
2.2.20	Freedom from torture (v2cltort)	ES: Is there freedom from torture?	V-Dem
2.2.21	Freedom from political killings (v2clkill)	ES: Is there freedom from political killings?	V-Dem
2.2.22	Human rights protection scores	Measure based on 13 in-house coded variables from nine different data sets. <sup>2</sup>	Fariss
2.2.23	Internal conflict (D)	ES: Is there political violence in the country? The rating assigned is the sum of three subcomponents: civil war/coup threat, terrorism/political violence and civil disorder	ICRG

No.	Indicator	Description / question	Data set
<b>2.3. Indicators of Social Rights and Equality</b>			
<b>2.3.A. Social Group Equality</b>			
2.3.1	Social class equality in respect for civil liberties (v2clacjust)	ES: Do poor people enjoy the same level of civil liberties as rich people do?	V-Dem
2.3.2	Social group equality in respect for civil liberties (v2clsocgrp)	ES: Do all social groups, as distinguished by language, ethnicity, religion, race, region or caste, enjoy the same level of civil liberties, or are some groups generally in a more favourable position?	V-Dem
2.3.3	Power distributed by socio-economic position (v2pepwrse)	ES: Is political power distributed according to socio-economic position?	V-Dem
2.3.4	Power distributed by social group (v2pepwrso)	ES: Is political power distributed according to social groups?	V-Dem
2.3.5	Representation of disadvantaged social groups (v2lgdsadl)	ES: Considering all disadvantaged social groups in the country, how well represented are these groups, as a whole, in the national legislature?	V-Dem
<b>2.3.B. Basic Welfare</b>			
2.3.6	Infant mortality rate	OD	Gapminder
2.3.7	Life expectancy	OD	Gapminder
2.3.8	Kilocalories per person per day	OD	FAO
2.3.9	Literacy	OD	UNESCO
2.3.10	Mean years of schooling	OD	GHDx
2.3.11	Educational equality (v2peedueq)	ES: To what extent is high quality basic education guaranteed to all, sufficient to enable them to exercise their basic rights as adult citizens?	V-Dem
2.3.12	Health equality (v2pehealth)	ES: To what extent is high quality basic health care guaranteed to all, sufficient to enable them to exercise their basic political rights as adult citizens?	V-Dem
<b>2.3.C. Gender Equality</b>			
2.3.13	Power distributed by gender (v2pepwrge)	ES: Is political power distributed according to gender?	V-Dem
2.3.14	CSO women's participation (v2csgender)	ES: Are women prevented from participating in civil society organizations?	V-Dem
2.3.15	Female vs. male mean years of schooling	OD	GHDx
2.3.16	Lower chamber female legislators (v2lgfemleg)	OD	V-Dem
2.3.17	Proportion of women in ministerial level positions	OD	IPU

No.	Indicator	Description / question	Data set
<b>3. Checks on Government</b> (effective control of executive power)			
<b>3.1. Indicators of Effective Parliament</b>			
3.1.1	Legislature questions officials in practice (v2lgqstexp)	ES: In practice, does the legislature routinely question executive branch officials?	V-Dem
3.1.2	Executive oversight (v2lgotovst)	ES: If executive branch officials were engaged in unconstitutional, illegal or unethical activity, how likely is it that a body other than the legislature, such as a comptroller general, general prosecutor or ombudsman, would question or investigate them and issue an unfavourable decision or report?	V-Dem
3.1.3	Legislature investigates in practice (v2lginvstp)	ES: If the executive were engaged in unconstitutional, illegal or unethical activity, how likely is it that a legislative body (perhaps a whole chamber, perhaps a committee, whether aligned with government or opposition) would conduct an investigation that would result in a decision or report that is unfavourable to the executive?	V-Dem
3.1.4	Legislature opposition parties (v2lgoppart)	ES: Are opposition parties (those not in the ruling party or coalition) able to exercise oversight and investigatory functions against the wishes of the governing party or coalition?	V-Dem
3.1.5	Executive constraints (xconst)	IC: The extent of institutionalized constraints on the decision-making powers of chief executives, whether individuals or collectivities.	Polity
<b>3.2. Indicators of Judicial Independence</b>			
3.2.1	High Court independence (v2juhcind)	ES: When the High Court in the judicial system is ruling in cases that are salient to the government, how often would you say that it makes decisions that merely reflect government wishes regardless of its sincere view of the legal record?	V-Dem
3.2.2	Lower court independence (v2juncind)	ES: When judges not on the High Court are ruling in cases that are salient to the government, how often would you say that their decisions merely reflect government wishes regardless of their sincere view of the legal record?	V-Dem
3.2.3	Compliance with High Court (v2juhcomp)	ES: How often would you say the government complies with important decisions of the High Court with which it disagrees?	V-Dem
3.2.4	Compliance with judiciary (v2jucomp)	ES: How often would you say the government complies with important decisions by other courts with which it disagrees?	V-Dem
3.2.5	Latent judicial independence	CM: Measure based on seven in-house coded variables and one observational variable from eight different data sets. <sup>3</sup>	Linzer / Staton
<b>3.3. Indicators of Media Integrity</b>			
3.3.1	Print/broadcast media critical (v2mecrit)	ES: Of the major print and broadcast media outlets, how many routinely criticize the government?	V-Dem
3.3.2	Print/broadcast media perspectives (v2merange)	ES: Do the major print and broadcast media represent a wide range of political perspectives?	V-Dem
3.3.3	Media bias (v2mebias)	ES: Is there media bias against opposition parties or candidates?	V-Dem
3.3.4	Media corrupt (v2mecorrupt)	ES: Do journalists, publishers or broadcasters accept payments in exchange for altering news coverage?	V-Dem
3.3.5	Media freedom	IC: Is criticism of government and government officials a common and normal part of the political dialogue in the mediated public sphere?	Media Freedom Data

No.	Indicator	Description / question	Data set
<b>4. Impartial Administration</b> (fair and predictable public administration)			
<b>4.1. Indicators of Absence of Corruption</b>			
4.1.1	Public sector corrupt exchanges (v2excrptps)	ES: How routinely do public sector employees grant favours in exchange for bribes, kickbacks or other material inducements?	V-Dem
4.1.2	Public sector theft (v2exthtps)	ES: How often do public sector employees steal, embezzle or misappropriate public funds or other state resources for personal or family use?	V-Dem
4.1.3	Executive embezzlement and theft (v2exembezt)	ES: How often do members of the executive (the head of state, head of government and cabinet ministers) or their agents steal, embezzle or misappropriate public funds or other state resources for personal or family use?	V-Dem
4.1.4	Executive bribery and corrupt exchanges (v2exbribe)	ES: How routinely do members of the executive (the head of state, the head of government and cabinet ministers) or their agents grant favours in exchange for bribes, kickbacks or other material inducements?	V-Dem
4.1.5	Corruption (F)	ES: How widespread is actual or potential corruption in the form of excessive patronage, nepotism, job reservations, 'favour-for-favours', secret party funding and suspiciously close ties between politics and business?	ICRG
<b>4.2. Indicators of Predictable Enforcement</b>			
4.2.1	Executive respects constitution (v2exrescon)	ES: Do members of the executive (the head of state, the head of government and cabinet ministers) respect the constitution?	V-Dem
4.2.2	Transparent laws with predictable enforcement (v2cltrnslw)	ES: Are the laws of the land clear, well-publicized, coherent (consistent with each other), relatively stable from year to year and enforced in a predictable manner?	V-Dem
4.2.3	Rigorous and impartial public administration (v2clrspct)	ES: Are public officials rigorous and impartial in the performance of their duties?	V-Dem
4.2.4	Bureaucratic quality (L)	ES: Bureaucracy has the strength and expertise to govern without drastic changes in policy or interruptions in government services.	ICRG
<b>5. Participatory Engagement</b> (instruments for and realization of political involvement)			
<b>5.1. Indicators of Civil Society Participation</b>			
5.1.1	CSO participatory environment (v2csprtpt)	ES: Are people involved in civil society organizations (CSOs)?	V-Dem
5.1.2	Engaged society (v2dlengage)	ES: When important policy changes are being considered, how wide and how independent are public deliberations?	V-Dem
<b>5.2. Indicators of Electoral Participation</b>			
5.2.1	Election: VAP turnout (v2elvaptrn)	OD	V-Dem
<b>5.3. Indicators of Direct Democracy</b>			
5.3.1	Direct popular vote index (v2xdd_dd)	CM: Measure based on 12 observable variables from V-Dem. It results from the combination of scores for each type of popular vote (popular initiatives, referendums, plebiscites and obligatory referendums). The measure captures how easy it is to initiate and approve each type of popular vote, and how consequential that vote is if approved. Ease of initiation is measured by the existence of a direct democratic process, the number of signatures needed, and time limits to collect signatures. Ease of approval is measured by quorums pertaining to participation, approval, supermajority and district majority. Consequences are measured by the legal status of the decision made by citizens (binding or consultative) and the frequency with which direct popular votes have been used and approved in the past.	V-Dem

No.	Indicator	Description / question	Data set
<b>5.4. Indicators of Subnational Elections</b>			
5.4.1	Local government elected (vzellocelc)	IC: At the local level, are government (local government) offices elected in practice?	V-Dem
5.4.2	Regional government elected (vzelsrgel)	IC: At the regional level, are government offices elected in practice?	V-Dem
5.4.3	Subnational elections free and fair (vzelffelr)	ES: Taking all aspects of the pre-election period, election day and the post-election process into account, would you consider subnational elections (regional and local, as previously identified) to be free and fair on average?	V-Dem

**Note:** ES = expert surveys; IC = standards-based in-house coding; OD = observational data; CM = composite measures.

<sup>1</sup> The 15 variables are: legislature closed down or aborted, lower chamber elected, upper chamber elected, legislature dominant chamber, head of state selection by legislature in practice, head of state appointment in practice, head of government selection by legislature in practice, head of government appointment in practice, head of state appoints cabinet in practice, head of government appoints cabinet in practice, head of state dismisses ministers in practice, head of government dismisses ministers in practice, head of state also head of government, chief executive appointment by upper chamber explicit approval, chief executive appointment by upper chamber.

<sup>2</sup> The nine data sets are: the CIRI physical integrity data (extrajudicial killings, disappearances, torture, political imprisonment) (Cingranelli and Richards 2014); Hathaway torture data (Hathaway, 2002); Ill-treatment and Torture (Conrad et al 2013); Political Terror Scale (Gilby and Dalton 1996); Mass-repression (Harff and Gurr 1998); Political Instability Task Force (PITF) (Marshall et al 2017); (PITF); Genocide and Democide (Rummel 1994a and 1994b); Uppsala Conflict Data Program One-sided Killing (Sundberg 2009) (UCDP); World Handbook of Political and Social Indicators (Political Executions) (WHPSI) Taylor and Jodice 1983).

<sup>3</sup> The variables are de facto judicial independence (Feld and Voigt 2003; Gwartney and Lawson 2007; Keith 2012; Howard and Carey 2004; Cingranelli and Richards 2014), contract intensive money (Claume et al 1999), constraints on the executive (Marshall et al 2016) and law and order (Howell 2011).

TABLE D.3

## Indicator summary

ID	Indicator	Data set	Variable	Missing (N)	Missing (%)	Year (min)	Year (max)
1.1.1	EMB autonomy	V-Dem	V2elembaut	0	0.00%	1975	2015
1.1.2	Election voter registry	V-Dem	V2elrgstry	3	0.05%	1975	2015
1.1.3	Election: other voting irregularities	V-Dem	V2elirreg	3	0.05%	1975	2015
1.1.4	Election government intimidation	V-Dem	V2elintim	3	0.05%	1975	2015
1.1.5	Election free and fair	V-Dem	V2elfrfair	3	0.05%	1975	2015
1.1.6	Competition	LIED	competitive elections	4	0.07%	1975	2015
1.2.1	Suffrage	V-Dem	v2elsuffrage	0	0.00%	1975	2015
1.3.1	Party ban	V-Dem	v2psparban	0	0.00%	1975	2015
1.3.2	Barriers to parties	V-Dem	v2psbars	0	0.00%	1975	2015
1.3.3	Opposition parties' autonomy	V-Dem	v2psoppaut	130	2.21%	1975	2015
1.3.4	Elections multiparty	V-Dem	v2elmulpar	3	0.05%	1975	2015
1.3.5	Competitiveness of participation	Polity	parcomp	277	4.70%	1975	2015
1.3.6	Multiparty elections	LIED	multi-party elections	4	0.07%	1975	2015
1.3.7	Was opposition allowed?	NELDA	NELDA 3	71	1.20%	1975	2015
1.3.8	Was more than one party legal?	NELDA	NELDA 4	71	1.20%	1975	2015
1.3.9	Were opposition leaders prevented from running?	NELDA	NELDA 13	190	3.22%	1975	2015
1.4.1	Elected executive index	V-Dem	v2x_elecoff	1	0.02%	1975	2015
1.4.2	Competitiveness of executive recruitment	Polity	xrcomp	277	4.70%	1975	2015
1.4.3	Openness of executive recruitment	Polity	xropen	277	4.70%	1975	2015
1.4.4	Legislative elections	LIED	Leg. elections	4	0.07%	1975	2015
1.4.5	Executive elections	LIED	Exec. elections	4	0.07%	1975	2015
2.1.1	Access to justice for men	V-Dem	v2clacjstm	0	0.00%	1975	2015
2.1.2	Access to justice for women	V-Dem	v2clacjstw	0	0.00%	1975	2015
2.1.3	Judicial corruption decision	V-Dem	v2juccorrdc	0	0.00%	1975	2015
2.1.4	Judicial accountability	V-Dem	v2juaccnt	0	0.00%	1975	2015
2.1.5	Fair trial	CLD	fairtrial	18	0.31%	1975	2015
2.2.1	Print/ broadcast censorship	V-Dem	v2mecenefm	3	0.05%	1975	2015
2.2.2	Harassment of journalists	V-Dem	v2meharjrn	3	0.05%	1975	2015
2.2.3	Media self-censorship	V-Dem	v2meslfcen	3	0.05%	1975	2015
2.2.4	Freedom of discussion for women	V-Dem	v2cldiscw	0	0.00%	1975	2015
2.2.5	Freedom of discussion for men	V-Dem	v2cldiscm	0	0.00%	1975	2015
2.2.6	Freedom of academic and cultural expression	V-Dem	v2clacfree	0	0.00%	1975	2015

ID	Indicator	Data set	Variable	Missing (N)	Missing (%)	Year (min)	Year (max)
2.2.7	Freedom of opinion and expression	CLD	freexp	18	0.31%	1975	2015
2.2.8	CSO entry and exit	V-Dem	v2cseeorgs	0	0.00%	1975	2015
2.2.9	CSO repression	V-Dem	v2csreprss	3	0.05%	1975	2015
2.2.10	Freedom of assembly and association	CLD	freass	18	0.31%	1975	2015
2.2.11	Freedom of religion	V-Dem	v2clrelig	0	0.00%	1975	2015
2.2.12	Religious organization repression	V-Dem	v2csrlgrep	3	0.05%	1975	2015
2.2.13	Freedom of thought, conscience and religion	CLD	frerel	18	0.31%	1975	2015
2.2.14	Freedom of foreign movement	V-Dem	v2clfmov	0	0.00%	1975	2015
2.2.15	Freedom of domestic movement for women	V-Dem	v2cldmovew	0	0.00%	1975	2015
2.2.16	Freedom of domestic movement for men	V-Dem	v2cldmovem	0	0.00%	1975	2015
2.2.17	Freedom of movement and residence	CLD	fremov	18	0.31%	1975	2015
2.2.18	Freedom from forced labour for women	V-Dem	v2clslavef	0	0.00%	1975	2015
2.2.19	Freedom from forced labour for men	V-Dem	v2clslavem	0	0.00%	1975	2015
2.2.20	Freedom from torture	V-Dem	v2cltort	0	0.00%	1975	2015
2.2.21	Freedom from political killings	V-Dem	v2clkill	0	0.00%	1975	2015
2.2.22	Human rights protection scores	Fariss	latentmean	311	5.28%	1975	2013
2.2.23	Internal conflict	ICRG	D	1932	32.78%	1984	2015
2.3.1	Social class equality in respect for civil liberties	V-Dem	v2clacjust	0	0.00%	1975	2015
2.3.2	Social group equality in respect for civil liberties	V-Dem	v2clsocgrp	0	0.00%	1975	2015
2.3.3	Power distributed by socio-economic position	V-Dem	v2pepwrse	0	0.00%	1975	2015
2.3.4	Power distributed by social group	V-Dem	v2pepwrso	0	0.00%	1975	2015
2.3.5	Representation of disadvantaged social groups	V-Dem	v2lgdsadlo	468	7.94%	1975	2015
2.3.6	Infant mortality rate	Gapminder	---	52	0.88%	1975	2015
2.3.7	Life expectancy	Gapminder	---	24	0.41%	1975	2015
2.3.8	Kilocalories per person per day	FAOSTAT	---	380	6.45%	1975	2015
2.3.9	Literacy	UNESCO	---	2453	41.62%	1975	2015
2.3.10	Average years of schooling	GHDx	---	24	0.41%	1975	2015
2.3.11	Educational equality	V-Dem	v2peedueq	0	0.00%	1975	2015
2.3.12	Health equality	V-Dem	v2pehealth	0	0.00%	1975	2015
2.3.13	Power distributed by gender	V-Dem	v2pepwrge	0	0.00%	1975	2015
2.3.14	CSO women's participation	V-Dem	v2csgender	3	0.05%	1975	2015
2.3.15	Female vs. male mean years of schooling	GHDx	—	24	0.41%	1975	2015
2.3.16	Lower chamber female legislators	V-Dem	v2lgfemleg	296	5.02%	1975	2015
2.3.17	Proportion of women in ministerial level positions	IPU	—	1709	29.00%	1987	2015
3.1.1	Legislature questions officials in practice	V-Dem	v2lgqstexp	468	7.94%	1975	2015



ID	Indicator	Data set	Variable	Missing (N)	Missing (%)	Year (min)	Year (max)
3.1.2	Executive oversight	V-Dem	v2lgotovst	469	7.96%	1975	2015
3.1.3	Legislature investigates in practice	V-Dem	v2lginvstp	468	7.94%	1975	2015
3.1.4	Legislature opposition parties	V-Dem	v2lgoppart	467	7.92%	1975	2015
3.1.5	Executive constraints	Polity	xconst	277	4.70%	1975	2015
3.2.1	High Court independence	V-Dem	v2juhcind	0	0.00%	1975	2015
3.2.2	Lower court independence	V-Dem	v2juncind	0	0.00%	1975	2015
3.2.3	Compliance with High Court	V-Dem	v2juhccomp	0	0.00%	1975	2015
3.2.4	Compliance with judiciary	V-Dem	v2jucomp	0	0.00%	1975	2015
3.2.5	Latent judicial independence	Linzer / Staton	---	488	8.28%	1975	2012
3.3.1	Print/broadcast media critical	V-Dem	v2mecrit	3	0.05%	1975	2015
3.3.2	Print/broadcast media perspectives	V-Dem	v2merange	3	0.05%	1975	2015
3.3.3	Media bias	V-Dem	v2mebias	3	0.05%	1975	2015
3.3.4	Media corrupt	V-Dem	v2mecorrpt	3	0.05%	1975	2015
3.3.5	Media freedom	MFD	---	11	0.19%	1975	2015
4.1.1	Public sector corrupt exchanges	V-Dem	v2excrcpts	0	0.00%	1975	2015
4.1.2	Public sector theft	V-Dem	v2exthtfts	0	0.00%	1975	2015
4.1.3	Executive embezzlement and theft	V-Dem	v2exembez	0	0.00%	1975	2015
4.1.4	Executive bribery and corrupt exchanges	V-Dem	v2exbribe	0	0.00%	1975	2015
4.1.5	Corruption	ICRG	F	1932	32.78%	1984	2015
4.2.1	Executive respects constitution	V-Dem	v2exrescon	0	0.00%	1975	2015
4.2.2	Transparent laws with predictable enforcement	V-Dem	v2cltrnslw	0	0.00%	1975	2015
4.2.3	Rigorous and impartial public administration	V-Dem	v2clrspct	0	0.00%	1975	2015
4.2.4	Bureaucratic quality	ICRG	L	1932	32.78%	1984	2015
5.1.1	CSO participatory environment	V-Dem	v2csprtcpt	3	0.05%	1975	2015
5.1.2	Engaged society	V-Dem	v2dlengage	0	0.00%	1975	2015
5.2.1	Election: VAP turnout	V-Dem / IDEA	v2elvaptrn	688	11.67%	1975	2015
5.3.1	Direct popular vote index	V-Dem	v2xdd_dd	0	0.00%	1975	2015
5.4.1	Local government elected	V-Dem	v2ellocelc	126	2.14%	1975	2015
5.4.2	Regional government elected	V-Dem	v2elsrgel	467	7.92%	1975	2015
5.4.3	Subnational elections free and fair	V-Dem	v2elffelr	1135	19.26%	1975	2015

## Annex E

### Dimensionality tests

The empirical dimensionality of the indicators selected to capture latent theoretical concepts at all aggregation levels were assessed using Bayesian factor analysis models. For each model, the first 5,000 iterations of the chain were discarded and the next 100,000 iterations selected. Saving each 100th iteration of the chain produced a data set of 1000 estimates for the parameters of interest in the models. As a general strategy, Bayesian factor analysis models were estimated by asking for a single factor. Two- and in some cases three-factor models were also run but none of these showed a better general fit with regard to capturing the empirical dimensionality in the data than the unidimensional solutions. Moreover, Cronbach's Alpha (CA) was calculated as a measure of scalability. To inform the choices made, the pairwise bivariate correlation coefficients (Pearson's  $r$ ) were also calculated for each cluster of indicators. These are presented in Annex F. The tables in this Annex include, for each indicator, the loadings and their corresponding standard error, the uniqueness coefficients and their corresponding standard errors, and the Cronbach's Alpha coefficients computed for the scale with the item deleted.

### Factor loadings and Cronbach's alpha values

#### Attribute 1: Representative Government

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
1.1	Clean Elections	0.947	0.000	0.103	0.000	.845
1.3	Free Political Parties	-0.944	0.000	0.111	0.000	.880
1.4	Elected Officials	-0.837	0.000	0.299	0.000	.926
						Cronbach's alpha = .934

#### 1.1. Clean Elections

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
1.1.1	EMB autonomy	-0.948	0.000	0.102	0.000	.930
1.1.2	Election voter registry	-0.887	0.000	0.214	0.000	.939
1.1.3	Election other voting irregularities	-0.879	0.000	0.228	0.000	.939
1.1.4	Election government intimidation	-0.963	0.000	0.074	0.000	.933
1.1.5	Election free and fair	-0.980	0.000	0.041	0.000	.928
1.1.6	Competition	-0.812	0.000	0.341	0.000	.971
						Cronbach's alpha = .967

**1.3. Free Political Parties**

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
1.3.1	Party ban	-0.843	0.000	0.291	0.000	.954
1.3.2	Barriers to parties	-0.888	0.000	0.213	0.000	.952
1.3.3	Opposition parties' autonomy	-0.874	0.000	0.239	0.000	.953
1.3.4	Elections multiparty	-0.898	0.000	0.196	0.000	.951
1.3.5	Competitiveness of participation	-0.867	0.000	0.249	0.000	.953
1.3.6	Multiparty elections	-0.860	0.000	0.261	0.000	.951
1.3.7	Was opposition allowed?	-0.842	0.000	0.292	0.000	.951
1.3.8	Was more than one party legal?	-0.860	0.000	0.262	0.000	.950
1.3.9	Were opposition leaders prevented from running?	-0.824	0.000	0.323	0.000	.954
						Cronbach's alpha = .963

**1.4. Elected Government**

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
1.4.1	Elected executive index	-0.803	0.000	0.357	0.000	.803
1.4.2	Competitiveness of executive recruitment	-0.569	0.000	0.676	0.000	.854
1.4.3	Openness of executive recruitment	-0.639	0.000	0.592	0.000	.834
1.4.4	Legislative elections	-0.781	0.000	0.390	0.000	.828
1.4.5	Executive elections	-0.907	0.000	0.179	0.000	.796
						Cronbach's alpha = .860

**Attribute 2: Fundamental Rights**

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.1	Access to Justice	-0.944	0.000	0.109	0.000	.847
2.2	Civil Liberties	0.909	0.000	0.174	0.000	.878
2.3	Social Rights	0.829	0.000	0.311	0.000	.916
						Cronbach's alpha = .922

## 2.1. Access to Justice

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.1.1	Access to justice for men	0.980	0.000	0.041	0.000	.880
2.1.2	Access to justice for women	0.960	0.000	0.080	0.000	.883
2.1.3	Judicial corruption decision	0.675	0.000	0.545	0.000	.899
2.1.4	Judicial accountability	0.638	0.000	0.593	0.000	.910
2.1.5	Fair trial	0.856	0.000	0.268	0.000	.892
						Cronbach's alpha = .924

## 2.2. Civil Liberties

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.2.A	Freedom of expression	0.984	0.000	0.032	0.000	.937
2.2.B	Freedom of association and assembly	0.956	0.000	0.086	0.000	.943
2.2.C	Freedom of religion	0.853	0.000	0.272	0.000	.954
2.2.D	Freedom of movement	0.892	0.000	0.205	0.000	.949
2.2.E	Personal integrity and security	-0.865	0.000	0.253	0.000	.957
						Cronbach's alpha = .961

### 2.2.A. Freedom of expression

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.2.1	Print/ broadcast censorship effort	-0.938	0.000	0.120	0.000	.966
2.2.2	Harassment of journalists	-0.920	0.000	0.154	0.000	.968
2.2.3	Media self-censorship	-0.912	0.000	0.170	0.000	.969
2.2.4	Freedom of discussion for women	-0.960	0.000	0.079	0.000	.967
2.2.5	Freedom of discussion for men	-0.963	0.000	0.074	0.000	.967
2.2.6	Freedom of academic and cultural expression	-0.926	0.000	0.143	0.000	.969
2.2.7	Freedom of opinion and expression	-0.860	0.000	0.261	0.000	.977
						Cronbach's alpha = .977

*2.2.B. Freedom of association and assembly*

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.2.8	CSO entry and exit	-0.959	0.000	0.080	0.000	.854
2.2.9	CSO repression	-0.933	0.000	0.130	0.000	.874
2.2.10	Freedom of assembly and association	-0.867	0.000	0.249	0.000	.944
						Cronbach's alpha = .942

*2.2.C. Freedom of religion*

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.2.11	Freedom of religion	-0.935	0.000	0.126	0.000	.804
2.2.12	Religious organization repression	-0.885	0.000	0.217	0.000	.833
2.2.13	Freedom of thought, conscience and religion	-0.786	0.000	0.383	0.000	.905
						Cronbach's alpha = .901

*2.2.D. Freedom of movement*

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.2.14	Freedom of foreign movement	-0.900	0.000	0.190	0.000	.855
2.2.15	Freedom of domestic movement for women	-0.891	0.000	0.205	0.000	.873
2.2.16	Freedom of domestic movement for men	-0.907	0.000	0.176	0.000	.872
2.2.17	Freedom of movement and residence	-0.784	0.000	0.385	0.000	.924
						Cronbach's alpha = .926

*2.2.E. Personal integrity and security*

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.2.18	Freedom from forced labour for women	0.717	0.000	0.488	0.000	.903
2.2.19	Freedom from forced labour for men	0.682	0.000	0.537	0.000	.908
2.2.20	Freedom from torture	0.938	0.000	0.123	0.000	.891
2.2.21	Freedom from political killings	0.956	0.000	0.088	0.000	.888
2.2.22	Human rights protection scores	0.848	0.000	0.282	0.000	.894
2.2.23	Internal conflict	0.634	0.000	0.598	0.000	.924
						Cronbach's alpha = .918

### 2.3. Social Rights and Equality

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.3.A	Social group equality	-0.796	0.000	0.367	0.000	.787
2.3.B	Basic welfare	-0.752	0.000	0.434	0.000	.818
2.3.C	Gender equality	-0.871	0.000	0.242	0.000	.746
						Cronbach's alpha = .847

#### 2.3.A. Social group equality

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.3.1	Social class equality in respect for civil liberties	-0.888	0.000	0.212	0.000	.820
2.3.2	Social group equality in respect for civil liberties	-0.781	0.000	0.391	0.000	.846
2.3.3	Power distributed by socio-economic position	-0.787	0.000	0.381	0.000	.836
2.3.4	Power distributed by social group	-0.784	0.000	0.386	0.000	.840
2.3.5	Representation of disadvantaged social groups	-0.573	0.000	0.671	0.000	.883
						Cronbach's alpha = .873

#### 2.3.B. Basic welfare

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.3.6	Infant mortality rate	-0.978	0.000	0.046	0.000	.910
2.3.7	Life expectancy	-0.893	0.000	0.205	0.000	.922
2.3.8	Kilocalories per person per day	-0.706	0.001	0.503	0.000	.932
2.3.9	Literacy	-0.861	0.000	0.261	0.000	.917
2.3.10	Average years of schooling	-0.852	0.000	0.277	0.000	.919
2.3.11	Educational equality	-0.656	0.001	0.572	0.000	.930
2.3.12	Health equality	-0.711	0.001	0.497	0.000	.925
						Cronbach's alpha = .933

*2.3.C. Gender equality*

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.3.13	Power distributed by gender	0.850	0.000	0.278	0.000	.755
2.3.14	CSO women's participation	0.775	0.000	0.400	0.000	.773
2.3.15	Female vs. male mean years of schooling	0.633	0.000	0.598	0.000	.81
2.3.16	Lower chamber female legislators	0.603	0.000	0.637	0.001	.798
2.3.17	Proportion of women in ministerial level positions	0.613	0.000	0.624	0.000	.799
						Cronbach's alpha = .824

*Attribute 3: Checks on Government*

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
3.1	Effective Parliament	-0.936	0.000	0.125	0.000	.879
3.2	Judicial Independence	-0.884	0.000	0.220	0.000	.896
3.3	Media Integrity	-0.902	0.000	0.188	0.000	.902
						Cronbach's alpha = .933

*3.1. Effective Parliament*

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
3.1.1	Legislature questions officials in practice	-0.881	0.000	0.225	0.000	.940
3.1.2	Executive oversight	-0.909	0.000	0.174	0.000	.937
3.1.3	Legislature investigates in practice	-0.939	0.000	0.119	0.000	.933
3.1.4	Legislature opposition parties	-0.914	0.000	0.165	0.000	.933
3.1.5	Executive constraints	-0.838	0.000	0.299	0.000	.950
						Cronbach's alpha = .953

### 3.2. Judicial Independence

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
3.2.1	High Court independence	-0.878	0.000	0.229	0.000	.934
3.2.2	Lower court independence	-0.872	0.000	0.241	0.000	.936
3.2.3	Compliance with High Court	-0.916	0.000	0.163	0.000	.933
3.2.4	Compliance with judiciary	-0.918	0.000	0.158	0.000	.932
3.2.5	Latent judicial independence	-0.843	0.000	0.291	0.000	.943
						Cronbach's alpha = .948

### 3.3. Media Integrity

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
3.3.1	Critical print/broadcast media	0.960	0.000	0.079	0.000	.908
3.3.2	Print/broadcast media perspectives	0.954	0.000	0.090	0.000	.908
3.3.3	Media bias	0.951	0.000	0.096	0.000	.910
3.3.4	Media corrupt	0.895	0.000	0.200	0.000	.913
3.3.5	Media freedom	0.751	0.000	0.437	0.000	.967
						Cronbach's alpha = .956

## Attribute 4: Impartial Administration

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
4.1	Absence of Corruption	0.879	0.015	0.225	0.027	—
4.2	Predictable Enforcement	0.948	0.016	0.100	0.031	—
						Cronbach's alpha = .907

### 4.1. Absence of Corruption

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
4.1.1	Public sector corrupt exchanges	0.955	0.000	0.089	0.000	.930
4.1.2	Public sector theft	0.955	0.000	0.089	0.000	.930
4.1.3	Executive embezzlement and theft	0.934	0.000	0.128	0.000	.931
4.1.4	Executive bribery and corrupt exchanges	0.898	0.000	0.193	0.000	.936
4.1.5	Corruption	0.706	0.000	0.503	0.000	.966
						Cronbach's alpha = .950



#### 4.2. Predictable Enforcement

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
4.2.1	Executive respects constitution	0.868	0.000	0.247	0.000	.887
4.2.2	Transparent laws with predictable enforcement	0.923	0.000	0.148	0.000	.876
4.2.3	Rigorous and impartial public administration	0.934	0.000	0.129	0.000	.871
4.2.4	Bureaucratic quality	0.710	0.000	0.495	0.000	.933
						Cronbach's alpha = .918

### Attribute 5: Participatory Engagement

#### 5.1. Civil Society Participation

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
5.1.1	CSO participatory environment	-0.933	0.034	0.124	0.064	---
5.1.2	Engaged society	-0.840	0.034	0.288	0.065	---
						Cronbach's alpha = .875

## Annex F

### Item–item correlations

The tables in this Annex present the pairwise bivariate correlation coefficients (Pearson's  $r$ ) for each of the clusters of indicators that were subsequently aggregated into subcomponents, subattributes or attributes.

#### Attribute 1. Representative Government

	1.1	1.2	1.3	1.4
1.1 Clean Elections		.663	.893	.793
1.2 Inclusive Suffrage	5887		.533	.609
1.3 Free Political Parties	5887	5894		.789
1.4 Elected Officials	5887	5894	5894	

##### 1.1. Clean Elections

	1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6
1.1.1 EMB autonomy		.830	.809	.906	.932	.822
1.1.2 Election voter registry	5891		.862	.868	.857	.660
1.1.3 Election other voting irregularities	5891	5891		.854	.854	.671
1.1.4 Election government intimidation	5891	5891	5891		.944	.760
1.1.5 Election free and fair	5891	5891	5891	5891		.803
1.1.6 Competition	5890	5887	5887	5887	5887	

##### 1.3. Free Political Parties

	1.3.1	1.3.2	1.3.3	1.3.4	1.3.5	1.3.6	1.3.7	1.3.8	1.3.9
1.3.1 Party ban		.807	.786	.755	.758	.707	.668	.688	.674
1.3.2 Barriers to parties	5894		.877	.816	.844	.704	.668	.700	.685
1.3.3 Opposition parties autonomy	5764	5764		.799	.847	.676	.639	.661	.659
1.3.4 Elections multiparty	5891	5891	5761		.805	.763	.757	.772	.749
1.3.5 Competitiveness of participation	5617	5617	5487	5614		.716	.678	.692	.678
1.3.6 Multiparty elections	5890	5890	5760	5887	5616		.855	.855	.765
1.3.7 Was opposition allowed?	5823	5823	5701	5823	5548	5820		.902	.806
1.3.8 Was more than one party legal?	5823	5823	5701	5823	5548	5820	5823		.775
1.3.9 Were opposition leaders prevented from running?	5704	5704	5586	5704	5431	5702	5704	5704	

**1.4. Elected Government**

		1.4.1	1.4.2	1.4.3	1.4.4	1.4.5
1.4.1	Elected executive index		.549	.506	.579	.708
1.4.2	Competitiveness of executive recruitment	5616		.517	.386	.468
1.4.3	Openness of executive recruitment	5616	5617		.461	.570
1.4.4	Legislative elections	5889	5616	5616		.746
1.4.5	Executive elections	5889	5616	5616	5890	

**Attribute 2. Fundamental Rights**

		2.1	2.2	2.3
2.1	Access to Justice		.858**	.784**
2.2	Civil Liberties	5914		.755**
2.3	Social Rights	5917	5914	

**2.1. Access to Justice**

		2.1.1	2.1.2	2.1.3	2.1.4	2.1.5
2.1.1	Access to justice for men		.944	.645	.611	.833
2.1.2	Access to justice for women	5894		.619	.588	.808
2.1.3	Judicial corruption decision	5894	5894		.689	.721
2.1.4	Judicial accountability	5894	5894	5894		.634
2.1.5	Fair trial	5876	5876	5876	5876	

**2.2. Fundamental Rights**

		2.2.A	2.2.B	2.2.C	2.2.D	2.2.E
2.2.A	Freedom of expression		.944	.825	.870	.862
2.2.B	Freedom of association and assembly	5873		.834	.840	.795
2.2.C	Freedom of religion	5873	5873		.847	.693
2.2.D	Freedom of movement	5873	5873	5873		.790
2.2.E	Personal integrity and security	5873	5873	5873	5876	

*2.2.A. Freedom of expression*

		2.2.1	2.2.2	2.2.3	2.2.4	2.2.5	2.2.6	2.2.7
2.2.1	Print/ broadcast censorship effort		.896	.895	.881	.878	.872	.845
2.2.2	Harassment of journalists	5891		.868	.867	.868	.841	.829
2.2.3	Media self-censorship	5891	5891		.846	.860	.844	.815
2.2.4	Freedom of discussion for women	5891	5891	5891		.960	.890	.802
2.2.5	Freedom of discussion for men	5891	5891	5891	5894		.895	.805
2.2.6	Freedom of academic and cultural expression	5891	5891	5891	5894	5894		.783
2.2.7	Freedom of opinion and expression	5873	5873	5873	5876	5876	5876	

*2.2.B. Freedom of association and assembly*

			2.2.8	2.2.9	2.2.10
2.2.8	CSO entry and exit			.894	.836
2.2.9	CSO repression		5891		.810
2.2.10	Freedom of assembly and association		5876	5873	

*2.2.C. Freedom of religion*

			2.2.11	2.2.12	2.2.13
2.2.11	Freedom of religion			.826	.733
2.2.12	Religious organization repression		5891		.693
2.2.13	Freedom of thought, conscience, and religion		5876	5873	

*2.2.D. Freedom of movement*

			2.2.14	2.2.15	2.2.16	2.2.17
2.2.14	Freedom of foreign movement			.793	.808	.742
2.2.15	Freedom of domestic movement for women		5894		.825	.677
2.2.16	Freedom of domestic movement for men		5894	5894		.695
2.2.17	Freedom of movement and residence		5876	5876	5876	

*2.2.E. Personal integrity and security*

		2.2.18	2.2.19	2.2.20	2.2.21	2.2.22	2.2.23
2.2.18	Freedom from forced labor for women		.894	.646	.638	.578	.435
2.2.29	Freedom from forced labor for men	5894		.642	.643	.575	.410
2.2.20	Freedom from torture	5894	5894		.902	.758	.565
2.2.21	Freedom from political killings	5894	5894	5894		.786	.598
2.2.22	Human rights protection scores	5583	5583	5583	5583		.666
2.2.23	Internal conflict	3962	3962	3962	3962	3702	

*2.3. Social Rights and Equality*

			2.3.A	2.3.B	2.3.C
2.3.A	Social group equality			.601	.696
2.3.B	Basic welfare		5894		.655
2.3.C	Gender equality		5894	5894	

*2.3.A. Social group equality*

		2.3.1	2.3.2	2.3.3	2.3.4	2.3.5
2.3.1	Social class equality in respect for civil liberties		.716	.694	.669	.495
2.3.2	Social group equality in respect for civil liberties	5894		.529	.674	.393
2.3.3	Power distributed by socioeconomic position	5894	5894		.605	.559
2.3.4	Power distributed by social group	5894	5894	5894		.405
2.3.5	Representation of disadvantaged social groups	5426	5426	5426	5426	

*2.3.B. Basic welfare*

		2.3.6	2.3.7	2.3.8	2.3.9	2.3.10	2.3.11	2.3.12
2.3.6	Infant mortality rate		.924	.777	.816	.866	.731	.755
2.3.7	Life expectancy	5827		.742	.700	.780	.641	.689
2.3.8	Kilocalories per person per day	5477	5514		.548	.689	.619	.673
2.3.9	Literacy	3441	3441	3225		.947	.587	.596
2.3.10	Average years of schooling	5827	5870	5514	3441		.694	.686
2.3.11	Educational equality	5842	5870	5514	3441	5870		.917
2.3.12	Health equality	5842	5870	5514	3441	5870	5894	

*2.3.C. Gender equality*

		2.3.13	2.3.14	2.3.15	2.3.16	2.3.17
2.3.13	Power distributed by gender		.677	.541	.509	.519
2.3.14	CSO women's participation	5891		.546	.383	.457
2.3.15	Female vs. male mean years of schooling	5870	5867		.334	.321
2.3.16	Lower chamber female legislators	5598	5595	5579		.586
2.3.17	Proportion of women in ministerial level positions	4185	4182	4184	4118	

**Attribute 3. Checks on Government**

		3.1	3.2	3.3
3.1	Effective Parliament		.826	.843
3.2	Judicial Independence	5815		.796
3.3	Media Integrity	5815	5894	

*3.1. Effective Parliament*

		3.1.1	3.1.2	3.1.3	3.1.4	3.1.5
3.1.1	Legislature questions officials in practice		.799	.821	.806	.736
3.1.2	Executive oversight	5423		.874	.797	.748
3.1.3	Legislature investigates in practice	5425	5423		.853	.750
3.1.4	Legislature opposition parties	5425	5425	5425		.827
3.1.5	Executive constraints	5228	5228	5229	5230	

*3.2. Judicial Independence*

		3.2.1	3.2.2	3.2.3	3.2.4	3.2.5
3.2.1	High Court independence		.892	.760	.764	.739
3.2.2	Lower court independence	5894		.755	.764	.721
3.2.3	Compliance with High Court	5894	5894		.890	.778
3.2.4	Compliance with judiciary	5894	5894	5894		.772
3.2.5	Latent judicial independence	5406	5406	5406	5406	

### 3.3. Media Integrity

		3.3.1	3.3.2	3.3.3	3.3.4	3.3.5
3.3.1	Print/broadcast media critical		.920	.907	.859	.720
3.3.2	Print/broadcast media perspectives	5891		.911	.838	.692
3.3.3	Media bias	5891	5891		.854	.710
3.3.4	Media corrupt	5891	5891	5891		.731
3.3.5	Media Freedom	5880	5880	5880	5880	

## Attribute 4. Impartial Administration

	4.1	4.2
4.1	Absence of Corruption	.829
4.2	Predictable Enforcement	5894

### 4.1. Absence of Corruption

	4.1.1	4.1.2	4.1.3	4.1.4	4.1.5
4.1.1	Public sector corrupt exchanges	.913	.860	.833	.660
4.1.2	Public sector theft	5894	.858	.809	.673
4.1.3	Executive embezzlement and theft	5894	5894	.870	.663
4.1.4	Executive bribery and corrupt exchanges	5894	5894	5894	.658
4.1.5	Corruption	3962	3962	3962	3962

### 4.2. Predictable Enforcement

	4.2.1	4.2.2	4.2.3	4.2.4
4.2.1	Executive respects constitution	.789	.780	.636
4.2.2	Transparent laws with predictable enforcement	5894	.850	.642
4.2.3	Rigorous and impartial public administration	5894	5894	.665
4.2.4	Bureaucratic quality	3962	3962	3962

**Attribute 5. Participatory Engagement****5.1. Civil Society Participation**

		5.1.1	5.1.2
5.1.1	CSO participatory environment		.777
5.1.2	Engaged society	5891	

**5.4. Subnational Democracy**

		5.4.1	5.4.2	5.4.3
5.4.1	Local government elected		.419	.492
5.4.2	Regional government elected	5360		.272
5.4.3	Subnational elections free and fair	4688	4386	



## Annex G

## Comparisons with extant measures

TABLE G.1.

## Selected characteristics of ten large-scale data sets

Data set	Years covered	Types of sources				Based on various data sets	Uncertainty estimates	Scale
		IC	OD	ES	PS			
International IDEA: GSODI	1975–2015	X	X	X		Yes	Yes	Interval
Bertelsmann Stiftung: Bertelsmann Transformation Index (BTI)	2003–2015 (biennial)			X		No	No	Ordinal
Cingranelli and Richards (CIRI): CIRI Human Rights Database	1981–2011	X				No	No	Ordinal
Electoral Integrity Project (EIP): Perceptions of Electoral Integrity (PEI)	2012–2016			X		No	Yes	Interval
Economist Intelligence Unit (EIU): Democracy Index	2006, 2008, 2010–2016			X	X	Yes	No	Interval
Freedom House (FH): Freedom in the World	1972–2016			X		No	No	Ordinal
Marshall, Jaggers and Gurr: Polity IV	1800–2015	X				No	No	Ordinal
V-Dem Project: V-Dem data set	1900–2016	X	X	X		No	Yes	Interval
Kaufmann and Kray: Worldwide Governance Indicators (WGI)	1996, 1998, 2000–2015	X	X	X	X	Yes	Yes	Interval
World Justice Project (WJP): Rule of Law Index	2012–2016			X	X	No	No	Interval

Note: ES = expert survey; IC = Standards-based in-house coding; OD = observational data; PS = population surveys.

The covariation between GSoD indices and existing measures constructed to measure relatively similar concepts are set out below. The correlation coefficients (Pearson's  $r$ ) indicate the general level of agreement (covariation) between them. As a rule-of-thumb, in a country–year setting such as this, with this kind of data, correlation coefficients above .80 indicate very high levels of agreement, coefficients above .60 signify high levels of agreement, correlations above .40 denote moderate levels of agreement, while correlations below .40 show low levels of agreement.

TABLE G.2.

### Correlations between GSoD indices and extant measures

#### *Attribute 1: Representative Government*

Correlation with:	Correlation coefficient	N	% of GSODI N
Voice and accountability (WGI)	.885	2559	43.12%
Political rights (FH) (inversed)	.889	5378	90.61%
Electoral process and pluralism (EIU)	.889	1519	25.59%
Political participation (BTI)	.884	719	12.11%
Polity2 (Polity)	.877	5325	89.72%
Polyarchy index (V-Dem)	.936	5609	94.51%

#### *Subattribute 1.1: Clean Elections*

Correlation with:	Correlation coefficient	N	% of GSODI N
Perceptions of electoral integrity (EIP)	.858	142	2.39%
Electoral self-determination (CIRI)	.771	4234	71.34%
Free and fair elections (BTI)	.878	719	12.11%

#### *Subattribute 1.4: Elected Government*

Correlation with:	Correlation coefficient	N	% of GSODI N
Effective power to govern (BTI)	.701	720	12.13%

#### *Attribute 2: Fundamental Rights*

##### *Subattribute 2.1: Access to Justice*

Correlation with:	Correlation coefficient	N	% of GSODI N
Due process of law and rights of the accused (WJP)	.832	288	4.85%
Civil justice (WJP)	.839	288	4.85%

*Subattribute 2.2: Civil Liberties*

Correlation with:	Correlation coefficient	N	% of GSODI N
Civil liberties (FH) (inversed)	.901	5381	90.67%
Civil liberties (EIU)	.878	1517	25.56%

*Subcomponent 2.2.A: Freedom of expression*

Correlation with:	Correlation coefficient	N	% of GSODI N
Freedom of opinion and expression is effectively guaranteed (WJP)	.872	286	4.82%
Freedom of speech (CIRI)	.670	4234	71.34%
Freedom of expression (BTI)	.877	1440	24.26%

*Subcomponent 2.2.B: Freedom of association and assembly*

Correlation with:	Correlation coefficient	N	% of GSODI N
Freedom of assembly and association is effectively guaranteed (WJP)	.819	286	4.82%
Freedom of assembly and association (CIRI)	.750	4229	71.26%
Freedom of assembly and association (BTI)	.874	1440	24.26%

*Subcomponent 2.2.C: Freedom of religion*

Correlation with:	Correlation coefficient	N	% of GSODI N
Freedom of belief and religion is effectively guaranteed (WJP)	.772	286	4.82%
Freedom of religion (CIRI)	.619	3490	58.80%

*Subcomponent 2.2.D: Freedom of movement*

Correlation with:	Correlation coefficient	N	% of GSODI N
Freedom of movement (CIRI)	.588	3495	58.89%

*Subcomponent 2.2.E: Personal integrity and security*

Correlation with:	Correlation coefficient	N	% of GSODI N
The right to life and security of the person is effectively guaranteed (WJP)	.853	288	4.85%
Conflict intensity (BTI) (inversed)	.605	1440	24.26%

*Subattribute 2.3: Social Rights and Equality*

Correlation with:	Correlation coefficient	N	% of GSODI N
Equal opportunity (BTI)	.768	720	12.13%

*Subcomponent 2.3.A: Social group equality*

Correlation with:	Correlation coefficient	N	% of GSODI N
Equal treatment and absence of discrimination (WJP)	.698	288	4.85%

*Subcomponent 2.3.B: Basic needs provisions*

Correlation with:	Correlation coefficient	N	% of GSODI N
Social safety nets (BTI)	.822	720	12.13%

*Subcomponent 2.3.C: Gender equality*

Correlation with:	Correlation coefficient	N	% of GSODI N
Women's social rights (CIRI)	.523	4194	70.67%
Women's economic rights (CIRI)	.599	3235	54.51%

*Attribute 3: Checks on Government*

Correlation with:	Correlation coefficient	N	% of GSODI N
Separation of powers (BTI)	.842	718	12.10%

*Subattribute 3.1: Effective Parliament*

Correlation with:	Correlation coefficient	N	% of GSODI N
Government powers are effectively limited by the legislature (WJP)	.757	288	4.85%

*Subattribute 3.2: Judicial Independence*

Correlation with:	Correlation coefficient	N	% of GSODI N
Government powers are effectively limited by the judiciary (WJP)	.783	288	4.85%
Judicial independence (BTI)	.810	720	12.13%
Independence of the judiciary (CIRI)	.699	4275	72.03%

*Subattribute 3.3: Media Integrity*

Correlation with:	Correlation coefficient	N	% of GSODI N
Government powers are subject to non-governmental checks (WJP)	.778	288	4.85%

**Attribute 4: Impartial Administration**

Correlation with:	Correlation coefficient	N	% of GSODI N
Government regulations are applied and enforced without improper influence (WJP)	.842	288	4.90%
Basic administration (BTI)	.643	720	12.13%

**Subattribute 4.1: Absence of Corruption**

Correlation with:	Correlation coefficient	N	% of GSODI N
Absence of corruption (WJP)	.904	288	4.90%
Absence of corruption (WGI)	.885	2559	43.12%
Prosecution of office abuse (BTI)	.737	720	12.13%
Anti-corruption policy (BTI)	.758	719	12.11%

**Subattribute 4.2: Predictable Enforcement**

Correlation with:	Correlation coefficient	N	% of GSODI N
Government regulations are effectively enforced (WJP)	.760	288	4.90%
Administrative proceedings are conducted without unreasonable delay (WJP)	.610	288	4.90%
Government effectiveness (WGI)	.862	2559	43.12%
Implementation (BTI)	.796	719	12.11%

**Attribute 5: Participatory Engagement****Subattribute 5.1: Civil Society Participation**

Correlation with:	Correlation coefficient	N	% of GSODI N
Interest groups (BTI)	.662	1400	24.26%
Civil society traditions (BTI) (inversed)	.583	1400	24.26%



**International IDEA**  
Strömsborg  
SE-103 34 Stockholm  
Sweden  
Tel: +46 8 698 37 00  
Email: [info@idea.int](mailto:info@idea.int)  
Web: [www.idea.int](http://www.idea.int)