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STEERING COMMITTEE FOR CULTURE, HERITAGE AND LANDSCAPE
(CDCPP)

INDICATOR FRAMEWORK ON CULTURE AND DEMOCRACY (IFCD)
PROJECT ACHIEVEMENTS AND NEXT STEPS

For action

*Framework on Culture and Democracy (IFCD)
Interactive Tool Proposal*

Secretariat Memorandum
prepared by the
Directorate of Democratic Governance
Democratic Institutions and Governance Department

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Indicator

Framework on Culture and Democracy (IFCD) - Interactive Tool Proposal

The images in this proposal are based on a functional, interactive prototype created by the Hertie School of Governance, which uses real data from a recent version of the IFCD dataset. While these plots are demonstrative of what they would look like using actual data, we ask that the reader not focus too much on specific data points as the IFCD dataset is still developing and many data points will be adjusted or updated in the future, and therefore these images may not accurately represent the current environment in a given country.

Country Overview

The country overview page presents a quick look at how a selected country performs on all of the IFCD component indices, and presents an 'opportunity' table where a selected component index is compared with all other component indices in terms of their performance, relevance, and a combined opportunity score.



Figure 1 The Country Overview page of the proposed IFCD Interactive Tool

At the top left of the country overview page, a drop-down menu allows the user to easily select a country of interest. Only countries for which the IFCD contains data would be available. Upon selecting a country, all of the text, data, plots, and tables would adapt to display the appropriate information for the selected country.

A second drop-down menu would allow the user to select a reference country or group of countries as a comparison to the selected overview country. Options could be any of the individual countries included in the IFCD, the mean or median of all countries in the IFCD, or the mean or median of selected groups of countries that might be of interest, e.g. 'Nordic countries' or 'Top 5 largest economies'. While 'mean of all countries' would likely be the default, the option enables a user to compare a country to sub-groups that better reflect its peers, if so desired.

A brief country overview would provide basic macroeconomic details about the country, like population and GDP, as well as a brief text reviewing the results of the IFCD framework for that specific country, for instance, mentioning significant deviations from the norm or clear opportunities for improvement. Such country reviews would need to be written by an expert or analyst in advance as these would not be possible to generate in real time automatically given only the IFCD data.

The selected options on the country overview page would automatically generate the radar plot and table seen on the country overview page, discussed in further detail below.

Radar Plot

Prominently placed on the country overview page is the featured radar plot (also sometimes called a spider plot or polar plot). The radar plot allows the user to review the selected country's performance on all of the component indices simultaneously and also to compare its performance to the selected reference/comparison group. The red line shows the selected country's performance, intersecting the axis of each component at the point that corresponds with the country's value for that component. Intersecting an axis closer to the center of the radar plot conveys a lower value, while further toward the edge of the radar plot conveys a higher value. The slightly transparent grey area shows the values for the selected reference/comparison group, where the outer edge of the grey area intersects each axis at the distance from the center that equals its value on the axis. The colored sectors that underlie the radar plot show of which dimension of the IFCD framework each of the component axes are a member. The dimensions that the colored sectors refer to are labeled in the legend to the right of the radar plot.

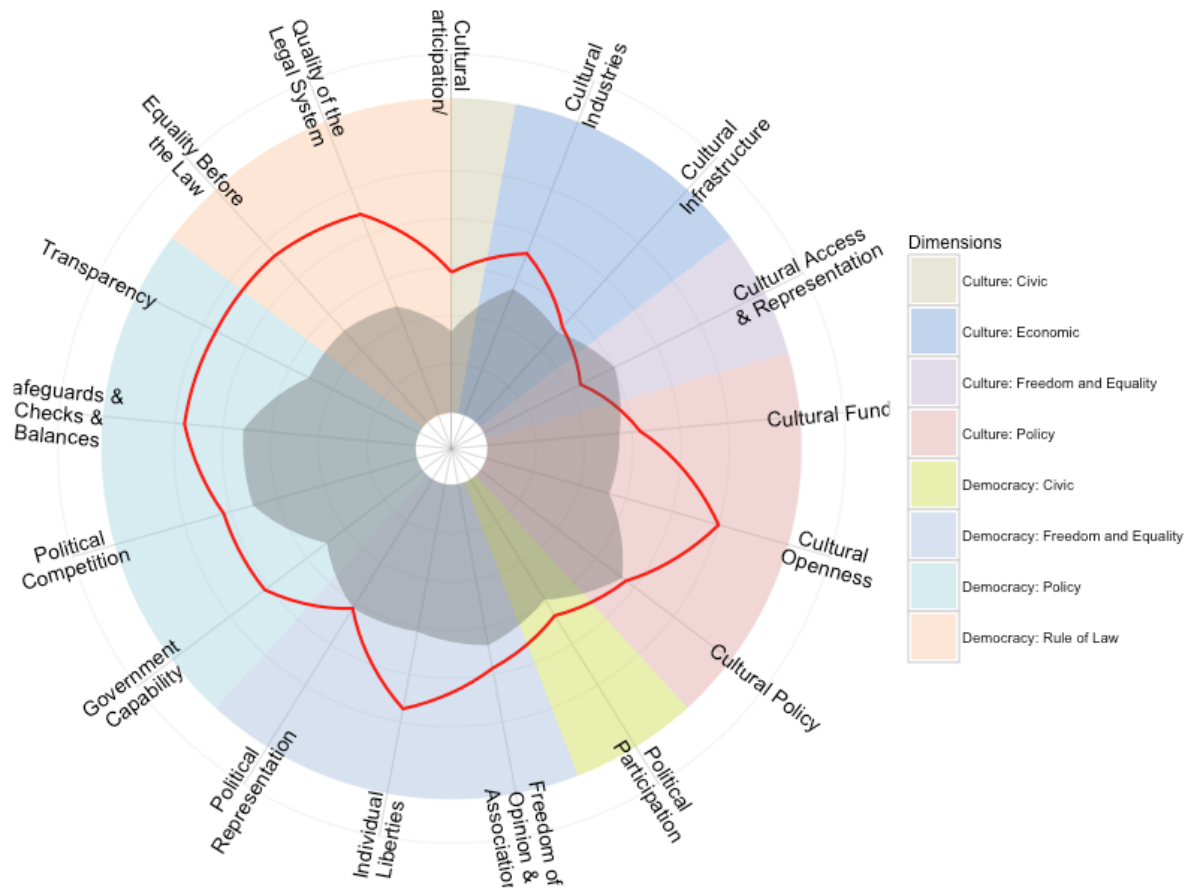


Figure 2 The featured radar plot on the Country Overview page of the proposed IFCD Interactive Tool

This plot makes it easy to simultaneously judge the selected country's performance in the individual component indices, overall performance across all component indices, and its relative performance in comparison to the selected reference/comparison group.

Opportunity Table

Below the radar plot lies the 'opportunity' table, where a user can compare the relationships between a selected component index and the other component indices. A user can select a component index of interest from the drop-down menu to see its relationship to other component indices in the table to the right. For greater interactivity, a user could also click on the component index label in the above radar plot to automatically load the opportunity table with data relevant to that component index.



Figure 3 The 'opportunity' table on the Country Overview page of the proposed IFCD Interactive Tool

The 'performance' score for each component index is equivalent to the value shown in the radar plot above for the same component index, but rather shown as a vertical bar chart in a sortable table with other relevant values. It gives an indication of how well a country performs in that specific index. The vertical grey line shows the score for the selected reference/comparison country or group.

The 'relevance' score shows the relevance of the row's component index to the selected component index of interest in the drop-down at the left. Technically, the relevance score is equal to the absolute value of the correlation coefficient between the row's component index to the selected component index of interest. This provides a true measure of the strength of the relationship between the two indices, but ignores the effect of a possible negative relationship.¹

The 'opportunity' score is a single value for a given component index in a given country relative to a given component index of interest, that is a function of a country's performance on the component index and the correlation between that component index and the component index of interest. This opportunity score is a novel idea, developed by the Hertie School of Governance, which aspires to quantify the idea that a particular aspect of culture or democracy might hold both a significant opportunity for improvement and the possibility of positively influencing another aspect of culture or democracy. In simple terms, the opportunity score highlights where a policy or other intervention might have the most impact given the country's performance on a particular component or indicator and given that component's relevance to the selected component index of interest.

¹ In its current form, the relevance score for a strong positive correlation is similar to the relevance score for a strong negative correlation due to taking the absolute value. This is intentional, to focus on the strength of the relationship, regardless of its direction. It's worth consideration to use the raw correlation score without taking the absolute value, so that strong positive correlations have a high relevance score, weak correlations have a medium relevance score, and strong negative correlations have a low relevance score, however, such a change would cause a significant impact on the name, meaning, and interpretation of the 'relevance' score (e.g. a strong negative correlation can easily be interpreted as 'relevant', just not in a positive way).

Index Comparison

A separate tab or page would focus on comparing the relationship between any pair of the dimension or component indices. The user can select any of the component indices of the IFCD framework for the X and Y axes of the scatter plot to the right. Additionally, the user can select a country to highlight in the scatter plot to see its position relative to the other data points in the IFCD dataset.

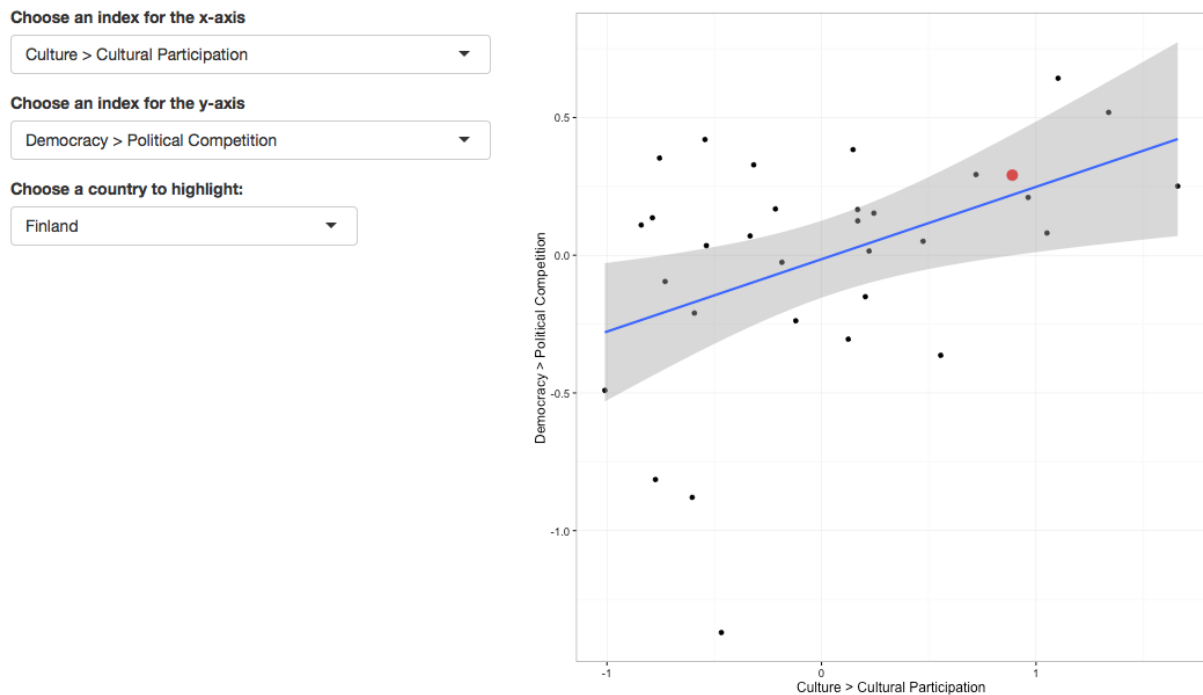


Figure 4 The Variable Relationship page of the proposed IFCD Interactive Tool

The scatter plot shows the position of each country with a black dot in the two-dimensional space defined by the two selected component indices. The blue line represents the least squares fit regression line for the selected component indices, indicating the direction and magnitude of the relationship. The curved grey areas represent the 95% confidence intervals. The chosen country to highlight is shown by a larger, red dot.

Use Case

A user from Finland visits the IFCD interactive tool webpage and is interested in her country's performance in comparison to other Nordic countries. She selects 'Finland' from the first drop-down menu and selects 'Nordic countries' from the comparison drop-down menu. She can easily see from the generated radar plot that her country is performing just about average for Nordic countries on most component indices, but falls behind a bit on a few of them. She's curious about these indices where Finland seems to fall behind, so she moves to the lower half of the page to investigate further.

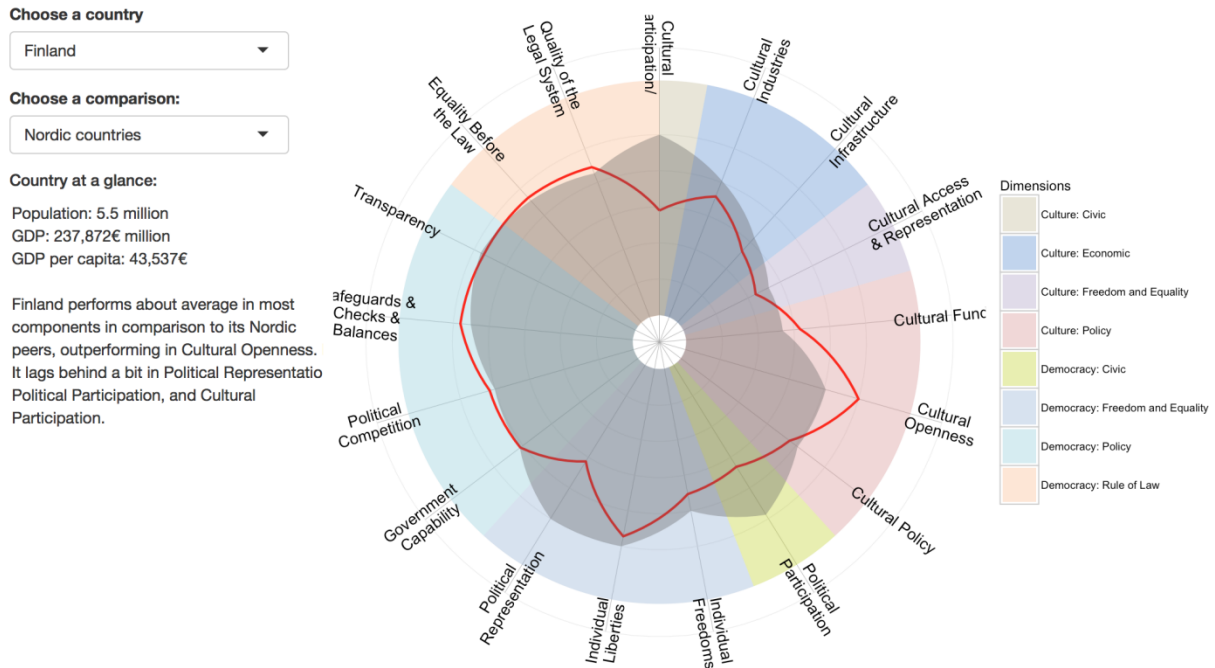


Figure 5 The user compares the performance of Finland with the mean performance of Nordic countries

In the opportunity table, she selects 'Individual Liberties' from the drop-down menu to see its relationship with the other component indices. She can easily determine that 'Cultural Participation' is the most 'relevant' component index to 'Individual Liberties', and it is easy to understand that 'Cultural Participation' has the highest 'opportunity' score given Finland's lower than average performance on that index. She also notices that while 'Cultural Industries' has a slightly higher relevance score than 'Cultural Access & Representation', it is listed below it in terms of opportunity. Looking closer though, she realizes that although 'Cultural Industries' has a higher relevance, Finland's performance in that index is just about average, whereas 'Cultural Access & Representation' has a similar level of relevance, but Finland's performance is obviously below average. Therefore she understands why there might be a slightly better 'opportunity' for Finland to consider some policy measure or intervention in the 'Cultural Access & Representation' index.

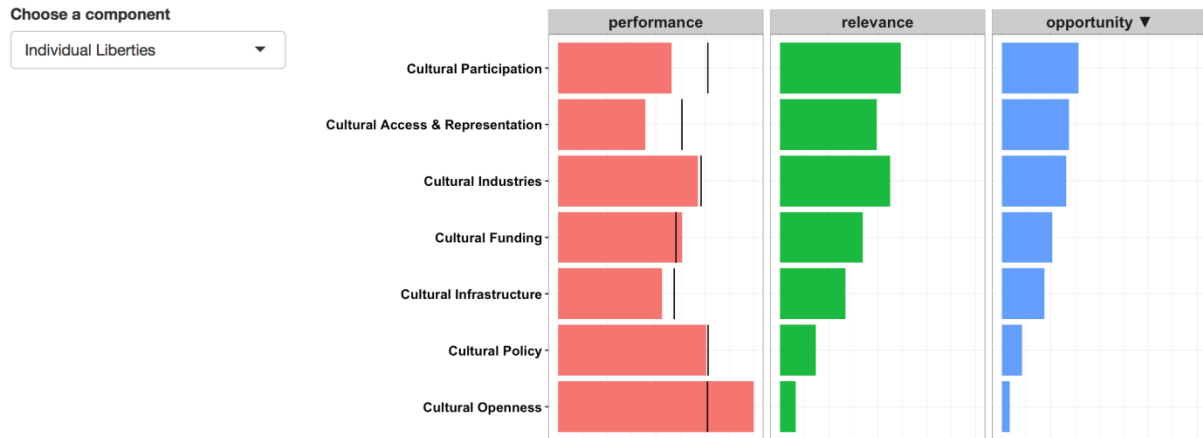


Figure 6 The user investigates the relationship between Individual Liberties in Finland and the other component indices

To further investigate these relationships, she switches to the index comparison tab. She selects 'Cultural Participation' for the x-axis and 'Individual Liberties' for the y-axis, and she chooses to highlight Finland. She can easily see that there is indeed a strong relationship between 'Cultural Participation' and 'Individual Liberties', and this leads her to consider options for investment in either or both of these areas.

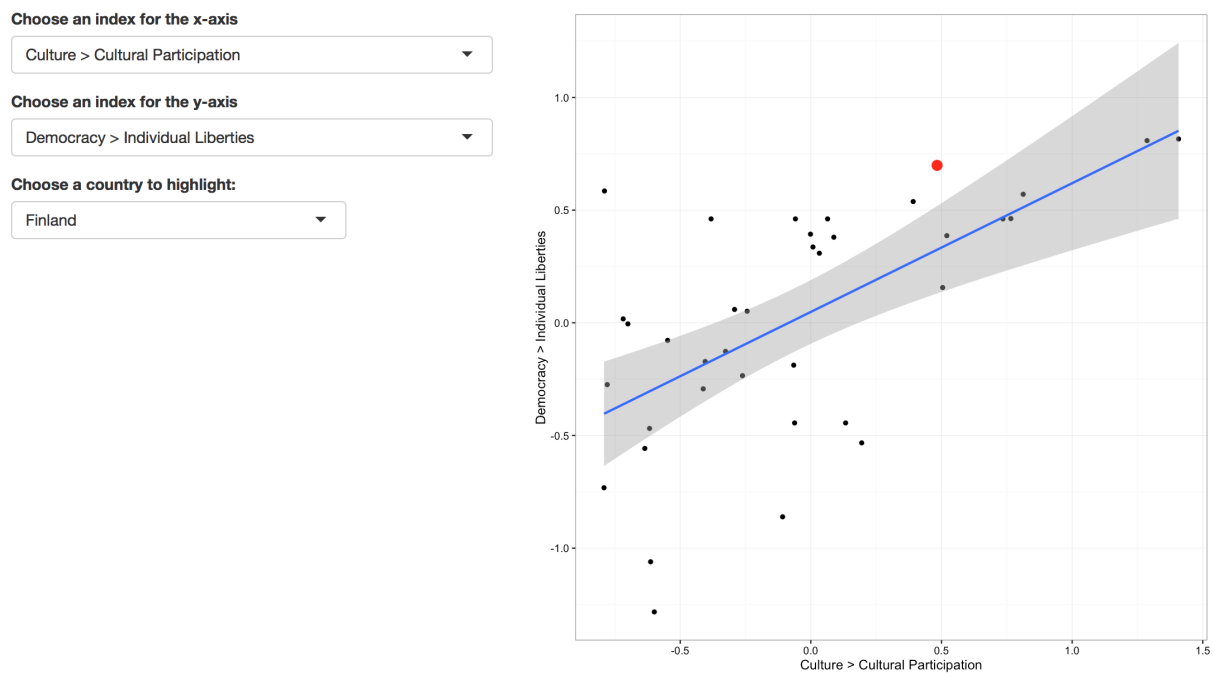


Figure 7 The user tests the relationship between Cultural Participation and Individual Liberties across the full IFCD dataset

Next Steps

The existing, functional prototype developed by the Hertie School of Governance was created using technology that is ideal for creating and modifying prototypes, and is sufficient for demonstrating the idea and the functionality of the proposed tool, but it is incapable of meeting the demands of a widely accessible web interface. In order to make the proposed IFCD Interactive Tool broadly available to a worldwide audience, it will need to be implemented in appropriate web technologies so that it is usable through a variety of web browser and operating system combinations, may be embedded in a webpage or website, and is made to be scalable² so that many users can access it and use it simultaneously. Additionally, the IFCD Interactive Tool will need to be hosted on a server or system of servers that is capable of handling the expected volume of use.

Ideally, the Hertie School of Governance would coordinate with a professional web developer to implement an optimal vision for the interface in the appropriate web technologies. In the short term, the final IFCD Interactive Tool could potentially be hosted on the website of the Hertie School of Governance, however, depending on the volume of traffic that the IFCD Interactive Tool draws, it could be necessary in the long run to find a suitable permanent host.

² The current prototype requires a unique virtual server for each user to generate the plots on the server side, increasing the necessary hosting infrastructure for each new, simultaneous user. If implemented in appropriate web technologies (e.g. JavaScript), the processing can be shifted to the client's machine/browser, enabling a single server to feed the necessary data and scripts to hundreds of users at the same time.