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1. Introduction

The online analysis tools were specially designed to display V-Dem data. They allow users to analyze 400+ indicators and indices of democracy in 120 countries from 1900 to the present day. Data for all countries of the world will be available by December 2015. The reliable, precise nature of the indicators as well as their lengthy historical coverage should be useful not only to scholars studying democracy, but also to governments, practitioners and NGOs.

The online analysis is composed by three tools:

**Variable Graph:** This tool is used to compare multiple countries for one index or one variable at a time.

**Country Graph:** This tool can be used to display multiple variables and/or indices for one country over time.

**Motion Charts:** This tool enables users to explore how the relationship between two variables changes over time.

**Tip!** The V-Dem database contains a large number of indicators. In order to identify indicators within a certain theme/area of interest: open the V-Dem Codebook, enter search mode and search on keywords/concepts within the theme you wish to explore. The search will take you to the relevant indicators. Keep the codebook open in a separate window while using the online tools; this will make it easier to navigate among the V-Dem indicators. You find the codebook on the following link: https://v-dem.net/en/reference/version-4-mar-2015/
2. Variable & Country Graphs

Variable Graph:

1. Select **ONE** variable, these are listed by:
   a. Variety of democracy, which are top-level aggregations and the main principles of democracy.
   b. Component, which are meso-level aggregations that are made up by combinations of indicators.
   c. Indicator, this is the lowest level of aggregation.

2. Choose **ONE or SEVERAL** countries or regions.
3. Adjust date range.
4. Tick the box ‘Graph Confidence’ to display the confidence levels. For more information about confidence levels, please see section 6.
5. Press ‘Generate Graph’.
6. Press ‘Selected Indicators’ to see the question details, click to expand.
7. The menu can be moved to the side via the arrow in the top right corner.
8. The symbols right below the ‘How-to’ button makes it possible to either save or print a graph.

**Tips!** Press the ‘How-to’ button in the top-right corner for a more information about the single variable tool.
Country Graph:
1. Select **ONE** country or region. These are listed in alphabetical order, it is also possible to use ‘search’ function.
2. Select **SEVERAL** indicators either by V-Dem indices, by component or by indicator. Click on a category to expand. An alphabetical list of indicators appears when placing the cursor in the ‘search’ field.
3. Select parameters:
   a. V-Dem indicators have different scales. ‘Relative scale’, which is the default setting, maps all indicators on a standardized range. The ‘original scale’ option plots indicators on their original scales. To learn more about scales and the different settings, see section 6.
   b. Tick the box Show ‘Confidence Rating’ to display the confidence intervals.
   c. Adjust date range.
4. Press ‘Generate Graph’.
5. Press ‘Selected Indicators’ to see the question details, click to expand.
6. Once a graph has been generated, the ‘toggle option’ makes it possible to see the original scale for one indicator at the time. Simply tick the box next to the indicator in the top right corner.
7. The menu can be moved to the side via the arrow in the top right corner.
8. The symbols right below the ‘How-to’ button makes it possible to either save or print a graph.

Tips! Press the ‘How-to’ button in the top-right cornered for a more information about the single graph tool.
3. Drill-Down Feature

The graphing tools include a drill-down feature. It offers the opportunity to interactively reveal the individual indicators included in an index while keeping the index in view.

The example below illustrates the Liberal Democracy Index in Indonesia (blue line in first picture). To activate the drill-down, just click the line of the index-line in the graph. The graphing tool will then draw all the different components of the liberal democracy index. The index line in blue fades slightly and the component lines are drawn in other colors, as in the second picture below. Finally, you can select and unselect which of the components you want to display on the graph by clicking on the text labels on the right-hand side, as shown in in the lower-right graph.

The drill-down option is an important part of the V-Dem online analysis tool. Users can explore which specific aspects of democracy that are driving changes in broader concepts of democracy (e.g. electoral, liberal democracy etc.).

Tips! In the V-Dem codebook you find the table ‘Indicators and Components Included in Indices’, which displays how indicators, components and indices relate. This makes it easier to understand the structure and relations between a given set of indicators and indices, which is especially relevant when exploring indices and the drill-down feature.
4. Motion Charts

The motion chart allows users to observe the development of a country or a region over time. Choose your preferred parameters (region/country and indicator), then click “play” in the bottom-left-hand corner and watch the developments unfold. Motion charts can be paused and a year can be selected in the time line to view information on specific years.

To increase the size of the motion chart, hit ctrl+ or cmd+ in your browser a few times. This makes it possible to see all the elements easily, including a full list of the available regions and countries, and to choose which ones to highlight and track as the animation plays.
5. Visual Examples

Being the biggest global dataset on democracy, V-Dem provides indicators that can be used by scholars, practitioners, policy makers, politicians as well as the general public. Our vast collection of specific indicators enables users to do country and regional comparisons, observe developments over time and much more. Below we have selected three examples to demonstrate the diversity and practicality of V-Dem data. For more examples, see the V-Dem homepage and go to “Graph of the Week” under “News”.

Individual issues of interest and their development can be tracked using the graph generator. The example on the right observes and compares the development of number of elected women in cabinet over a period of 10 years in a few selected countries in Latin America.

A number of indicators measuring different forms of clientelism and corruption within various sectors are available as part of our online analysis tool. Turkmenistan was in 2014 ranked as one of the world’s top ten most corrupt countries in the Corruption Perception Index, provided by Transparency International. The lack of development in this area since 1990 can be observed on the adjoining graph.

V-Dem offers 11 indicators on civil society organizations (CSOs), these are hopefully valuable to the CSO research community and policymakers. Four of them are included in this graph, where the role of the CSOs over time in Brazil can be examined. Apart from an overall increase in all four indicators over time, a quite sharp change can be noted around 1984-1988, around the time of Brazil’s most recent transition to democracy. In addition, women’s participation in CSOs seems to have experienced a leap in 1995-1996, while the CSO consultation increased significantly in 2002-2004.
6. How to Interpret Graphs

The V-Dem online analysis tools are specifically designed to visualize the V-Dem data, therefore the generated graphs differ from customary line graphs. Below we provide information on how to interpret V-Dem generated graphs.

Confidence Intervals
Confidence intervals are displayed as a shadow above and below the lines of indicators and indices, as can be seen in the graph below. Confidence intervals are only available for indicators coded by multiple coders (Country Expert coding). The bounds demarcate points lying one standard deviation (a) above and (b) below the estimated best guess for a particular country-year by the V-Dem measurement model¹. The more expert ratings obtained, the more they were in agreement, and the more historical variation there was for that question for that particular country, the narrower the confidence intervals are. Thus, a wider range indicates higher uncertainty.

Variable Graphs - Gridlines
When only one variable is graphed, the scores are displayed relative to the values in the original indicator. For example, the scale for percentages is 0-20-40-60-80-100 and the scale for a multiple-choice question could be 0-1-2-3-4. However, these numbers refer to the range of values between the gridlines, not the gridlines themselves. In other words, the gridlines demarcate the boundaries between 0 and 1, 1 and 2, and so on. A line below the gridline separating 1 and 2 is more likely to have a true value of 1; a value above that line is more likely to be a 2; and so on for other ranges.

For ordinal indicators, these lines are not evenly spaced because the actual distances between scores are not the same. In the example below, on the dimension of Freedom from torture, it is easier to move from the range of 1 to the range of 3 than to move from the range of 2 to the range of 4, as the range of values consistent with a 3 is very wide. The distances between categories are calculated with the V-Dem measurement model by taking into account coders’ relative thresholds, which becomes observable when coders move from one category to another.

¹ For more information about the measurement model and methodology, please refer to the V-Dem Codebook and Methodology documents.
Country Graphs - Scales

When multiple indicators are combined in the same line graph their values cannot be plotted in a strictly comparable manner due to the fact that indicators have different scales. In order to make it possible to display multiple indicators in the same graph, we transform them so that the area between the gridline below the maximum and the gridline above the minimum are all in the same range. This does not make these values comparable in any but a very rough sense. A relatively high value on one variable may have the same transformed score as a relatively low value on a different value. Ultimately, whether these scores are “relatively democratic” or “relatively undemocratic” depends on the meaning of those scores. In the example below, the bottom gridline, above the “MIN” label, corresponds to the threshold between the lowest score and the second-lowest score on the scale. The top gridline, below the “MAX” label, corresponds to the threshold between the highest score and the second-highest score on the scale. The two indicators belong to different scales. Health equality ranges from 0 to 4 while Range of Consultation varies from 0 to 5, but here the two are standardized and graphed on the same scale. This corresponds to the graphing parameter ‘relative scale’, which is the default setting for country graphs. The ‘original scale’ option displays how the original scales fall relative to that range. That is, it takes the max and min of all the indicators and uses those as the graph parameters and shows where they fall within the scale. A 2 out of 2 will fall at 2 in the original scale, whereas on the relative scale it will fall at the max. Finally, the ‘toggle option’ on the right hand side of the graph makes it possible to see the original scale for one indicator at the time.