



The Global State of Democracy Indices

Technical Procedures Guide, Version 3





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Claudiu D. Tufis

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About this document

The Global State of Democracy Indices: Technical Procedures Guide, Version 2 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, Version 3* (Skaaning 2019), which presents the theoretical framework that guided the construction of the Indices, and *The Global State of Democracy Indices Codebook, Version 3* (Tufis 2018), which presents information about the data set, including variables, attributes of democracy, subattributes, subcomponents and indicators.

The GSoD Indices depict democratic trends at the country, regional and global levels across a broad range of different attributes of democracy in the period 1975–2017 but do not provide a single index of democracy. The Indices produce data for 158 countries. The data underlying the Indices is based on 97 indicators developed by various scholars and organizations using different types of sources, including expert surveys, standards-based coding by research groups and analysts, observational data and composite measures.

The Global State of Democracy is a biennial report that 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. The 2019 edition of the report (International IDEA 2019), provides a global health check of democracy.

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

Introduction

This Guide outlines the process of constructing the Global State of Democracy (GSoD) Indices, which inform *The Global State of Democracy 2019: Addressing the Ills, Reviving the Promise* (International IDEA 2019). 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, Version 3* (Skaaning 2019).

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 2019: Addressing the Ills, Reviving the Promise* (International IDEA 2019) 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 and then updated in 2018, cover the 158 independent countries with a population of more than one million that existed in the period 1975–2017. The Indices are composite measures based on 97 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 2019). 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 2019).

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 2019).

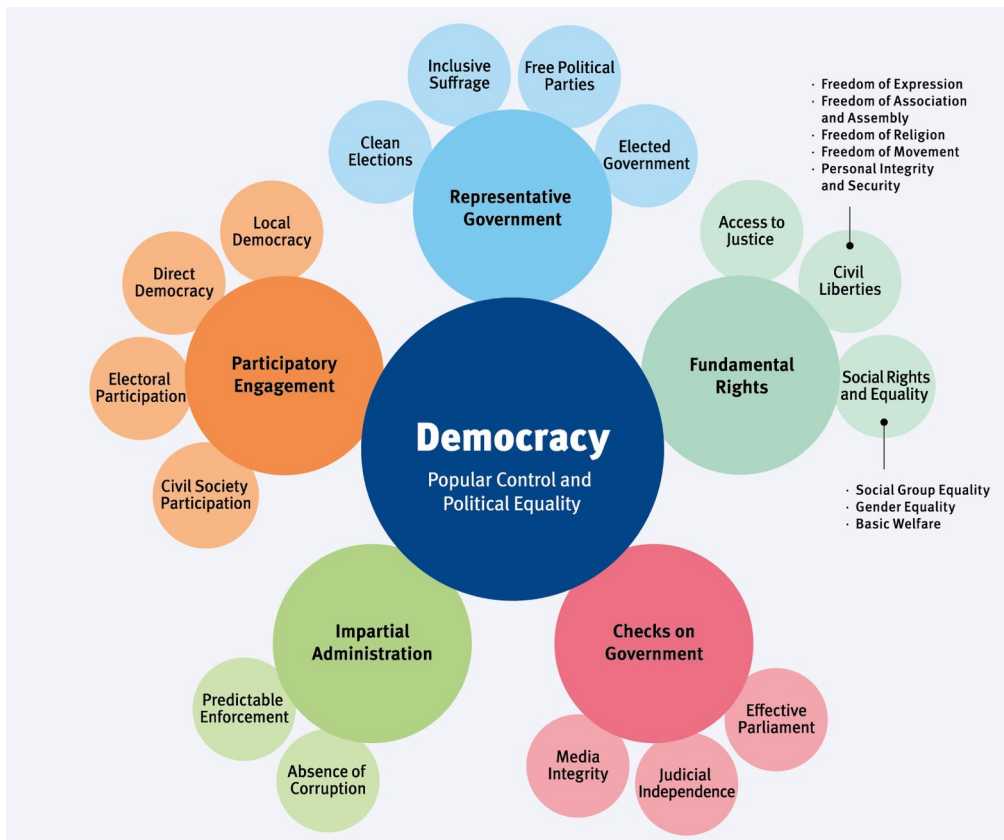
The GSoD data set therefore contains separate, fine-grained Indices and subIndices related to five attributes of democracy (see Beetham 1999: 154–57; Beetham et al. 2008: 27–28):

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)

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.

Figure I.1. The Global State of Democracy: Conceptual framework



Source: International IDEA

Table I.1. Attributes, subattributes and general assessment questions of the GSoD conceptual framework

Attribute	Subattribute	Assessment question
1. Representative Government (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?
2. Fundamental Rights (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?
3. Checks on Government (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?
4. Impartial Administration (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?
5. Participatory Engagement (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. Local Democracy	To what extent are there freely elected, influential local governments?

Source: Skaaning (2019)

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 97 indicators collected from 12 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 sources 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 Skaaning (2019). Table A.1 (see Annex A) lists the 12 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 9 of the Varieties of Democracy (V-Dem) data set, released in the Spring of 2019, was used. Updated versions of the Civil Liberties Dataset (CLD), the Lexical Index of Electoral Democracy (LIED) and the Media Freedom Dataset were obtained directly from the authors. The International Country Risk Guide (ICRG) data set was purchased. For the remaining eight data sets (see Table A.1), the versions available online were downloaded during March–May 2019. Since the Polity IV and Political Terror Scale data sets had not been updated by that time, scores for 2018 were added by International IDEA staff based on the Human Rights Reports of the U.S. State Department and in close consultation with the academic advisors of the GSoD Report. 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 2018 release of the data set contains data for 158 countries for up to 43 years, giving a total of 6,331 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 158 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 (2017) is shown in Figure 2.1. A complete list of the 158 countries included in the GSoD Indices data set is provided in Table B.1 (see Annex B).

Temporal coverage

The third edition of International IDEA's GSoD Indices covers the period 1975–2018. 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 referred to as 'the third wave of democratization' (Huntington 1991) in the democratization literature.

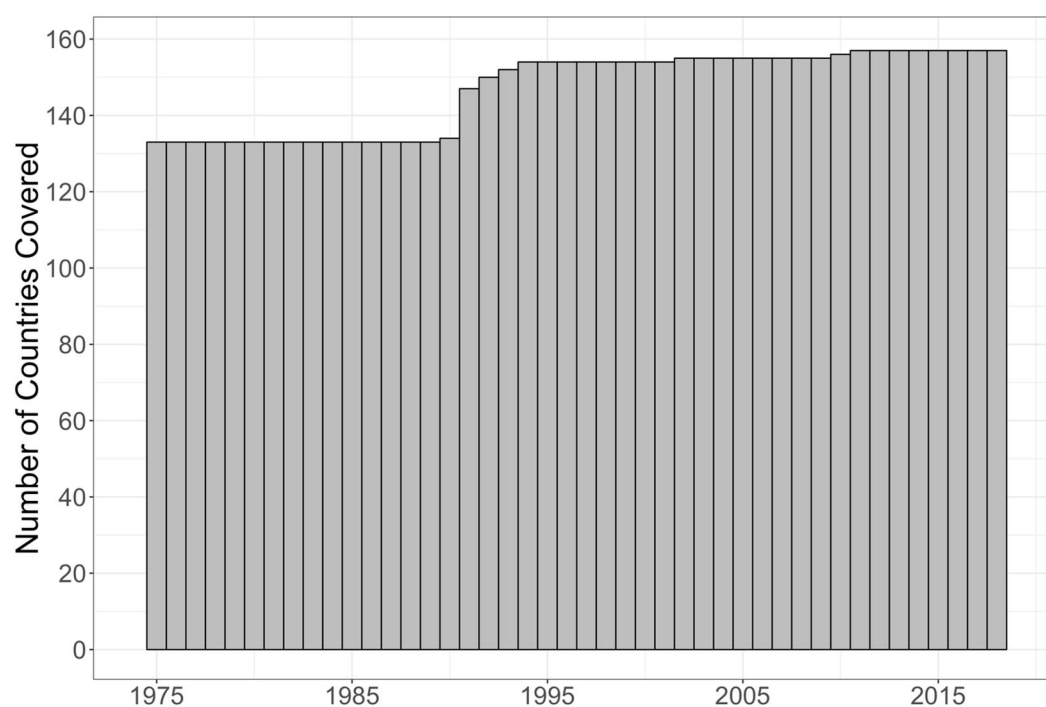
The number of countries covered each year by the GSoD Indices is shown in Figure 2.2, while Table B.1 (see Annex B) indicates the temporal coverage for each of the 158 countries included in the data set.

Figure 2.1. Spatial coverage of International IDEA's Global State of Democracy Indices, 2019



Source: International IDEA.

Figure 2.2. Temporal coverage of International IDEA's Global State of Democracy Indices, 2019



Source: International IDEA.

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 2017), 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 a total of six regions and 17 subregions:

1. Africa (East Africa, Central Africa, Southern Africa, West Africa and North Africa)
2. Latin America and the Caribbean (the Caribbean, Central America and Mexico, and South America)
3. North America
4. Asia and the Pacific (Central Asia, East Asia, South Asia, South East Asia, and Oceania)
5. Middle East and Iran
6. 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 contain aggregated values for five regional organizations: the African Union (AU), the Association of South East Asian Nations (ASEAN), the European Union (EU), the Organisation 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 (158 countries with a population of over one million, and the period 1975–2017), 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 6,952 country–years (158 countries over 44 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 6488 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 12 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 9202018, 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 International Country Risk Guide (ICRG) data set, for instance, 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 2018).

3. Indicators

The GSoD Indices conceptual framework guided the 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 97 indicators selected from the 12 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 Skaaning (2019), while detailed information on each of the indicators is available in Tufis (2018).

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 Skaaning (2019: 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 categories with very few cases (country-years). As a general rule, categories with less than 1 per cent of the data were recoded into adjacent categories (see the Codebook). Fourth, in some cases the scale was inversed so that all indicators included in an index run in the same direction, with low values indicating absence or low levels of an attribute and high values indicating 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.

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-level 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 Skaaning (2019).

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, 2014b; 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 per cent) 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 was also used to aggregate indicators related to the presence, and freedom and fairness of local 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 in an index were computed 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 24 Indices computed had a Cronbach's Alpha higher than .90. All but one of 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 subattribute 1.3
starttime <- Sys.time()
# 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))
nrow(SD13score) # Check the number of cases
# Run the model and compute the scores
SD13irt <- mirt(SD13score[,17:22], 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[,1:7], Scores_SD13)
# Export the scores
write.csv(SD13_save, file = "SD13_save.csv")
endtime <- Sys.time()
timetaken_SD13 <- endtime-starttime
```

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
starttime <- Sys.time()
# 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")
#summary(SD22a)
endtime <- Sys.time()
timetaken_SD22a <- endtime-starttime
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
1. Representative Government (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	Weighted average
		1.3. Free Political Parties	Item response modelling
		1.4. Elected Government	Item response modelling
2. Fundamental Rights (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.
3. Checks on Government (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
4. Impartial Administration (fair and predictable public administration)	Bayesian factor analysis	4.1. Absence of Corruption	Item response modelling
		4.2. Predictable Enforcement	Item response modelling
5. Participatory Engagement (instruments for realization of political involvement)	N/A (no obvious way to combine the multidimensional subattributes)	5.1. Civil Society Participation	Bayesian factor analysis
		5.2. Electoral Participation	N/A (only one indicator)
		5.3. Direct Democracy	Multiplication
		5.4. Local Democracy	Multiplication

Source: Skaaning (2019).

Step 5: Aggregating the indicators into Indices

Representative Government: Due to missing data, two 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. The inclusive elections subattribute was computed as a weighted average of its two indicators. 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 other three 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.

Fundamental Rights: 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.

Checks on Government: 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.

Impartial Administration: 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.

Participatory Engagement: On its subattributes, no aggregation was needed for electoral participation, since only one indicator was used. The three 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 direct democracy we used an existing index and multiplied it with the electoral measure from Bjørnskov and Rode. For local democracy, 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.

The relationship between the subattributes and the overarching attribute is less evident for Participatory Engagement, and 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 as expressions of popular participation. Aggregation through reflective models did not appear plausible. As it is also unclear 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 local 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, and 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 error from the estimated score. The lower bound of the 68 per cent confidence interval was computed by subtracting the standard error from the estimated score of the index, while the upper bound of the 68 per cent confidence interval was computed by adding the standard error 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 Electoral Participation (5.2), which is composed of a single indicator, and the inclusive suffrage (1.2), direct democracy (5.3) and local democracy (5.4) subattributes, which are aggregated using a formative formula.

8. Validity checks

A series of validity checks was run throughout the process of constructing the GSoD Indices to verify that they truly 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 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 Skaaning (2019). 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 indicators and 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 check their validity using country-specific expertise. This 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 2019). If the reader is interested in a particular indicator used, more information is available in the GSoD Codebook (Tufis 2018). 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	No. of indicators	Spatial coverage	Temporal coverage
Bjørnskov-Rode Regime Data (BRRD)	IC	1	208 countries	1950–2018
Civil Liberties Dataset (CLD)	IC	5	203 countries	1975–2018
Food and Agriculture Organization (FAO)	OD	1	184 countries	1961–2013
Global Health Data Exchange (GHDx)	OD	2	189 countries	1970–2015
International Country Risk Guide (ICRG)	ES	6	146 countries	1984–2018
Lexical Index of Electoral Democracy (LIED)	IC, OD	4	All independent	1800–2018
Media Freedom Data (MFD)	IC	1	187 countries	1948–2018
Political Terror Scale (PTS)	IC	1	210 countries	1976–2016
Polity IV	IC	4	195 countries	1800–2017
United Nations Demographic and Social Statistics (UN)	OD	2	varying	Varying
United Nation Educational, Scientific and Cultural Organization (UNESCO)	OD	1	varying	Varying
Varieties of Democracy (V-Dem)	CM, ES, IC, OD	69	201 countries	1789–2018

Notes: 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	2018	44
Albania	1975	2018	44
Algeria	1975	2018	44
Angola	1975	2018	44
Argentina	1975	2018	44
Armenia	1991	2018	28
Australia	1975	2018	44
Austria	1975	2018	44
Azerbaijan	1991	2018	28
Bangladesh	1975	2018	44
Belarus	1991	2018	28
Belgium	1975	2018	44
Benin	1975	2018	44
Bolivia	1975	2018	44
Bosnia and Herzegovina	1992	2018	27
Botswana	1975	2018	44
Brazil	1975	2018	44
Bulgaria	1975	2018	44
Burkina Faso	1975	2018	44
Burundi	1975	2018	44
Cambodia	1975	2018	44

Country	First Year	Last Year	Country–years
Cameroon	1975	2018	44
Canada	1975	2018	44
Central African Republic	1975	2018	44
Chad	1975	2018	44
Chile	1975	2018	44
China	1975	2018	44
Colombia	1975	2018	44
Costa Rica	1975	2018	44
Côte d'Ivoire	1975	2018	44
Croatia	1991	2018	28
Cuba	1975	2018	44
Cyprus	1975	2018	44
Czechia	1975	2018	44
Democratic People's Republic of Korea	1975	2018	44
Democratic Republic of the Congo (DRC)	1975	2018	44
Denmark	1975	2018	44
Dominican Republic	1975	2018	44
Ecuador	1975	2018	44
Egypt	1975	2018	44
El Salvador	1975	2018	44
Eritrea	1993	2018	26
Estonia	1991	2018	28
Eswatini	1975	2018	44
Ethiopia	1975	2018	44
Finland	1975	2018	44
France	1975	2018	44
Gabon	1975	2018	44
Gambia	1975	2018	44
Georgia	1991	2018	28
German Democratic Republic	1975	1990	16
Germany	1975	2018	44
Ghana	1975	2018	44
Greece	1975	2018	44
Guatemala	1975	2018	44

Country	First Year	Last Year	Country–years
Guinea	1975	2018	44
Guinea-Bissau	1975	2018	44
Haiti	1975	2018	44
Honduras	1975	2018	44
Hungary	1975	2018	44
India	1975	2018	44
Indonesia	1975	2018	44
Iran	1975	2018	44
Iraq	1975	2018	44
Ireland	1975	2018	44
Israel	1975	2018	44
Italy	1975	2018	44
Jamaica	1975	2018	44
Japan	1975	2018	44
Jordan	1975	2018	44
Kazakhstan	1991	2018	28
Kenya	1975	2018	44
Kosovo	2008	2018	11
Kuwait	1975	2018	44
Kyrgyzstan	1991	2018	28
Laos	1975	2018	44
Latvia	1991	2018	28
Lebanon	1975	2018	44
Lesotho	1975	2018	44
Liberia	1975	2018	44
Libya	1975	2018	44
Lithuania	1991	2018	28
Madagascar	1975	2018	44
Malawi	1975	2018	44
Malaysia	1975	2018	44
Mali	1975	2018	44
Mauritania	1975	2018	44
Mauritius	1975	2018	44
Mexico	1975	2018	44

Country	First Year	Last Year	Country–years
Moldova	1991	2018	28
Mongolia	1975	2018	44
Morocco	1975	2018	44
Mozambique	1975	2018	44
Myanmar	1975	2018	44
Namibia	1990	2018	29
Nepal	1975	2018	44
Netherlands	1975	2018	44
New Zealand	1975	2018	44
Nicaragua	1975	2018	44
Niger	1975	2018	44
Nigeria	1975	2018	44
North Macedonia	1991	2018	28
Norway	1975	2018	44
Oman	1975	2018	44
Pakistan	1975	2018	44
Panama	1975	2018	44
Papua New Guinea	1975	2018	44
Paraguay	1975	2018	44
Peru	1975	2018	44
Philippines	1975	2018	44
Poland	1975	2018	44
Portugal	1975	2018	44
Qatar	1975	2018	44
Republic of Congo	1975	2018	44
Republic of Korea	1975	2018	44
Romania	1975	2018	44
Russia	1975	2018	44
Rwanda	1975	2018	44
Saudi Arabia	1975	2018	44
Senegal	1975	2018	44
Serbia	1975	2018	44
Sierra Leone	1975	2018	44
Singapore	1975	2018	44

Country	First Year	Last Year	Country-years
Slovakia	1993	2018	26
Slovenia	1991	2018	28
Somalia	1975	2018	44
South Africa	1975	2018	44
South Sudan	2011	2018	8
Spain	1975	2018	44
Sri Lanka	1975	2018	44
Sudan	1975	2018	44
Sweden	1975	2018	44
Switzerland	1975	2018	44
Syria	1975	2018	44
Taiwan	1975	2018	44
Tajikistan	1991	2018	28
Tanzania	1975	2018	44
Thailand	1975	2018	44
Timor-Leste	2002	2018	17
Togo	1975	2018	44
Trinidad and Tobago	1975	2018	44
Tunisia	1975	2018	44
Turkey	1975	2018	44
Turkmenistan	1991	2018	28
Uganda	1975	2018	44
Ukraine	1991	2018	28
United Kingdom	1975	2018	44
United States	1975	2018	44
Uruguay	1975	2018	44
Uzbekistan	1991	2018	28
Venezuela	1975	2018	44
Viet Nam	1975	2018	44
Yemen	1975	2018	44
Zambia	1975	2018	44
Zimbabwe	1975	2018	44

Note: The country names in this table do not represent the official position of International IDEA with regard to the legal status of, or policy on, the entities mentioned. It is a harmonization of often-divergent lists and practices.

Table B.2. Division of countries into regions and subregions as covered by the GSoD Indices

Region/subregion	Country
Africa	
East Africa	Burundi, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, Tanzania, Uganda
Central Africa	Cameroon, Central African Republic, Chad, Democratic Republic of the Congo (DRC), Equatorial Guinea, Gabon, Republic of Congo
Southern Africa	Angola, Botswana, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Zambia, Zimbabwe
West Africa	Benin, Burkina Faso, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo
North Africa	Algeria, Egypt, Libya, Morocco, South Sudan, Sudan, Tunisia
Latin America and the Caribbean	
The Caribbean	Cuba, Dominican Republic, Haiti, Jamaica, Trinidad and Tobago
Central America and Mexico	Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama
South America	Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela
North America	
North America	Canada, United States of America
Asia and the Pacific	
Central Asia	Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan
East Asia	China, Democratic People's Republic of Korea, Japan, Mongolia, Republic of Korea, Taiwan
South Asia	Afghanistan, Bangladesh, India, Nepal, Pakistan, Sri Lanka
South East Asia	Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, Viet Nam
Oceania	Australia, New Zealand, Papua New Guinea
The Middle East and Iran	
The Middle East	Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen
Iran	Iran
Europe	
East-Central Europe	Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Estonia, German Democratic Republic, Hungary, Kosovo, Latvia, Lithuania, North Macedonia, Poland, Romania, Serbia, Slovakia, Slovenia
Eastern Europe/Post-Soviet Europe	Armenia, Azerbaijan, Belarus, Georgia, Moldova, Russia, Ukraine
North and West Europe	Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Netherlands, Norway, Sweden, Switzerland, United Kingdom
South Europe	Cyprus, Greece, Israel, Italy, Portugal, Spain, Turkey

Note: The country names in this table do not represent the official position of International IDEA with regard to the legal status of, or policy on, the entities mentioned. It is 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
African Union (AU)	Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Democratic Republic of the Congo (DRC), Egypt, Equatorial Guinea, Eritrea, Eswatini, 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, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe
Association of South East Asian Nations (ASEAN)	Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam
European Union (EU)	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
Organization for Economic Co-operation and Development (OECD)	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
Organization of American States (OAS)	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	EMB capacity
			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
			1.2.2	Election voter registry
	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
	1.4. Elected Government	To what extent is access to government determined by elections?	1.4.1	Elected officials index
			1.4.2	Competitiveness of executive recruitment
			1.4.3	Openness of executive recruitment

Attributes	Subattributes	Assessment questions	No.	Indicators
			1.4.4	Electoral
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?	Sub-component 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
			Sub-component 2.2.B: Freedom of association and assembly	
			2.2.8	CSO entry and exit
			2.2.9	CSO repression
			2.2.10	Freedom of assembly and association
			Sub-component 2.2.C: Freedom of religion	
			2.2.11	Freedom of religion
			2.2.12	Religious organization repression
			2.2.13	Freedom of thought, conscience and religion
			Sub-component 2.2.D: Freedom of movement	
			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

Attributes	Subattributes	Assessment questions	No.	Indicators
			2.2.17	Freedom of movement and residence
			Sub-component 2.2.E: Personal integrity and security	
			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	Political terror scale
			2.2.23	Internal conflict
	2.3. Social Rights and Equality	To what extent are basic welfare and social and political equality realized?	Sub-component 2.3.A: Social group equality	
			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
			2.3.6	Religious tensions
			2.3.7	Ethnic tensions
			Sub-component 2.3.B: Basic welfare	
			2.3.8	Infant mortality rate
			2.3.9	Life expectancy
			2.3.10	Kilocalories per person per day
			2.3.11	Literacy
			2.3.12	Mean years of schooling
			2.3.13	Educational equality
			2.3.14	Health equality
			Sub-component 2.3.C: Gender equality	
			2.3.15	Power distributed by gender
			2.3.16	CSO women's participation

Attributes	Subattributes	Assessment questions	No.	Indicators
3. Checks on Government			2.3.17	Female vs. male mean years of schooling
			2.3.18	Lower chamber female legislators
			2.3.19	Election women in the cabinet
	3.1. Effective Parliament	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
	3.2. Judicial Independence	To what extent are the courts independent?	3.2.1	High Court independence
			3.2.2	Lower court independence
			3.2.3	Compliance with higher court
			3.2.4	Compliance with judiciary
			3.2.5	Law and order
	3.3. Media Integrity	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
4. Impartial Administration	4.1. Absence of Corruption	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
	4.2. Predictable Enforcement	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

Attributes	Subattributes	Assessment questions	No.	Indicators
			4.2.4	Bureaucratic quality
5. Participatory Engagement	5.1. Civil Society participation	To what extent do people participate in civil society organizations?	5.1.1	CSO participatory environment
			5.1.2	Engaged society
			5.1.3	CSO consultation
	5.2. Electoral Participation	To what extent do people participate in national elections?	5.2.1	Election voting age population (VAP) turnout
	5.3. Direct Democracy	To what extent are mechanisms of direct democracy available and used?	5.3.1	Direct popular vote index
			5.3.2	Electoral
	5.4. Local Democracy	To what extent are there freely elected, influential local governments?	5.4.1	Local government index
			5.4.2	Subnational elections free and fair

Overview of indicators and sources

1. Representative Government

1.1. Indicators of Clean Elections

No.	Indicator	Description/question	Data set
1.1.1	EMB autonomy (vzelembaut)	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	EMB capacity (vzelembcap)	ES: Does the election management body (EMB) have sufficient staff and resources to administer a well-run national election?	V-Dem
1.1.3	Election other voting irregularities (vzelirreg)	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 (vzelintim)	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 (vzelfrfair)	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 they were to attract sufficient support from the electorate.	LIED

Notes: ES = expert surveys; IC = standards-based in-house coding.

1.2. Indicators of Inclusive Suffrage

No.	Indicator	Description/question	Data set
1.2.1	Suffrage (vzelsuffrage)	OD: What percentage (%) of adult citizens (as defined by statute) has the legal right to vote in national elections?	V-Dem
1.2.2	Election voter registry (vzelrgstry)	ES: In this national election, was there a reasonably accurate voter registry in place and was it used?	V-Dem

Notes: ES = expert surveys; OD = observational data.

1.3. Indicators of Free Political Parties

No.	Indicator	Description/question	Data set
1.3.1	Party ban (v2psparban)	ES: Are any 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 (v2elmulpar)	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)	OD: The lower house (or unicameral chamber) of the legislature is (at least in part) elected by voters facing more than one choice. Specifically, parties are not banned and (a) more than one party is allowed to compete or (b) elections are nonpartisan (i.e., all candidates run without party labels).	LIED

Notes: ES = expert surveys; IC = standards-based in-house coding; OD = observational data.

1.4. Indicators of Elected Government

No.	Indicator	Description/question	Data set
1.4.1	Elected officials index (v2x_elecoff)	CM: Are the chief executive and legislature appointed through popular elections? Measure based on 16 variables from expert survey data, in-house coded data and observational data collected by V-Dem.*	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	Electoral	IC: Does a country have no regular elections, elections in an effectively one-party state, elections with opposition parties but without an actual chance of government change, or full democracy?	Bjørnskov and Rode

Notes: IC = standards-based in-house coding; CM = composite measures.

* The 16 variables are: legislature bicameral; lower chamber elected; upper chamber elected; percentage of indirectly elected legislators lower chamber; percentage of indirectly elected legislators upper 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 the same as head of government; chief executive appointment by upper chamber implicit approval; and chief executive appointment by upper chamber.

2. Fundamental Rights (individual liberties and resources)

2.1. Indicators of Access to Justice

No.	Indicator	Description/question	Data set
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 (v2juaccnt)	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 to be entitled to trial without undue delays if arrested, detained or charged with a criminal offence.	CLD

Notes: ES = expert surveys; IC = standards-based in-house coding.

2.2. Indicators of Civil Liberties

No.	Indicator	Description/question	Data set
Freedom of expression			
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, i.e. 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 the press to hold views freely and to seek, obtain and pass on information on political issues broadly understood without being subject to actual limitations or restrictions.	CLD
Freedom of association and assembly			
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 the 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 actual limitations or restrictions.	CLD
Freedom of religion			
2.2.11	Freedom of religion (v2clrelig)	ES: Is there freedom of religion?	V-Dem
2.2.12	Religious organization repression (v2csrlgprep)	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 citizens to have and change religion or belief of their own volition and alone or in community, manifest their religion or belief in practice, worship, observance and teaching in private or public, as well as proselytize peacefully without being subject to actual limitations or restrictions.	CLD
Freedom of movement			
2.2.14	Freedom of foreign movement (v2clfmmove)	ES: Is there freedom of foreign travel and emigration?	V-Dem

No.	Indicator	Description/question	Data set
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 within their country as well as to leave and return to their country of without being subject to actual limitations or restrictions.	CLD
Personal integrity and security			
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 (v2clkil)	ES: Is there freedom from political killings?	V-Dem
2.2.22	Political terror scale (PTSsd)	IC: What is the level of political violence and terror?	Gibney et al.
2.2.23	Internal conflict (D)	ES: Is there political violence in the country? The rating assigned is the sum of three sub-components: civil war/coup threat, terrorism/political violence and civil disorder	ICRG

Notes: ES = expert surveys; IC = standards-based in-house coding.

2.3. Indicators of Social Rights and Equality

No.	Indicator	Description/question	Data set
Social group equality			
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?	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 (v2lgdsadlo)	ES: Considering all disadvantaged social groups in the country, how well represented are these groups, as a whole, in the national legislature?	V-Dem
2.3.6	Religious tensions	IC: What is the degree of tension within a country attributable to religious divisions, domination, or suppression?	ICRG
2.3.7	Ethnic tensions	IC: What is the degree of tension within a country attributable to racial, nationality, or language divisions?	ICRG
Basic welfare			
2.3.8	Infant mortality rate	OD	UN statistics
2.3.9	Life expectancy	OD	UN statistics
2.3.10	Kilocalories per person per day	OD	FAO
2.3.11	Literacy	OD	UNESCO
2.3.12	Mean years of schooling	OD	GHDx
2.3.13	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
2.3.14	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
Gender equality			
2.3.15	Power distributed by gender (v2pepwrge)	ES: Is political power distributed according to gender?	V-Dem
2.3.16	CSO women's participation (v2csgender)	ES: Are women prevented from participating in civil society organizations?	V-Dem
2.3.17	Female vs. male mean years of schooling	OD	GHDx
2.3.18	Lower chamber female legislators (v2lgfemleg)	OD	V-Dem

No.	Indicator	Description/question	Data set
2.3.19	Election women in the cabinet (v2elwomcab)	OD	V-Dem

Notes: ES = expert surveys; IC = standards-based in-house coding; OD = observational data.

3. Checks on Government (effective control of executive power)

3.1. Indicators of Effective Parliament

No.	Indicator	Description/question	Data set
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

Notes: ES = expert surveys; IC = standards-based in-house coding.

3.2. Indicators of Judicial Independence

No.	Indicator	Description/question	Data set
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 (v2juhccomp)	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	Law and order	IC: To what extent is the legal system strong and impartial and to what degree is there popular observance of the law?	ICRG

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

3.3. Indicators of Media Integrity

No.	Indicator	Description/question	Data set
3.3.1	Print/broadcast media critical (v2mecrit)	ES: Of the major print and broadcast 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

Notes: ES = expert surveys; IC = standards-based in-house coding.

4. Impartial Administration (fair and predictable public administration)

4.1. Indicators of Absence of Corruption

No.	Indicator	Description/question	Data set
4.1.1	Public sector corrupt exchanges (v2excrtps)	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 (v2exthfts)	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 (v2exembe)	ES: How often do members of the executive (the head of state, the 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 or suspiciously close ties between politics and business?	ICRG

Notes: ES = expert surveys.

4.2. Indicators of Predictable Enforcement

No.	Indicator	Description/question	Data set
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 (v2clrspt)	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

Notes: ES = expert surveys.

5. Participatory Engagement (instruments for and realization of political involvement)

5.1. Indicators of Civil Society Participation

No.	Indicator	Description/question	Data set
5.1.1	CSO participatory environment (v2csprtpt)	ES: Are people involved in civil society organizations?	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
5.1.3	CSO consultation (v2csnsult)	ES: Are major civil society organizations (CSOs) routinely consulted by policymakers on policies relevant to their members?	V-Dem

Notes: ES = expert surveys.

5.2. Indicators of Electoral Participation

No.	Indicator	Description/question	Data set
5.2.1	Election VAP turnout (v2elvaptrn)	OD	V-Dem

Notes: OD = observational data.

5.3 Indicators of Direct Democracy

No.	Indicator	Description/question	Data set
5.3.1	Direct popular vote index (v2xdd_dd)	CM: Measure based on 12 observable variables from V-Dem, resulting from the combination of scores for each type of popular vote (i.e. 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 the time limit 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
5.3.2	Electoral	IC: Does a country have no regular elections, elections in an effectively one-party state, elections with opposition parties but without an actual chance of government change, or full democracy?	Bjørnskov and Rode

Notes: IC = standards-based in-house coding; CM = composite measures.

5.4. Indicators of Local Democracy

No.	Indicator	Description/question	Data set
5.4.1	Local government index (v2xel_locelec)	CM: Are there elected local governments, and if so to what extent can they operate without interference from unelected bodies at the local level?	V-Dem
5.4.2	Subnational elections free and fair (v2elfelr)	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

Notes: ES = expert surveys; CM = composite measures.

Summary of indicators

ID	Indicator	Data set	Variable	Missing (N)	Missing (%)	Year (min)	Year (max)
1.1.1	EMB autonomy	V-Dem	v2elembaut	0	0.00%	1975	2018
1.1.2	EMB capacity	V-Dem	v2elembcap	0	0.00%	1975	2018
1.1.3	Election: other voting irregularities	V-Dem	v2elirreg	26	0.40%	1975	2018
1.1.4	Election government intimidation	V-Dem	v2elintim	26	0.40%	1975	2018
1.1.5	Election free and fair	V-Dem	v2elfrfair	26	0.40%	1975	2018
1.1.6	Competition	LIED	competitive elections	0	0.00%	1975	2018
1.2.1	Suffrage	V-Dem	v2elsuffrage	0	0.00%	1975	2018
1.2.2	Election voter registry	V-Dem	V2elrgstry	26	0.40%	1975	2018
1.3.1	Party ban	V-Dem	v2psparban	0	0.00%	1975	2018
1.3.2	Barriers to parties	V-Dem	v2psbars	0	0.00%	1975	2018
1.3.3	Opposition parties' autonomy	V-Dem	v2psoppaut	183	2.90%	1975	2018
1.3.4	Elections multiparty	V-Dem	v2elmulpar	26	0.40%	1975	2018
1.3.5	Competitiveness of participation	Polity	parcomp	292	4.71%	1975	2018
1.3.6	Multiparty elections	LIED	multiparty legislative elections	0	0.00%	1975	2018
1.4.1	Elected officials index	V-Dem	v2x_elecoff	0	0.00%	1975	2018
1.4.2	Competitiveness of executive recruitment	Polity	xrcomp	292	4.71%	1975	2018
1.4.3	Openness of executive recruitment	Polity	xropen	292	4.71%	1975	2018
1.4.4	Electoral	BRRD	Electoral	17	0.26%	1975	2018
2.1.1	Access to justice for men	V-Dem	v2clacjstm	0	0.00%	1975	2018
2.1.2	Access to justice for women	V-Dem	v2clacjstw	0	0.00%	1975	2018
2.1.3	Judicial corruption decision	V-Dem	v2jucorrdc	30	0.46%	1975	2018
2.1.4	Judicial accountability	V-Dem	v2juacnt	0	0.00%	1975	2018
2.1.5	Fair trial	CLD	fairtrial	0	0.00%	1975	2018
2.2.1	Print/ broadcast censorship	V-Dem	v2mecenefm	0	0.00%	1975	2018
2.2.2	Harassment of journalists	V-Dem	v2meharjrn	0	0.00%	1975	2018
2.2.3	Media self-censorship	V-Dem	v2meslfcen	0	0.00%	1975	2018
2.2.4	Freedom of discussion for women	V-Dem	v2cldiscw	0	0.00%	1975	2018

ID	Indicator	Data set	Variable	Missing (N)	Missing (%)	Year (min)	Year (max)
2.2.5	Freedom of discussion for men	V-Dem	v2cldiscm	0	0.00%	1975	2018
2.2.6	Freedom of academic and cultural expression	V-Dem	v2clacfree	0	0.00%	1975	2018
2.2.7	Freedom of opinion and expression	CLD	freexp	0	0.00%	1975	2018
2.2.8	CSO entry and exit	V-Dem	v2cseeorgs	0	0.00%	1975	2018
2.2.9	CSO repression	V-Dem	v2csreprss	0	0.00%	1975	2018
2.2.10	Freedom of assembly and association	CLD	freass	0	0.00%	1975	2018
2.2.11	Freedom of religion	V-Dem	v2clrelig	0	0.00%	1975	2018
2.2.12	Religious organization repression	V-Dem	v2csrlgprep	0	0.00%	1975	2018
2.2.13	Freedom of thought, conscience and religion	CLD	frerel	0	0.00%	1975	2018
2.2.14	Freedom of foreign movement	V-Dem	v2clfmov	0	0.00%	1975	2018
2.2.15	Freedom of domestic movement for women	V-Dem	v2cldmovew	0	0.00%	1975	2018
2.2.16	Freedom of domestic movement for men	V-Dem	v2cldmovem	0	0.00%	1975	2018
2.2.17	Freedom of movement and residence	CLD	fremov	0	0.00%	1975	2018
2.2.18	Freedom from forced labour for women	V-Dem	v2clslavef	0	0.00%	1975	2018
2.2.19	Freedom from forced labour for men	V-Dem	v2clslavem	0	0.00%	1975	2018
2.2.20	Freedom from torture	V-Dem	v2cltort	0	0.00%	1975	2018
2.2.21	Freedom from political killings	V-Dem	v2clkill	0	0.00%	1975	2018
2.2.22	Political terror scale	PTS	PTSsd	249	3.99%	1975	2018
2.2.23	Internal conflict	ICRG	D	2066	46.72%	1984	2018
2.3.1	Social class equality in respect for civil liberties	V-Dem	v2clacjust	0	0.00%	1975	2018
2.3.2	Social group equality in respect for civil liberties	V-Dem	v2clsocgrp	0	0.00%	1975	2018
2.3.3	Power distributed by socio-economic position	V-Dem	v2pepwrse	0	0.00%	1975	2018
2.3.4	Power distributed by social group	V-Dem	v2pepwrso	0	0.00%	1975	2018
2.3.5	Representation of disadvantaged social groups	V-Dem	v2lgdsadlo	490	8.17%	1975	2018

ID	Indicator	Data set	Variable	Missing (N)	Missing (%)	Year (min)	Year (max)
2.3.6	Religious tensions	ICRG	---	2066	46.72%	1984	2018
2.3.7	Ethnic tensions	ICRG	---	2066	46.72%	1984	2018
2.3.8	Infant mortality rate	UN statistics	---	142	2.24%	1975	2018
2.3.9	Life expectancy	UN statistics	---	76	1.19%	1975	2018
2.3.10	Kilocalories per person per day	FAO	---	533	8.95%	1975	2018
2.3.11	Literacy	UNESCO	---	2534	64.09%	1975	2018
2.3.12	Mean years of schooling	GHDx	---	27	0.42%	1975	2018
2.3.13	Educational equality	V-Dem	v2peedueq	0	0.00%	1975	2018
2.3.14	Health equality	V-Dem	v2pehealth	0	0.00%	1975	2018
2.3.15	Power distributed by gender	V-Dem	v2pepwrgen	0	0.00%	1975	2018
2.3.16	CSO women's participation	V-Dem	v2csgender	0	0.00%	1975	2018
2.3.17	Female vs. male mean years of schooling	GHDx	—	27	0.42%	1975	2018
2.3.18	Lower chamber female legislators	V-Dem	v2lgfemleg	310	5.02%	1975	2018
2.3.19	Election women in the cabinet	V-Dem	v2elwomcab	515	8.62%	1987	2018
3.1.1	Legislature questions officials in practice	V-Dem	v2lgqstexp	0	0.00%	1975	2018
3.1.2	Executive oversight	V-Dem	v2lgotovst	0	0.00%	1975	2018
3.1.3	Legislature investigates in practice	V-Dem	v2lginvstp	0	0.00%	1975	2018
3.1.4	Legislature opposition parties	V-Dem	v2lgoppart	0	0.00%	1975	2018
3.1.5	Executive constraints	Polity	xconst	291	4.70%	1975	2018
3.2.1	High Court independence	V-Dem	v2juhcind	27	0.42%	1975	2018
3.2.2	Lower court independence	V-Dem	v2juncind	0	0.00%	1975	2018
3.2.3	Compliance with High Court	V-Dem	v2juhccomp	30	0.46%	1975	2018
3.2.4	Compliance with judiciary	V-Dem	v2jucomp	30	0.46%	1975	2018
3.2.5	Law and order	ICRG	---	2066	46.72%	1975	2018
3.3.1	Print/broadcast media critical	V-Dem	v2mecrit	0	0.00%	1975	2018
3.3.2	Print/broadcast media perspectives	V-Dem	v2merange	0	0.00%	1975	2018
3.3.3	Media bias	V-Dem	v2mebias	0	0.00%	1975	2018

ID	Indicator	Data set	Variable	Missing (N)	Missing (%)	Year (min)	Year (max)
3.3.4	Media corrupt	V-Dem	v2mecorrpt	0	0.00%	1975	2018
3.3.5	Media freedom	MFD	---	0	0.00%	1975	2018
4.1.1	Public sector corrupt exchanges	V-Dem	v2excrptps	0	0.00%	1975	2018
4.1.2	Public sector theft	V-Dem	v2exthtfts	0	0.00%	1975	2018
4.1.3	Executive embezzlement and theft	V-Dem	v2exembezt	0	0.00%	1975	2018
4.1.4	Executive bribery and corrupt exchanges	V-Dem	v2exbribe	0	0.00%	1975	2018
4.1.5	Corruption	ICRG	F	2066	46.72%	1984	2018
4.2.1	Executive respects constitution	V-Dem	v2exrescon	0	0.00%	1975	2018
4.2.2	Transparent laws with predictable enforcement	V-Dem	v2cltrnslw	0	0.00%	1975	2018
4.2.3	Rigorous and impartial public administration	V-Dem	v2clrspct	0	0.00%	1975	2018
4.2.4	Bureaucratic quality	ICRG	L	2066	46.72%	1984	2018
5.1.1	CSO participatory environment	V-Dem	v2csprtcpt	0	0.00%	1975	2018
5.1.2	Engaged society	V-Dem	v2dlengage	0	0.00%	1975	2018
5.1.3	CSO consultation	V-Dem	V2csnsult	0	0.00%	1975	2018
5.2.1	Election: VAP turnout	V-Dem / IDEA	v2elvaptrn	763	13.33%	1975	2018
5.3.1	Direct popular vote index	V-Dem	v2xdd_dd	41	0.64%	1975	2018
5.3.2	Electoral	BRRD	Electoral	17	0.26%	1975	2018
5.4.1	Local government index	V-Dem	v2xel_loelec	167	2.64%	1975	2018
5.4.2	Subnational elections free and fair	V-Dem	v2elffelr	798	14.02%	1975	2018

Annex E. Dimensionality tests, factor loadings and Cronbach's alpha values

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	0.934	0.000	0.129	0.000	.882
1.3	Free Political Parties	0.931	0.000	0.135	0.000	.912
1.4	Elected Officials	0.912	0.000	0.168	0.000	.917
						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	0.944	0.000	0.110	0.000	.926
1.1.2	EMB capacity	0.855	0.000	0.269	0.000	.938
1.1.3	Election other voting irregularities	0.887	0.000	0.214	0.000	.934
1.1.4	Election government intimidation	0.961	0.000	0.077	0.000	.930
1.1.5	Election free and fair	0.981	0.000	0.038	0.000	.924
1.1.6	Competition	0.807	0.000	0.349	0.000	.969
						Cronbach's alpha = .946

1.3. Free Political Parties

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
1.3.1	Party ban	-0.848	0.000	0.284	0.000	.935
1.3.2	Barriers to parties	-0.936	0.000	0.126	0.000	.929
1.3.3	Opposition parties' autonomy	-0.929	0.000	0.138	0.000	.929
1.3.4	Elections multiparty	-0.887	0.000	0.215	0.000	.930
1.3.5	Competitiveness of participation	-0.896	0.000	0.198	0.000	.931
1.3.6	Multiparty elections	-0.772	0.000	0.406	0.000	.953
						Cronbach's alpha = .945

1.4. Elected Government

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
1.4.1	Elected officials index	-0.722	0.000	0.479	0.000	.821
1.4.2	Competitiveness of executive recruitment	-0.827	0.000	0.315	0.000	.807
1.4.3	Openness of executive recruitment	-0.610	0.000	0.628	0.000	.848
1.4.4	Electoral	-0.929	0.000	0.136	0.000	.778
						Cronbach's alpha = .854

Attribute 2: Fundamental Rights

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.1	Access to Justice	-0.942	0.000	0.112	0.000	.863
2.2	Civil Liberties	-0.906	0.000	0.180	0.000	.892
2.3	Social Rights	-0.855	0.000	0.269	0.000	.913
						Cronbach's alpha = .924

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	-0.977	0.000	0.046	0.000	.877
2.1.2	Access to justice for women	-0.963	0.000	0.072	0.000	.879
2.1.3	Judicial corruption decision	-0.685	0.000	0.532	0.000	.897
2.1.4	Judicial accountability	-0.660	0.000	0.565	0.000	.907
2.1.5	Fair trial	-0.868	0.000	0.247	0.000	.898
						Cronbach's alpha = .911

2.2. Civil Liberties

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.2.A	Freedom of expression	0.987	0.000	0.026	0.000	.935
2.2.B	Freedom of association and assembly	0.956	0.000	0.087	0.000	.942
2.2.C	Freedom of religion	0.844	0.000	0.288	0.000	.954
2.2.D	Freedom of movement	0.893	0.000	0.203	0.000	.949
2.2.E	Personal integrity and security	-0.869	0.000	0.245	0.000	.955
						Cronbach's alpha = .957

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	-0.935	0.000	0.127	0.000	.966
2.2.2	Harassment of journalists	-0.924	0.000	0.148	0.000	.967
2.2.3	Media self-censorship	-0.908	0.000	0.177	0.000	.968
2.2.4	Freedom of discussion for women	-0.956	0.000	0.087	0.000	.967
2.2.5	Freedom of discussion for men	-0.962	0.000	0.076	0.000	.967
2.2.6	Freedom of academic and cultural expression	-0.931	0.000	0.136	0.000	.967
2.2.7	Freedom of opinion and expression	-0.863	0.000	0.257	0.000	.976
						Cronbach's alpha = .973

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	-0.960	0.000	0.077	0.000	.853
2.2.9	CSO repression	-0.933	0.000	0.130	0.000	.871
2.2.10	Freedom of assembly and association	-0.872	0.000	0.238	0.000	.945
						Cronbach's alpha = .918

2.2.C. Freedom of religion

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.2.11	Freedom of religion	-0.947	0.000	0.102	0.000	.799
2.2.12	Religious organization repression	-0.881	0.000	0.223	0.000	.840
2.2.13	Freedom of thought, conscience, and religion	-0.792	0.000	0.372	0.000	.910
						Cronbach's alpha = .891

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	-0.907	0.000	0.179	0.000	.852
2.2.15	Freedom of domestic movement for women	-0.883	0.000	0.222	0.000	.874
2.2.16	Freedom of domestic movement for men	-0.924	0.000	0.147	0.000	.869
2.2.17	Freedom of movement and residence	-0.776	0.000	0.398	0.000	.926
						Cronbach's alpha = .905

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 labor for women	0.705	0.000	0.504	0.000	.889
2.2.19	Freedom from forced labor for men	0.677	0.000	0.542	0.000	.893
2.2.20	Freedom from torture	0.932	0.000	0.132	0.000	.877
2.2.21	Freedom from political killings	0.952	0.000	0.095	0.000	.873
2.2.22	Political Terror Scale	-0.752	0.000	0.435	0.000	.892
2.2.23	Internal conflict	0.636	0.000	0.596	0.000	.910
						Cronbach's alpha = .906

2.3. Social Rights and Equality

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.3.A	Social group equality	-0.810	0.000	0.343	0.000	.768
2.3.B	Basic welfare	-0.712	0.000	0.493	0.000	.833
2.3.C	Gender equality	-0.880	0.000	0.224	0.000	.730
						Cronbach's alpha = .839

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	0.924	0.000	0.148	0.000	.798
2.3.2	Social group equality in respect for civil liberties	0.821	0.000	0.326	0.000	.815
2.3.3	Power distributed by socioeconomic position	0.794	0.000	0.371	0.000	.813
2.3.4	Power distributed by social group	0.793	0.000	0.372	0.000	.818
2.3.5	Representation of disadvantaged social groups	0.544	0.000	0.705	0.000	.861
2.3.6	Religious / ethnic tensions	0.326	0.000	0.893	0.000	.881
						Cronbach's alpha = .858

2.3.B. Basic welfare

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.3.8	Infant mortality rate	-0.987	0.000	0.027	0.000	.920
2.3.9	Life expectancy	-0.936	0.000	0.127	0.000	.928
2.3.10	Kilocalories per person per day	-0.720	0.000	0.483	0.000	.941
2.3.11	Literacy	-0.839	0.000	0.298	0.000	.927
2.3.12	Average years of schooling	-0.846	0.000	0.287	0.000	.927
2.3.13	Educational equality	-0.664	0.000	0.561	0.000	.937
2.3.14	Health equality	-0.739	0.000	0.456	0.000	.932
						Cronbach's alpha = .940

2.3.C. Gender equality

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
2.3.15	Power distributed by gender	-0.846	0.000	0.285	0.000	.758
2.3.16	CSO women's participation	-0.789	0.000	0.379	0.000	.772
2.3.17	Female vs. male mean years of schooling	-0.620	0.000	0.617	0.000	.812
2.3.18	Women's representation in national parliaments	-0.614	0.000	0.624	0.000	.799
2.3.19	Proportion of women in cabinets	-0.622	0.000	0.614	0.000	.804
						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	-0.957	0.000	0.083	0.000	.852
3.2	Judicial independence	-0.852	0.000	0.273	0.000	.875
3.3	Media integrity	0.886	0.000	0.214	0.000	.851
						Cronbach's alpha = .902

3.1. Effective Parliament

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
3.1.1	Legislature questions officials in practice	0.886	0.000	0.215	0.000	.948
3.1.2	Executive oversight	0.916	0.000	0.160	0.000	.945
3.1.3	Legislature investigates in practice	0.945	0.000	0.108	0.000	.941
3.1.4	Legislature opposition parties	0.926	0.000	0.142	0.000	.941
3.1.5	Executive constraints	0.847	0.000	0.282	0.000	.960
						Cronbach's alpha = .957

3.2. Judicial Independence

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
3.2.1	High court independence	0.924	0.000	0.147	0.000	.885
3.2.2	Lower court independence	0.922	0.000	0.151	0.000	.885
3.2.3	Compliance with high court	0.897	0.000	0.196	0.000	.885
3.2.4	Compliance with judiciary	0.931	0.000	0.134	0.000	.878
3.2.5	Law and order	0.471	0.000	0.777	0.000	.955
						Cronbach's alpha = .919

3.3. Media Integrity

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
3.3.1	Print/broadcast media critical	-0.961	0.000	0.078	0.000	.908
3.3.2	Print/broadcast media perspectives	-0.955	0.000	0.088	0.000	.909
3.3.3	Media bias	-0.952	0.000	0.094	0.000	.912
3.3.4	Media corrupt	-0.895	0.000	0.200	0.000	.913
3.3.5	Media Freedom	-0.750	0.000	0.439	0.000	.967
						Cronbach's alpha = .935

Attribute 4: Impartial Administration

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
4.1	Absence of Corruption	-0.909	0.002	0.170	0.004	---
4.2	Predictable Enforcement	-0.928	0.002	0.136	0.004	---
						Cronbach's alpha = .912

4.1. Absence of Corruption

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
4.1.1	Public sector corrupt exchanges	0.962	0.000	0.075	0.000	.925
4.1.2	Public sector theft	0.964	0.000	0.072	0.000	.924
4.1.3	Executive embezzlement and theft	0.914	0.000	0.165	0.000	.928
4.1.4	Executive bribery and corrupt exchanges	0.875	0.000	0.236	0.000	.934
4.1.5	Corruption	0.702	0.000	0.508	0.000	.962
						Cronbach's alpha = .948

4.2. Predictable Enforcement

No.	Component	Loading	SE	Uniqueness	SE	Cronbach's alpha if item deleted
4.2.1	Executive respects constitution	0.881	0.000	0.226	0.000	.889
4.2.2	Transparent laws with predictable enforcement	0.919	0.000	0.156	0.000	.881
4.2.3	Rigorous and impartial public administration	0.932	0.000	0.133	0.000	.876
4.2.4	Bureaucratic quality	0.720	0.000	0.483	0.000	.935
						Cronbach's alpha = .920

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	-0.866	0.000	0.250	0.000	.892
5.1.2	Engaged society	-0.894	0.000	0.199	0.000	.876
5.1.3	CSO consultation	-0.904	0.000	0.182	0.000	.873
						Cronbach's alpha = .917

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. While the cells above the diagonal list the coefficients, the cells below the diagonal contain the respective numbers of observations (country-years).

Dimension 1. Representative Government

No.	Component	1.1	1.2	1.3	1.4
1.1	Clean elections		.763**	.868**	.846**
1.2	Inclusive suffrage	6462		.587**	.719**
1.3	Free political parties	6462	6462		.842**
1.4	Elected officials	6462	6462	6488	

1.1. Clean Elections

No.	Component	1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6
1.1.1	EMB autonomy		.812**	.809**	.895**	.929**	.823**
1.1.2	EMB capacity	6488		.856**	.830**	.821**	.640**
1.1.3	Election other voting irregularities	6462	6462		.865**	.864**	.674**
1.1.4	Election government intimidation	6462	6462	6462		.945**	.752**
1.1.5	Election free and fair	6462	6462	6462	6462		.795**
1.1.6	Competition	6488	6488	6462	6462	6462	

1.3. Free Political Parties

No.	Component	1.3.1	1.3.2	1.3.3	1.3.4	1.3.5	1.3.6
1.3.1	Party ban		.800**	.781**	.747**	.755**	.707**
1.3.2	Barriers to parties	6488		.882**	.819**	.843**	.702**
1.3.3	Opposition parties autonomy	6305	6305		.803**	.837**	.674**
1.3.4	Elections multiparty	6462	6462	6279		.809**	.757**
1.3.5	Competitiveness of participation	6196	6196	6013	6170		.716**
1.3.6	Multiparty elections	6488	6488	6305	6462	6196	

1.4. Elected Government

No.	Component	1.4.1	1.4.2	1.4.3	1.4.4
1.4.1	Elected officials index		.543**	.542**	.681**
1.4.2	Competitiveness of executive recruitment	6196		.538**	.776**
1.4.3	Openness of executive recruitment	6196	6196		.534**
1.4.4	Electoral	6471	6181	6181	

Dimension 2. Fundamental Rights

No.	Component	2.1	2.2	2.3
2.1	Access to justice		.853**	.806**
2.2	Civil liberties	6458		.775**
2.3	Social rights	6458	6488	

2.1. Access to Justice

No.	Component	2.1.1	2.1.2	2.1.3	2.1.4	2.1.5
2.1.1	Access to justice for men		.945**	.657**	.632**	.842**
2.1.2	Access to justice for women	6488		.628**	.621**	.830**
2.1.3	Judicial corruption decision	6458	6458		.686**	.706**
2.1.4	Judicial accountability	6488	6488	6458		.619**
2.1.5	Fair trial	6488	6488	6458	6488	

2.2. Fundamental Rights

No.	Component	2.2.A	2.2.B	2.2.C	2.2.D	2.2.E
2.2.A	Freedom of expression		.945**	.820**	.875**	.868**
2.2.B	Freedom of association and assembly	6488		.831**	.845**	.795**
2.2.C	Freedom of religion	6488	6488		.833**	.696**
2.2.D	Freedom of movement	6488	6488	6488		.793**
2.2.E	Personal integrity and security	6488	6488	6488	6488	

2.2.A. Freedom of expression

No.	Component	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		.890**	.891**	.874**	.873**	.870**	.841**
2.2.2	Harassment of journalists	6488		.866**	.864**	.874**	.842**	.832**
2.2.3	Media self-censorship	6488	6488		.833**	.855**	.844**	.806**
2.2.4	Freedom of discussion for women	6488	6488	6488		.955**	.892**	.803**
2.2.5	Freedom of discussion for men	6488	6488	6488	6488		.899**	.803**
2.2.6	Freedom of academic and cultural expression	6488	6488	6488	6488	6488		.792**
2.2.7	Freedom of opinion and expression	6488	6488	6488	6488	6488	6488	

2.2.B. Freedom of association and assembly

No.	Component	2.2.8	2.2.9	2.2.10
2.2.8	CSO entry and exit		.896**	.839**
2.2.9	CSO repression	6488		.815**
2.2.10	Freedom of assembly and association	6488	6488	

2.2.C. Freedom of religion

No.	Component	2.2.11	2.2.12	2.2.13
2.2.11	Freedom of religion		.835**	.751**
2.2.12	Religious organization repression	6488		.699**
2.2.13	Freedom of thought, conscience, and religion	6488	6488	

2.2.D. Freedom of movement

No.	Component	2.2.14	2.2.15	2.2.16	2.2.17
2.2.14	Freedom of foreign movement		.784**	.835**	.740**
2.2.15	Freedom of domestic movement for women	6488		.830**	.677**
2.2.16	Freedom of domestic movement for men	6488	6488		.691**
2.2.17	Freedom of movement and residence	6488	6488	6488	

2.2.E. Personal integrity and security

No.	Component	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		.882**	.633**	.620**	.470**	.416**
2.2.29	Freedom from forced labor for men	6488		.632**	.630**	.456**	.390**
2.2.20	Freedom from torture	6488	6488		.899**	.605**	.547**
2.2.21	Freedom from political killings	6488	6488	6488		.651**	.599**
2.2.22	Political Terror Scale	6239	6239	6239	6239		.600**
2.2.23	Internal conflict	4422	4422	4422	4422	4396	

2.3. Social rights

No.	Component	2.3.A	2.3.B	2.3.C
2.3.A	Social group equality		.578**	.714**
2.3.B	Basic welfare	6488		.628**
2.3.C	Gender equality	6488	6488	

2.3.A. Social group equality

No.	Component	2.3.1	2.3.2	2.3.3	2.3.4	2.3.5	2.3.6
2.3.1	Social class equality in respect for civil liberties		.744**	.715**	.696**	.513**	.279**
2.3.2	Social group equality in respect for civil liberties	6488		.548**	.686**	.435**	.318**
2.3.3	Power distributed by socioeconomic position	6488	6488		.597**	.584**	.296**
2.3.4	Power distributed by social group	6488	6488	6488		.421**	.291**
2.3.5	Representation of disadvantaged social groups	5998	5998	5998	5998		.111**
2.3.6	Religious / ethnic tensions	4422	4422	4422	4422	4237	

2.3.B. Basic welfare

No.	Component	2.3.8	2.3.9	2.3.10	2.3.11	2.3.12	2.3.13	2.3.14
2.3.8	Infant mortality rate		.955**	.783**	.799**	.863**	.723**	.772**
2.3.9	Life expectancy	6339		.768**	.734**	.819**	.667**	.727**
2.3.10	Kilocalories per person per day	5855	5895		.546**	.687**	.619**	.679**
2.3.11	Literacy	3948	3954	3656		.940**	.615**	.635**
2.3.12	Average years of schooling	6346	6401	5955	3954		.692**	.696**
2.3.13	Educational equality	6346	6412	5955	3954	6461		.905**
2.3.14	Health equality	6346	6412	5955	3954	6461	6488	

2.3.C. Gender equality

No.	Component	2.3.15	2.3.16	2.3.17	2.3.18	2.3.19
2.3.15	Power distributed by gender		.699**	.517**	.507**	.534**
2.3.16	CSO women's participation	6488		.566**	.396**	.474**
2.3.17	Female vs. male mean years of schooling	6461	6461		.336**	.305**
2.3.18	Women's representation in national parliaments	6178	6178	6156		.539**
2.3.19	Proportion of women in cabinets	5973	5973	5948	5764	

Dimension 3. Checks on government

No.	Component	3.1	3.2	3.3
3.1	Effective parliament		.744**	.782**
3.2	Judicial independence	6488		.755**
3.3	Media integrity	6488	6488	

3.1. Effective parliament

No.	Component	3.1.1	3.1.2	3.1.3	3.1.4	3.1.5
3.1.1	Legislature questions officials in practice		.836**	.848**	.842**	.766**
3.1.2	Executive oversight	6488		.897**	.842**	.771**
3.1.3	Legislature investigates in practice	6488	6488		.887**	.780**
3.1.4	Legislature opposition parties	6488	6488	6488		.831**
3.1.5	Executive constraints	6197	6197	6197	6197	

3.2. Judicial independence

No.	Component	3.2.1	3.2.2	3.2.3	3.2.4	3.2.5
3.2.1	High court independence		.901**	.763**	.801**	.394**
3.2.2	Lower court independence	6461		.765**	.799**	.391**
3.2.3	Compliance with high court	6458	6458		.890**	.478**
3.2.4	Compliance with judiciary	6458	6458	6458		.469**
3.2.5	Law and order	4404	4422	4401	4401	

3.3. Media integrity

No.	Component	3.3.1	3.3.2	3.3.3	3.3.4	3.3.5
3.3.1	Print/broadcast media critical		.922**	.909**	.859**	.720**
3.3.2	Print/broadcast media perspectives	6488		.913**	.839**	.694**
3.3.3	Media bias	6488	6488		.858**	.708**
3.3.4	Media corrupt	6488	6488	6488		.734**
3.3.5	Media Freedom	6488	6488	6488	6488	

Dimension 4. Impartial administration

No.	Component	4.1	4.2
4.1	Absence of corruption		.838**
4.2	Predictable enforcement	6488	

4.1. Absence of corruption

No.	Component	4.1.1	4.1.2	4.1.3	4.1.4	4.1.5
4.1.1	Public sector corrupt exchanges		.923**	.850**	.820**	.664**
4.1.2	Public sector theft	6488		.849**	.805**	.670**
4.1.3	Executive embezzlement and theft	6488	6488		.851**	.659**
4.1.4	Executive bribery and corrupt exchanges	6488	6488	6488		.648**
4.1.5	Corruption	4422	4422	4422	4422	

4.2. Predictable enforcement

No.	Component	4.2.1	4.2.2	4.2.3	4.2.4
4.2.1	Executive respects constitution		.800**	.789**	.647**
4.2.2	Transparent laws with predictable enforcement	6488		.854**	.654**
4.2.3	Rigorous and impartial public administration	6488	6488		.668**
4.2.4	Bureaucratic quality	4422	4422	4422	

5.1. Civil society participation

No.	Component	5.1.1	5.1.2	5.1.3
5.1.1	CSO participatory environment		.775**	.784**
5.1.2	Engaged society	6488		.809**
5.1.3	CSO consultation	6488	6488	

5.3. Direct democracy

No.	Component	5.3.1	5.3.2	5.3
5.3.1	Direct popular vote index		.242**	.948**
5.3.2	Electoral	6430		.388**
5.3	Direct democracy sub-dimension	6430	6430	

5.4. Local democracy

No.	Component	5.4.1	5.4.2	5.4
5.4.1	Local government index		.766**	.935**
5.4.2	Subnational elections free and fair	5627		.877**
5.4	Local democracy sub-dimension	6224	5690	

Annex G. Comparisons with extant measures

Table G.1. Selected characteristics of 10 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: GSOD Indices	1975–2018	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 Kraay: 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.

Correlations between GSoD Indices and extant measures

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)	.902	2541	39.16%
Political rights (FH)	-.903	5323	82.04%
Democracy (Democracy - Dictatorship)	.820	4651	71.69%
Electoral process and pluralism (EIU)	.904	1510	23.27%
Political participation (BTI)	.902	719	11.08%
Polity2 (Polity)	.892	5266	81.17%
Polyarchy index (V-Dem)	.952	5550	85.54%

Subattribute 1.1: Clean elections

Correlation with:	Correlation coefficient	N	% of GSODI N
Perceptions of electoral integrity (EIP)	.864	142	2.19%
Electoral self-determination (CIRI)	.769	4208	64.86%
Free and fair elections (BTI)	.879	719	11.08%

Subattribute 1.3: Free political parties

Correlation with:	Correlation coefficient	N	% of GSODI N
Opposition (Political Institutions and Political Events - PIPE)	.820	4629	71.35%

Subattribute 1.4: Elected officials

Correlation with:	Correlation coefficient	N	% of GSODI N
Executive elections (LIED)	.682	5515	85.00%
Legislative elections (LIED)	.654	5514	84.99%
Effective power to govern (BTI)	.773	720	11.10%

Attribute 2: Fundamental rights

Correlation with:	Correlation coefficient	N	% of GSODI N
Civil liberties (FH)	-.888	5344	82.37%
Civil liberties (EIU)	.856	1510	23.27%
Egalitarian component index (V-Dem)	.850	5587	86.11%

Subattribute 2.1: Access to justice

Correlation with:	Correlation coefficient	N	% of GSODI N
Due process of law and rights of the accused (WJP)	.834	288	4.44%
Civil justice (WJP)	.848	288	4.44%

Subattribute 2.2: Civil liberties

Correlation with:	Correlation coefficient	N	% of GSODI N
Civil liberties (FH)	-.903	5344	82.37%
Civil liberties (EIU)	.879	1510	23.27%

Sub-component 2.2.A: Freedom of expression

Correlation with:	Correlation coefficient	N	% of GSODI N
Freedom of opinion and expression is effectively guaranteed (WJP)	.877	288	4.44%
Freedom of speech (CIRI)	.671	4224	65.10%
Freedom of expression (BTI)	.879	1440	22.19%

Sub-component 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)	.838	288	4.44%
Freedom of assembly and association (CIRI)	.751	4219	65.03%
Freedom of assembly and association (BTI)	.875	1440	22.19%

Sub-component 2.2.C: Freedom of religion

Correlation with:	Correlation coefficient	N	% of GSODI N
Freedom of belief and religion is effectively guaranteed (WJP)	.772	288	4.44%
Freedom of religion (CIRI)	.615	3485	53.71%
Religious discrimination (Religion and State Project - RAS)	-.733	2760	42.54%
Religious regulation (Religion and State Project - RAS)	-.700	2759	42.52%

Sub-component 2.2.D: Freedom of movement

Correlation with:	Correlation coefficient	N	% of GSODI N
Freedom of movement (CIRI)	.580	3490	53.79%

Sub-component 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)	.862	288	4.44%
Conflict intensity (BTI) (inversed)	-.596	1440	22.19%

Subattribute 2.3: Social rights

Correlation with:	Correlation coefficient	N	% of GSODI N
Equal opportunity (BTI)	.753	720	11.10%

Sub-component 2.3.A: Social group equality

Correlation with:	Correlation coefficient	N	% of GSODI N
Equal treatment and absence of discrimination (WJP)	.720	288	4.44%
Ethnic group exclusion (Ethnic Power Relations - EPR)	-.358	5427	83.65%
Equal opportunity (BTI)	.601	720	11.10%

Sub-component 2.3.B: Basic needs provisions

Correlation with:	Correlation coefficient	N	% of GSODI N
Social safety nets (BTI)	.815	720	11.10%

Sub-component 2.3.C: Gender equality

Correlation with:	Correlation coefficient	N	% of GSODI N
Women's social rights (CIRI)	.536	4184	64.49%
Women's economic rights (CIRI)	.607	3231	49.80%

Attribute 3: Checks on government

Correlation with:	Correlation coefficient	N	% of GSODI N
Separation of powers (BTI)	.841	720	11.10%

Subattribute 3.1: Effective parliament

Correlation with:	Correlation coefficient	N	% of GSODI N
Government powers are effectively limited by the legislature (WJP)	.713	288	4.44%
Separation of powers (BTI)	.755	720	11.10%

Subattribute 3.2: Judicial independence

Correlation with:	Correlation coefficient	N	% of GSODI N
Government powers are effectively limited by the judiciary (WJP)	.770	288	4.44%
Judicial independence (BTI)	.784	720	11.10%
Independence of the judiciary (CIRI)	.667	4244	65.41%

Subattribute 3.3: Media integrity

Correlation with:	Correlation coefficient	N	% of GSODI N
Government powers are subject to non-governmental checks (WJP)	.794	288	4.44%

Attribute 4: Impartial administration

Correlation with:	Correlation coefficient	N	% of GSODI N
Government regulations are applied and enforced without improper influence (WJP)	.896	288	4.44%
Basic administration (BTI)	.651	720	11.10%

Subattribute 4.1: Absence of corruption

Correlation with:	Correlation coefficient	N	% of GSODI N
Absence of corruption (WJP)	.912	288	4.44%
Government regulations are applied and enforced without improper influence (WJP)	.870	288	4.44%
Absence of corruption (WGI)	.888	2543	39.20%
Prosecution of office abuse (BTI)	.752	720	11.10%
Anti-corruption policy (BTI)	.778	719	11.08%

Subattribute 4.2: Predictable enforcement

Correlation with:	Correlation coefficient	N	% of GSODI N
Government regulations are effectively enforced (WJP)	.769	288	4.44%
Administrative proceedings are conducted without unreasonable delay (WJP)	.634	288	4.44%
Government effectiveness (WGI)	.871	2543	39.20%
Basic administration (BTI)	.601	720	11.10%
Implementation (BTI)	.799	719	11.08%

Subattribute 5.1: Civil society participation

Correlation with:	Correlation coefficient	N	% of GSODI N
Interest groups (BTI)	.683	1440	22.19%
Civil society traditions (BTI)	-.590	1440	22.19%

About the author

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The International Institute for Democracy and Electoral Assistance (International IDEA) is an intergovernmental organization with the mission to advance democracy worldwide, as a universal human aspiration and enabler of sustainable development. We do this by supporting the building, strengthening and safeguarding of democratic political institutions and processes at all levels. Our vision is a world in which democratic processes, actors and institutions are inclusive and accountable and deliver sustainable development to all.

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In our work we focus on three main impact areas: electoral processes; constitution-building processes; and political participation and representation. The themes of gender and inclusion, conflict sensitivity and sustainable development are mainstreamed across all our areas of work.

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