Replication package for: Reviewing Assessment Tools for Measuring Country Statistical Capacity

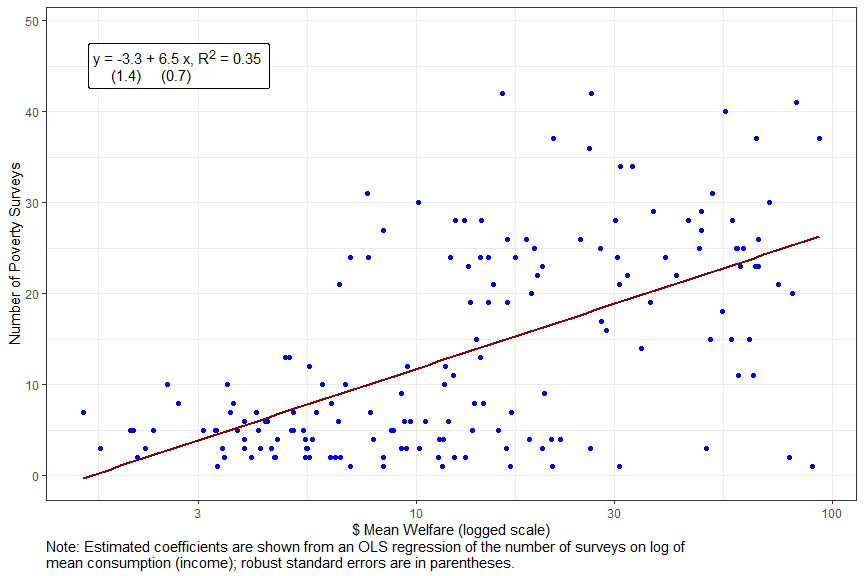
Brian Stacy

2024-03-04

## Table 1. Comparing the SPI and Other Data and Statistics Indexes

Table produced using Microsoft Word. Numbers come from research on each index.

## Figure 1. Number of Household Surveys vs. Country Income, 1982- 2022



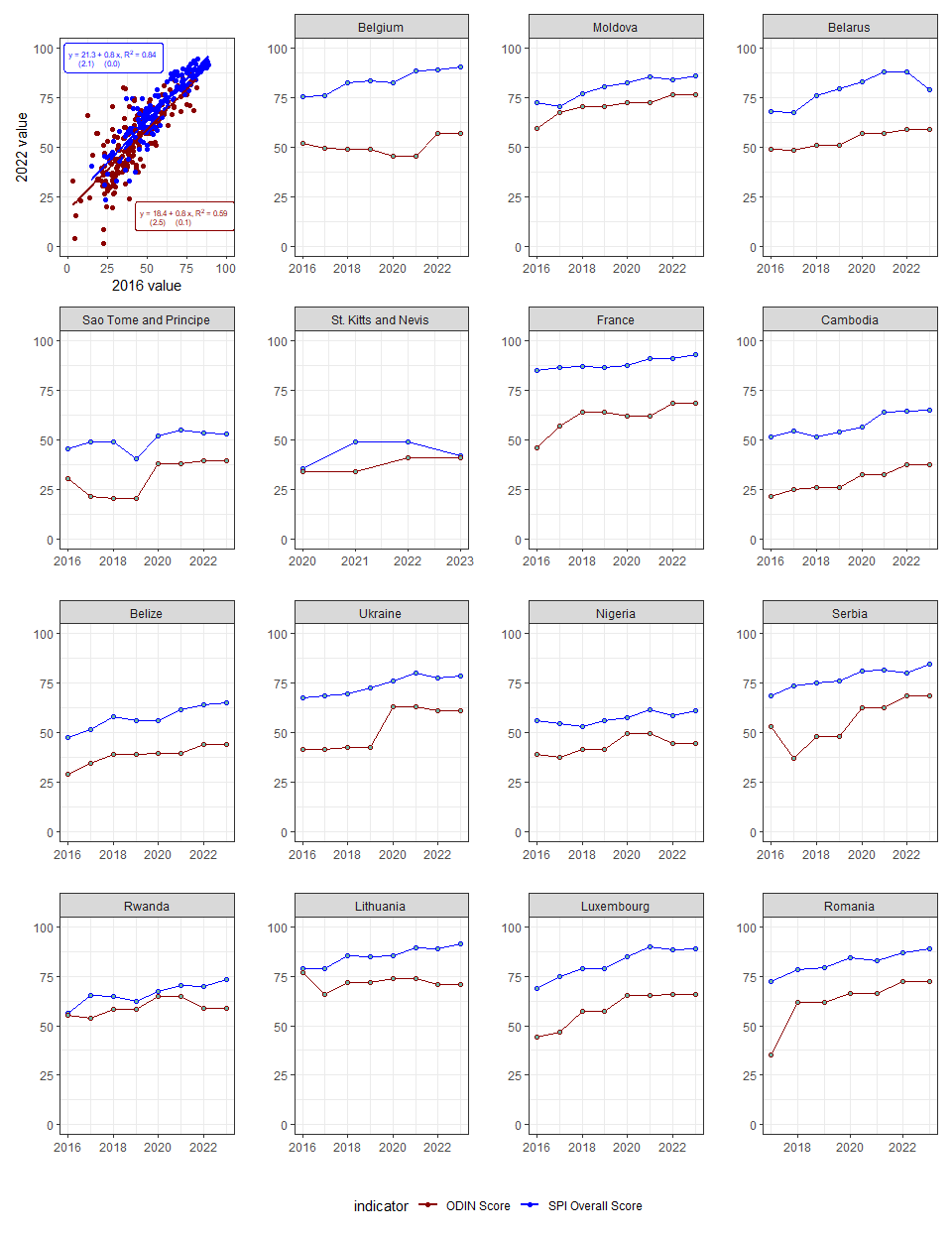
**Note**: This figure employs data from the World Bank’s PIP database.

## Figure 2. Mapping Other Data Tools to SPI Framework



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## Figure 3. Scatter plot and Trends of ODIN and SPI Overall Scores for 2016 and 2022

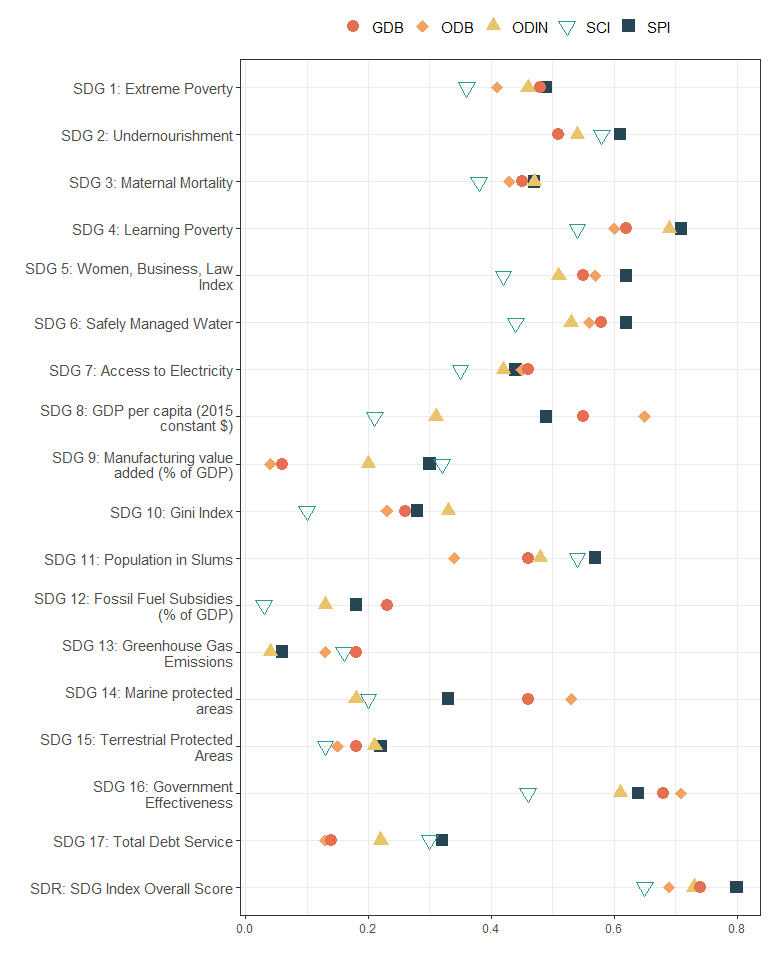


[1] 2.20125

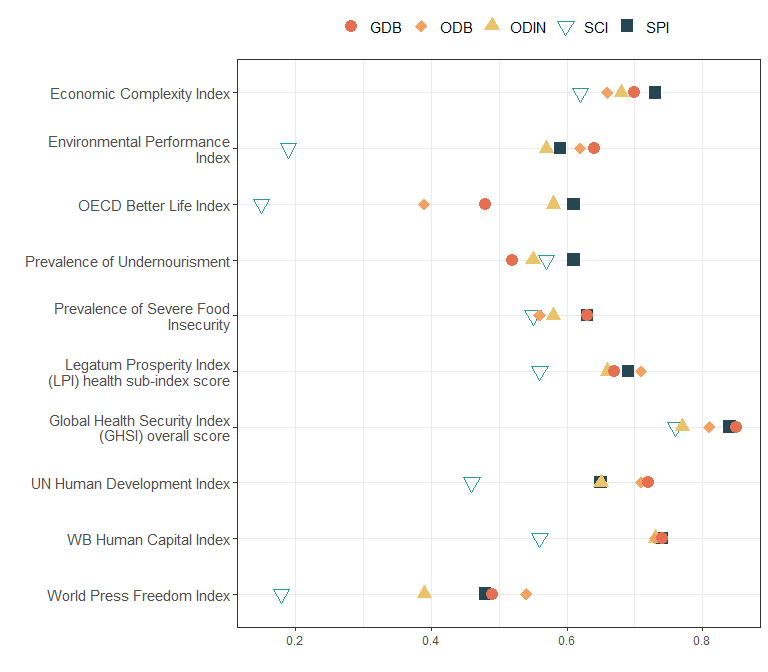
[1] "ODIN std dev: 5.87730984989446"

[1] "SPI std dev: 5.32591933807929"

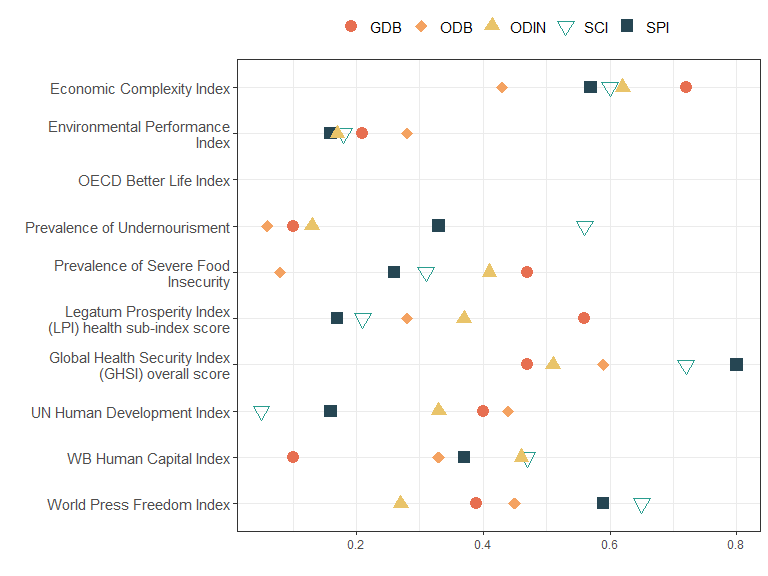
## Figure 4. Absolute Value of Correlation between Key SDGs and Indexes



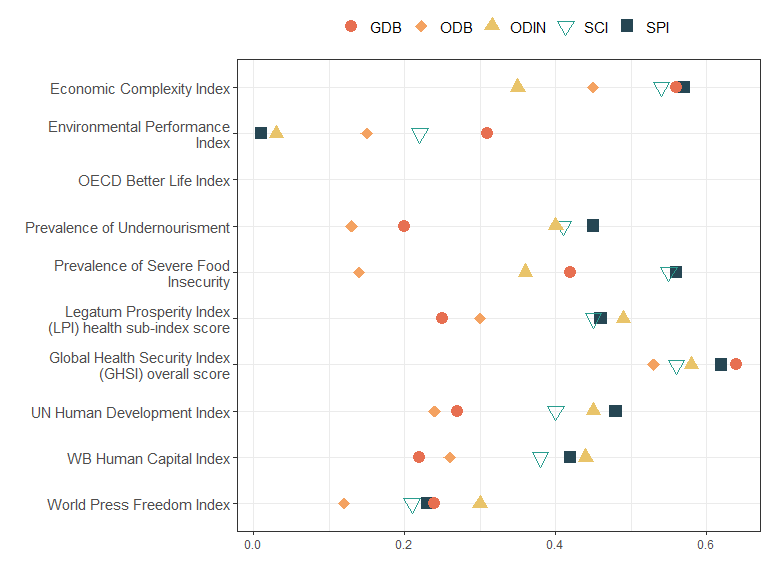
## Figure 5. Absolute Value of Correlations between Key Development Indices



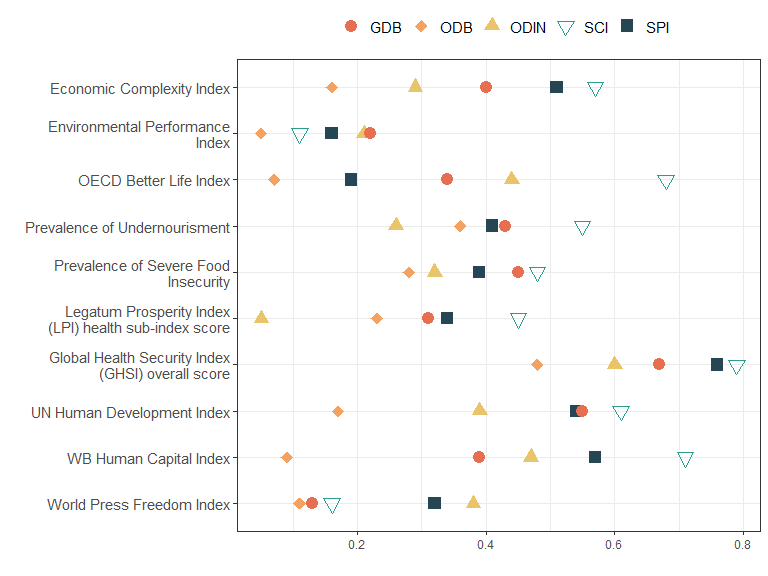
### Figure 5. Absolute Value of Correlations between Key Development Indices - Low Income Countries



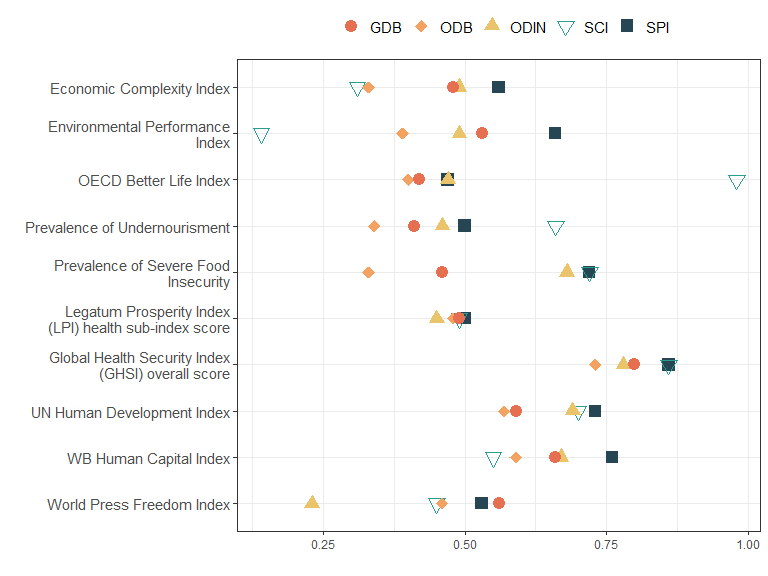
### Figure 5. Absolute Value of Correlations between Key Development Indices - Lower Middle Income Countries



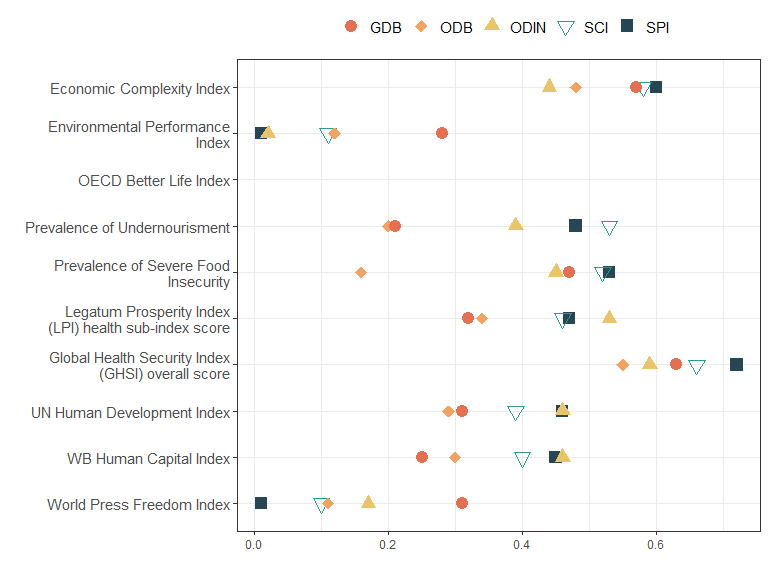
### Figure 5. Absolute Value of Correlations between Key Development Indices - Upper Middle Income Countries



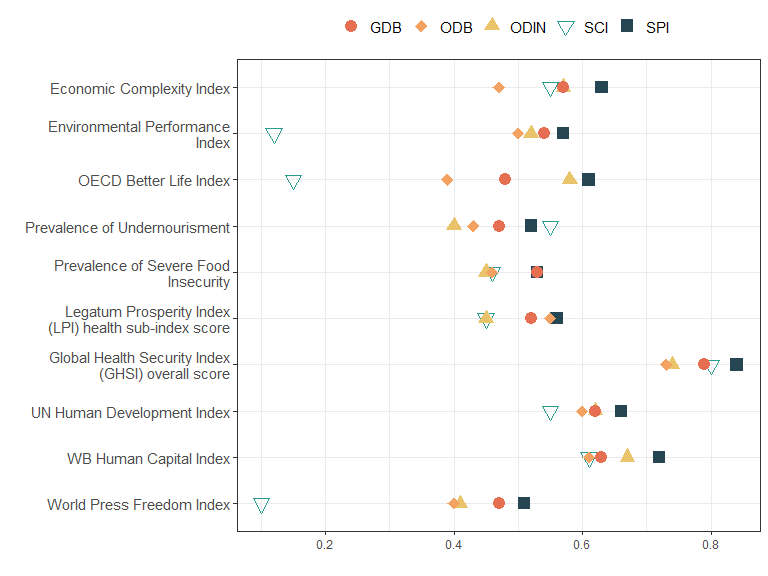
### Figure 5. Absolute Value of Correlations between Key Development Indices - High Income Countries



### Figure 5. Absolute Value of Correlations between Key Development Indices - LIC & LMIC



### Figure 5. Absolute Value of Correlations between Key Development Indices - UMIC & HIC



## Figure 6. Theory of Change

Figure produced using Microsoft Powerpoint.



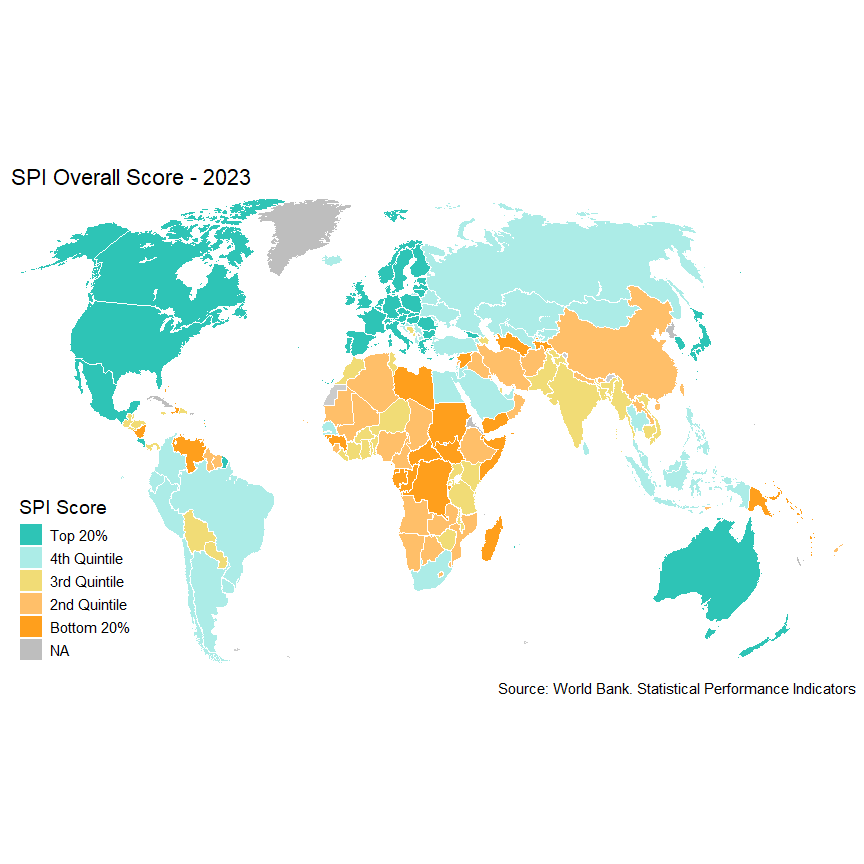
## Figure 7. The Pillars and Dimensions that Construct the New SPI

Figure produced using Microsoft Powerpoint. Figure reproduced below.

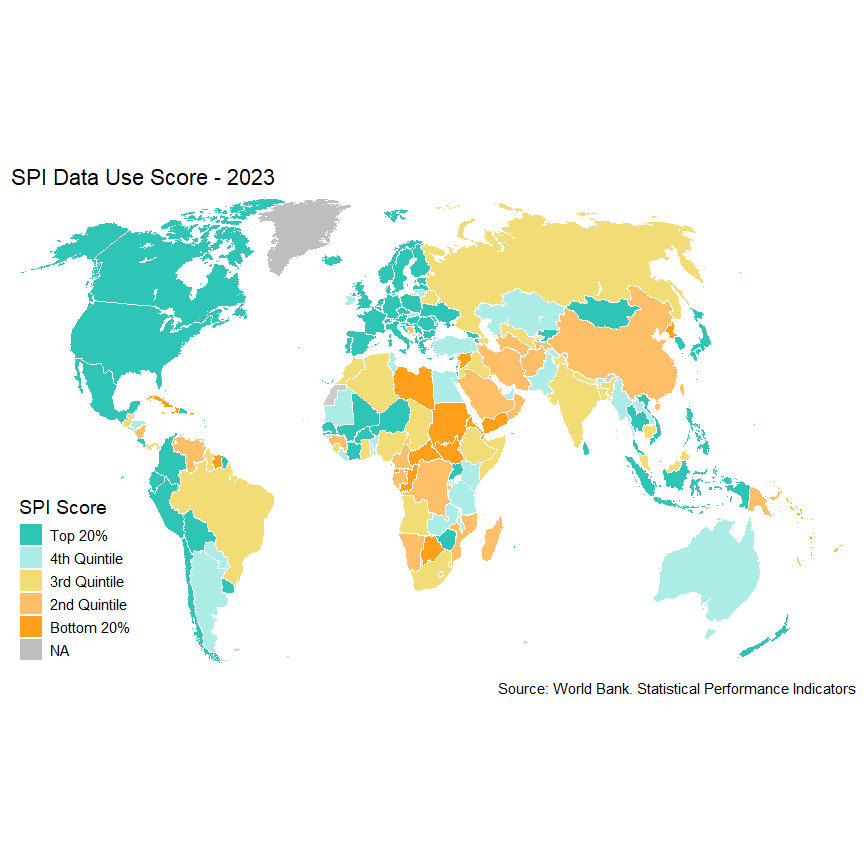


## Figure 8. SPI Overall Score and Pillar Scores in 2022

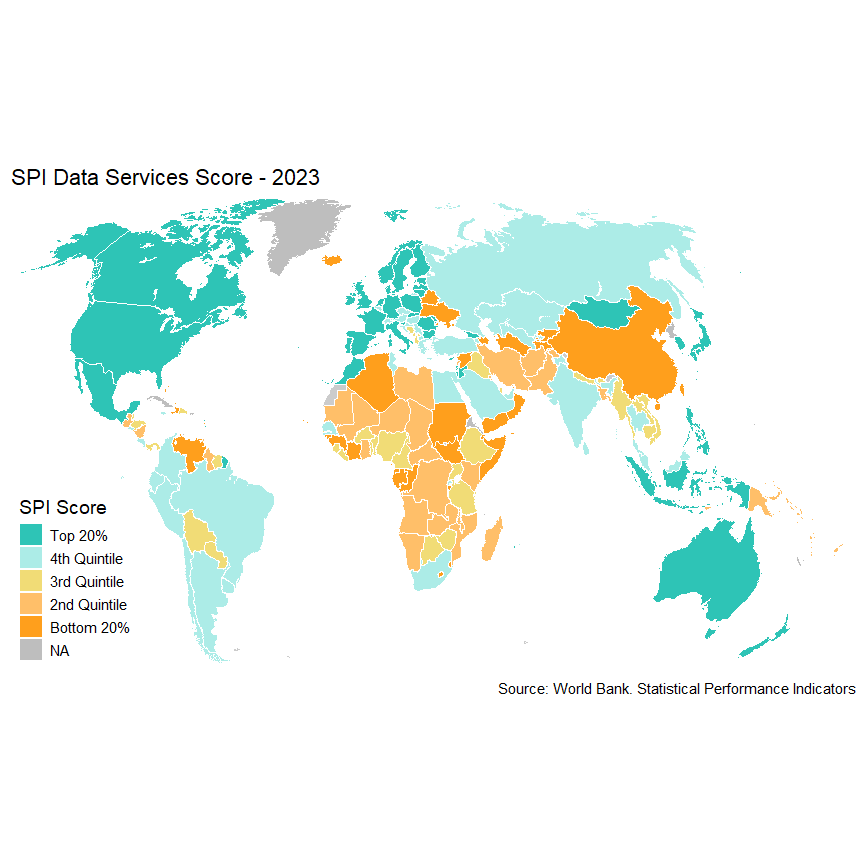
### SPI Overall Score



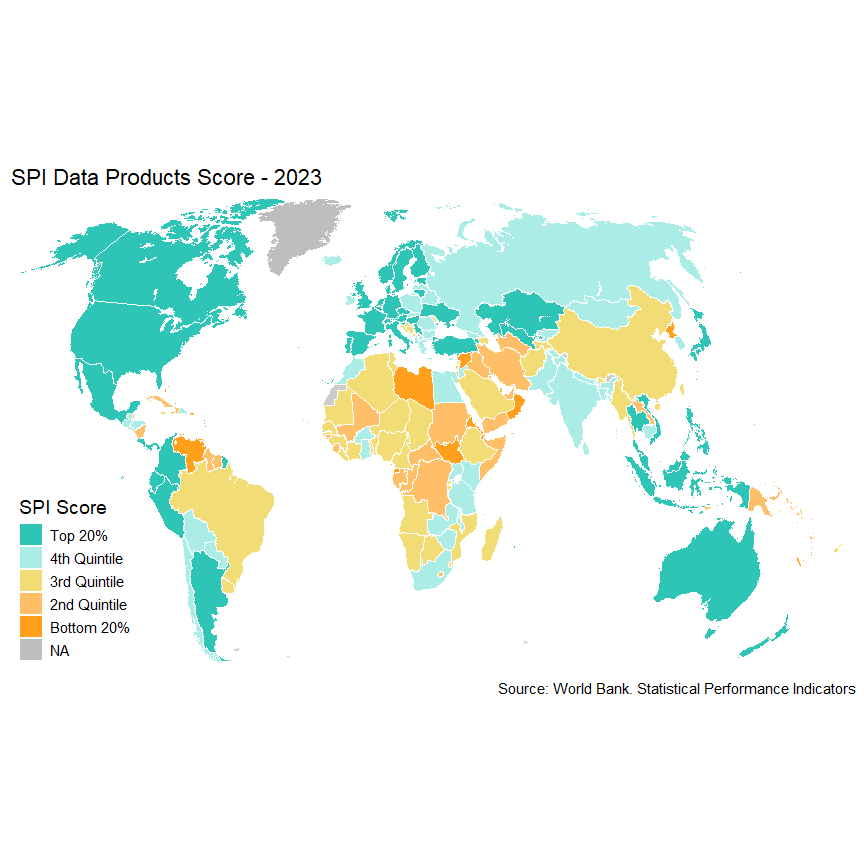
### SPI Data Use Score (Pillar 1)



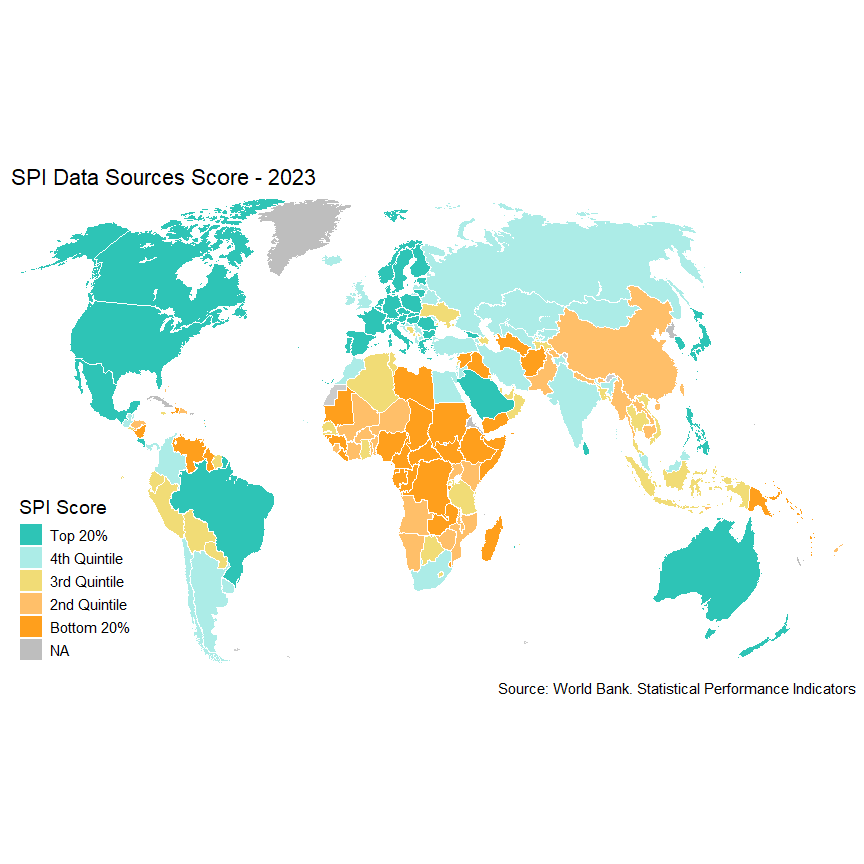
### SPI Data Services Score (Pillar 2)



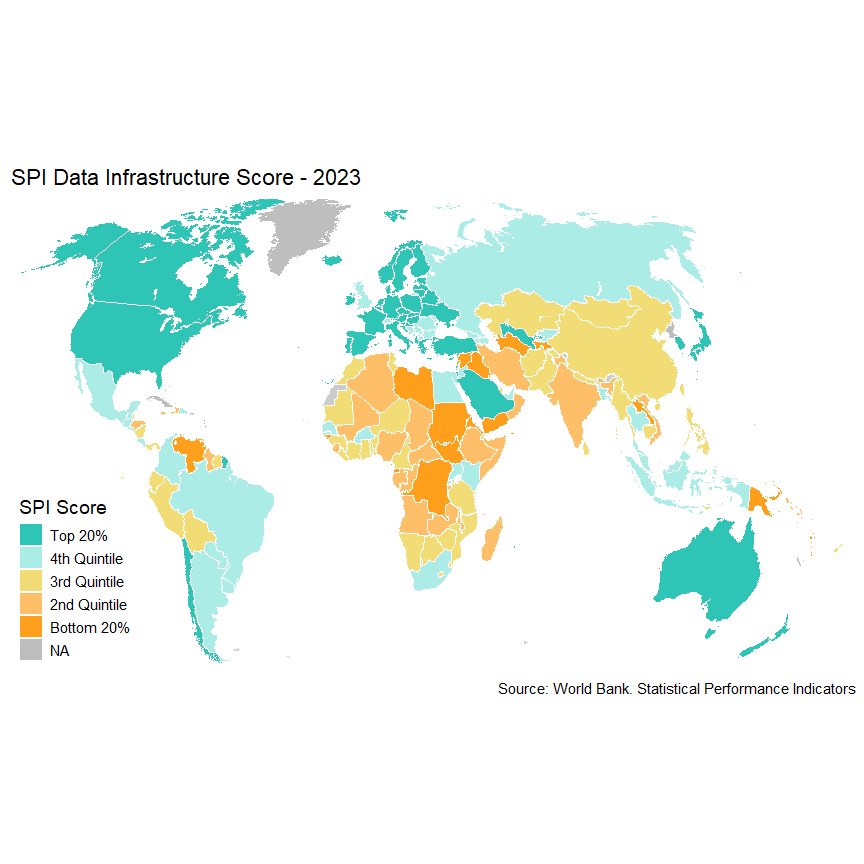
### SPI Data Products Score (Pillar 3)



### SPI Data Sources Score (Pillar 4)



### SPI Data Infrastructure Score (Pillar 5)



## Table S1. An Overview of the World Bank’s Statistical Capacity Index (SCI) in Selected Recent Studies

Table produced using Microsoft Word. Articles gathered through a literature review.

## Table S2. Description of SPI Dimensions

Table produced using Microsoft Word, based on SPI metadata.

## Table S3. Mapping of SPI Indicators to SDG Indicators

Table produced using Microsoft Word, based on SPI metadata and UN SDG Indicator metadata.

## Table S4. SPI overall score and Pillar Scores in 2022

Below, the full list of countries by their SPI overall score in 2022 is presented. The first column is the country name and the following columns are the overall SPI overall score, and then the sub-scores for pillars 1, 2, 3, 4, and 5. The purpose of the SPI is to help countries assess and improve the performance of their statistical systems. The presentation of SPI overall scores is designed to reflect that aim. Small differences between countries should not be stressed since they can reflect imprecision arising from the currently available indicators rather than meaningful differences in performance. Instead, the presentation of overall SPI scores focuses on larger groupings of countries reflecting broad categories of performance as measured by the indicator framework. In total there are 186 countries with sufficient data to compute an index value. This set of countries covers 99.3 percent of the world population. Countries shaded in dark orange are the lowest performing, countries in dark green are the highest performing. Countries are grouped into five groups:

* **Top Quintile**: Countries in the Top quintile are classified in this group. Shading in dark green.
* **4th Quintile**: Countries in the 4th quintile, or those above the 60th percentile but below the 80th percentile are in this group. Shading in light green.
* **3rd Quintile**: Countries in the 3rd quintile, or those between the 40th and 60th percentile, are classified in this group. Shading in yellow.
* **2nd Quintile**: Countries in the 2nd quintile, or those above the 20th percentile but below the 40th percentile, are in this group. Shading in light orange.
* **Bottom 20%**: Countries in the bottom 20% are classified in this group. Shading in dark orange.

| Country | SPI overall score | Pillar 1: Data Use | Pillar 2: Data Services | Pillar 3: Data Products | Pillar 4: Data Sources | Pillar 5: Data Infrastructure |
| --- | --- | --- | --- | --- | --- | --- |
| Poland | 94.2 | 100.0 | 97.3 | 82.2 | 91.4 | 100 |
| Finland | 93.7 | 100.0 | 96.4 | 84.1 | 88.2 | 100 |
| Denmark | 93.2 | 100.0 | 98.5 | 80.4 | 87.1 | 100 |
| Sweden | 93.0 | 100.0 | 96.0 | 83.3 | 85.5 | 100 |
| Slovenia | 92.7 | 100.0 | 97.5 | 83.8 | 82.2 | 100 |
| Netherlands | 92.5 | 100.0 | 96.9 | 82.0 | 83.6 | 100 |
| Portugal | 92.4 | 100.0 | 96.9 | 84.7 | 80.3 | 100 |
| Estonia | 91.9 | 100.0 | 96.9 | 80.9 | 81.7 | 100 |
| United States | 91.9 | 100.0 | 93.1 | 80.6 | 85.6 | 100 |
| Canada | 91.8 | 100.0 | 92.7 | 76.6 | 89.8 | 100 |
| Germany | 91.8 | 100.0 | 94.9 | 82.4 | 86.7 | 95 |
| Norway | 91.7 | 100.0 | 97.2 | 77.4 | 83.8 | 100 |
| Spain | 91.5 | 100.0 | 91.2 | 78.5 | 87.8 | 100 |
| Italy | 91.5 | 100.0 | 93.0 | 82.3 | 81.9 | 100 |
| France | 90.8 | 100.0 | 92.3 | 81.3 | 80.7 | 100 |
| Japan | 90.3 | 100.0 | 90.3 | 82.1 | 84.0 | 95 |
| Austria | 90.1 | 100.0 | 89.5 | 85.0 | 81.0 | 95 |
| Australia | 89.8 | 90.0 | 94.0 | 80.5 | 84.7 | 100 |
| Czechia | 89.6 | 100.0 | 89.1 | 72.9 | 86.1 | 100 |
| Georgia | 89.6 | 100.0 | 92.5 | 86.1 | 79.2 | 90 |
| Costa Rica | 89.4 | 100.0 | 86.7 | 90.3 | 80.2 | 90 |
| Latvia | 89.1 | 100.0 | 97.1 | 72.7 | 75.4 | 100 |
| Switzerland | 89.0 | 100.0 | 88.4 | 82.6 | 84.2 | 90 |
| Mexico | 89.0 | 100.0 | 93.6 | 89.4 | 86.9 | 75 |
| Hungary | 88.9 | 100.0 | 89.0 | 84.7 | 80.7 | 90 |
| Greece | 88.7 | 100.0 | 88.2 | 74.3 | 81.2 | 100 |
| Belgium | 88.7 | 100.0 | 86.9 | 77.6 | 78.9 | 100 |
| Lithuania | 88.6 | 90.0 | 91.2 | 79.8 | 81.9 | 100 |
| Slovak Republic | 88.5 | 90.0 | 94.5 | 77.8 | 80.1 | 100 |
| Korea, Rep. | 88.5 | 100.0 | 93.4 | 78.9 | 85.0 | 85 |
| New Zealand | 88.3 | 100.0 | 92.7 | 80.3 | 78.4 | 90 |
| Luxembourg | 88.1 | 100.0 | 93.6 | 76.9 | 70.0 | 100 |
| Belarus | 87.8 | 100.0 | 87.1 | 83.1 | 73.8 | 95 |
| Ireland | 87.8 | 90.0 | 96.3 | 75.5 | 77.1 | 100 |
| Bulgaria | 87.2 | 100.0 | 91.3 | 74.5 | 79.9 | 90 |
| Singapore | 86.7 | 100.0 | 100.0 | 59.2 | 94.2 | 80 |
| United Kingdom | 86.6 | 100.0 | 90.3 | 78.7 | 74.2 | 90 |
| Romania | 86.6 | 100.0 | 94.2 | 74.0 | 80.0 | 85 |
| Colombia | 86.2 | 100.0 | 85.2 | 87.9 | 78.0 | 80 |
| Chile | 86.1 | 100.0 | 85.6 | 75.3 | 74.7 | 95 |
| Iceland | 86.1 | 100.0 | 86.7 | 67.7 | 76.0 | 100 |
| Israel | 86.0 | 100.0 | 90.9 | 66.3 | 77.6 | 95 |
| Cyprus | 85.7 | 100.0 | 90.6 | 67.9 | 75.2 | 95 |
| Turkiye | 85.7 | 90.0 | 86.8 | 85.9 | 65.9 | 100 |
| Croatia | 84.8 | 100.0 | 87.4 | 65.0 | 76.8 | 95 |
| Armenia | 84.7 | 100.0 | 85.4 | 83.6 | 64.6 | 90 |
| Albania | 84.4 | 100.0 | 69.8 | 80.1 | 72.3 | 100 |
| Moldova | 84.1 | 100.0 | 95.4 | 72.0 | 68.0 | 85 |
| Kyrgyz Republic | 84.0 | 100.0 | 81.0 | 88.1 | 70.8 | 80 |
| Philippines | 84.0 | 100.0 | 92.7 | 84.8 | 87.3 | 55 |
| Mongolia | 83.3 | 100.0 | 97.2 | 85.0 | 74.5 | 60 |
| Russian Federation | 83.0 | 93.4 | 87.9 | 72.5 | 71.1 | 90 |
| North Macedonia | 82.9 | 100.0 | 87.7 | 69.0 | 77.8 | 80 |
| South Africa | 81.9 | 80.0 | 86.2 | 80.8 | 77.5 | 85 |
| West Bank and Gaza | 81.6 | 90.0 | 91.5 | 71.2 | 70.2 | 85 |
| Thailand | 81.5 | 100.0 | 81.3 | 86.2 | 54.8 | 85 |
| Brazil | 81.1 | 90.0 | 87.3 | 72.9 | 85.2 | 70 |
| Malta | 80.8 | 100.0 | 85.6 | 62.9 | 80.7 | 75 |
| Serbia | 80.2 | 100.0 | 74.9 | 82.7 | 73.1 | 70 |
| Ecuador | 79.2 | 100.0 | 89.1 | 86.1 | 61.0 | 60 |
| Sri Lanka | 79.1 | 100.0 | 82.0 | 74.5 | 83.8 | 55 |
| Kazakhstan | 78.9 | 90.0 | 89.0 | 85.7 | 70.0 | 60 |
| Indonesia | 78.9 | 100.0 | 91.6 | 84.5 | 58.5 | 60 |
| Jordan | 78.6 | 80.0 | 90.4 | 84.1 | 68.6 | 70 |
| Egypt, Arab Rep. | 78.3 | 90.0 | 77.1 | 80.5 | 73.8 | 70 |
| Ukraine | 77.9 | 100.0 | 54.0 | 80.7 | 59.5 | 95 |
| Argentina | 76.8 | 90.0 | 80.1 | 83.3 | 70.6 | 60 |
| Uruguay | 76.7 | 100.0 | 87.6 | 75.7 | 65.1 | 55 |
| Mauritius | 76.5 | 90.0 | 85.9 | 74.0 | 62.7 | 70 |
| Malaysia | 76.2 | 80.0 | 87.7 | 84.1 | 74.0 | 55 |
| Senegal | 76.0 | 100.0 | 82.1 | 72.1 | 50.6 | 75 |
| Paraguay | 75.6 | 90.0 | 68.2 | 83.7 | 61.2 | 75 |
| Tunisia | 75.6 | 90.0 | 89.7 | 80.1 | 63.1 | 55 |
| Montenegro | 75.4 | 90.0 | 70.0 | 80.0 | 57.2 | 80 |
| Peru | 75.0 | 100.0 | 87.3 | 87.9 | 54.8 | 45 |
| India | 74.6 | 80.0 | 87.7 | 79.1 | 71.1 | 55 |
| Saudi Arabia | 74.4 | 70.0 | 88.4 | 71.1 | 77.4 | 65 |
| United Arab Emirates | 74.3 | 90.0 | 79.5 | 69.2 | 62.5 | 70 |
| Uzbekistan | 74.1 | 80.0 | 76.6 | 75.7 | 63.3 | 75 |
| El Salvador | 73.8 | 90.0 | 79.9 | 75.6 | 53.4 | 70 |
| Morocco | 73.3 | 80.0 | 90.4 | 81.6 | 69.7 | 45 |
| Dominican Republic | 72.9 | 100.0 | 68.0 | 73.6 | 47.8 | 75 |
| Guatemala | 72.6 | 80.0 | 62.1 | 81.1 | 70.0 | 70 |
| Azerbaijan | 70.8 | 80.0 | 69.3 | 70.2 | 64.4 | 70 |
| Bolivia | 70.7 | 100.0 | 66.9 | 77.8 | 63.6 | 45 |
| Uganda | 70.6 | 100.0 | 65.8 | 77.1 | 40.1 | 70 |
| Rwanda | 70.0 | 90.0 | 71.1 | 72.0 | 56.9 | 60 |
| Bangladesh | 69.6 | 90.0 | 61.7 | 78.1 | 58.5 | 60 |
| Myanmar | 69.6 | 90.0 | 67.5 | 77.9 | 47.6 | 65 |
| Zimbabwe | 69.6 | 100.0 | 67.0 | 82.7 | 38.2 | 60 |
| Panama | 69.4 | 80.0 | 65.7 | 81.8 | 64.6 | 55 |
| Burkina Faso | 69.4 | 100.0 | 69.0 | 77.6 | 40.5 | 60 |
| Bosnia and Herzegovina | 69.1 | 70.0 | 63.8 | 68.9 | 62.8 | 80 |
| Pakistan | 68.9 | 90.0 | 61.9 | 82.9 | 49.7 | 60 |
| Tanzania | 68.9 | 90.0 | 70.7 | 78.5 | 50.2 | 55 |
| Niger | 68.8 | 100.0 | 61.1 | 76.4 | 46.3 | 60 |
| Kenya | 68.6 | 90.0 | 62.3 | 74.0 | 46.5 | 70 |
| Cote d'Ivoire | 67.8 | 100.0 | 58.1 | 73.0 | 42.7 | 65 |
| Gambia, The | 67.7 | 90.0 | 66.0 | 82.6 | 44.8 | 55 |
| Viet Nam | 67.4 | 100.0 | 69.4 | 74.9 | 52.6 | 40 |
| Qatar | 66.7 | 80.0 | 63.4 | 65.8 | 59.3 | 65 |
| Togo | 66.2 | 90.0 | 63.9 | 74.0 | 43.2 | 60 |
| Benin | 65.8 | 90.0 | 69.4 | 78.9 | 40.5 | 50 |
| Jamaica | 65.3 | 80.0 | 74.3 | 71.4 | 60.9 | 40 |
| Cabo Verde | 65.2 | 80.0 | 64.7 | 67.6 | 68.7 | 45 |
| Ghana | 64.9 | 66.6 | 61.8 | 79.1 | 57.2 | 60 |
| Malawi | 64.8 | 90.0 | 62.1 | 77.8 | 49.0 | 45 |
| Cambodia | 64.3 | 80.0 | 63.6 | 78.5 | 44.2 | 55 |
| Belize | 64.2 | 70.0 | 64.9 | 63.4 | 67.7 | 55 |
| St. Lucia | 64.2 | 70.0 | 69.7 | 61.4 | 64.8 | 55 |
| Mali | 64.1 | 100.0 | 60.9 | 74.4 | 40.1 | 45 |
| Liberia | 64.0 | 90.0 | 66.0 | 70.2 | 33.5 | 60 |
| Samoa | 63.7 | 80.0 | 63.0 | 69.2 | 46.3 | 60 |
| Seychelles | 63.3 | 90.0 | 44.2 | 55.2 | 57.3 | 70 |
| Algeria | 62.2 | 80.0 | 57.8 | 73.2 | 50.1 | 50 |
| Nepal | 62.0 | 80.0 | 63.4 | 81.0 | 40.8 | 45 |
| Zambia | 61.2 | 90.0 | 61.1 | 77.6 | 32.3 | 45 |
| Bhutan | 61.1 | 90.0 | 64.0 | 68.6 | 43.0 | 40 |
| Tonga | 61.0 | 80.0 | 63.6 | 70.7 | 45.9 | 45 |
| Sierra Leone | 61.0 | 80.0 | 65.7 | 72.5 | 46.8 | 40 |
| Brunei Darussalam | 60.9 | 80.0 | 71.0 | 51.8 | 51.5 | 50 |
| Honduras | 60.8 | 90.0 | 64.0 | 79.2 | 40.7 | 30 |
| Timor-Leste | 60.8 | 80.0 | 61.1 | 57.7 | 40.0 | 65 |
| Barbados | 60.7 | 80.0 | 57.6 | 60.9 | 50.0 | 55 |
| Fiji | 60.1 | 60.0 | 63.1 | 74.8 | 42.6 | 60 |
| Ethiopia | 59.9 | 80.0 | 64.5 | 75.8 | 39.2 | 40 |
| Kuwait | 59.9 | 60.0 | 63.2 | 59.8 | 61.6 | 55 |
| Botswana | 59.8 | 50.0 | 68.9 | 72.4 | 62.7 | 45 |
| Angola | 59.6 | 80.0 | 60.8 | 69.7 | 47.7 | 40 |
| Mauritania | 59.4 | 90.0 | 63.2 | 58.3 | 25.5 | 60 |
| Afghanistan | 59.3 | 80.0 | 60.0 | 74.2 | 27.5 | 55 |
| Maldives | 59.3 | 70.0 | 64.0 | 67.6 | 59.6 | 35 |
| Mozambique | 59.2 | 70.0 | 59.7 | 69.0 | 42.2 | 55 |
| Lao PDR | 58.7 | 76.6 | 65.7 | 66.8 | 44.2 | 40 |
| Oman | 58.6 | 70.0 | 46.9 | 57.3 | 63.9 | 55 |
| Nigeria | 58.4 | 80.0 | 63.8 | 73.2 | 35.1 | 40 |
| Iran, Islamic Rep. | 58.2 | 80.0 | 29.5 | 66.4 | 69.9 | 45 |
| Suriname | 58.0 | 40.0 | 67.1 | 64.1 | 58.8 | 60 |
| Lebanon | 58.0 | 60.0 | 61.6 | 76.9 | 51.3 | 40 |
| Guinea | 57.5 | 80.0 | 62.8 | 68.9 | 25.7 | 50 |
| Namibia | 57.4 | 60.0 | 62.8 | 74.4 | 34.6 | 55 |
| Lesotho | 57.4 | 80.0 | 29.7 | 66.2 | 50.8 | 60 |
| Guyana | 57.1 | 80.0 | 62.7 | 66.4 | 31.4 | 45 |
| Cameroon | 56.9 | 60.0 | 65.2 | 79.2 | 35.1 | 45 |
| China | 56.5 | 73.4 | 43.8 | 73.9 | 41.6 | 50 |
| Trinidad and Tobago | 56.3 | 60.0 | 61.3 | 64.0 | 41.0 | 55 |
| Iraq | 55.3 | 60.0 | 64.5 | 73.1 | 34.1 | 45 |
| Bahrain | 55.0 | 60.0 | 73.7 | 51.7 | 59.4 | 30 |
| Sao Tome and Principe | 53.5 | 60.0 | 61.0 | 61.5 | 50.0 | 35 |
| Madagascar | 53.4 | 60.0 | 60.6 | 73.4 | 28.0 | 45 |
| Eswatini | 52.7 | 80.0 | 22.3 | 70.0 | 31.0 | 60 |
| Chad | 52.6 | 83.4 | 59.2 | 68.2 | 22.2 | 30 |
| Nicaragua | 52.5 | 60.0 | 61.1 | 60.7 | 25.8 | 55 |
| St. Vincent and the Grenadines | 52.3 | 50.0 | 67.4 | 56.0 | 48.0 | 40 |
| Palau | 51.7 | 50.0 | 59.7 | 55.0 | 53.8 | 40 |
| Congo, Dem. Rep. | 51.3 | 70.0 | 62.4 | 63.1 | 21.0 | 40 |
| Vanuatu | 50.9 | 56.6 | 59.1 | 68.9 | 34.8 | 35 |
| Burundi | 50.9 | 70.0 | 63.1 | 68.7 | 17.4 | 35 |
| Bahamas, The | 49.2 | 60.0 | 27.7 | 46.7 | 36.9 | 75 |
| Tajikistan | 48.9 | 60.0 | 29.2 | 74.1 | 51.3 | 30 |
| St. Kitts and Nevis | 48.8 | 60.0 | 66.7 | 39.9 | 42.3 | 35 |
| Venezuela, RB | 48.6 | 80.0 | 56.2 | 51.4 | 30.5 | 25 |
| Somalia | 47.9 | 80.0 | 47.9 | 65.7 | 6.1 | 40 |
| Antigua and Barbuda | 47.3 | 60.0 | 26.9 | 60.5 | 49.1 | 40 |
| Kiribati | 47.3 | 50.0 | 59.9 | 71.2 | 30.2 | 25 |
| Grenada | 46.4 | 70.0 | 22.1 | 61.7 | 48.3 | 30 |
| Papua New Guinea | 45.7 | 60.0 | 59.2 | 67.6 | 11.8 | 30 |
| Gabon | 45.4 | 60.0 | 29.8 | 59.1 | 33.2 | 45 |
| Djibouti | 44.7 | 50.0 | 59.5 | 53.3 | 15.6 | 45 |
| Andorra | 44.4 | 60.0 | 55.8 | 33.4 | 57.6 | 15 |
| Solomon Islands | 44.1 | 30.0 | 59.3 | 64.2 | 17.0 | 50 |
| Sudan | 44.0 | 53.4 | 57.9 | 66.5 | 22.2 | 20 |
| Guinea-Bissau | 42.9 | 90.0 | 23.7 | 66.0 | 14.6 | 20 |
| Central African Republic | 42.0 | 50.0 | 58.6 | 62.1 | 14.0 | 25 |
| Dominica | 41.7 | 60.0 | 28.3 | 51.0 | 39.4 | 30 |
| Tuvalu | 41.1 | 50.0 | 59.7 | 56.0 | 24.7 | 15 |
| Marshall Islands | 40.1 | 30.0 | 58.3 | 58.3 | 33.9 | 20 |
| Equatorial Guinea | 38.8 | 30.0 | 59.6 | 56.1 | 23.4 | 25 |
| Haiti | 38.6 | 50.0 | 18.0 | 61.5 | 18.3 | 45 |
| Nauru | 37.4 | 50.0 | 37.6 | 51.3 | 43.3 | 5 |
| Congo, Rep. | 37.2 | 50.0 | 29.4 | 59.4 | 22.0 | 25 |
| Micronesia, Fed. Sts. | 36.5 | 20.0 | 59.1 | 56.3 | 22.2 | 25 |
| Yemen, Rep. | 32.9 | 36.6 | 28.0 | 55.5 | 24.5 | 20 |
| South Sudan | 32.9 | 40.0 | 37.8 | 50.8 | 5.8 | 30 |
| Syrian Arab Republic | 32.6 | 46.6 | 23.1 | 50.0 | 13.3 | 30 |
| Turkmenistan | 30.7 | 60.0 | 0.5 | 66.6 | 11.7 | 15 |
| Libya | 23.5 | 20.0 | 25.6 | 49.2 | 7.6 | 15 |
| American Samoa |  | 20.0 |  | 20.7 |  |  |
| Aruba |  | 40.0 |  | 26.5 |  |  |
| Bermuda |  | 40.0 |  | 26.5 |  |  |
| British Virgin Islands |  | 40.0 |  | 26.2 |  |  |
| Cayman Islands |  | 30.0 |  | 27.7 |  |  |
| Channel Islands |  | 40.0 |  |  |  |  |
| Comoros |  | 60.0 |  | 64.3 |  | 40 |
| Cuba |  | 40.0 |  | 66.3 |  |  |
| Curacao |  | 60.0 |  | 25.9 |  |  |
| Eritrea |  | 36.6 |  | 46.2 |  | 10 |
| Faroe Islands |  | 40.0 |  | 14.4 |  |  |
| French Polynesia |  | 40.0 |  | 25.3 |  |  |
| Gibraltar |  | 40.0 |  | 17.2 |  |  |
| Greenland |  | 40.0 |  | 21.6 |  |  |
| Guam |  | 40.0 |  | 20.9 |  |  |
| Hong Kong SAR, China |  | 60.0 |  | 40.0 |  |  |
| Isle of Man |  | 40.0 |  | 11.5 |  |  |
| Korea, Dem. People's Rep. |  | 10.0 |  | 44.2 |  |  |
| Kosovo |  | 60.0 | 66.5 |  | 50.3 | 80 |
| Liechtenstein |  | 50.0 |  | 33.1 |  |  |
| Macao SAR, China |  | 50.0 |  | 35.2 |  |  |
| Monaco |  | 60.0 |  | 38.5 |  |  |
| New Caledonia |  | 60.0 |  | 30.9 |  |  |
| Northern Mariana Islands |  | 40.0 |  | 16.7 |  |  |
| Puerto Rico |  | 40.0 |  | 33.9 |  |  |
| San Marino |  | 70.0 | 60.7 | 32.6 |  | 55 |
| Sint Maarten (Dutch part) |  | 30.0 |  | 18.0 |  |  |
| St. Martin (French part) |  | 40.0 |  | 13.0 |  |  |
| Turks and Caicos Islands |  | 30.0 |  | 30.0 |  |  |
| Virgin Islands (U.S.) |  | 40.0 |  | 18.6 |  |  |

## Table S5. Comparison of SPI to Other Statistical and Development Indices

Table produced using Microsoft Word and a review of other indices.

## Table S6. Bivariate Correlation between Statistical Indexes and Key Development Outcomes

| SDG | GDB | | ODB | | ODIN | | SCI | | SPI | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SDG 1: Extreme Poverty | -0.48\*\*\* | ODB, ODIN, SCI, SPI | -0.41\*\*\* | GDB, ODIN, SCI, SPI | -0.46\*\*\* | GDB, ODB, SCI, SPI | -0.36\*\*\* | GDB, ODB, ODIN, | -0.49\*\*\* | GDB, ODB, ODIN, |
| SDG 2: Undernourishment | -0.51\*\*\* | ODB, ODIN, SCI, SPI | -0.51\*\*\* | GDB, ODIN, SCI, SPI | -0.54\*\*\* | GDB, ODB, SCI, | -0.58\*\*\* | GDB, ODB, ODIN, SPI | -0.61\*\*\* | GDB, ODB SCI |
| SDG 3: Maternal Mortality | -0.45\*\*\* | ODB, ODIN, SCI, SPI | -0.43\*\*\* | GDB, ODIN, SCI, SPI | -0.47\*\*\* | GDB, ODB, SCI, SPI | -0.38\*\*\* | GDB, ODB, ODIN, | -0.47\*\*\* | GDB, ODB, ODIN, |
| SDG 4: Learning Poverty | -0.62\*\*\* | ODB, ODIN, SCI, SPI | -0.6\*\*\* | GDB, ODIN, SCI, SPI | -0.69\*\*\* | GDB, ODB SPI | -0.54\*\*\* | GDB, ODB | -0.71\*\*\* | GDB, ODB, ODIN, |
| SDG 5: Women, Business, Law Index | 0.55\*\*\* | ODB, ODIN, SCI, SPI | 0.57\*\*\* | GDB, ODIN, SCI, SPI | 0.51\*\*\* | GDB, ODB, SCI, | 0.42\*\*\* | GDB, ODB, ODIN, | 0.62\*\*\* | GDB, ODB |
| SDG 6: Safely Managed Water | 0.58\*\*\* | ODB, ODIN, SCI, SPI | 0.56\*\*\* | GDB, ODIN, SCI, SPI | 0.53\*\*\* | GDB, ODB, SCI, | 0.44\*\*\* | GDB, ODB, ODIN, | 0.62\*\*\* | GDB, ODB |
| SDG 7: Access to Electricity | 0.46\*\*\* | ODB, ODIN, SCI, SPI | 0.45\*\*\* | GDB, ODIN, SCI, SPI | 0.42\*\*\* | GDB, ODB, SCI, SPI | 0.35\*\*\* | GDB, ODB, ODIN, | 0.44\*\*\* | GDB, ODB, ODIN, |
| SDG 8: GDP per capita (2015 constant $) | 0.55\*\*\* | , SPI | 0.65\*\*\* | , | 0.31\*\*\* | SCI, | 0.21\*\* | ODIN, | 0.49\*\*\* | GDB , |
| SDG 9: Manufacturing value added (% of GDP) | 0.06 | , ODIN | -0.04 | , | 0.2\*\*\* | GDB SCI, | 0.32\*\*\* | ODIN, SPI | 0.3\*\*\* | , SCI |
| SDG 10: Gini Index | -0.26\*\* | ODB, ODIN, SCI, SPI | -0.23\*\* | GDB, ODIN, SCI, SPI | -0.33\*\*\* | GDB, ODB SPI | -0.1\*\* | GDB, ODB | -0.28\*\*\* | GDB, ODB, ODIN, |
| SDG 11: Population in Slums | -0.46\*\*\* | , ODIN, SCI, SPI | -0.34\*\*\* | , ODIN, SCI, | -0.48\*\*\* | GDB, ODB, SCI, | -0.54\*\*\* | GDB, ODB, ODIN, SPI | -0.57\*\*\* | GDB , SCI |
| SDG 12: Fossil Fuel Subsidies (% of GDP) | -0.23\*\* | ODB, ODIN SPI | -0.23\*\* | GDB, ODIN SPI | -0.13\* | GDB, ODB, SCI, SPI | -0.03 | ODIN, | -0.18\*\* | GDB, ODB, ODIN, |
| SDG 13: Greenhouse Gas Emissions | 0.18\* | ODB, ODIN, SCI, SPI | 0.13\*\* | GDB, ODIN, SCI, SPI | 0.04 | GDB, ODB, SCI, SPI | 0.16\* | GDB, ODB, ODIN, | 0.06\*\* | GDB, ODB, ODIN, |
| SDG 14: Marine protected areas | 0.46\*\*\* | ODB , SPI | 0.53\*\*\* | GDB , | 0.18\*\* | SCI, | 0.2\*\* | ODIN, | 0.33\*\*\* | GDB , |
| SDG 15: Terrestrial Protected Areas | 0.18\* | ODB, ODIN, SCI, SPI | 0.15\*\* | GDB, ODIN, SCI, SPI | 0.21\*\*\* | GDB, ODB, SCI, SPI | 0.13\*\* | GDB, ODB, ODIN, | 0.22\*\*\* | GDB, ODB, ODIN, |
| SDG 16: Government Effectiveness | 0.68\*\*\* | ODB, ODIN SPI | 0.71\*\*\* | GDB, ODIN SPI | 0.61\*\*\* | GDB, ODB SPI | 0.46\*\*\* | , | 0.64\*\*\* | GDB, ODB, ODIN, |
| SDG 17: Total Debt Service | 0.14\*\* | ODB, ODIN, SCI, | 0.13\*\* | GDB, ODIN, SCI, | 0.22\*\* | GDB, ODB, SCI, | 0.3\*\*\* | GDB, ODB, ODIN, SPI | 0.32\*\*\* | , SCI |
| SDR: SDG Index Overall Score | 0.74\*\*\* | ODB, ODIN, SCI, SPI | 0.69\*\*\* | GDB, ODIN, SCI, | 0.73\*\*\* | GDB, ODB, SCI, | 0.65\*\*\* | GDB, ODB, ODIN, | 0.8\*\*\* | GDB , |

## Table S7. Bivariate Correlation between Statistical Indexes and Key Development Indices

| Index | GDB | | ODB | | ODIN | | SCI | | SPI | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Economic Complexity Index | 0.7\*\*\* | ODB, ODIN, SCI, SPI | 0.66\*\*\* | GDB, ODIN, SCI, SPI | 0.68\*\*\* | GDB, ODB, SCI, SPI | 0.62\*\*\* | GDB, ODB, ODIN, | 0.73\*\*\* | GDB, ODB, ODIN, |
| Environmental Performance Index | 0.64\*\*\* | ODB, ODIN SPI | 0.62\*\*\* | GDB, ODIN SPI | 0.57\*\*\* | GDB, ODB SPI | 0.19\*\* | , | 0.59\*\*\* | GDB, ODB, ODIN, |
| OECD Better Life Index | 0.48\*\*\* | ODB, ODIN, SCI, SPI | 0.39\*\* | GDB, ODIN, SCI, | 0.58\*\*\* | GDB, ODB, SCI, SPI | 0.15 | GDB, ODB, ODIN, | 0.61\*\*\* | GDB ODIN, |
| Prevalence of Undernourisment | -0.52\*\*\* | ODB, ODIN, SCI, SPI | -0.52\*\*\* | GDB, ODIN, SCI, SPI | -0.55\*\*\* | GDB, ODB, SCI, SPI | -0.57\*\*\* | GDB, ODB, ODIN, SPI | -0.61\*\*\* | GDB, ODB, ODIN, SCI |
| Prevalence of Severe Food Insecurity | -0.63\*\*\* | ODB, ODIN, SCI, SPI | -0.56\*\*\* | GDB, ODIN, SCI, SPI | -0.58\*\*\* | GDB, ODB, SCI, SPI | -0.55\*\*\* | GDB, ODB, ODIN, | -0.63\*\*\* | GDB, ODB, ODIN, |
| Legatum Prosperity Index (LPI) health sub-index score | -0.67\*\*\* | ODB, ODIN, SCI, SPI | -0.71\*\*\* | GDB, ODIN SPI | -0.66\*\*\* | GDB, ODB, SCI, SPI | -0.56\*\*\* | GDB ODIN, | -0.69\*\*\* | GDB, ODB, ODIN, |
| Global Health Security Index (GHSI) overall score | 0.85\*\*\* | ODB , SPI | 0.81\*\*\* | GDB, ODIN, SCI, SPI | 0.77\*\*\* | , ODB, SCI, | 0.76\*\*\* | , ODB, ODIN, | 0.84\*\*\* | GDB, ODB |
| UN Human Development Index | 0.72\*\*\* | ODB, ODIN SPI | 0.71\*\*\* | GDB, ODIN SPI | 0.65\*\*\* | GDB, ODB SPI | 0.46\*\*\* | , | 0.65\*\*\* | GDB, ODB, ODIN, |
| WB Human Capital Index | 0.74\*\*\* | ODB, ODIN SPI | 0.73\*\*\* | GDB, ODIN SPI | 0.73\*\*\* | GDB, ODB SPI | 0.56\*\*\* | , | 0.74\*\*\* | GDB, ODB, ODIN, |
| World Press Freedom Index | 0.49\*\*\* | ODB, ODIN SPI | 0.54\*\*\* | GDB , SPI | 0.39\*\*\* | GDB , | 0.18\*\* | , | 0.48\*\*\* | GDB, ODB |

## Table S8. Relationship between the SDG Index Overall Score from the 2023 Sustainable Development Report and SPI scores, 2016-2022

|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| --- | --- | --- | --- | --- | --- | --- |
| Overall SPI Score | 0.529\*\*\* | 0.032\*\* | 0.036\*\*\* |  |  |  |
|  | (0.04) | (0.01) | (0.01) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | 0.094\*\* | 0.007 | 0.007 |
|  |  |  |  | (0.04) | (0.00) | (0.00) |
| SPI Pillar 2 Score (Data services) |  |  |  | -0.003 | 0.000 | 0.002 |
|  |  |  |  | (0.02) | (0.00) | (0.00) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.091\*\*\* | 0.011 | 0.009 |
|  |  |  |  | (0.03) | (0.01) | (0.01) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.314\*\*\* | 0.012 | 0.011 |
|  |  |  |  | (0.03) | (0.01) | (0.01) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.118\*\*\* | 0.013\*\*\* | 0.013\*\*\* |
|  |  |  |  | (0.02) | (0.00) | (0.00) |
| Log GDP per capita (constant 2015 US$) |  |  | 2.353\*\*\* |  |  | 2.176\*\* |
|  |  |  | (0.86) |  |  | (0.85) |
| Trade (% of GDP) |  |  | -0.011\*\*\* |  |  | -0.010\*\*\* |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.007 |  |  | -0.014 |
|  |  |  | (0.04) |  |  | (0.04) |
| Manufacturing value added (% of GDP) |  |  | -0.016 |  |  | -0.015 |
|  |  |  | (0.03) |  |  | (0.03) |
| School Enrollment, Primary (% gross) |  |  | 0.020\*\* |  |  | 0.021\*\* |
|  |  |  | (0.01) |  |  | (0.01) |
| Year 2017 |  | 0.566\*\*\* | 0.524\*\*\* |  | 0.601\*\*\* | 0.555\*\*\* |
|  |  | (0.05) | (0.05) |  | (0.07) | (0.06) |
| Year 2018 |  | 0.824\*\*\* | 0.760\*\*\* |  | 0.916\*\*\* | 0.836\*\*\* |
|  |  | (0.08) | (0.08) |  | (0.10) | (0.10) |
| Year 2019 |  | 1.231\*\*\* | 1.117\*\*\* |  | 1.306\*\*\* | 1.180\*\*\* |
|  |  | (0.09) | (0.09) |  | (0.10) | (0.11) |
| Year 2020 |  | 1.379\*\*\* | 1.330\*\*\* |  | 1.416\*\*\* | 1.372\*\*\* |
|  |  | (0.11) | (0.10) |  | (0.14) | (0.13) |
| Year 2021 |  | 1.584\*\*\* | 1.492\*\*\* |  | 1.510\*\*\* | 1.458\*\*\* |
|  |  | (0.15) | (0.13) |  | (0.23) | (0.21) |
| Year 2022 |  | 1.720\*\*\* | 1.667\*\*\* |  | 1.663\*\*\* | 1.637\*\*\* |
|  |  | (0.15) | (0.15) |  | (0.19) | (0.19) |
| Constant | 31.732\*\*\* |  |  | 41.445\*\*\* |  |  |
|  | (2.70) |  |  | (3.51) |  |  |
| Num.Obs. | 1001 | 1001 | 1001 | 1001 | 1001 | 1001 |
| R2 | 0.621 | 0.997 | 0.997 | 0.748 | 0.997 | 0.997 |
| R2 Adj. | 0.621 | 0.996 | 0.997 | 0.746 | 0.996 | 0.997 |
| R2 Within |  | 0.609 | 0.639 |  | 0.615 | 0.643 |
| R2 Within Adj. |  | 0.606 | 0.634 |  | 0.610 | 0.636 |
| AIC | 6523.1 | 1992.0 | 1921.4 | 6123.8 | 1984.1 | 1919.6 |
| BIC | 6533.0 | 2728.3 | 2682.3 | 6153.3 | 2740.1 | 2700.1 |
| RMSE | 6.28 | 0.56 | 0.54 | 5.12 | 0.56 | 0.54 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data are from the World Bank’s World Development Indicators (WDI) and SPI. In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. | | | | | | |

[1] "Model 2: sigma\_e=0.73. sigma\_u=5.85"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = sdg\_index\_score ~ SPI.INDEX, data = reg\_df,   
 model = "random", index = c("country", "date"))  
  
Balanced Panel: n = 143, T = 7, N = 1001  
  
Effects:  
 var std.dev share  
idiosyncratic 0.5277 0.7265 0.015  
individual 34.2190 5.8497 0.985  
theta: 0.9531  
  
Residuals:  
 Min. 1st Qu. Median 3rd Qu. Max.   
-3.575345 -0.440800 0.099025 0.522265 2.546749   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 59.5345114 0.6253370 95.204 < 2.2e-16 \*\*\*  
SPI.INDEX 0.1236296 0.0047834 25.846 < 2.2e-16 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 1039.8  
Residual Sum of Squares: 623.14  
R-Squared: 0.40072  
Adj. R-Squared: 0.40012  
Chisq: 667.993 on 1 DF, p-value: < 2.22e-16

[1] "Model 3: sigma\_e=0.69. sigma\_u=4.66"

[1] "Model 5: sigma\_e=0.71. sigma\_u=4.89"

[1] "Model 6: sigma\_e=0.67. sigma\_u=4.37"

## Table S9 Relationship between the SDG Index Overall Score from the 2023 Sustainable Development Report and ODIN, Open Data Barometer, and Global Data Barometer scores, 2013-2022

|  | ODIN - Model 1 | ODIN - Model 2 | ODIN - Model 3 | ODB - Model 1 | ODB - Model 2 | ODB - Model 3 | GDB - Model 1 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ODIN Score | 0.427\*\*\* | 0.008 | 0.009 |  |  |  |  |
|  | (0.03) | (0.01) | (0.01) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.332\*\*\* | 0.011\*\* | 0.011\*\*\* |  |
|  |  |  |  | (0.03) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.384\*\*\* |
|  |  |  |  |  |  |  | (0.04) |
| Trade (% of GDP) |  |  | -0.012\*\*\* |  |  | -0.022\*\* |  |
|  |  |  | (0.00) |  |  | (0.01) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.009 |  |  | -0.008 |  |
|  |  |  | (0.04) |  |  | (0.06) |  |
| Manufacturing value added (% of GDP) |  |  | -0.003 |  |  | -0.034 |  |
|  |  |  | (0.04) |  |  | (0.04) |  |
| School Enrollment, Primary (% gross) |  |  | 0.019\*\* |  |  | 0.025 |  |
|  |  |  | (0.01) |  |  | (0.02) |  |
| Year 2014 |  |  |  |  | 0.475\*\*\* | 0.415\*\*\* |  |
|  |  |  |  |  | (0.07) | (0.07) |  |
| Year 2015 |  |  |  |  | 0.910\*\*\* | 0.780\*\*\* |  |
|  |  |  |  |  | (0.09) | (0.10) |  |
| Year 2016 |  |  |  |  | 1.159\*\*\* | 0.951\*\*\* |  |
|  |  |  |  |  | (0.11) | (0.12) |  |
| Year 2017 |  | 0.631\*\*\* | 0.597\*\*\* |  | 1.630\*\*\* | 1.443\*\*\* |  |
|  |  | (0.04) | (0.05) |  | (0.17) | (0.18) |  |
| Year 2018 |  | 0.933\*\*\* | 0.874\*\*\* |  |  |  |  |
|  |  | (0.07) | (0.08) |  |  |  |  |
| Year 2019 |  | 1.358\*\*\* | 1.249\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.11) |  |  |  |  |
| Year 2020 |  | 1.533\*\*\* | 1.491\*\*\* |  |  |  |  |
|  |  | (0.10) | (0.10) |  |  |  |  |
| Year 2021 |  | 1.894\*\*\* | 1.827\*\*\* |  |  |  |  |
|  |  | (0.11) | (0.12) |  |  |  |  |
| Year 2022 |  | 1.982\*\*\* | 1.951\*\*\* |  |  |  |  |
|  |  | (0.12) | (0.16) |  |  |  |  |
| Constant | 47.059\*\*\* |  |  | 56.988\*\*\* |  |  | 56.960\*\*\* |
|  | (1.91) |  |  | (1.21) |  |  | (1.61) |
| Num.Obs. | 998 | 998 | 998 | 368 | 368 | 368 | 95 |
| R2 | 0.499 | 0.997 | 0.997 | 0.571 | 0.998 | 0.998 | 0.537 |
| R2 Adj. | 0.498 | 0.996 | 0.996 | 0.570 | 0.997 | 0.997 | 0.532 |
| R2 Within |  | 0.595 | 0.625 |  | 0.573 | 0.612 |  |
| R2 Within Adj. |  | 0.591 | 0.620 |  | 0.565 | 0.596 |  |
| AIC | 6736.5 | 2024.5 | 1956.5 | 2388.3 | 611.0 | 586.2 | 602.4 |
| BIC | 6746.3 | 2765.3 | 2721.8 | 2396.1 | 1025.3 | 1020.0 | 607.6 |
| RMSE | 7.06 | 0.57 | 0.55 | 6.18 | 0.42 | 0.40 | 5.65 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |  |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data from the World Bank’s World Development Indicators (WDI), Open Data Watch (ODIN), Global Data Barometer (GDB), and Open Data Barometer (ODB). In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. Estimates with country fixed effects not available for the Global Data Barometer, because the indicator contains on ly one time period. | | | | | | | |

[1] "ODIN Model 2: sigma\_e=0.84. sigma\_u=6.48"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = sdg\_index\_score ~ ODIN\_score, data = odin\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 144, T = 1-7, N = 998  
  
Effects:  
 var std.dev share  
idiosyncratic 0.7085 0.8418 0.017  
individual 41.9642 6.4780 0.983  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8711 0.9509 0.9509 0.9508 0.9509 0.9509   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-4.3200 -0.4839 0.1226 0.0059 0.6254 2.5019   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 64.6057231 0.6157908 104.915 < 2.2e-16 \*\*\*  
ODIN\_score 0.0702549 0.0040983 17.142 < 2.2e-16 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 1054.7  
Residual Sum of Squares: 816.67  
R-Squared: 0.22703  
Adj. R-Squared: 0.22625  
Chisq: 293.865 on 1 DF, p-value: < 2.22e-16

[1] "ODIN Model 3: sigma\_e=0.78. sigma\_u=5.2"

[1] "ODB Model 2: sigma\_e=0.73. sigma\_u=5.89"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = sdg\_index\_score ~ odb, data = odb\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 101, T = 1-5, N = 368  
  
Effects:  
 var std.dev share  
idiosyncratic 0.5287 0.7271 0.015  
individual 34.7292 5.8932 0.985  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8776 0.9384 0.9384 0.9369 0.9449 0.9449   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-3.4697 -0.5229 0.0619 -0.0009 0.5627 1.7913   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 67.359921 0.725082 92.8997 < 2.2e-16 \*\*\*  
odb 0.039214 0.007196 5.4494 5.054e-08 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 583.72  
Residual Sum of Squares: 262.91  
R-Squared: 0.5496  
Adj. R-Squared: 0.54837  
Chisq: 29.6958 on 1 DF, p-value: 5.0545e-08

[1] "ODB Model 3: sigma\_e=0.59. sigma\_u=4.78"

## Table S10. Relationship between the Economic Complexity Index and SPI scores, 2016-2022

|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| --- | --- | --- | --- | --- | --- | --- |
| Overall SPI Score | 0.047\*\*\* | 0.003 | 0.003 |  |  |  |
|  | (0.00) | (0.00) | (0.00) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | 0.005 | 0.001 | 0.002 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.003 | 0.000 | 0.001 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.017\*\*\* | 0.001 | 0.001 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.027\*\*\* | 0.003 | 0.002 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.013\*\*\* | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| Log GDP per capita (constant 2015 US$) |  |  | 0.502\*\*\* |  |  | 0.496\*\*\* |
|  |  |  | (0.19) |  |  | (0.17) |
| Trade (% of GDP) |  |  | -0.001 |  |  | -0.001 |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | 0.004 |  |  | 0.005 |
|  |  |  | (0.01) |  |  | (0.01) |
| Manufacturing value added (% of GDP) |  |  | 0.023\*\*\* |  |  | 0.023\*\*\* |
|  |  |  | (0.01) |  |  | (0.01) |
| School Enrollment, Primary (% gross) |  |  | 0.000 |  |  | 0.001 |
|  |  |  | (0.00) |  |  | (0.00) |
| Year 2017 |  | 0.010 | 0.001 |  | 0.013 | 0.003 |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2018 |  | 0.007 | -0.009 |  | 0.010 | -0.007 |
|  |  | (0.03) | (0.03) |  | (0.02) | (0.02) |
| Year 2019 |  | 0.010 | -0.012 |  | 0.016 | -0.007 |
|  |  | (0.03) | (0.03) |  | (0.02) | (0.03) |
| Year 2020 |  | -0.001 | -0.009 |  | -0.002 | -0.008 |
|  |  | (0.03) | (0.03) |  | (0.03) | (0.03) |
| Year 2021 |  | -0.034 | -0.061 |  | -0.049 | -0.060 |
|  |  | (0.04) | (0.05) |  | (0.04) | (0.04) |
| Year 2022 |  | -0.036 | -0.069 |  | -0.047 | -0.066 |
|  |  | (0.05) | (0.06) |  | (0.05) | (0.05) |
| Constant | -3.260\*\*\* |  |  | -1.694\*\*\* |  |  |
|  | (0.25) |  |  | (0.31) |  |  |
| Num.Obs. | 882 | 882 | 882 | 882 | 882 | 882 |
| R2 | 0.497 | 0.981 | 0.982 | 0.629 | 0.981 | 0.982 |
| R2 Adj. | 0.496 | 0.977 | 0.978 | 0.627 | 0.977 | 0.978 |
| R2 Within |  | 0.010 | 0.057 |  | 0.016 | 0.063 |
| R2 Within Adj. |  | 0.001 | 0.042 |  | 0.002 | 0.043 |
| AIC | 1899.4 | -713.1 | -746.1 | 1639.0 | -710.5 | -743.4 |
| BIC | 1908.9 | -77.1 | -86.2 | 1667.7 | -55.3 | -64.3 |
| RMSE | 0.71 | 0.14 | 0.14 | 0.61 | 0.14 | 0.14 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data are from the World Bank’s World Development Indicators (WDI) and SPI. In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. | | | | | | |

[1] "Model 2: sigma\_e=0.15. sigma\_u=0.65"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = eci\_value ~ SPI.INDEX, data = reg\_df, model = "random",   
 index = c("country", "date"))  
  
Balanced Panel: n = 126, T = 7, N = 882  
  
Effects:  
 var std.dev share  
idiosyncratic 0.02276 0.15085 0.051  
individual 0.42089 0.64876 0.949  
theta: 0.9125  
  
Residuals:  
 Min. 1st Qu. Median 3rd Qu. Max.   
-1.163995 -0.080727 0.021552 0.098197 0.834095   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) -0.2026533 0.0961132 -2.1085 0.0349890 \*   
SPI.INDEX 0.0034871 0.0010392 3.3557 0.0007916 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 23.806  
Residual Sum of Squares: 23.505  
R-Squared: 0.012635  
Adj. R-Squared: 0.011513  
Chisq: 11.2608 on 1 DF, p-value: 0.00079162

[1] "Model 3: sigma\_e=0.15. sigma\_u=0.45"

[1] "Model 5: sigma\_e=0.15. sigma\_u=0.58"

[1] "Model 6: sigma\_e=0.15. sigma\_u=0.44"

## Table S11. Relationship between the Environmental Performance Index and SPI scores, 2016-2022

|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| --- | --- | --- | --- | --- | --- | --- |
| Overall SPI Score | 0.491\*\*\* | 0.028 | 0.031 |  |  |  |
|  | (0.05) | (0.07) | (0.07) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | 0.091\*\* | 0.087\*\*\* | 0.086\*\*\* |
|  |  |  |  | (0.04) | (0.03) | (0.03) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.043 | 0.006 | 0.007 |
|  |  |  |  | (0.03) | (0.02) | (0.02) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.568\*\*\* | -0.046 | -0.040 |
|  |  |  |  | (0.05) | (0.05) | (0.05) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.330\*\*\* | 0.029 | 0.021 |
|  |  |  |  | (0.05) | (0.06) | (0.07) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.199\*\*\* | -0.050\* | -0.047\* |
|  |  |  |  | (0.03) | (0.03) | (0.03) |
| Log GDP per capita (constant 2015 US$) |  |  | 2.110 |  |  | 1.800 |
|  |  |  | (4.55) |  |  | (4.61) |
| Trade (% of GDP) |  |  | 0.036 |  |  | 0.032 |
|  |  |  | (0.03) |  |  | (0.03) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | 0.115 |  |  | 0.107 |
|  |  |  | (0.20) |  |  | (0.19) |
| Manufacturing value added (% of GDP) |  |  | -0.310 |  |  | -0.291 |
|  |  |  | (0.20) |  |  | (0.21) |
| School Enrollment, Primary (% gross) |  |  | -0.003 |  |  | 0.000 |
|  |  |  | (0.06) |  |  | (0.06) |
| Year 2017 |  | -0.069 | -0.158 |  | 0.168 | 0.058 |
|  |  | (0.18) | (0.21) |  | (0.26) | (0.28) |
| Year 2018 |  | -0.135 | -0.290 |  | 0.120 | -0.043 |
|  |  | (0.35) | (0.42) |  | (0.43) | (0.49) |
| Year 2019 |  | -0.140 | -0.349 |  | 0.284 | 0.077 |
|  |  | (0.36) | (0.48) |  | (0.42) | (0.55) |
| Year 2020 |  | -9.478\*\*\* | -9.358\*\*\* |  | -8.756\*\*\* | -8.702\*\*\* |
|  |  | (0.73) | (0.73) |  | (0.80) | (0.79) |
| Year 2021 |  | -9.615\*\*\* | -9.790\*\*\* |  | -8.103\*\*\* | -8.335\*\*\* |
|  |  | (1.00) | (1.04) |  | (1.25) | (1.28) |
| Year 2022 |  | -13.550\*\*\* | -14.030\*\*\* |  | -12.348\*\*\* | -12.813\*\*\* |
|  |  | (1.00) | (1.14) |  | (1.10) | (1.22) |
| Constant | 19.608\*\*\* |  |  | 50.966\*\*\* |  |  |
|  | (3.06) |  |  | (3.41) |  |  |
| Num.Obs. | 1085 | 1085 | 1085 | 1085 | 1085 | 1085 |
| R2 | 0.285 | 0.927 | 0.928 | 0.550 | 0.929 | 0.929 |
| R2 Adj. | 0.284 | 0.914 | 0.914 | 0.547 | 0.916 | 0.916 |
| R2 Within |  | 0.640 | 0.644 |  | 0.649 | 0.653 |
| R2 Within Adj. |  | 0.638 | 0.640 |  | 0.645 | 0.647 |
| AIC | 8580.5 | 6428.3 | 6426.4 | 8087.2 | 6408.5 | 6408.3 |
| BIC | 8590.5 | 7236.6 | 7259.6 | 8117.1 | 7236.7 | 7261.4 |
| RMSE | 12.60 | 4.03 | 4.01 | 10.00 | 3.98 | 3.96 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data are from the World Bank’s World Development Indicators (WDI) and SPI. In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. | | | | | | |

[1] "Model 2: sigma\_e=6.02. sigma\_u=8.9"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = env\_perform\_index ~ SPI.INDEX, data = reg\_df,   
 model = "random", index = c("country", "date"))  
  
Balanced Panel: n = 155, T = 7, N = 1085  
  
Effects:  
 var std.dev share  
idiosyncratic 36.188 6.016 0.313  
individual 79.293 8.905 0.687  
theta: 0.7526  
  
Residuals:  
 Min. 1st Qu. Median 3rd Qu. Max.   
-22.6880 -5.9286 1.3541 5.9782 13.4903   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 69.224825 2.476128 27.957 < 2.2e-16 \*\*\*  
SPI.INDEX -0.252821 0.034586 -7.310 2.671e-13 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 60764  
Residual Sum of Squares: 57906  
R-Squared: 0.047021  
Adj. R-Squared: 0.046141  
Chisq: 53.4363 on 1 DF, p-value: 2.6712e-13

[1] "Model 3: sigma\_e=5.99. sigma\_u=4.98"

[1] "Model 5: sigma\_e=5.45. sigma\_u=6.77"

[1] "Model 6: sigma\_e=5.44. sigma\_u=5.05"

## Table S12. Relationship between the OECD Better Life Index and SPI scores, 2016-2022

|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| --- | --- | --- | --- | --- | --- | --- |
| Overall SPI Score | 0.093\*\*\* | 0.006 | 0.005 |  |  |  |
|  | (0.03) | (0.01) | (0.01) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | 0.034 | 0.006 | 0.011\* |
|  |  |  |  | (0.03) | (0.01) | (0.01) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.009 | 0.002 | 0.001 |
|  |  |  |  | (0.01) | (0.00) | (0.00) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.041\*\* | 0.009\* | 0.003 |
|  |  |  |  | (0.02) | (0.01) | (0.00) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.028 | -0.004 | -0.004 |
|  |  |  |  | (0.02) | (0.01) | (0.01) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.052\*\*\* | -0.007 | -0.004 |
|  |  |  |  | (0.01) | (0.00) | (0.01) |
| Log GDP per capita (constant 2015 US$) |  |  | 2.178\*\* |  |  | 2.307\*\*\* |
|  |  |  | (0.82) |  |  | (0.84) |
| Trade (% of GDP) |  |  | -0.001 |  |  | 0.000 |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | 0.091 |  |  | 0.102\* |
|  |  |  | (0.06) |  |  | (0.06) |
| Manufacturing value added (% of GDP) |  |  | -0.063\*\*\* |  |  | -0.055\*\* |
|  |  |  | (0.02) |  |  | (0.03) |
| School Enrollment, Primary (% gross) |  |  | 0.022 |  |  | 0.014 |
|  |  |  | (0.01) |  |  | (0.01) |
| Year 2017 |  | -0.132\*\*\* | -0.186\*\*\* |  | -0.174\*\*\* | -0.208\*\*\* |
|  |  | (0.04) | (0.04) |  | (0.05) | (0.05) |
| Year 2018 |  | -0.241\*\* | -0.325\*\*\* |  | -0.285\*\*\* | -0.333\*\*\* |
|  |  | (0.09) | (0.08) |  | (0.08) | (0.07) |
| Year 2019 |  | -0.243\*\* | -0.372\*\*\* |  | -0.256\*\*\* | -0.361\*\*\* |
|  |  | (0.09) | (0.08) |  | (0.08) | (0.07) |
| Year 2020 |  | -0.248\*\* | -0.290\*\*\* |  | -0.282\*\*\* | -0.278\*\*\* |
|  |  | (0.10) | (0.08) |  | (0.09) | (0.08) |
| Year 2021 |  | -0.274\* | -0.417\*\*\* |  | -0.329\*\* | -0.390\*\*\* |
|  |  | (0.15) | (0.13) |  | (0.15) | (0.12) |
| Year 2022 |  | -0.271\* | -0.473\*\*\* |  | -0.282\* | -0.445\*\*\* |
|  |  | (0.14) | (0.13) |  | (0.15) | (0.12) |
| Constant | -1.125 |  |  | -1.163 |  |  |
|  | (2.84) |  |  | (2.79) |  |  |
| Num.Obs. | 287 | 287 | 287 | 287 | 287 | 287 |
| R2 | 0.122 | 0.978 | 0.981 | 0.413 | 0.979 | 0.982 |
| R2 Adj. | 0.119 | 0.973 | 0.977 | 0.403 | 0.975 | 0.978 |
| R2 Within |  | 0.131 | 0.272 |  | 0.188 | 0.302 |
| R2 Within Adj. |  | 0.105 | 0.235 |  | 0.150 | 0.254 |
| AIC | 954.3 | -6.1 | -47.1 | 846.7 | -17.7 | -51.2 |
| BIC | 961.7 | 169.5 | 146.9 | 868.7 | 172.6 | 157.3 |
| RMSE | 1.27 | 0.20 | 0.19 | 1.04 | 0.20 | 0.18 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data are from the World Bank’s World Development Indicators (WDI) and SPI. In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. | | | | | | |

[1] "Model 2: sigma\_e=0.23. sigma\_u=1.15"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = better\_life\_index ~ SPI.INDEX, data = reg\_df,   
 model = "random", index = c("country", "date"))  
  
Balanced Panel: n = 41, T = 7, N = 287  
  
Effects:  
 var std.dev share  
idiosyncratic 0.05299 0.23020 0.039  
individual 1.31744 1.14780 0.961  
theta: 0.9244  
  
Residuals:  
 Min. 1st Qu. Median 3rd Qu. Max.   
-0.5431055 -0.1204076 0.0029068 0.1339022 0.7756650   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 7.7223967 0.3750259 20.5916 < 2.2e-16 \*\*\*  
SPI.INDEX -0.0109093 0.0038219 -2.8544 0.004312 \*\*   
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 16.463  
Residual Sum of Squares: 16.005  
R-Squared: 0.027793  
Adj. R-Squared: 0.024382  
Chisq: 8.14749 on 1 DF, p-value: 0.0043121

[1] "Model 3: sigma\_e=0.22. sigma\_u=0.58"

[1] "Model 5: sigma\_e=0.22. sigma\_u=1"

[1] "Model 6: sigma\_e=0.22. sigma\_u=0.53"

## Table S13. Relationship between the UN Human Development Index and SPI scores, 2016-2022

|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| --- | --- | --- | --- | --- | --- | --- |
| Overall SPI Score | 0.006\*\*\* | 0.000 | 0.000 |  |  |  |
|  | (0.00) | (0.00) | (0.00) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | 0.000 | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.000 | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.004\*\*\* | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.006\*\*\* | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.002\*\*\* | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| Log GDP per capita (constant 2015 US$) |  |  | 0.038\*\*\* |  |  | 0.038\*\*\* |
|  |  |  | (0.01) |  |  | (0.01) |
| Trade (% of GDP) |  |  | 0.000 |  |  | 0.000 |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | 0.000 |  |  | 0.000 |
|  |  |  | (0.00) |  |  | (0.00) |
| Manufacturing value added (% of GDP) |  |  | 0.000 |  |  | 0.000 |
|  |  |  | (0.00) |  |  | (0.00) |
| School Enrollment, Primary (% gross) |  |  | 0.000\*\*\* |  |  | 0.000\*\*\* |
|  |  |  | (0.00) |  |  | (0.00) |
| Year 2017 |  | 0.003\*\*\* | 0.003\*\*\* |  | 0.004\*\*\* | 0.003\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2018 |  | 0.007\*\*\* | 0.006\*\*\* |  | 0.007\*\*\* | 0.006\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2019 |  | 0.011\*\*\* | 0.009\*\*\* |  | 0.012\*\*\* | 0.009\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2020 |  | 0.005\*\*\* | 0.005\*\*\* |  | 0.005\*\*\* | 0.005\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2021 |  | 0.004\*\*\* | 0.003\*\* |  | 0.005\*\* | 0.003\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2022 |  | 0.004\*\*\* | 0.002 |  | 0.005\*\*\* | 0.003\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Constant | 0.315\*\*\* |  |  | 0.607\*\*\* |  |  |
|  | (0.04) |  |  | (0.03) |  |  |
| Num.Obs. | 1106 | 1106 | 1106 | 1106 | 1106 | 1106 |
| R2 | 0.460 | 0.999 | 0.999 | 0.754 | 0.999 | 0.999 |
| R2 Adj. | 0.460 | 0.999 | 0.999 | 0.753 | 0.999 | 0.999 |
| R2 Within |  | 0.286 | 0.424 |  | 0.294 | 0.431 |
| R2 Within Adj. |  | 0.281 | 0.416 |  | 0.286 | 0.421 |
| AIC | -1716.3 | -8265.8 | -8492.7 | -2578.8 | -8270.0 | -8499.2 |
| BIC | -1706.3 | -7439.4 | -7641.3 | -2548.8 | -7423.6 | -7627.7 |
| RMSE | 0.11 | 0.00 | 0.00 | 0.08 | 0.00 | 0.00 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data are from the World Bank’s World Development Indicators (WDI) and SPI. In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. | | | | | | |

[1] "Model 2: sigma\_e=0.01. sigma\_u=0.11"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = hdi\_value ~ SPI.INDEX, data = reg\_df, model = "random",   
 index = c("country", "date"))  
  
Balanced Panel: n = 158, T = 7, N = 1106  
  
Effects:  
 var std.dev share  
idiosyncratic 3.993e-05 6.319e-03 0.004  
individual 1.134e-02 1.065e-01 0.996  
theta: 0.9776  
  
Residuals:  
 Min. 1st Qu. Median 3rd Qu. Max.   
-0.03065595 -0.00424729 0.00080481 0.00470484 0.02016888   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 7.2127e-01 9.4164e-03 76.5970 < 2.2e-16 \*\*\*  
SPI.INDEX 1.4741e-04 3.9153e-05 3.7649 0.0001666 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.050929  
Residual Sum of Squares: 0.050283  
R-Squared: 0.012677  
Adj. R-Squared: 0.011782  
Chisq: 14.1748 on 1 DF, p-value: 0.00016659

[1] "Model 3: sigma\_e=0.01. sigma\_u=0.04"

[1] "Model 5: sigma\_e=0.01. sigma\_u=0.07"

[1] "Model 6: sigma\_e=0.01. sigma\_u=0.04"

## Table S14. Relationship between the WB Human Capital Index and SPI scores, 2016-2022

|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| --- | --- | --- | --- | --- | --- | --- |
| Overall SPI Score | 0.006\*\*\* | 0.001\*\*\* | 0.001\*\*\* |  |  |  |
|  | (0.00) | (0.00) | (0.00) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | 0.000 | 0.000\*\* | 0.000\*\* |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.000 | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.003\*\*\* | 0.000\*\* | 0.000\*\* |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.004\*\*\* | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.002\*\*\* | 0.000\*\*\* | 0.000\*\*\* |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| Log GDP per capita (constant 2015 US$) |  |  | -0.015 |  |  | -0.015 |
|  |  |  | (0.01) |  |  | (0.01) |
| Trade (% of GDP) |  |  | 0.000 |  |  | 0.000 |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.001\* |  |  | -0.001\* |
|  |  |  | (0.00) |  |  | (0.00) |
| Manufacturing value added (% of GDP) |  |  | 0.000 |  |  | 0.000 |
|  |  |  | (0.00) |  |  | (0.00) |
| School Enrollment, Primary (% gross) |  |  | 0.000 |  |  | 0.000 |
|  |  |  | (0.00) |  |  | (0.00) |
| Year 2017 |  | 0.018\*\*\* | 0.018\*\*\* |  | 0.018\*\*\* | 0.018\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2018 |  | 0.017\*\*\* | 0.018\*\*\* |  | 0.019\*\*\* | 0.019\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2019 |  | 0.017\*\*\* | 0.017\*\*\* |  | 0.018\*\*\* | 0.019\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2020 |  | 0.012\*\*\* | 0.012\*\*\* |  | 0.011\*\*\* | 0.011\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2021 |  | 0.008\*\*\* | 0.009\*\*\* |  | 0.004 | 0.005 |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2022 |  | 0.008\*\*\* | 0.009\*\*\* |  | 0.006\*\* | 0.006\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Constant | 0.140\*\*\* |  |  | 0.416\*\*\* |  |  |
|  | (0.03) |  |  | (0.03) |  |  |
| Num.Obs. | 1050 | 1050 | 1050 | 1050 | 1050 | 1050 |
| R2 | 0.530 | 0.991 | 0.991 | 0.749 | 0.992 | 0.992 |
| R2 Adj. | 0.530 | 0.990 | 0.990 | 0.748 | 0.990 | 0.990 |
| R2 Within |  | 0.222 | 0.229 |  | 0.244 | 0.252 |
| R2 Within Adj. |  | 0.216 | 0.219 |  | 0.234 | 0.238 |
| AIC | -1904.6 | -5793.3 | -5792.8 | -2555.2 | -5815.0 | -5816.4 |
| BIC | -1894.7 | -5015.1 | -4989.8 | -2525.4 | -5017.0 | -4993.6 |
| RMSE | 0.10 | 0.01 | 0.01 | 0.07 | 0.01 | 0.01 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data are from the World Bank’s World Development Indicators (WDI) and SPI. In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. | | | | | | |

[1] "Model 2: sigma\_e=0.02. sigma\_u=0.09"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = HD.HCI.OVRL ~ SPI.INDEX, data = reg\_df, model = "random",   
 index = c("country", "date"))  
  
Balanced Panel: n = 150, T = 7, N = 1050  
  
Effects:  
 var std.dev share  
idiosyncratic 0.0002463 0.0156925 0.028  
individual 0.0084113 0.0917132 0.972  
theta: 0.9355  
  
Residuals:  
 Min. 1st Qu. Median 3rd Qu. Max.   
-0.0768716 -0.0094207 -0.0011443 0.0094010 0.0994482   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 0.50734730 0.01044464 48.5749 < 2.2e-16 \*\*\*  
SPI.INDEX 0.00092910 0.00009874 9.4096 < 2.2e-16 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.32289  
Residual Sum of Squares: 0.29774  
R-Squared: 0.077904  
Adj. R-Squared: 0.077024  
Chisq: 88.5411 on 1 DF, p-value: < 2.22e-16

[1] "Model 3: sigma\_e=0.02. sigma\_u=0.05"

[1] "Model 5: sigma\_e=0.02. sigma\_u=0.07"

[1] "Model 6: sigma\_e=0.02. sigma\_u=0.05"

## Table S15. Relationship between the World Press Freedom Index and SPI scores, 2016-2022

|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| --- | --- | --- | --- | --- | --- | --- |
| Overall SPI Score | 0.370\*\*\* | 0.005 | 0.010 |  |  |  |
|  | (0.06) | (0.06) | (0.06) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | 0.038 | 0.062\*\* | 0.063\*\* |
|  |  |  |  | (0.09) | (0.03) | (0.03) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.084\* | 0.011 | 0.014 |
|  |  |  |  | (0.05) | (0.01) | (0.01) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.078 | -0.048 | -0.050 |
|  |  |  |  | (0.09) | (0.05) | (0.05) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.019 | 0.013 | 0.010 |
|  |  |  |  | (0.08) | (0.05) | (0.04) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.163\*\*\* | -0.050\*\* | -0.049\*\* |
|  |  |  |  | (0.06) | (0.02) | (0.02) |
| Log GDP per capita (constant 2015 US$) |  |  | 3.366 |  |  | 3.856 |
|  |  |  | (4.56) |  |  | (4.49) |
| Trade (% of GDP) |  |  | -0.012 |  |  | -0.019 |
|  |  |  | (0.02) |  |  | (0.02) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.159 |  |  | -0.135 |
|  |  |  | (0.20) |  |  | (0.20) |
| Manufacturing value added (% of GDP) |  |  | -0.109 |  |  | -0.085 |
|  |  |  | (0.15) |  |  | (0.15) |
| School Enrollment, Primary (% gross) |  |  | 0.040 |  |  | 0.041 |
|  |  |  | (0.04) |  |  | (0.04) |
| Year 2017 |  | -0.012 | -0.073 |  | 0.125 | 0.053 |
|  |  | (0.14) | (0.19) |  | (0.18) | (0.23) |
| Year 2018 |  | -0.024 | -0.151 |  | 0.049 | -0.094 |
|  |  | (0.28) | (0.38) |  | (0.29) | (0.40) |
| Year 2019 |  | -0.366 | -0.597 |  | -0.172 | -0.428 |
|  |  | (0.39) | (0.52) |  | (0.38) | (0.52) |
| Year 2020 |  | -0.246 | -0.261 |  | 0.242 | 0.194 |
|  |  | (0.53) | (0.53) |  | (0.63) | (0.64) |
| Year 2021 |  | -0.577 | -0.667 |  | 0.678 | 0.629 |
|  |  | (0.81) | (0.90) |  | (1.20) | (1.26) |
| Year 2022 |  | -7.311\*\*\* | -7.374\*\*\* |  | -6.338\*\*\* | -6.327\*\*\* |
|  |  | (0.99) | (1.20) |  | (1.22) | (1.37) |
| Constant | 40.950\*\*\* |  |  | 51.592\*\*\* |  |  |
|  | (4.30) |  |  | (7.13) |  |  |
| Num.Obs. | 1043 | 1043 | 1043 | 1043 | 1043 | 1043 |
| R2 | 0.151 | 0.956 | 0.957 | 0.174 | 0.957 | 0.958 |
| R2 Adj. | 0.150 | 0.948 | 0.949 | 0.170 | 0.950 | 0.950 |
| R2 Within |  | 0.399 | 0.406 |  | 0.415 | 0.423 |
| R2 Within Adj. |  | 0.394 | 0.398 |  | 0.408 | 0.412 |
| AIC | 8376.9 | 5597.0 | 5593.9 | 8356.9 | 5576.7 | 5573.0 |
| BIC | 8386.8 | 6369.2 | 6390.8 | 8386.6 | 6368.7 | 6389.7 |
| RMSE | 13.40 | 3.05 | 3.03 | 13.22 | 3.01 | 2.99 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data are from the World Bank’s World Development Indicators (WDI) and SPI. In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. | | | | | | |

[1] "Model 2: sigma\_e=4.06. sigma\_u=12.43"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = press\_free\_score ~ SPI.INDEX, data = reg\_df,   
 model = "random", index = c("country", "date"))  
  
Balanced Panel: n = 149, T = 7, N = 1043  
  
Effects:  
 var std.dev share  
idiosyncratic 16.468 4.058 0.096  
individual 154.499 12.430 0.904  
theta: 0.8775  
  
Residuals:  
 Min. 1st Qu. Median 3rd Qu. Max.   
-25.48725 -1.08795 0.97647 2.44704 12.06175   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 76.737685 1.948808 39.3767 < 2.2e-16 \*\*\*  
SPI.INDEX -0.155954 0.023989 -6.5011 7.973e-11 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 19186  
Residual Sum of Squares: 18437  
R-Squared: 0.039016  
Adj. R-Squared: 0.038093  
Chisq: 42.2643 on 1 DF, p-value: 7.9734e-11

[1] "Model 3: sigma\_e=3.91. sigma\_u=11.52"

[1] "Model 5: sigma\_e=3.92. sigma\_u=12.29"

[1] "Model 6: sigma\_e=3.8. sigma\_u=11.16"

## Table S16. Relationship between the Economic Complexity Index and ODIN, Open Data Barometer, and Global Data Barometer scores, 2013-2022

|  | ODIN - Model 1 | ODIN - Model 2 | ODIN - Model 3 | ODB - Model 1 | ODB - Model 2 | ODB - Model 3 | GDB - Model 1 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ODIN Score | 0.038\*\*\* | 0.001 | 0.001 |  |  |  |  |
|  | (0.00) | (0.00) | (0.00) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.030\*\*\* | 0.000 | 0.000 |  |
|  |  |  |  | (0.00) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.038\*\*\* |
|  |  |  |  |  |  |  | (0.00) |
| Trade (% of GDP) |  |  | -0.001 |  |  | 0.000 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | 0.006 |  |  | 0.000 |  |
|  |  |  | (0.01) |  |  | (0.01) |  |
| Manufacturing value added (% of GDP) |  |  | 0.027\*\*\* |  |  | -0.001 |  |
|  |  |  | (0.01) |  |  | (0.00) |  |
| School Enrollment, Primary (% gross) |  |  | 0.000 |  |  | 0.000 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Year 2014 |  |  |  |  | 0.006 | -0.002 |  |
|  |  |  |  |  | (0.02) | (0.02) |  |
| Year 2015 |  |  |  |  | 0.008 | -0.008 |  |
|  |  |  |  |  | (0.01) | (0.02) |  |
| Year 2016 |  |  |  |  | -0.023 | -0.048\*\* |  |
|  |  |  |  |  | (0.02) | (0.02) |  |
| Year 2017 |  | 0.011 | -0.001 |  | -0.017 | -0.051\*\* |  |
|  |  | (0.01) | (0.01) |  | (0.02) | (0.02) |  |
| Year 2018 |  | 0.013 | -0.011 |  |  |  |  |
|  |  | (0.02) | (0.03) |  |  |  |  |
| Year 2019 |  | 0.017 | -0.014 |  |  |  |  |
|  |  | (0.02) | (0.03) |  |  |  |  |
| Year 2020 |  | 0.003 | -0.008 |  |  |  |  |
|  |  | (0.03) | (0.03) |  |  |  |  |
| Year 2021 |  | -0.012 | -0.053 |  |  |  |  |
|  |  | (0.03) | (0.04) |  |  |  |  |
| Year 2022 |  | -0.019 | -0.074 |  |  |  |  |
|  |  | (0.03) | (0.05) |  |  |  |  |
| Constant | -1.903\*\*\* |  |  | -0.743\*\*\* |  |  | -1.249\*\*\* |
|  | (0.15) |  |  | (0.11) |  |  | (0.14) |
| Num.Obs. | 892 | 892 | 892 | 359 | 359 | 359 | 91 |
| R2 | 0.418 | 0.980 | 0.981 | 0.464 | 0.993 | 0.993 | 0.452 |
| R2 Adj. | 0.418 | 0.976 | 0.977 | 0.462 | 0.991 | 0.991 | 0.446 |
| R2 Within |  | 0.007 | 0.069 |  | 0.024 | 0.051 |  |
| R2 Within Adj. |  | -0.002 | 0.054 |  | 0.005 | 0.013 |  |
| AIC | 2040.3 | -686.9 | -734.6 | 765.0 | -601.5 | -601.4 | 185.0 |
| BIC | 2049.9 | -39.8 | -63.5 | 772.8 | -201.6 | -182.0 | 190.0 |
| RMSE | 0.76 | 0.14 | 0.14 | 0.70 | 0.08 | 0.08 | 0.65 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |  |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data from the World Bank’s World Development Indicators (WDI), Open Data Watch (ODIN), Global Data Barometer (GDB), and Open Data Barometer (ODB). In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. Estimates with country fixed effects not available for the Global Data Barometer, because the indicator contains on ly one time period. | | | | | | | |

[1] "ODIN Model 2: sigma\_e=0.15. sigma\_u=0.69"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = eci\_value ~ ODIN\_score, data = odin\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 128, T = 3-7, N = 892  
  
Effects:  
 var std.dev share  
idiosyncratic 0.02357 0.15353 0.048  
individual 0.46923 0.68500 0.952  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8717 0.9156 0.9156 0.9154 0.9156 0.9156   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-1.17189 -0.07738 0.02114 0.00032 0.09520 0.83701   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) -0.04795196 0.07574700 -0.6331 0.52670   
ODIN\_score 0.00182075 0.00076382 2.3837 0.01714 \*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 24.192  
Residual Sum of Squares: 24.041  
R-Squared: 0.0062528  
Adj. R-Squared: 0.0051362  
Chisq: 5.68221 on 1 DF, p-value: 0.017138

[1] "ODIN Model 3: sigma\_e=0.15. sigma\_u=0.49"

[1] "ODB Model 2: sigma\_e=0.09. sigma\_u=0.67"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = eci\_value ~ odb, data = odb\_reg\_df, model = "random",   
 index = c("country", "date"))  
  
Unbalanced Panel: n = 98, T = 1-5, N = 359  
  
Effects:  
 var std.dev share  
idiosyncratic 0.008738 0.093478 0.019  
individual 0.453930 0.673743 0.981  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8626 0.9308 0.9308 0.9293 0.9381 0.9381   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.40065 -0.05310 0.01374 0.00321 0.07059 0.32987   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 0.19365409 0.08168736 2.3707 0.01776 \*  
odb 0.00171805 0.00089164 1.9268 0.05400 .  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 3.8789  
Residual Sum of Squares: 3.8809  
R-Squared: 0.0029933  
Adj. R-Squared: 0.00020055  
Chisq: 3.71271 on 1 DF, p-value: 0.054

[1] "ODB Model 3: sigma\_e=0.09. sigma\_u=0.45"

## Table S17 Relationship between the Environmental Performance Index and ODIN, Open Data Barometer, and Global Data Barometer scores, 2013-2022

|  | ODIN - Model 1 | ODIN - Model 2 | ODIN - Model 3 | ODB - Model 1 | ODB - Model 2 | ODB - Model 3 | GDB - Model 1 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ODIN Score | 0.466\*\*\* | -0.029 | -0.028 |  |  |  |  |
|  | (0.04) | (0.04) | (0.04) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.460\*\*\* | 0.000 | 0.000 |  |
|  |  |  |  | (0.04) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.744\*\*\* |
|  |  |  |  |  |  |  | (0.06) |
| Trade (% of GDP) |  |  | 0.031 |  |  | 0.000 |  |
|  |  |  | (0.03) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | 0.021 |  |  | 0.000 |  |
|  |  |  | (0.21) |  |  | (0.00) |  |
| Manufacturing value added (% of GDP) |  |  | -0.276 |  |  | 0.000 |  |
|  |  |  | (0.23) |  |  | (0.00) |  |
| School Enrollment, Primary (% gross) |  |  | -0.020 |  |  | 0.000 |  |
|  |  |  | (0.06) |  |  | (0.00) |  |
| Year 2014 |  |  |  |  | 0.000 | 0.000 |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2015 |  |  |  |  | 0.000 | 0.000 |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2016 |  |  |  |  | 0.000 | 0.000 |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2017 |  | 0.018 | -0.058 |  | 0.000 | 0.000 |  |
|  |  | (0.04) | (0.11) |  | (0.00) | (0.00) |  |
| Year 2018 |  | 0.149 | -0.018 |  |  |  |  |
|  |  | (0.20) | (0.30) |  |  |  |  |
| Year 2019 |  | 0.149 | -0.064 |  |  |  |  |
|  |  | (0.20) | (0.38) |  |  |  |  |
| Year 2020 |  | -8.947\*\*\* | -8.873\*\*\* |  |  |  |  |
|  |  | (0.66) | (0.67) |  |  |  |  |
| Year 2021 |  | -8.947\*\*\* | -9.119\*\*\* |  |  |  |  |
|  |  | (0.66) | (0.70) |  |  |  |  |
| Year 2022 |  | -12.944\*\*\* | -13.388\*\*\* |  |  |  |  |
|  |  | (0.73) | (0.85) |  |  |  |  |
| Constant | 29.708\*\*\* |  |  | 43.954\*\*\* |  |  | 23.016\*\*\* |
|  | (1.98) |  |  | (1.63) |  |  | (1.95) |
| Num.Obs. | 1065 | 1065 | 1065 | 368 | 368 | 368 | 95 |
| R2 | 0.266 | 0.929 | 0.929 | 0.534 | 1.000 | 1.000 | 0.584 |
| R2 Adj. | 0.265 | 0.916 | 0.916 | 0.533 | 1.000 | 1.000 | 0.579 |
| R2 Within |  | 0.642 | 0.645 |  | 0.000 | 0.000 |  |
| R2 Within Adj. |  | 0.639 | 0.640 |  | -0.019 | -0.039 |  |
| AIC | 8458.0 | 6297.8 | 6299.0 | 2684.1 | -24047.8 | -24037.8 | 709.8 |
| BIC | 8467.9 | 7108.0 | 7134.1 | 2691.9 | -23633.6 | -23604.0 | 714.9 |
| RMSE | 12.81 | 3.99 | 3.98 | 9.23 | 0.00 | 0.00 | 9.93 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |  |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data from the World Bank’s World Development Indicators (WDI), Open Data Watch (ODIN), Global Data Barometer (GDB), and Open Data Barometer (ODB). In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. Estimates with country fixed effects not available for the Global Data Barometer, because the indicator contains on ly one time period. | | | | | | | |

[1] "ODIN Model 2: sigma\_e=6.4. sigma\_u=8.78"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = env\_perform\_index ~ ODIN\_score, data = odin\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 156, T = 1-7, N = 1065  
  
Effects:  
 var std.dev share  
idiosyncratic 40.958 6.400 0.347  
individual 77.022 8.776 0.653  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.4108 0.7343 0.7343 0.7321 0.7343 0.7343   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-21.5678 -6.0597 1.5716 0.0241 5.8886 14.0896   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 60.262882 1.635024 36.8575 < 2.2e-16 \*\*\*  
ODIN\_score -0.167227 0.028918 -5.7828 7.347e-09 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 61357  
Residual Sum of Squares: 59134  
R-Squared: 0.036959  
Adj. R-Squared: 0.036053  
Chisq: 33.4406 on 1 DF, p-value: 7.3474e-09

[1] "ODIN Model 3: sigma\_e=6.28. sigma\_u=5.57"

[1] "ODB Model 2: sigma\_e=0. sigma\_u=8.87"

[1] "ODB Model 3: sigma\_e=0. sigma\_u=6.46"

## Table S18. Relationship between the OECD Better Life Index and ODIN, Open Data Barometer, and Global Data Barometer scores, 2013-2022

|  | ODIN - Model 1 | ODIN - Model 2 | ODIN - Model 3 | ODB - Model 1 | ODB - Model 2 | ODB - Model 3 | GDB - Model 1 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ODIN Score | 0.056\*\*\* | 0.000 | 0.001 |  |  |  |  |
|  | (0.01) | (0.01) | (0.00) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.050\*\*\* | -0.008\*\* | -0.007\* |  |
|  |  |  |  | (0.01) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.064\*\*\* |
|  |  |  |  |  |  |  | (0.02) |
| Trade (% of GDP) |  |  | -0.001 |  |  | -0.002 |  |
|  |  |  | (0.00) |  |  | (0.01) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | 0.095 |  |  | 0.019 |  |
|  |  |  | (0.06) |  |  | (0.05) |  |
| Manufacturing value added (% of GDP) |  |  | -0.066\*\*\* |  |  | -0.032 |  |
|  |  |  | (0.02) |  |  | (0.02) |  |
| School Enrollment, Primary (% gross) |  |  | 0.021 |  |  | 0.008 |  |
|  |  |  | (0.01) |  |  | (0.01) |  |
| Year 2014 |  |  |  |  | 0.014 | -0.019 |  |
|  |  |  |  |  | (0.04) | (0.04) |  |
| Year 2015 |  |  |  |  | 0.084\* | 0.038 |  |
|  |  |  |  |  | (0.05) | (0.05) |  |
| Year 2016 |  |  |  |  | -0.229\*\*\* | -0.293\*\*\* |  |
|  |  |  |  |  | (0.05) | (0.06) |  |
| Year 2017 |  | -0.122\*\*\* | -0.178\*\*\* |  | -0.317\*\*\* | -0.408\*\*\* |  |
|  |  | (0.03) | (0.04) |  | (0.07) | (0.08) |  |
| Year 2018 |  | -0.217\*\* | -0.311\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.08) |  |  |  |  |
| Year 2019 |  | -0.217\*\* | -0.357\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.08) |  |  |  |  |
| Year 2020 |  | -0.217\*\* | -0.273\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.08) |  |  |  |  |
| Year 2021 |  | -0.217\*\* | -0.376\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.09) |  |  |  |  |
| Year 2022 |  | -0.218\*\* | -0.439\*\*\* |  |  |  |  |
|  |  | (0.10) | (0.11) |  |  |  |  |
| Constant | 3.174\*\*\* |  |  | 4.396\*\*\* |  |  | 3.295\*\*\* |
|  | (0.94) |  |  | (0.49) |  |  | (1.07) |
| Num.Obs. | 287 | 287 | 287 | 163 | 163 | 163 | 30 |
| R2 | 0.239 | 0.977 | 0.981 | 0.397 | 0.986 | 0.986 | 0.230 |
| R2 Adj. | 0.236 | 0.973 | 0.977 | 0.393 | 0.981 | 0.981 | 0.202 |
| R2 Within |  | 0.127 | 0.270 |  | 0.402 | 0.430 |  |
| R2 Within Adj. |  | 0.102 | 0.233 |  | 0.377 | 0.380 |  |
| AIC | 913.4 | -5.1 | -46.4 | 488.9 | -38.3 | -35.9 | 100.3 |
| BIC | 920.7 | 170.6 | 147.6 | 495.0 | 94.7 | 112.6 | 103.1 |
| RMSE | 1.18 | 0.20 | 0.19 | 1.07 | 0.17 | 0.16 | 1.20 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |  |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data from the World Bank’s World Development Indicators (WDI), Open Data Watch (ODIN), Global Data Barometer (GDB), and Open Data Barometer (ODB). In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. Estimates with country fixed effects not available for the Global Data Barometer, because the indicator contains on ly one time period. | | | | | | | |

[1] "ODIN Model 2: sigma\_e=0.23. sigma\_u=1.12"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = better\_life\_index ~ ODIN\_score, data = odin\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Balanced Panel: n = 41, T = 7, N = 287  
  
Effects:  
 var std.dev share  
idiosyncratic 0.0533 0.2309 0.041  
individual 1.2575 1.1214 0.959  
theta: 0.9224  
  
Residuals:  
 Min. 1st Qu. Median 3rd Qu. Max.   
-0.5112795 -0.1169232 0.0027095 0.1256532 0.8323813   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 7.1710026 0.2492316 28.7724 < 2e-16 \*\*\*  
ODIN\_score -0.0058472 0.0026198 -2.2319 0.02562 \*   
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 16.619  
Residual Sum of Squares: 16.333  
R-Squared: 0.017178  
Adj. R-Squared: 0.01373  
Chisq: 4.98132 on 1 DF, p-value: 0.025622

[1] "ODIN Model 3: sigma\_e=0.22. sigma\_u=0.48"

[1] "ODB Model 2: sigma\_e=0.24. sigma\_u=0.99"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = better\_life\_index ~ odb, data = odb\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 38, T = 1-5, N = 163  
  
Effects:  
 var std.dev share  
idiosyncratic 0.05955 0.24403 0.058  
individual 0.97280 0.98631 0.942  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.7598 0.8772 0.8900 0.8822 0.8900 0.8900   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.80023 -0.19863 0.06145 -0.00007 0.20551 0.52447   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 7.0154055 0.2306571 30.4149 <2e-16 \*\*\*  
odb 0.0012031 0.0028449 0.4229 0.6724   
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 12.941  
Residual Sum of Squares: 11.451  
R-Squared: 0.11515  
Adj. R-Squared: 0.10965  
Chisq: 0.178858 on 1 DF, p-value: 0.67236

[1] "ODB Model 3: sigma\_e=0.24. sigma\_u=0.37"

## Table S19. Relationship between the UN Human Development Index and ODIN, Open Data Barometer, and Global Data Barometer scores, 2013-2022

|  | ODIN - Model 1 | ODIN - Model 2 | ODIN - Model 3 | ODB - Model 1 | ODB - Model 2 | ODB - Model 3 | GDB - Model 1 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ODIN Score | 0.006\*\*\* | 0.000 | 0.000 |  |  |  |  |
|  | (0.00) | (0.00) | (0.00) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.005\*\*\* | 0.000 | 0.000 |  |
|  |  |  |  | (0.00) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.006\*\*\* |
|  |  |  |  |  |  |  | (0.00) |
| Trade (% of GDP) |  |  | 0.000 |  |  | 0.000\* |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | 0.000 |  |  | -0.001\* |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Manufacturing value added (% of GDP) |  |  | 0.000 |  |  | 0.001 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| School Enrollment, Primary (% gross) |  |  | 0.000\*\*\* |  |  | 0.000 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Year 2014 |  |  |  |  | 0.005\*\*\* | 0.004\*\*\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2015 |  |  |  |  | 0.009\*\*\* | 0.007\*\*\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2016 |  |  |  |  | 0.013\*\*\* | 0.010\*\*\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2017 |  | 0.004\*\*\* | 0.003\*\*\* |  | 0.016\*\*\* | 0.012\*\*\* |  |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |  |
| Year 2018 |  | 0.007\*\*\* | 0.006\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2019 |  | 0.011\*\*\* | 0.009\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2020 |  | 0.005\*\*\* | 0.005\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2021 |  | 0.005\*\*\* | 0.003\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2022 |  | 0.005\*\*\* | 0.002 |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Constant | 0.438\*\*\* |  |  | 0.581\*\*\* |  |  | 0.545\*\*\* |
|  | (0.02) |  |  | (0.02) |  |  | (0.03) |
| Num.Obs. | 1092 | 1092 | 1092 | 369 | 369 | 369 | 97 |
| R2 | 0.460 | 0.999 | 0.999 | 0.550 | 0.999 | 1.000 | 0.522 |
| R2 Adj. | 0.460 | 0.999 | 0.999 | 0.549 | 0.999 | 0.999 | 0.517 |
| R2 Within |  | 0.294 | 0.434 |  | 0.675 | 0.770 |  |
| R2 Within Adj. |  | 0.288 | 0.427 |  | 0.669 | 0.761 |  |
| AIC | -1699.2 | -8175.9 | -8408.1 | -646.7 | -2917.7 | -3034.4 | -183.8 |
| BIC | -1689.2 | -7336.6 | -7543.9 | -638.9 | -2499.2 | -2596.4 | -178.7 |
| RMSE | 0.11 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.09 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |  |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data from the World Bank’s World Development Indicators (WDI), Open Data Watch (ODIN), Global Data Barometer (GDB), and Open Data Barometer (ODB). In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. Estimates with country fixed effects not available for the Global Data Barometer, because the indicator contains on ly one time period. | | | | | | | |

[1] "ODIN Model 2: sigma\_e=0.01. sigma\_u=0.1"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = hdi\_value ~ ODIN\_score, data = odin\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 161, T = 1-7, N = 1092  
  
Effects:  
 var std.dev share  
idiosyncratic 3.957e-05 6.291e-03 0.004  
individual 1.033e-02 1.016e-01 0.996  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9382 0.9766 0.9766 0.9763 0.9766 0.9766   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-3.12e-02 -4.19e-03 7.02e-04 2.06e-05 4.67e-03 2.07e-02   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 7.2779e-01 8.7992e-03 82.7110 < 2.2e-16 \*\*\*  
ODIN\_score 1.1681e-04 2.9909e-05 3.9055 9.403e-05 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.053008  
Residual Sum of Squares: 0.050637  
R-Squared: 0.045654  
Adj. R-Squared: 0.044779  
Chisq: 15.2528 on 1 DF, p-value: 9.4035e-05

[1] "ODIN Model 3: sigma\_e=0.01. sigma\_u=0.04"

[1] "ODB Model 2: sigma\_e=0.01. sigma\_u=0.1"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = hdi\_value ~ odb, data = odb\_reg\_df, model = "random",   
 index = c("country", "date"))  
  
Unbalanced Panel: n = 102, T = 1-5, N = 369  
  
Effects:  
 var std.dev share  
idiosyncratic 0.0000501 0.0070779 0.005  
individual 0.0092285 0.0960650 0.995  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9265 0.9632 0.9632 0.9622 0.9671 0.9671   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.027875 -0.004359 0.001292 0.000158 0.005242 0.023633   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 7.4707e-01 1.1253e-02 66.3898 < 2.2e-16 \*\*\*  
odb 2.5397e-04 7.0472e-05 3.6039 0.0003135 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.036048  
Residual Sum of Squares: 0.024609  
R-Squared: 0.32283  
Adj. R-Squared: 0.32099  
Chisq: 12.9881 on 1 DF, p-value: 0.00031348

[1] "ODB Model 3: sigma\_e=0. sigma\_u=0.04"

## Table S20. Relationship between the WB Human Capital Index and ODIN, Open Data Barometer, and Global Data Barometer scores, 2013-2022

|  | ODIN - Model 1 | ODIN - Model 2 | ODIN - Model 3 | ODB - Model 1 | ODB - Model 2 | ODB - Model 3 | GDB - Model 1 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ODIN Score | 0.006\*\*\* | 0.000 | 0.000 |  |  |  |  |
|  | (0.00) | (0.00) | (0.00) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.005\*\*\* | 0.000 | 0.000 |  |
|  |  |  |  | (0.00) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.006\*\*\* |
|  |  |  |  |  |  |  | (0.00) |
| Trade (% of GDP) |  |  | 0.000 |  |  | 0.000 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.001 |  |  | -0.001 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Manufacturing value added (% of GDP) |  |  | 0.000 |  |  | 0.001\* |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| School Enrollment, Primary (% gross) |  |  | 0.000 |  |  | 0.000 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Year 2014 |  |  |  |  | 0.001 | 0.001\*\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2015 |  |  |  |  | 0.000 | 0.001\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2016 |  |  |  |  | 0.000 | 0.002 |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2017 |  | 0.020\*\*\* | 0.020\*\*\* |  | 0.023\*\*\* | 0.026\*\*\* |  |
|  |  | (0.00) | (0.00) |  | (0.01) | (0.01) |  |
| Year 2018 |  | 0.021\*\*\* | 0.021\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2019 |  | 0.021\*\*\* | 0.021\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2020 |  | 0.017\*\*\* | 0.017\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2021 |  | 0.017\*\*\* | 0.017\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2022 |  | 0.017\*\*\* | 0.017\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Constant | 0.270\*\*\* |  |  | 0.409\*\*\* |  |  | 0.385\*\*\* |
|  | (0.02) |  |  | (0.02) |  |  | (0.02) |
| Num.Obs. | 1030 | 1030 | 1030 | 368 | 368 | 368 | 94 |
| R2 | 0.526 | 0.991 | 0.991 | 0.596 | 0.998 | 0.998 | 0.544 |
| R2 Adj. | 0.525 | 0.990 | 0.990 | 0.594 | 0.997 | 0.997 | 0.539 |
| R2 Within |  | 0.206 | 0.213 |  | 0.408 | 0.429 |  |
| R2 Within Adj. |  | 0.200 | 0.202 |  | 0.397 | 0.407 |  |
| AIC | -1842.5 | -5653.1 | -5651.5 | -703.7 | -2413.2 | -2416.7 | -191.6 |
| BIC | -1832.6 | -4873.0 | -4846.7 | -695.9 | -1998.9 | -1982.9 | -186.6 |
| RMSE | 0.10 | 0.01 | 0.01 | 0.09 | 0.01 | 0.01 | 0.09 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |  |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data from the World Bank’s World Development Indicators (WDI), Open Data Watch (ODIN), Global Data Barometer (GDB), and Open Data Barometer (ODB). In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. Estimates with country fixed effects not available for the Global Data Barometer, because the indicator contains on ly one time period. | | | | | | | |

[1] "ODIN Model 2: sigma\_e=0.02. sigma\_u=0.09"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = HD.HCI.OVRL ~ ODIN\_score, data = odin\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 151, T = 1-7, N = 1030  
  
Effects:  
 var std.dev share  
idiosyncratic 0.0002589 0.0160908 0.033  
individual 0.0075911 0.0871271 0.967  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8184 0.9304 0.9304 0.9297 0.9304 0.9304   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.083528 -0.009797 -0.000837 0.000066 0.009876 0.103132   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 5.4997e-01 8.7489e-03 62.8614 < 2.2e-16 \*\*\*  
ODIN\_score 4.4670e-04 7.9027e-05 5.6524 1.582e-08 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.33949  
Residual Sum of Squares: 0.32491  
R-Squared: 0.04406  
Adj. R-Squared: 0.04313  
Chisq: 31.9499 on 1 DF, p-value: 1.582e-08

[1] "ODIN Model 3: sigma\_e=0.02. sigma\_u=0.06"

[1] "ODB Model 2: sigma\_e=0.01. sigma\_u=0.09"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = HD.HCI.OVRL ~ odb, data = odb\_reg\_df, model = "random",   
 index = c("country", "date"))  
  
Unbalanced Panel: n = 101, T = 1-5, N = 368  
  
Effects:  
 var std.dev share  
idiosyncratic 0.0001082 0.0104015 0.014  
individual 0.0076146 0.0872616 0.986  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8816 0.9405 0.9405 0.9391 0.9468 0.9468   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.026676 -0.008420 -0.000138 0.000239 0.007260 0.102094   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 0.57425001 0.01087583 52.8006 < 2.2e-16 \*\*\*  
odb 0.00035698 0.00010483 3.4053 0.0006609 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.071225  
Residual Sum of Squares: 0.055672  
R-Squared: 0.22501  
Adj. R-Squared: 0.22289  
Chisq: 11.5962 on 1 DF, p-value: 0.00066086

[1] "ODB Model 3: sigma\_e=0.01. sigma\_u=0.06"

## Table S21. Relationship between the World Press Freedom Index and ODIN, Open Data Barometer, and Global Data Barometer scores, 2013-2022

|  | ODIN - Model 1 | ODIN - Model 2 | ODIN - Model 3 | ODB - Model 1 | ODB - Model 2 | ODB - Model 3 | GDB - Model 1 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ODIN Score | 0.289\*\*\* | -0.021 | -0.022 |  |  |  |  |
|  | (0.06) | (0.03) | (0.03) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.345\*\*\* | 0.000 | 0.000 |  |
|  |  |  |  | (0.05) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.393\*\*\* |
|  |  |  |  |  |  |  | (0.07) |
| Trade (% of GDP) |  |  | -0.006 |  |  | 0.000 |  |
|  |  |  | (0.02) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.213 |  |  | 0.000 |  |
|  |  |  | (0.19) |  |  | (0.00) |  |
| Manufacturing value added (% of GDP) |  |  | -0.116 |  |  | 0.000 |  |
|  |  |  | (0.17) |  |  | (0.00) |  |
| School Enrollment, Primary (% gross) |  |  | 0.048 |  |  | 0.000 |  |
|  |  |  | (0.04) |  |  | (0.00) |  |
| Year 2014 |  |  |  |  | 0.000 | 0.000 |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2015 |  |  |  |  | 0.000 | 0.000 |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2016 |  |  |  |  | 0.000 | 0.000 |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2017 |  | -0.011 | -0.133 |  | 0.000 | 0.000 |  |
|  |  | (0.05) | (0.09) |  | (0.00) | (0.00) |  |
| Year 2018 |  | 0.091 | -0.163 |  |  |  |  |
|  |  | (0.19) | (0.27) |  |  |  |  |
| Year 2019 |  | -0.199 | -0.597\* |  |  |  |  |
|  |  | (0.27) | (0.36) |  |  |  |  |
| Year 2020 |  | -0.031 | -0.008 |  |  |  |  |
|  |  | (0.43) | (0.42) |  |  |  |  |
| Year 2021 |  | -0.346 | -0.540 |  |  |  |  |
|  |  | (0.45) | (0.49) |  |  |  |  |
| Year 2022 |  | -7.265\*\*\* | -7.552\*\*\* |  |  |  |  |
|  |  | (0.77) | (0.88) |  |  |  |  |
| Constant | 51.783\*\*\* |  |  | 56.673\*\*\* |  |  | 53.178\*\*\* |
|  | (2.95) |  |  | (2.57) |  |  | (2.77) |
| Num.Obs. | 1038 | 1038 | 1038 | 369 | 369 | 369 | 96 |
| R2 | 0.106 | 0.957 | 0.958 | 0.244 | 1.000 | 1.000 | 0.183 |
| R2 Adj. | 0.106 | 0.949 | 0.950 | 0.242 | 1.000 | 1.000 | 0.174 |
| R2 Within |  | 0.415 | 0.428 |  | 0.000 | 0.000 |  |
| R2 Within Adj. |  | 0.410 | 0.421 |  | -0.019 | -0.039 |  |
| AIC | 8408.8 | 5581.5 | 5567.1 | 2947.0 | -23857.0 | -23847.0 | 771.4 |
| BIC | 8418.6 | 6362.8 | 6373.2 | 2954.8 | -23438.5 | -23409.0 | 776.5 |
| RMSE | 13.87 | 3.06 | 3.02 | 13.05 | 0.00 | 0.00 | 13.17 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |  |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data from the World Bank’s World Development Indicators (WDI), Open Data Watch (ODIN), Global Data Barometer (GDB), and Open Data Barometer (ODB). In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. Estimates with country fixed effects not available for the Global Data Barometer, because the indicator contains on ly one time period. | | | | | | | |

[1] "ODIN Model 2: sigma\_e=4.21. sigma\_u=12.9"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = press\_free\_score ~ ODIN\_score, data = odin\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 151, T = 1-7, N = 1038  
  
Effects:  
 var std.dev share  
idiosyncratic 17.743 4.212 0.096  
individual 166.297 12.896 0.904  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.6895 0.8775 0.8775 0.8767 0.8775 0.8775   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-25.9276 -0.9843 1.0516 0.0145 2.5199 11.2221   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 70.646218 1.411116 50.0641 < 2.2e-16 \*\*\*  
ODIN\_score -0.096102 0.018409 -5.2204 1.785e-07 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 19832  
Residual Sum of Squares: 19236  
R-Squared: 0.03097  
Adj. R-Squared: 0.030035  
Chisq: 27.2529 on 1 DF, p-value: 1.7851e-07

[1] "ODIN Model 3: sigma\_e=3.98. sigma\_u=12.16"

[1] "ODB Model 2: sigma\_e=0. sigma\_u=13.02"

[1] "ODB Model 3: sigma\_e=0. sigma\_u=12.43"