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

Brian Stacy

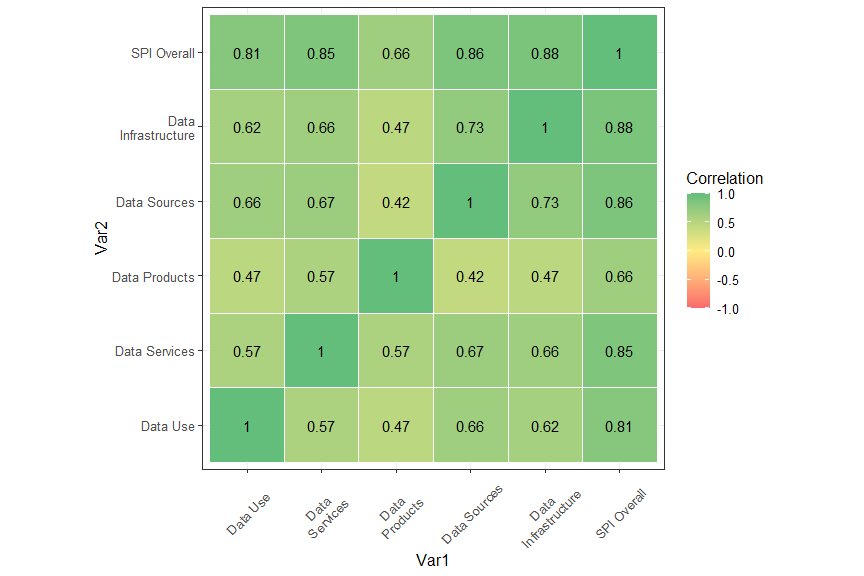
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## Figure M.1. The Pillars and Dimensions that Construct the New SPI

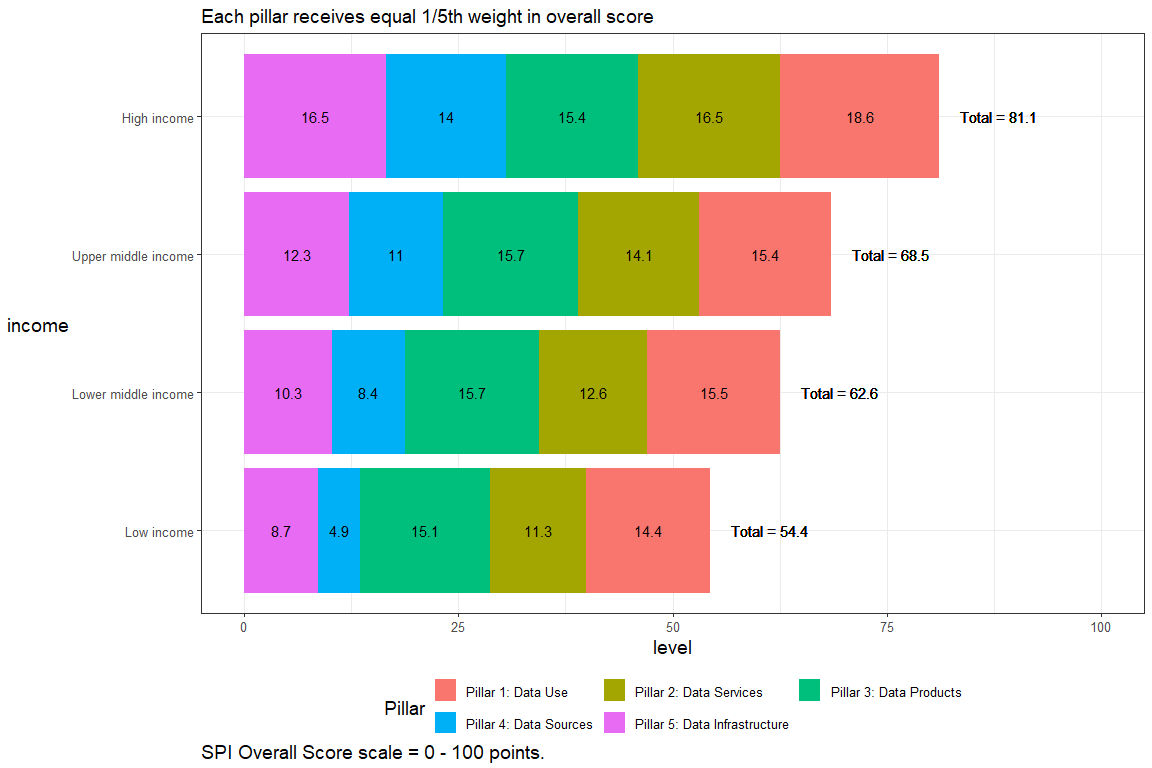
Figure produced using Microsoft Powerpoint. Figure reproduced below.

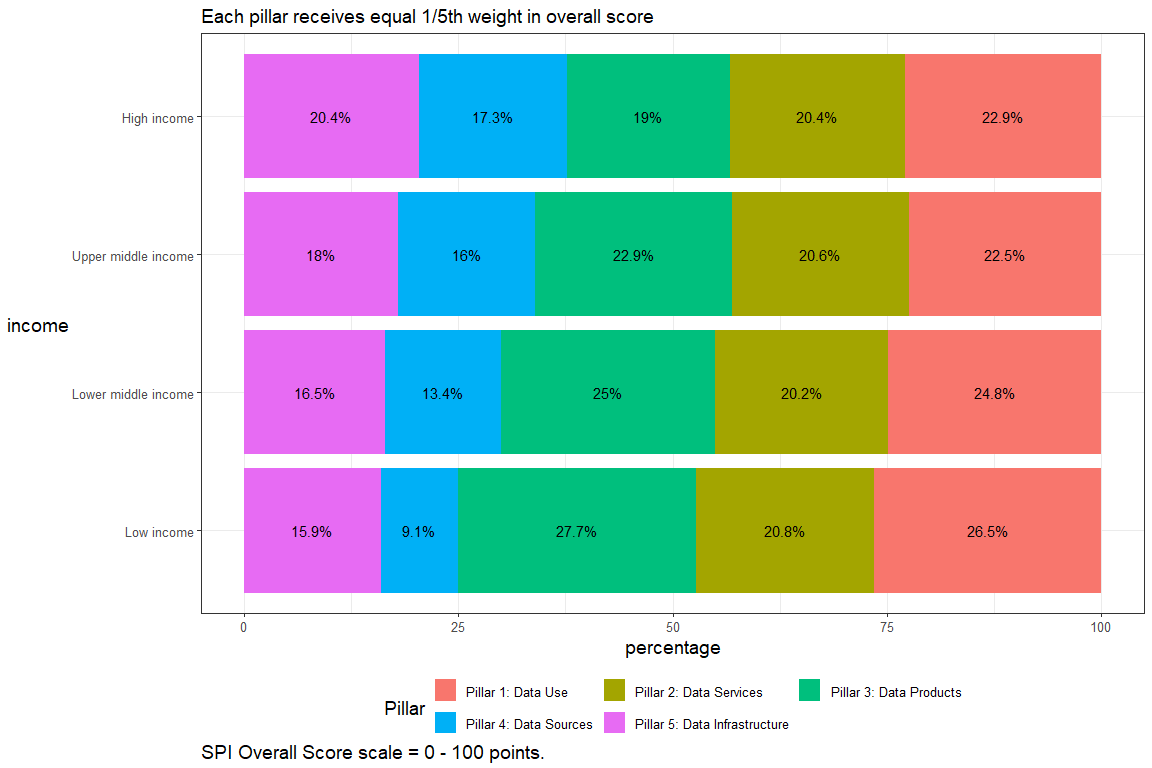


## Figure M.2. Correlation between the SPI Pillars



## Figure M.3. Contribution of Each Pillar to SPI Score, by Country Income Level

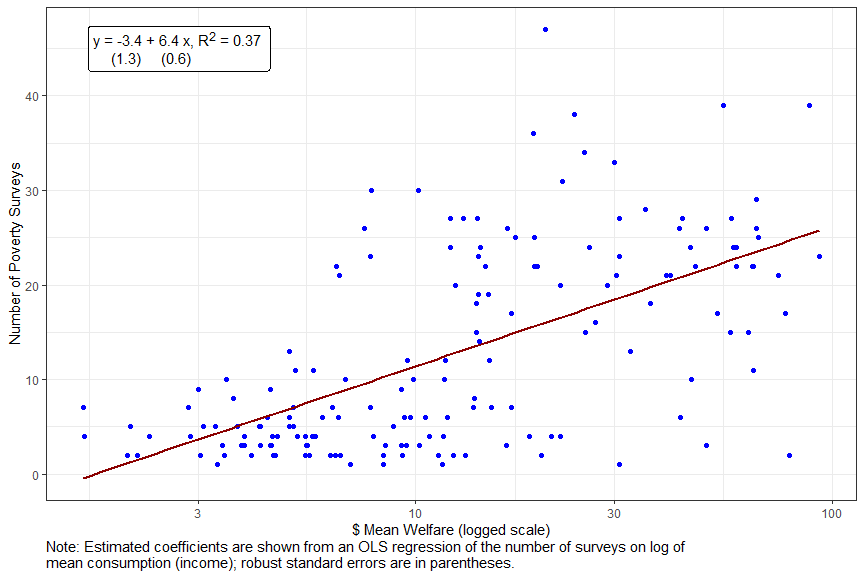




## Table 1. Comparing the SPI and Other Data and Statistics Indexes

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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## Measuring Country Progress over time

This analysis explores countries that experienced large deviations from their country specific time trends in the year 2022 for both the SPI and ODIN indices.

For each country, a country specific time trend was calculated using data for that country from 2016 to 2020. This time trend was calculated using OLS regression of the index (SPI or ODIN as the case may be) on the year. Each regression is calculated separately by country. A predicted value based on these regressions is then calculated for the year 2022.

A set of 15 countries that are the largest over-performers and 15 of the largest underperformers are shown below for each index.

Figure. Over/Under-Performers in 2022 for SPI and ODIN overall scores compared to 5 year country trends.

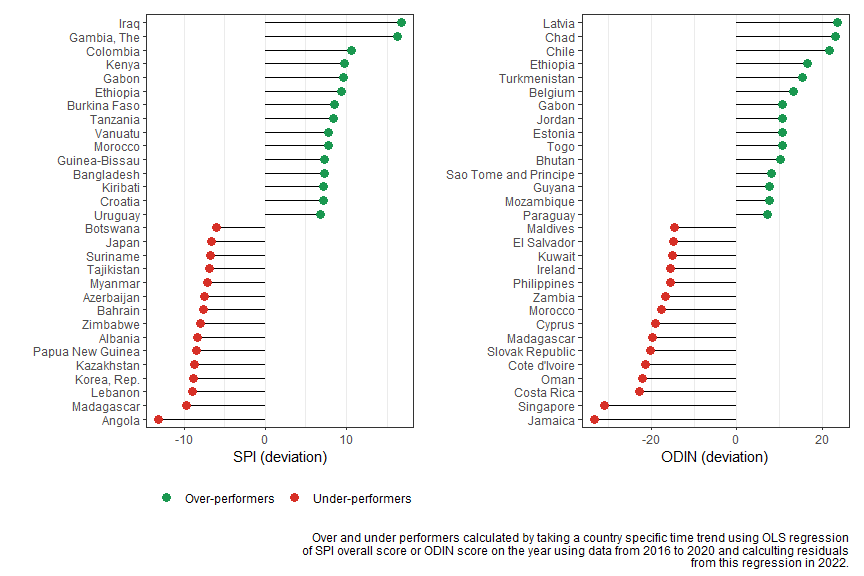
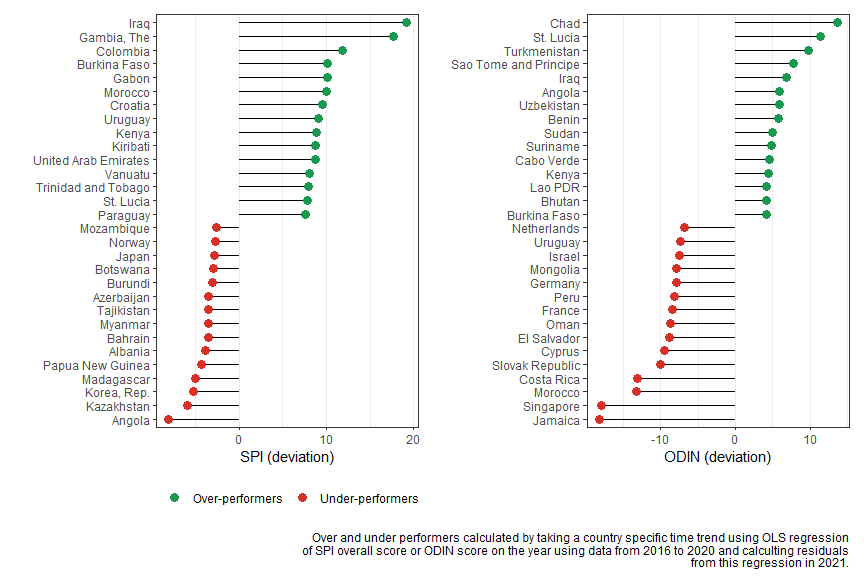


Figure. Over/Under-Performers in 2021 for SPI and ODIN overall scores compared to 5 year country trends.



| SPI and ODIN Over/Under-performers in 2022 compared to country time trend from 2016 to 2020. | | | |
| --- | --- | --- | --- |
| SPI Country | SPI Difference | ODIN Country | ODIN Difference |
| Iraq | 19.2 | Chad | 13.6 |
| Gambia, The | 17.7 | St. Lucia | 11.4 |
| Colombia | 11.9 | Turkmenistan | 9.8 |
| Burkina Faso | 10.1 | Sao Tome and Principe | 7.7 |
| Gabon | 10.1 | Iraq | 6.8 |
| Morocco | 10.1 | Angola | 5.9 |
| Croatia | 9.5 | Uzbekistan | 5.8 |
| Uruguay | 9.0 | Benin | 5.8 |
| Kenya | 8.8 | Sudan | 5.0 |
| Kiribati | 8.7 | Suriname | 4.8 |
| United Arab Emirates | 8.7 | Cabo Verde | 4.6 |
| Vanuatu | 8.0 | Kenya | 4.5 |
| Trinidad and Tobago | 8.0 | Lao PDR | 4.1 |
| St. Lucia | 7.9 | Bhutan | 4.1 |
| Paraguay | 7.6 | Burkina Faso | 4.1 |
| Mozambique | -2.6 | Netherlands | -6.8 |
| Norway | -2.7 | Uruguay | -7.3 |
| Japan | -2.8 | Israel | -7.6 |
| Botswana | -2.9 | Germany | -7.9 |
| Burundi | -3.1 | Mongolia | -7.9 |
| Azerbaijan | -3.5 | Peru | -8.1 |
| Tajikistan | -3.5 | France | -8.4 |
| Myanmar | -3.6 | Oman | -8.7 |
| Bahrain | -3.6 | El Salvador | -8.8 |
| Albania | -3.8 | Cyprus | -9.5 |
| Papua New Guinea | -4.4 | Slovak Republic | -10.0 |
| Madagascar | -5.1 | Morocco | -13.2 |
| Korea, Rep. | -5.2 | Costa Rica | -13.2 |
| Kazakhstan | -5.9 | Singapore | -17.9 |
| Angola | -8.1 | Jamaica | -18.2 |

[1] 3.949142

[1] 6.927273

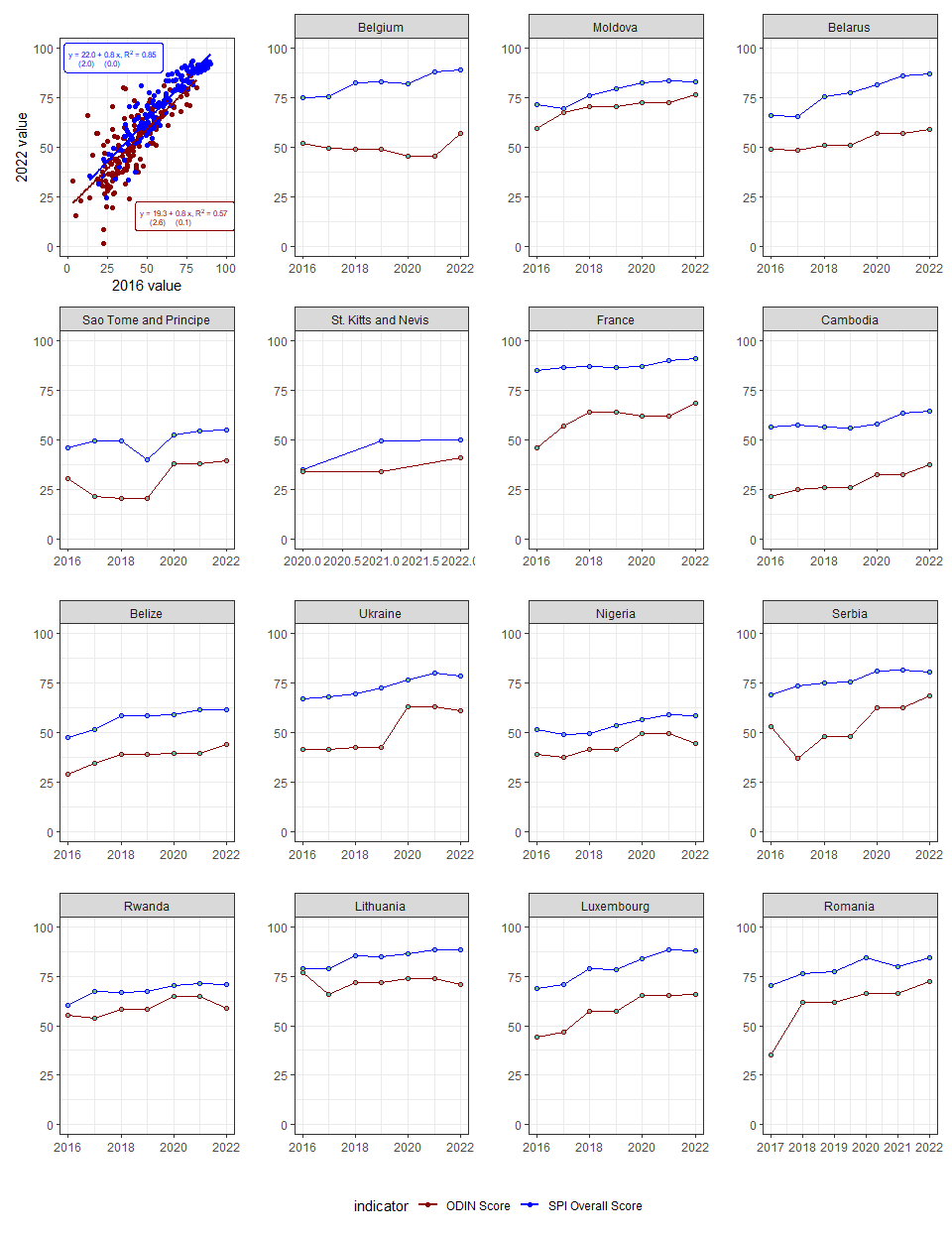
[1] 0.1731068

Movement between quintiles

Table. Top Movers for SPI and ODIN between 2016 and 2022.

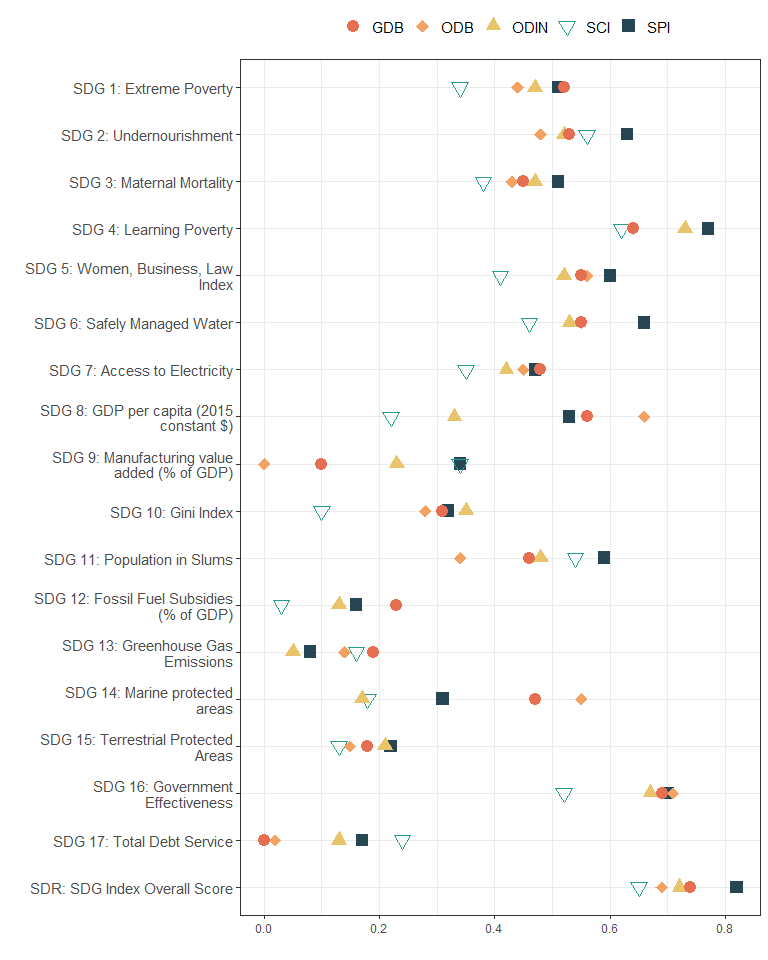
| Country | 2016 SPI overall score | 2022 SPI overall score | 2016 ODIN overall score | 2022 ODIN overall score |
| --- | --- | --- | --- | --- |
| Morocco | 3 | 3 | 2 | 5 |
| Jamaica | 2 | 2 | 1 | 4 |
| Afghanistan | 1 | 2 | 3 | 1 |
| Costa Rica | 4 | 5 | 1 | 4 |
| Iceland | 4 | 5 | 4 | 3 |
| North Macedonia | 3 | 4 | 5 | 4 |
| Indonesia | 4 | 4 | 3 | 5 |
| Uruguay | 4 | 4 | 2 | 4 |
| Mauritius | 4 | 4 | 5 | 3 |
| El Salvador | 4 | 3 | 1 | 2 |
| Peru | 4 | 3 | 3 | 4 |
| Uzbekistan | 1 | 3 | 1 | 5 |
| Kuwait | 2 | 3 | 3 | 2 |
| Tanzania | 3 | 3 | 2 | 4 |
| Liberia | 2 | 3 | 3 | 2 |
| Benin | 2 | 2 | 1 | 3 |
| Lao PDR | 2 | 2 | 1 | 3 |
| Mali | 2 | 2 | 4 | 2 |
| Lebanon | 1 | 2 | 2 | 1 |
| Guyana | 1 | 2 | 2 | 1 |

## Figure 3. Trends in Overall ODIN and SPI Scores, 2016-2022

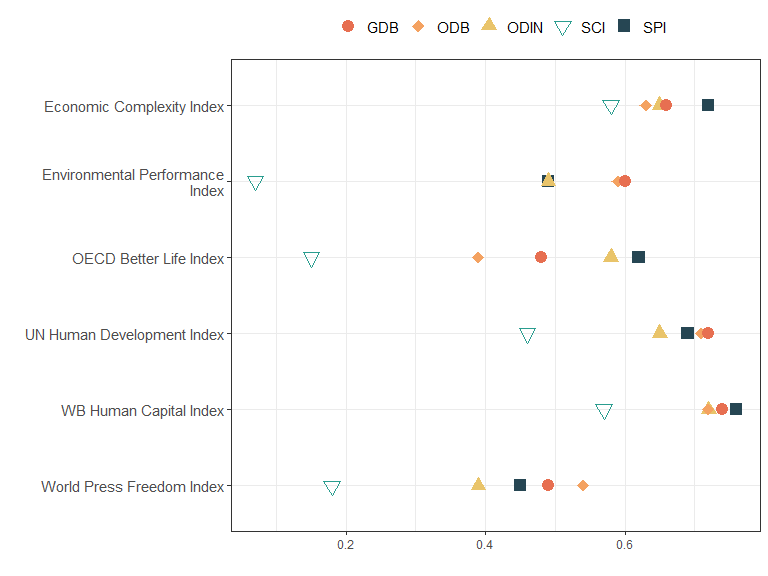


[1] 5.012917

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



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



## Figure 6. Theory of Change

Figure produced using Microsoft Powerpoint.



## Table A.1. 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 A.2. Description of SPI Dimensions

Table produced using Microsoft Word, based on SPI metadata.

## Table A.3. Mapping of SPI Indicators to SDG Indicators

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

## Table A.4. 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 |
| --- | --- | --- | --- | --- | --- | --- |
| Finland | 93.6 | 100.0 | 96.4 | 88.5 | 83.3 | 100 |
| Norway | 93.5 | 100.0 | 97.1 | 87.2 | 83.1 | 100 |
| Canada | 92.9 | 100.0 | 92.6 | 83.7 | 88.3 | 100 |
| Netherlands | 92.8 | 100.0 | 96.9 | 87.8 | 79.5 | 100 |
| United States | 92.8 | 100.0 | 93.6 | 86.0 | 84.4 | 100 |
| Slovenia | 92.5 | 100.0 | 97.5 | 87.1 | 78.1 | 100 |
| Sweden | 92.2 | 100.0 | 96.0 | 86.4 | 78.7 | 100 |
| Italy | 91.9 | 100.0 | 93.0 | 88.7 | 77.8 | 100 |
| Denmark | 91.6 | 90.0 | 98.7 | 86.5 | 82.9 | 100 |
| Poland | 91.6 | 90.0 | 97.1 | 86.8 | 84.0 | 100 |
| Spain | 91.4 | 100.0 | 91.1 | 82.9 | 83.1 | 100 |
| Ireland | 91.3 | 100.0 | 96.4 | 87.2 | 72.9 | 100 |
| Germany | 91.0 | 100.0 | 94.9 | 85.0 | 80.1 | 95 |
| Czechia | 90.9 | 100.0 | 88.8 | 84.4 | 81.2 | 100 |
| France | 90.8 | 100.0 | 92.1 | 86.2 | 75.6 | 100 |
| Georgia | 90.7 | 100.0 | 92.0 | 91.5 | 79.9 | 90 |
| Austria | 90.0 | 100.0 | 89.5 | 88.6 | 76.8 | 95 |
| Australia | 89.9 | 90.0 | 92.9 | 83.0 | 83.9 | 100 |
| Costa Rica | 89.9 | 100.0 | 86.3 | 93.1 | 80.2 | 90 |
| Japan | 89.9 | 100.0 | 90.3 | 84.9 | 79.2 | 95 |
| Estonia | 89.6 | 90.0 | 96.9 | 83.9 | 77.0 | 100 |
| Portugal | 89.3 | 90.0 | 93.1 | 87.4 | 76.1 | 100 |
| Slovak Republic | 89.1 | 90.0 | 94.5 | 85.3 | 76.0 | 100 |
| Belgium | 88.9 | 100.0 | 86.9 | 81.3 | 76.4 | 100 |
| Latvia | 88.8 | 100.0 | 97.1 | 76.1 | 70.9 | 100 |
| Switzerland | 88.8 | 100.0 | 88.4 | 85.6 | 80.0 | 90 |
| Greece | 88.7 | 100.0 | 88.1 | 78.6 | 77.0 | 100 |
| New Zealand | 88.7 | 100.0 | 92.4 | 82.9 | 78.4 | 90 |
| Mexico | 88.6 | 100.0 | 93.4 | 93.0 | 81.5 | 75 |
| Lithuania | 88.1 | 90.0 | 91.1 | 82.3 | 77.2 | 100 |
| Hungary | 87.9 | 100.0 | 89.0 | 88.2 | 72.3 | 90 |
| Korea, Rep. | 87.8 | 100.0 | 92.1 | 83.0 | 79.2 | 85 |
| Luxembourg | 87.8 | 100.0 | 93.4 | 81.7 | 64.1 | 100 |
| Turkiye | 87.7 | 100.0 | 86.8 | 94.2 | 57.6 | 100 |
| Chile | 87.4 | 100.0 | 85.6 | 87.2 | 69.4 | 95 |
| United Kingdom | 87.1 | 100.0 | 88.0 | 85.2 | 72.6 | 90 |
| Iceland | 86.9 | 100.0 | 86.3 | 76.3 | 71.8 | 100 |
| Belarus | 86.7 | 100.0 | 85.4 | 87.5 | 65.4 | 95 |
| Singapore | 86.6 | 100.0 | 99.7 | 64.1 | 88.9 | 80 |
| Colombia | 85.9 | 100.0 | 82.9 | 92.3 | 74.2 | 80 |
| Cyprus | 85.1 | 100.0 | 88.8 | 70.5 | 71.0 | 95 |
| Romania | 84.3 | 90.0 | 94.2 | 76.5 | 75.9 | 85 |
| Russian Federation | 84.1 | 93.4 | 87.6 | 76.5 | 72.8 | 90 |
| Mongolia | 84.0 | 100.0 | 97.2 | 89.7 | 73.4 | 60 |
| Bulgaria | 83.9 | 90.0 | 91.3 | 75.7 | 72.4 | 90 |
| North Macedonia | 83.5 | 100.0 | 87.5 | 74.6 | 75.3 | 80 |
| Albania | 83.4 | 90.0 | 69.8 | 87.2 | 70.1 | 100 |
| Philippines | 83.4 | 100.0 | 90.6 | 89.8 | 81.4 | 55 |
| West Bank and Gaza | 83.4 | 100.0 | 92.1 | 73.1 | 66.7 | 85 |
| Israel | 83.3 | 100.0 | 91.1 | 70.9 | 59.3 | 95 |
| Croatia | 83.1 | 90.0 | 87.5 | 72.3 | 71.0 | 95 |
| Armenia | 82.8 | 90.0 | 85.4 | 86.6 | 61.9 | 90 |
| Moldova | 82.8 | 90.0 | 95.4 | 75.5 | 68.0 | 85 |
| Thailand | 82.5 | 100.0 | 81.3 | 91.5 | 54.8 | 85 |
| South Africa | 82.4 | 80.0 | 86.0 | 87.6 | 73.4 | 85 |
| Kyrgyz Republic | 81.5 | 100.0 | 81.0 | 91.8 | 54.4 | 80 |
| Serbia | 80.8 | 100.0 | 74.5 | 86.1 | 73.6 | 70 |
| Saudi Arabia | 80.8 | 100.0 | 88.2 | 71.6 | 79.1 | 65 |
| Brazil | 80.5 | 90.0 | 87.2 | 80.2 | 75.3 | 70 |
| Malta | 80.3 | 100.0 | 86.1 | 65.6 | 74.6 | 75 |
| Egypt, Arab Rep. | 79.6 | 100.0 | 77.1 | 83.9 | 67.0 | 70 |
| Ecuador | 79.2 | 100.0 | 89.1 | 89.8 | 56.9 | 60 |
| Sri Lanka | 79.1 | 100.0 | 81.8 | 78.0 | 80.4 | 55 |
| Indonesia | 79.0 | 100.0 | 91.1 | 90.2 | 53.5 | 60 |
| Ukraine | 78.9 | 100.0 | 53.8 | 87.1 | 58.5 | 95 |
| India | 78.2 | 100.0 | 87.7 | 86.3 | 62.0 | 55 |
| Kazakhstan | 78.2 | 90.0 | 89.3 | 89.4 | 62.3 | 60 |
| Jordan | 78.2 | 80.0 | 90.4 | 87.6 | 62.9 | 70 |
| Montenegro | 78.1 | 100.0 | 69.9 | 83.2 | 57.2 | 80 |
| Uruguay | 77.7 | 100.0 | 87.9 | 89.1 | 56.7 | 55 |
| United Arab Emirates | 77.5 | 100.0 | 79.6 | 71.2 | 67.0 | 70 |
| Mauritius | 77.3 | 90.0 | 85.5 | 80.9 | 60.1 | 70 |
| Malaysia | 76.6 | 80.0 | 87.6 | 85.1 | 75.4 | 55 |
| Paraguay | 75.8 | 90.0 | 69.4 | 87.7 | 57.1 | 75 |
| Tunisia | 75.1 | 90.0 | 89.5 | 82.8 | 58.4 | 55 |
| El Salvador | 73.8 | 90.0 | 78.8 | 78.3 | 51.7 | 70 |
| Azerbaijan | 73.5 | 80.0 | 68.8 | 82.5 | 66.1 | 70 |
| Peru | 73.3 | 90.0 | 87.3 | 90.9 | 53.1 | 45 |
| Vietnam | 73.2 | 100.0 | 69.3 | 77.2 | 79.2 | 40 |
| Dominican Republic | 72.4 | 100.0 | 68.0 | 77.1 | 42.0 | 75 |
| Morocco | 72.3 | 80.0 | 89.6 | 85.9 | 60.8 | 45 |
| Senegal | 72.2 | 80.0 | 82.0 | 78.5 | 45.6 | 75 |
| Guatemala | 72.0 | 80.0 | 62.0 | 85.9 | 62.1 | 70 |
| Myanmar | 72.0 | 100.0 | 67.4 | 85.3 | 42.1 | 65 |
| Argentina | 71.8 | 70.0 | 78.9 | 90.2 | 59.8 | 60 |
| Bolivia | 71.2 | 100.0 | 66.9 | 82.0 | 62.0 | 45 |
| Pakistan | 71.1 | 100.0 | 61.9 | 86.8 | 46.9 | 60 |
| Uganda | 70.7 | 100.0 | 65.4 | 81.6 | 36.8 | 70 |
| Qatar | 70.6 | 100.0 | 62.1 | 67.4 | 58.8 | 65 |
| Bosnia and Herzegovina | 70.6 | 70.0 | 63.8 | 77.5 | 61.8 | 80 |
| Rwanda | 70.6 | 90.0 | 70.6 | 79.5 | 52.8 | 60 |
| Uzbekistan | 70.6 | 80.0 | 74.7 | 78.7 | 44.4 | 75 |
| Panama | 70.5 | 80.0 | 66.0 | 87.4 | 64.1 | 55 |
| Zimbabwe | 70.2 | 100.0 | 67.0 | 88.0 | 36.1 | 60 |
| Bangladesh | 69.7 | 90.0 | 61.9 | 85.8 | 51.0 | 60 |
| Kuwait | 69.2 | 100.0 | 63.2 | 66.2 | 61.5 | 55 |
| Tanzania | 67.3 | 90.0 | 70.7 | 76.6 | 44.4 | 55 |
| Togo | 66.7 | 90.0 | 63.7 | 87.0 | 32.7 | 60 |
| Oman | 66.1 | 100.0 | 46.6 | 61.2 | 67.8 | 55 |
| St. Lucia | 66.0 | 70.0 | 69.6 | 68.6 | 66.8 | 55 |
| Seychelles | 66.0 | 90.0 | 44.2 | 68.4 | 57.3 | 70 |
| Cabo Verde | 65.7 | 80.0 | 64.4 | 76.1 | 63.0 | 45 |
| Niger | 65.3 | 90.0 | 60.8 | 84.8 | 30.8 | 60 |
| Liberia | 64.9 | 90.0 | 65.7 | 82.3 | 26.5 | 60 |
| Burkina Faso | 64.8 | 80.0 | 68.9 | 81.5 | 33.8 | 60 |
| Malawi | 64.8 | 90.0 | 62.0 | 80.6 | 46.5 | 45 |
| Barbados | 64.6 | 100.0 | 57.6 | 62.2 | 48.3 | 55 |
| Gambia, The | 64.4 | 80.0 | 65.5 | 89.4 | 32.3 | 55 |
| Brunei Darussalam | 64.4 | 90.0 | 71.0 | 57.7 | 53.2 | 50 |
| Cambodia | 64.3 | 80.0 | 63.6 | 81.0 | 42.0 | 55 |
| Ghana | 64.2 | 66.6 | 61.8 | 88.8 | 44.0 | 60 |
| Fiji | 63.2 | 80.0 | 63.1 | 75.4 | 37.3 | 60 |
| Algeria | 63.2 | 80.0 | 57.8 | 82.0 | 46.0 | 50 |
| Benin | 62.6 | 80.0 | 69.7 | 83.6 | 29.5 | 50 |
| Samoa | 62.4 | 70.0 | 63.0 | 78.8 | 40.5 | 60 |
| Kenya | 62.3 | 70.0 | 60.1 | 76.6 | 34.9 | 70 |
| Cote d'Ivoire | 62.2 | 80.0 | 57.7 | 79.1 | 29.4 | 65 |
| Nepal | 62.0 | 80.0 | 62.8 | 85.5 | 36.6 | 45 |
| Belize | 61.9 | 70.0 | 64.6 | 67.2 | 62.5 | 45 |
| Maldives | 61.8 | 70.0 | 63.9 | 82.5 | 57.7 | 35 |
| Jamaica | 61.6 | 60.0 | 72.6 | 77.8 | 57.9 | 40 |
| Suriname | 61.5 | 50.0 | 69.2 | 69.6 | 58.9 | 60 |
| Botswana | 61.2 | 50.0 | 68.8 | 77.8 | 64.4 | 45 |
| Ethiopia | 61.1 | 90.0 | 64.5 | 81.5 | 29.5 | 40 |
| Honduras | 61.0 | 90.0 | 62.1 | 84.1 | 38.5 | 30 |
| Lao PDR | 60.4 | 76.6 | 65.5 | 79.2 | 40.7 | 40 |
| Zambia | 60.1 | 80.0 | 60.4 | 86.7 | 28.5 | 45 |
| Tonga | 59.9 | 70.0 | 63.2 | 75.9 | 45.4 | 45 |
| Timor-Leste | 59.9 | 80.0 | 61.0 | 64.5 | 28.8 | 65 |
| China | 59.6 | 83.4 | 43.8 | 77.5 | 43.3 | 50 |
| Bhutan | 59.6 | 80.0 | 63.9 | 75.2 | 38.8 | 40 |
| Bahrain | 59.4 | 80.0 | 72.8 | 52.3 | 61.7 | 30 |
| Sierra Leone | 59.2 | 80.0 | 65.3 | 79.0 | 31.7 | 40 |
| Mali | 59.1 | 80.0 | 60.7 | 82.6 | 27.4 | 45 |
| Mauritania | 58.9 | 80.0 | 63.2 | 66.6 | 24.5 | 60 |
| Iran, Islamic Rep. | 58.7 | 80.0 | 29.3 | 70.7 | 68.6 | 45 |
| Nigeria | 58.6 | 80.0 | 63.8 | 77.8 | 31.5 | 40 |
| Lebanon | 58.5 | 60.0 | 61.6 | 79.6 | 51.3 | 40 |
| Afghanistan | 58.0 | 80.0 | 59.4 | 78.6 | 17.0 | 55 |
| Guinea | 57.9 | 80.0 | 62.8 | 76.6 | 20.2 | 50 |
| Lesotho | 57.5 | 80.0 | 29.4 | 76.3 | 41.7 | 60 |
| Mozambique | 56.7 | 60.0 | 59.7 | 76.5 | 32.2 | 55 |
| Guyana | 56.5 | 70.0 | 62.7 | 71.5 | 33.0 | 45 |
| Iraq | 56.3 | 60.0 | 64.5 | 78.3 | 33.8 | 45 |
| Namibia | 55.8 | 60.0 | 62.7 | 77.6 | 23.6 | 55 |
| Trinidad and Tobago | 55.4 | 60.0 | 61.2 | 64.2 | 36.9 | 55 |
| St. Vincent and the Grenadines | 55.3 | 60.0 | 67.4 | 60.9 | 48.1 | 40 |
| Sao Tome and Principe | 54.8 | 60.0 | 60.9 | 69.2 | 49.0 | 35 |
| Cameroon | 54.5 | 60.0 | 64.2 | 82.1 | 21.2 | 45 |
| Bahamas, The | 54.1 | 80.0 | 27.7 | 49.5 | 38.5 | 75 |
| Madagascar | 53.7 | 60.0 | 60.6 | 78.2 | 25.0 | 45 |
| Angola | 53.5 | 60.0 | 60.8 | 71.3 | 35.2 | 40 |
| Tajikistan | 53.4 | 80.0 | 29.2 | 81.7 | 46.2 | 30 |
| Nicaragua | 52.7 | 60.0 | 61.1 | 64.2 | 23.3 | 55 |
| Venezuela, RB | 52.3 | 80.0 | 59.9 | 62.2 | 34.1 | 25 |
| Eswatini | 51.7 | 80.0 | 22.3 | 71.7 | 24.3 | 60 |
| Vanuatu | 51.2 | 56.6 | 59.1 | 72.2 | 33.2 | 35 |
| Congo, Dem. Rep. | 51.1 | 70.0 | 62.4 | 67.5 | 15.5 | 40 |
| Burundi | 50.7 | 60.0 | 62.9 | 79.7 | 15.8 | 35 |
| St. Kitts and Nevis | 50.0 | 60.0 | 66.7 | 44.8 | 43.6 | 35 |
| Chad | 49.2 | 63.4 | 59.2 | 75.8 | 17.8 | 30 |
| Somalia | 48.4 | 80.0 | 47.9 | 69.7 | 4.4 | 40 |
| Palau | 48.3 | 40.0 | 59.6 | 56.4 | 45.7 | 40 |
| Solomon Islands | 48.2 | 50.0 | 59.3 | 65.8 | 15.9 | 50 |
| Antigua and Barbuda | 48.2 | 60.0 | 26.9 | 64.6 | 49.3 | 40 |
| Djibouti | 46.6 | 50.0 | 59.5 | 63.8 | 14.5 | 45 |
| Papua New Guinea | 46.0 | 60.0 | 59.2 | 70.6 | 10.1 | 30 |
| Dominica | 44.2 | 60.0 | 28.3 | 59.3 | 43.4 | 30 |
| Kiribati | 43.8 | 40.0 | 59.5 | 75.4 | 18.9 | 25 |
| Sudan | 43.6 | 53.4 | 57.9 | 67.8 | 18.8 | 20 |
| Gabon | 42.8 | 60.0 | 29.8 | 66.1 | 13.2 | 45 |
| Central African Republic | 42.6 | 50.0 | 58.6 | 68.8 | 10.7 | 25 |
| Grenada | 41.1 | 40.0 | 22.1 | 68.7 | 45.0 | 30 |
| Guinea-Bissau | 40.0 | 70.0 | 23.7 | 71.7 | 14.6 | 20 |
| Haiti | 39.6 | 50.0 | 18.0 | 71.6 | 13.3 | 45 |
| Equatorial Guinea | 39.0 | 30.0 | 59.6 | 58.7 | 21.8 | 25 |
| Tuvalu | 38.1 | 40.0 | 59.4 | 60.8 | 15.5 | 15 |
| Congo, Rep. | 37.5 | 50.0 | 29.4 | 62.6 | 20.2 | 25 |
| Marshall Islands | 35.5 | 10.0 | 58.3 | 64.0 | 25.3 | 20 |
| Micronesia, Fed. Sts. | 35.3 | 20.0 | 59.1 | 58.6 | 13.7 | 25 |
| South Sudan | 33.8 | 40.0 | 37.8 | 53.9 | 7.5 | 30 |
| Yemen, Rep. | 33.2 | 46.6 | 28.0 | 55.6 | 16.0 | 20 |
| Nauru | 32.6 | 30.0 | 37.6 | 55.4 | 35.0 | 5 |
| Syrian Arab Republic | 31.9 | 36.6 | 23.1 | 55.0 | 15.0 | 30 |
| Turkmenistan | 31.4 | 60.0 | 0.5 | 69.6 | 11.7 | 15 |
| Libya | 24.4 | 20.0 | 25.6 | 53.6 | 7.6 | 15 |
| American Samoa |  | 40.0 |  | 22.6 |  |  |
| Andorra |  | 80.0 |  | 38.6 |  | 15 |
| Aruba |  | 60.0 |  | 28.5 |  |  |
| Bermuda |  | 60.0 |  | 27.1 |  |  |
| British Virgin Islands |  | 60.0 |  | 27.2 |  |  |
| Cayman Islands |  | 50.0 |  | 28.6 |  |  |
| Channel Islands |  | 60.0 |  |  |  |  |
| Comoros |  | 50.0 |  | 68.2 |  | 40 |
| Cuba |  | 60.0 |  | 69.7 |  |  |
| Curacao |  | 80.0 |  | 28.5 |  |  |
| Eritrea |  | 36.6 |  | 51.7 |  | 10 |
| Faroe Islands |  | 60.0 |  | 14.7 |  |  |
| French Polynesia |  | 60.0 |  | 24.0 |  |  |
| Gibraltar |  | 60.0 |  | 18.1 |  |  |
| Greenland |  | 50.0 |  | 21.0 |  |  |
| Guam |  | 60.0 |  | 22.1 |  |  |
| Hong Kong SAR, China |  | 80.0 |  | 43.8 |  |  |
| Isle of Man |  | 70.0 |  | 12.3 |  |  |
| Korea, Dem. People's Rep. |  | 30.0 |  | 51.6 |  |  |
| Kosovo |  | 40.0 | 66.5 |  | 50.3 | 80 |
| Liechtenstein |  | 70.0 |  | 38.3 |  |  |
| Macao SAR, China |  | 80.0 |  | 37.7 |  |  |
| Monaco |  | 90.0 |  | 41.6 |  |  |
| New Caledonia |  | 80.0 |  | 31.6 |  |  |
| Northern Mariana Islands |  | 60.0 |  | 16.0 |  |  |
| Puerto Rico |  | 60.0 |  | 35.4 |  |  |
| San Marino |  | 90.0 | 60.7 | 38.1 |  | 55 |
| Sint Maarten (Dutch part) |  | 50.0 |  | 19.7 |  |  |
| St. Martin (French part) |  | 40.0 |  | 13.6 |  |  |
| Taiwan, China |  | 40.0 |  |  |  |  |
| Turks and Caicos Islands |  | 60.0 |  | 31.5 |  |  |
| Virgin Islands (U.S.) |  | 60.0 |  | 19.0 |  |  |

## Table A.5. Comparison of SPI to Other Statistical and Development Indices

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

## Table A.6. Bivariate Correlation between Statistical Indexes and Key Development Outcomes

| Table. Correlation between Development Outcomes | | | | | |
| --- | --- | --- | --- | --- | --- |
| var | GDB | ODB | ODIN | SCI | SPI |
| SDG 1: Extreme Poverty | -0.52\*\*\* | -0.44\*\*\* | -0.47\*\*\* | -0.34\*\*\* | -0.51\*\*\* |
| SDG 2: Undernourishment | -0.53\*\*\* | -0.48\*\*\* | -0.52\*\*\* | -0.56\*\*\* | -0.63\*\*\* |
| SDG 3: Maternal Mortality | -0.45\*\*\* | -0.43\*\*\* | -0.47\*\*\* | -0.38\*\*\* | -0.51\*\*\* |
| SDG 4: Learning Poverty | -0.64\*\*\* | -0.64\*\*\* | -0.73\*\*\* | -0.62\*\*\* | -0.77\*\*\* |
| SDG 5: Women, Business, Law Index | 0.55\*\*\* | 0.56\*\*\* | 0.52\*\*\* | 0.41\*\*\* | 0.6\*\*\* |
| SDG 6: Safely Managed Water | 0.55\*\*\* | 0.55\*\*\* | 0.53\*\*\* | 0.46\*\*\* | 0.66\*\*\* |
| SDG 7: Access to Electricity | 0.48\*\*\* | 0.45\*\*\* | 0.42\*\*\* | 0.35\*\*\* | 0.47\*\*\* |
| SDG 8: GDP per capita (2015 constant $) | 0.56\*\*\* | 0.66\*\*\* | 0.33\*\*\* | 0.22\*\*\* | 0.53\*\*\* |
| SDG 9: Manufacturing value added (% of GDP) | 0.1\*\* | 0 | 0.23\*\*\* | 0.34\*\*\* | 0.34\*\*\* |
| SDG 10: Gini Index | -0.31\*\*\* | -0.28\*\*\* | -0.35\*\*\* | -0.1\*\* | -0.32\*\*\* |
| SDG 11: Population in Slums | -0.46\*\*\* | -0.34\*\*\* | -0.48\*\*\* | -0.54\*\*\* | -0.59\*\*\* |
| SDG 12: Fossil Fuel Subsidies (% of GDP) | -0.23\*\* | -0.23\*\* | -0.13\* | -0.03 | -0.16\*\* |
| SDG 13: Greenhouse Gas Emissions | 0.19\*\* | 0.14\*\* | 0.05 | 0.16\* | 0.08\*\* |
| SDG 14: Marine protected areas | 0.47\*\*\* | 0.55\*\*\* | 0.17\*\* | 0.18\* | 0.31\*\*\* |
| SDG 15: Terrestrial Protected Areas | 0.18\* | 0.15\*\* | 0.21\*\*\* | 0.13\*\* | 0.22\*\*\* |
| SDG 16: Government Effectiveness | 0.69\*\*\* | 0.71\*\*\* | 0.67\*\*\* | 0.52\*\*\* | 0.7\*\*\* |
| SDG 17: Total Debt Service | 0 | 0.02 | 0.13\*\* | 0.24\*\*\* | 0.17\* |
| SDR: SDG Index Overall Score | 0.74\*\*\* | 0.69\*\*\* | 0.72\*\*\* | 0.65\*\*\* | 0.82\*\*\* |
| Note: \* p<0.1,\*\* p<0.05,\*\*\* p<0.01 | | | | | |

## Table A.7. Testing for Bivaration Correlation between Statistical Indexes and Key Development Outcomes

| SDG | GDB | | | | ODB | | | | ODIN | | | | SCI | | | | SPI | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SDG 1: Extreme Poverty | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 2: Undernourishment | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 3: Maternal Mortality | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 4: Learning Poverty | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 5: Women, Business, Law Index | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN |  | GDB | ODB | ODIN |  |
| SDG 6: Safely Managed Water | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 7: Access to Electricity | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 8: GDP per capita (2015 constant $) | ODB |  |  | SPI | GDB |  |  | SPI |  |  | SCI |  |  |  | ODIN |  | GDB | ODB |  |  |
| SDG 9: Manufacturing value added (% of GDP) | ODB | ODIN | SCI |  | GDB | ODIN |  |  | GDB | ODB | SCI | SPI | GDB |  | ODIN | SPI |  |  | ODIN | SCI |
| SDG 10: Gini Index | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB |  | SPI | GDB | ODB |  | SPI | GDB | ODB | ODIN | SCI |
| SDG 11: Population in Slums | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI |  | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB |  | ODIN | SCI |
| SDG 12: Fossil Fuel Subsidies (% of GDP) | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 13: Greenhouse Gas Emissions | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 14: Marine protected areas | ODB |  |  | SPI | GDB |  |  |  |  |  | SCI | SPI |  |  | ODIN | SPI | GDB |  | ODIN | SCI |
| SDG 15: Terrestrial Protected Areas | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 16: Government Effectiveness | ODB | ODIN |  | SPI | GDB | ODIN |  | SPI | GDB | ODB |  | SPI |  |  |  |  | GDB | ODB | ODIN |  |
| SDG 17: Total Debt Service | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDR: SDG Index Overall Score | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI |  | GDB | ODB | SCI |  | GDB | ODB | ODIN |  | GDB |  |  |  |

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| SDG | GDB | | | | ODB | | | | ODIN | | | | SCI | | | | SPI | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SDG 1: Extreme Poverty | -0.52\*\*\* | | | | -0.44\*\*\* | | | | -0.47\*\*\* | | | | -0.34\*\*\* | | | | -0.51\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 2: Undernourishment | -0.53\*\*\* | | | | -0.48\*\*\* | | | | -0.52\*\*\* | | | | -0.56\*\*\* | | | | -0.63\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 3: Maternal Mortality | -0.45\*\*\* | | | | -0.43\*\*\* | | | | -0.47\*\*\* | | | | -0.38\*\*\* | | | | -0.51\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 4: Learning Poverty | -0.64\*\*\* | | | | -0.64\*\*\* | | | | -0.73\*\*\* | | | | -0.62\*\*\* | | | | -0.77\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 5: Women, Business, Law Index | 0.55\*\*\* | | | | 0.56\*\*\* | | | | 0.52\*\*\* | | | | 0.41\*\*\* | | | | 0.6\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN |  | GDB | ODB | ODIN |  |
| SDG 6: Safely Managed Water | 0.55\*\*\* | | | | 0.55\*\*\* | | | | 0.53\*\*\* | | | | 0.46\*\*\* | | | | 0.66\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 7: Access to Electricity | 0.48\*\*\* | | | | 0.45\*\*\* | | | | 0.42\*\*\* | | | | 0.35\*\*\* | | | | 0.47\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 8: GDP per capita (2015 constant $) | 0.56\*\*\* | | | | 0.66\*\*\* | | | | 0.33\*\*\* | | | | 0.22\*\*\* | | | | 0.53\*\*\* | | | |
| ODB |  |  | SPI | GDB |  |  | SPI |  |  | SCI |  |  |  | ODIN |  | GDB | ODB |  |  |
| SDG 9: Manufacturing value added (% of GDP) | 0.1\*\* | | | | 0 | | | | 0.23\*\*\* | | | | 0.34\*\*\* | | | | 0.34\*\*\* | | | |
| ODB | ODIN | SCI |  | GDB | ODIN |  |  | GDB | ODB | SCI | SPI | GDB |  | ODIN | SPI |  |  | ODIN | SCI |
| SDG 10: Gini Index | -0.31\*\*\* | | | | -0.28\*\*\* | | | | -0.35\*\*\* | | | | -0.1\*\* | | | | -0.32\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB |  | SPI | GDB | ODB |  | SPI | GDB | ODB | ODIN | SCI |
| SDG 11: Population in Slums | -0.46\*\*\* | | | | -0.34\*\*\* | | | | -0.48\*\*\* | | | | -0.54\*\*\* | | | | -0.59\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI |  | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB |  | ODIN | SCI |
| SDG 12: Fossil Fuel Subsidies (% of GDP) | -0.23\*\* | | | | -0.23\*\* | | | | -0.13\* | | | | -0.03 | | | | -0.16\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 13: Greenhouse Gas Emissions | 0.19\*\* | | | | 0.14\*\* | | | | 0.05 | | | | 0.16\* | | | | 0.08\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 14: Marine protected areas | 0.47\*\*\* | | | | 0.55\*\*\* | | | | 0.17\*\* | | | | 0.18\* | | | | 0.31\*\*\* | | | |
| ODB |  |  | SPI | GDB |  |  |  |  |  | SCI | SPI |  |  | ODIN | SPI | GDB |  | ODIN | SCI |
| SDG 15: Terrestrial Protected Areas | 0.18\* | | | | 0.15\*\* | | | | 0.21\*\*\* | | | | 0.13\*\* | | | | 0.22\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDG 16: Government Effectiveness | 0.69\*\*\* | | | | 0.71\*\*\* | | | | 0.67\*\*\* | | | | 0.52\*\*\* | | | | 0.7\*\*\* | | | |
| ODB | ODIN |  | SPI | GDB | ODIN |  | SPI | GDB | ODB |  | SPI |  |  |  |  | GDB | ODB | ODIN |  |
| SDG 17: Total Debt Service | 0 | | | | 0.02 | | | | 0.13\*\* | | | | 0.24\*\*\* | | | | 0.17\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| SDR: SDG Index Overall Score | 0.74\*\*\* | | | | 0.69\*\*\* | | | | 0.72\*\*\* | | | | 0.65\*\*\* | | | | 0.82\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI |  | GDB | ODB | SCI |  | GDB | ODB | ODIN |  | GDB |  |  |  |

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| SDG | GDB | | ODB | | ODIN | | SCI | | SPI | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SDG 1: Extreme Poverty | -0.52\*\*\* | ODB, ODIN SPI | -0.44\*\*\* | GDB, ODIN, SCI, SPI | -0.47\*\*\* | GDB, ODB SPI | -0.34\*\*\* | , ODB | -0.51\*\*\* | GDB, ODB, ODIN, |
| SDG 2: Undernourishment | -0.53\*\*\* | ODB, ODIN, SCI, SPI | -0.48\*\*\* | GDB, ODIN, SCI, | -0.52\*\*\* | GDB, ODB, SCI, | -0.56\*\*\* | GDB, ODB, ODIN, SPI | -0.63\*\*\* | GDB , 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, | -0.51\*\*\* | GDB, ODB, ODIN, |
| SDG 4: Learning Poverty | -0.64\*\*\* | ODB, ODIN, SCI, | -0.64\*\*\* | GDB, ODIN, SCI, | -0.73\*\*\* | GDB, ODB, SCI, SPI | -0.62\*\*\* | GDB, ODB, ODIN, | -0.77\*\*\* | ODIN, |
| SDG 5: Women, Business, Law Index | 0.55\*\*\* | ODB, ODIN, SCI, SPI | 0.56\*\*\* | GDB, ODIN, SCI, SPI | 0.52\*\*\* | GDB, ODB, SCI, | 0.41\*\*\* | GDB, ODB, ODIN, | 0.6\*\*\* | GDB, ODB |
| SDG 6: Safely Managed Water | 0.55\*\*\* | ODB, ODIN, SCI, SPI | 0.55\*\*\* | GDB, ODIN, SCI, SPI | 0.53\*\*\* | GDB, ODB, SCI, | 0.46\*\*\* | GDB, ODB, ODIN, | 0.66\*\*\* | GDB, ODB |
| SDG 7: Access to Electricity | 0.48\*\*\* | ODB, ODIN, SCI, SPI | 0.45\*\*\* | GDB, ODIN, SCI, SPI | 0.42\*\*\* | GDB, ODB, SCI, SPI | 0.35\*\*\* | GDB, ODB, ODIN, | 0.47\*\*\* | GDB, ODB, ODIN, |
| SDG 8: GDP per capita (2015 constant $) | 0.56\*\*\* | , SPI | 0.66\*\*\* | , | 0.33\*\*\* | SCI, | 0.22\*\*\* | ODIN, | 0.53\*\*\* | GDB , |
| SDG 9: Manufacturing value added (% of GDP) | 0.1\*\* | , ODIN | 0 | , | 0.23\*\*\* | GDB SCI, | 0.34\*\*\* | ODIN, SPI | 0.34\*\*\* | , SCI |
| SDG 10: Gini Index | -0.31\*\*\* | ODB, ODIN SPI | -0.28\*\*\* | GDB, ODIN, SCI, SPI | -0.35\*\*\* | GDB, ODB SPI | -0.1\*\* | , ODB | -0.32\*\*\* | 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 | -0.59\*\*\* | 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, | -0.16\*\* | GDB, ODB, ODIN, |
| SDG 13: Greenhouse Gas Emissions | 0.19\*\* | ODB, ODIN, SCI, SPI | 0.14\*\* | GDB, ODIN, SCI, SPI | 0.05 | GDB, ODB, SCI, SPI | 0.16\* | GDB, ODB, ODIN, | 0.08\*\* | GDB, ODB, ODIN, |
| SDG 14: Marine protected areas | 0.47\*\*\* | ODB , | 0.55\*\*\* | GDB , | 0.17\*\* | SCI, | 0.18\* | ODIN, | 0.31\*\*\* | , |
| 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 | 0.69\*\*\* | ODB, ODIN SPI | 0.71\*\*\* | GDB, ODIN SPI | 0.67\*\*\* | GDB, ODB SPI | 0.52\*\*\* | , | 0.7\*\*\* | GDB, ODB, ODIN, |
| SDG 17: Total Debt Service | 0 | ODB, ODIN | 0.02 | GDB, ODIN, SCI, SPI | 0.13\*\* | GDB, ODB, SCI, SPI | 0.24\*\*\* | , ODB, ODIN, SPI | 0.17\* | , ODB, ODIN, SCI |
| SDR: SDG Index Overall Score | 0.74\*\*\* | ODB, ODIN, SCI, | 0.69\*\*\* | GDB, ODIN, SCI, | 0.72\*\*\* | GDB, ODB, SCI, | 0.65\*\*\* | GDB, ODB, ODIN, | 0.82\*\*\* | , |

Table A.9. Comparison of Statistical Indices to Key Development Indices

| Table. Correlation between Development Outcomes | | | | | |
| --- | --- | --- | --- | --- | --- |
| var | GDB | ODB | ODIN | SCI | SPI |
| Economic Complexity Index | 0.66\*\*\* | 0.63\*\*\* | 0.65\*\*\* | 0.58\*\*\* | 0.72\*\*\* |
| Environmental Performance Index | 0.6\*\*\* | 0.59\*\*\* | 0.49\*\*\* | 0.07\*\* | 0.49\*\*\* |
| OECD Better Life Index | 0.48\*\*\* | 0.39\*\* | 0.58\*\*\* | 0.15 | 0.62\*\*\* |
| UN Human Development Index | 0.72\*\*\* | 0.71\*\*\* | 0.65\*\*\* | 0.46\*\*\* | 0.69\*\*\* |
| WB Human Capital Index | 0.74\*\*\* | 0.72\*\*\* | 0.72\*\*\* | 0.57\*\*\* | 0.76\*\*\* |
| World Press Freedom Index | 0.49\*\*\* | 0.54\*\*\* | 0.39\*\*\* | 0.18\*\* | 0.45\*\*\* |
| Note: \* p<0.1,\*\* p<0.05,\*\*\* p<0.01 | | | | | |

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| Dev Index | GDB | | | | ODB | | | | ODIN | | | | SCI | | | | SPI | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Economic Complexity Index | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| Environmental Performance Index | ODB | ODIN |  | SPI | GDB | ODIN |  | SPI | GDB | ODB |  | SPI |  |  |  |  | GDB | ODB | ODIN |  |
| OECD Better Life Index | ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| UN Human Development Index | ODB | ODIN |  | SPI | GDB | ODIN |  | SPI | GDB | ODB |  | SPI |  |  |  |  | GDB | ODB | ODIN |  |
| WB Human Capital Index | ODB | ODIN |  | SPI | GDB | ODIN |  | SPI | GDB | ODB |  | SPI |  |  |  |  | GDB | ODB | ODIN |  |
| World Press Freedom Index | ODB | ODIN |  | SPI | GDB | ODIN |  | SPI | GDB | ODB |  | SPI |  |  |  |  | GDB | ODB | ODIN |  |

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| Dev Index | GDB | | | | ODB | | | | ODIN | | | | SCI | | | | SPI | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Economic Complexity Index | 0.66\*\*\* | | | | 0.63\*\*\* | | | | 0.65\*\*\* | | | | 0.58\*\*\* | | | | 0.72\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| Environmental Performance Index | 0.6\*\*\* | | | | 0.59\*\*\* | | | | 0.49\*\*\* | | | | 0.07\*\* | | | | 0.49\*\*\* | | | |
| ODB | ODIN |  | SPI | GDB | ODIN |  | SPI | GDB | ODB |  | SPI |  |  |  |  | GDB | ODB | ODIN |  |
| OECD Better Life Index | 0.48\*\*\* | | | | 0.39\*\* | | | | 0.58\*\*\* | | | | 0.15 | | | | 0.62\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN | SPI | GDB | ODB | ODIN | SCI |
| UN Human Development Index | 0.72\*\*\* | | | | 0.71\*\*\* | | | | 0.65\*\*\* | | | | 0.46\*\*\* | | | | 0.69\*\*\* | | | |
| ODB | ODIN |  | SPI | GDB | ODIN |  | SPI | GDB | ODB |  | SPI |  |  |  |  | GDB | ODB | ODIN |  |
| WB Human Capital Index | 0.74\*\*\* | | | | 0.72\*\*\* | | | | 0.72\*\*\* | | | | 0.57\*\*\* | | | | 0.76\*\*\* | | | |
| ODB | ODIN |  | SPI | GDB | ODIN |  | SPI | GDB | ODB |  | SPI |  |  |  |  | GDB | ODB | ODIN |  |
| World Press Freedom Index | 0.49\*\*\* | | | | 0.54\*\*\* | | | | 0.39\*\*\* | | | | 0.18\*\* | | | | 0.45\*\*\* | | | |
| ODB | ODIN |  | SPI | GDB | ODIN |  | SPI | GDB | ODB |  | SPI |  |  |  |  | GDB | ODB | ODIN |  |

Blank

| Index | GDB | | ODB | | ODIN | | SCI | | SPI | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Economic Complexity Index | 0.66\*\*\* | ODB, ODIN, SCI, SPI | 0.63\*\*\* | GDB, ODIN, SCI, SPI | 0.65\*\*\* | GDB, ODB, SCI, | 0.58\*\*\* | GDB, ODB, ODIN, | 0.72\*\*\* | GDB, ODB |
| Environmental Performance Index | 0.6\*\*\* | ODB, ODIN | 0.59\*\*\* | GDB, ODIN SPI | 0.49\*\*\* | GDB, ODB SPI | 0.07\*\* | , | 0.49\*\*\* | , 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, | 0.62\*\*\* | GDB ODIN, |
| UN Human Development Index | 0.72\*\*\* | ODB, ODIN SPI | 0.71\*\*\* | GDB, ODIN SPI | 0.65\*\*\* | GDB, ODB SPI | 0.46\*\*\* | , | 0.69\*\*\* | GDB, ODB, ODIN, |
| WB Human Capital Index | 0.74\*\*\* | ODB, ODIN SPI | 0.72\*\*\* | GDB, ODIN SPI | 0.72\*\*\* | GDB, ODB SPI | 0.57\*\*\* | , | 0.76\*\*\* | GDB, ODB, ODIN, |
| World Press Freedom Index | 0.49\*\*\* | ODB, ODIN SPI | 0.54\*\*\* | GDB , SPI | 0.39\*\*\* | GDB , SPI | 0.18\*\* | , | 0.45\*\*\* | GDB, ODB, ODIN, |

|  | Economic Complexity Index | Environmental Performance Index | OECD Better Life Index | UN Human Development Index | WB Human Capital Index | World Press Freedom Index |
| --- | --- | --- | --- | --- | --- | --- |
| SPI | 0.048\*\*\* | 0.393\*\*\* | 0.277\*\*\* | 0.006\*\*\* | 0.007\*\*\* | 0.471\*\*\* |
|  | (0.00) | (0.06) | (0.05) | (0.00) | (0.00) | (0.07) |
| SPI-SCI | -0.019\*\*\* | -0.351\*\*\* | -0.239\*\*\* | -0.003\*\*\* | -0.003\*\*\* | -0.307\*\*\* |
|  | (0.00) | (0.05) | (0.07) | (0.00) | (0.00) | (0.08) |
| SPI-ODIN | -0.009\*\* | -0.038 | -0.199\*\*\* | -0.001 | -0.001\* | -0.088\* |
|  | (0.00) | (0.03) | (0.05) | (0.00) | (0.00) | (0.05) |
| SPI-ODB | -0.014\*\* | 0.059 | -0.238\*\*\* | 0.000 | -0.001 | 0.063 |
|  | (0.01) | (0.06) | (0.05) | (0.00) | (0.00) | (0.07) |
| SPI-GDB | -0.011\*\* | 0.085 | -0.213\*\*\* | 0.000 | -0.001 | 0.033 |
|  | (0.01) | (0.06) | (0.05) | (0.00) | (0.00) | (0.07) |
| Num.Obs. | 556 | 704 | 159 | 733 | 673 | 692 |
| R2 | 0.459 | 0.280 | 0.343 | 0.463 | 0.540 | 0.199 |
| R2 Adj. | 0.450 | 0.270 | 0.303 | 0.456 | 0.533 | 0.188 |
| AIC | 1195.9 | 5293.8 | 513.3 | -1185.2 | -1295.1 | 5698.2 |
| BIC | 1239.1 | 5339.4 | 544.0 | -1139.2 | -1250.0 | 5743.6 |
| RMSE | 0.70 | 10.24 | 1.14 | 0.11 | 0.09 | 14.64 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. | | | | | | |

## Table A.8 Relationship between Log GDP per capita and SPI scores, 2016-2022

|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| --- | --- | --- | --- | --- | --- | --- |
| Overall SPI Score | 0.053\*\*\* | 0.001 | 0.001 |  |  |  |
|  | (0.00) | (0.00) | (0.00) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | -0.007\* | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.001 | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.035\*\*\* | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.044\*\*\* | 0.002\*\*\* | 0.002\*\*\* |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.020\*\*\* | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| Trade (% of GDP) |  |  | 0.001\*\*\* |  |  | 0.001\*\*\* |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.002 |  |  | -0.003 |
|  |  |  | (0.00) |  |  | (0.00) |
| Manufacturing value added (% of GDP) |  |  | -0.004 |  |  | -0.004 |
|  |  |  | (0.00) |  |  | (0.00) |
| School Enrollment, Primary (% gross) |  |  | 0.001 |  |  | 0.001 |
|  |  |  | (0.00) |  |  | (0.00) |
| WGI Index |  |  | 0.108\*\*\* |  |  | 0.111\*\*\* |
|  |  |  | (0.04) |  |  | (0.04) |
| Year 2017 |  | 0.017\*\*\* | 0.014\*\*\* |  | 0.023\*\*\* | 0.020\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2018 |  | 0.036\*\*\* | 0.030\*\*\* |  | 0.043\*\*\* | 0.038\*\*\* |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2019 |  | 0.054\*\*\* | 0.048\*\*\* |  | 0.062\*\*\* | 0.055\*\*\* |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2020 |  | -0.002 | 0.004 |  | 0.003 | 0.008 |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2021 |  | 0.034\*\* | 0.033\*\* |  | 0.038\* | 0.034\* |
|  |  | (0.02) | (0.02) |  | (0.02) | (0.02) |
| Year 2022 |  | 0.061\*\*\* | 0.050\*\*\* |  | 0.066\*\*\* | 0.052\*\* |
|  |  | (0.02) | (0.02) |  | (0.02) | (0.02) |
| Constant | 5.158\*\*\* |  |  | 8.145\*\*\* |  |  |
|  | (0.35) |  |  | (0.33) |  |  |
| N | 1113 | 1113 | 1113 | 1113 | 1113 | 1113 |
| R<sup>2</sup> | 0.396 | 0.999 | 0.999 | 0.670 | 0.999 | 0.999 |
| 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=0.06. sigma\_u=1.06"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = log(NY.GDP.PCAP.KD) ~ SPI.INDEX, data = reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 161, T = 2-7, N = 1113  
  
Effects:  
 var std.dev share  
idiosyncratic 0.003508 0.059225 0.003  
individual 1.121895 1.059196 0.997  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9605 0.9789 0.9789 0.9788 0.9789 0.9789   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.33315 -0.03627 0.00603 -0.00016 0.04156 0.29043   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 8.48319735 0.09072136 93.5083 < 2.2e-16 \*\*\*  
SPI.INDEX 0.00299563 0.00036418 8.2257 < 2.2e-16 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 4.7146  
Residual Sum of Squares: 4.2739  
R-Squared: 0.094043  
Adj. R-Squared: 0.093228  
Chisq: 67.6626 on 1 DF, p-value: < 2.22e-16

[1] "Model 3: sigma\_e=0.06. sigma\_u=0.54"

[1] "Model 5: sigma\_e=0.06. sigma\_u=0.77"

[1] "Model 6: sigma\_e=0.06. sigma\_u=0.49"

## Table A.9. Relationship between Government Effectiveness from Worldwide Governance Indicators and SPI scores, 2016-2022

|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| --- | --- | --- | --- | --- | --- | --- |
| Overall SPI Score | 0.033\*\*\* | 0.002\* | 0.002 |  |  |  |
|  | (0.00) | (0.00) | (0.00) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | -0.004 | 0.001 | 0.001 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.006\*\*\* | 0.001 | 0.001 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.017\*\*\* | 0.003\*\* | 0.003\*\*\* |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.019\*\*\* | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.012\*\*\* | -0.001 | -0.001 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| Log GDP per capita (constant 2015 US$) |  |  | 0.189\*\*\* |  |  | 0.192\*\*\* |
|  |  |  | (0.07) |  |  | (0.06) |
| Trade (% of GDP) |  |  | 0.000 |  |  | 0.000 |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.005\* |  |  | -0.005 |
|  |  |  | (0.00) |  |  | (0.00) |
| Manufacturing value added (% of GDP) |  |  | -0.001 |  |  | -0.002 |
|  |  |  | (0.01) |  |  | (0.01) |
| School Enrollment, Primary (% gross) |  |  | -0.001 |  |  | -0.001 |
|  |  |  | (0.00) |  |  | (0.00) |
| Year 2017 |  | -0.007 | -0.010\* |  | -0.013\* | -0.016\*\* |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2018 |  | -0.015 | -0.024\*\* |  | -0.021\*\* | -0.031\*\*\* |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2019 |  | -0.012 | -0.025\*\* |  | -0.012 | -0.027\*\* |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2020 |  | -0.017 | -0.018 |  | -0.032\*\* | -0.034\*\* |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2021 |  | -0.025 | -0.033\*\* |  | -0.052\*\* | -0.061\*\*\* |
|  |  | (0.02) | (0.02) |  | (0.02) | (0.02) |
| Year 2022 |  | -0.026 | -0.038\*\* |  | -0.052\*\* | -0.067\*\*\* |
|  |  | (0.02) | (0.02) |  | (0.02) | (0.02) |
| Constant | -2.152\*\*\* |  |  | -0.615\*\* |  |  |
|  | (0.24) |  |  | (0.31) |  |  |
| Num.Obs. | 1113 | 1113 | 1113 | 1113 | 1113 | 1113 |
| R2 | 0.395 | 0.994 | 0.994 | 0.548 | 0.994 | 0.995 |
| R2 Adj. | 0.394 | 0.993 | 0.993 | 0.546 | 0.993 | 0.994 |
| R2 Within |  | 0.012 | 0.044 |  | 0.038 | 0.071 |
| R2 Within Adj. |  | 0.004 | 0.031 |  | 0.027 | 0.055 |
| AIC | 2271.0 | -2571.5 | -2598.0 | 1954.7 | -2593.8 | -2622.3 |
| BIC | 2281.1 | -1729.0 | -1730.4 | 1984.8 | -1731.2 | -1734.6 |
| RMSE | 0.67 | 0.07 | 0.06 | 0.58 | 0.06 | 0.06 |
| 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=0.07. sigma\_u=0.65"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = WGI.OVL ~ SPI.INDEX, data = reg\_df, model = "random",   
 index = c("country", "date"))  
  
Unbalanced Panel: n = 161, T = 2-7, N = 1113  
  
Effects:  
 var std.dev share  
idiosyncratic 0.005061 0.071139 0.012  
individual 0.420374 0.648363 0.988  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9226 0.9586 0.9586 0.9584 0.9586 0.9586   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.44351 -0.04496 0.00022 -0.00007 0.04742 0.24318   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) -0.09411652 0.06098062 -1.5434 0.1227376   
SPI.INDEX 0.00150389 0.00043574 3.4513 0.0005578 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 6.2612  
Residual Sum of Squares: 6.1948  
R-Squared: 0.010615  
Adj. R-Squared: 0.0097243  
Chisq: 11.9118 on 1 DF, p-value: 0.00055779

[1] "Model 3: sigma\_e=0.07. sigma\_u=0.39"

[1] "Model 5: sigma\_e=0.07. sigma\_u=0.56"

[1] "Model 6: sigma\_e=0.07. sigma\_u=0.38"

## Table A.10. 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 | 0.048\*\*\* | 0.005 | 0.003 |  |  |  |
|  | (0.00) | (0.00) | (0.00) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | 0.005 | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.002 | 0.001 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.012\*\*\* | 0.005\*\* | 0.004\*\* |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.023\*\*\* | 0.003\* | 0.003\* |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.014\*\*\* | -0.001 | -0.001 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| Log GDP per capita (constant 2015 US$) |  |  | 0.004 |  |  | -0.075 |
|  |  |  | (0.20) |  |  | (0.20) |
| Trade (% of GDP) |  |  | 0.000 |  |  | 0.000 |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.015 |  |  | -0.016 |
|  |  |  | (0.01) |  |  | (0.01) |
| Manufacturing value added (% of GDP) |  |  | 0.028\*\*\* |  |  | 0.026\*\*\* |
|  |  |  | (0.01) |  |  | (0.01) |
| School Enrollment, Primary (% gross) |  |  | -0.002 |  |  | -0.002 |
|  |  |  | (0.00) |  |  | (0.00) |
| Year 2017 |  | -0.012 | -0.008 |  | -0.014 | -0.007 |
|  |  | (0.01) | (0.02) |  | (0.01) | (0.02) |
| Year 2018 |  | -0.021 | -0.018 |  | -0.022 | -0.011 |
|  |  | (0.03) | (0.03) |  | (0.02) | (0.03) |
| Year 2019 |  | -0.020 | -0.015 |  | -0.010 | 0.001 |
|  |  | (0.02) | (0.03) |  | (0.02) | (0.03) |
| Year 2020 |  | -0.026 | -0.012 |  | -0.045 | -0.028 |
|  |  | (0.03) | (0.03) |  | (0.03) | (0.03) |
| Year 2021 |  | -0.052 | -0.039 |  | -0.103\*\* | -0.083\* |
|  |  | (0.04) | (0.04) |  | (0.04) | (0.04) |
| Year 2022 |  | -0.053 | -0.041 |  | -0.101\*\* | -0.080\* |
|  |  | (0.04) | (0.05) |  | (0.04) | (0.05) |
| Constant | -3.315\*\*\* |  |  | -1.867\*\*\* |  |  |
|  | (0.24) |  |  | (0.34) |  |  |
| Num.Obs. | 847 | 847 | 847 | 847 | 847 | 847 |
| R2 | 0.509 | 0.982 | 0.983 | 0.615 | 0.982 | 0.983 |
| R2 Adj. | 0.508 | 0.979 | 0.979 | 0.613 | 0.979 | 0.980 |
| R2 Within |  | 0.012 | 0.053 |  | 0.037 | 0.073 |
| R2 Within Adj. |  | 0.003 | 0.037 |  | 0.022 | 0.052 |
| AIC | 1792.1 | -748.3 | -774.4 | 1593.8 | -761.5 | -784.3 |
| BIC | 1801.5 | -131.9 | -134.2 | 1622.3 | -126.1 | -125.2 |
| RMSE | 0.70 | 0.13 | 0.13 | 0.62 | 0.13 | 0.13 |
| 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=0.14. sigma\_u=0.64"

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"))  
  
Unbalanced Panel: n = 123, T = 2-7, N = 847  
  
Effects:  
 var std.dev share  
idiosyncratic 0.02101 0.14494 0.049  
individual 0.41021 0.64048 0.951  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8420 0.9148 0.9148 0.9143 0.9148 0.9148   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.76545 -0.07970 0.01510 -0.00087 0.09105 0.65081   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) -0.2532704 0.0976874 -2.5927 0.009524 \*\*   
SPI.INDEX 0.0048224 0.0010577 4.5592 5.134e-06 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 21.377  
Residual Sum of Squares: 20.853  
R-Squared: 0.024561  
Adj. R-Squared: 0.023406  
Chisq: 20.7866 on 1 DF, p-value: 5.134e-06

[1] "Model 3: sigma\_e=0.14. sigma\_u=0.47"

[1] "Model 5: sigma\_e=0.14. sigma\_u=0.59"

[1] "Model 6: sigma\_e=0.14. sigma\_u=0.47"

## Table A.11. 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 | 0.496\*\*\* | -0.068 | -0.047 |  |  |  |
|  | (0.05) | (0.07) | (0.07) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | 0.011 | 0.037 | 0.044 |
|  |  |  |  | (0.04) | (0.03) | (0.03) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.062\* | 0.003 | 0.008 |
|  |  |  |  | (0.03) | (0.02) | (0.02) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.549\*\*\* | -0.022 | -0.005 |
|  |  |  |  | (0.04) | (0.06) | (0.06) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.295\*\*\* | -0.087 | -0.089\* |
|  |  |  |  | (0.05) | (0.05) | (0.05) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.244\*\*\* | -0.041 | -0.042 |
|  |  |  |  | (0.04) | (0.03) | (0.03) |
| Log GDP per capita (constant 2015 US$) |  |  | 5.194 |  |  | 6.278 |
|  |  |  | (4.15) |  |  | (4.17) |
| Trade (% of GDP) |  |  | 0.004 |  |  | 0.004 |
|  |  |  | (0.02) |  |  | (0.02) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.075 |  |  | -0.042 |
|  |  |  | (0.17) |  |  | (0.17) |
| Manufacturing value added (% of GDP) |  |  | -0.601\*\*\* |  |  | -0.615\*\*\* |
|  |  |  | (0.23) |  |  | (0.24) |
| School Enrollment, Primary (% gross) |  |  | -0.067 |  |  | -0.071 |
|  |  |  | (0.05) |  |  | (0.05) |
| Year 2017 |  | 0.164 | 0.074 |  | -0.017 | -0.162 |
|  |  | (0.17) | (0.21) |  | (0.28) | (0.32) |
| Year 2018 |  | 0.326 | 0.014 |  | 0.037 | -0.337 |
|  |  | (0.33) | (0.38) |  | (0.46) | (0.53) |
| Year 2019 |  | 0.353 | -0.185 |  | 0.162 | -0.427 |
|  |  | (0.37) | (0.44) |  | (0.45) | (0.56) |
| Year 2020 |  | -8.966\*\*\* | -9.200\*\*\* |  | -8.947\*\*\* | -9.275\*\*\* |
|  |  | (0.70) | (0.69) |  | (0.82) | (0.80) |
| Year 2021 |  | -8.690\*\*\* | -9.116\*\*\* |  | -8.231\*\*\* | -8.854\*\*\* |
|  |  | (0.90) | (0.91) |  | (1.27) | (1.28) |
| Year 2022 |  | -12.553\*\*\* | -13.139\*\*\* |  | -12.142\*\*\* | -12.948\*\*\* |
|  |  | (0.95) | (1.03) |  | (1.25) | (1.31) |
| Constant | 19.207\*\*\* |  |  | 55.461\*\*\* |  |  |
|  | (3.03) |  |  | (3.08) |  |  |
| Num.Obs. | 1092 | 1092 | 1092 | 1092 | 1092 | 1092 |
| R2 | 0.292 | 0.927 | 0.929 | 0.577 | 0.928 | 0.930 |
| R2 Adj. | 0.291 | 0.914 | 0.915 | 0.575 | 0.914 | 0.916 |
| R2 Within |  | 0.643 | 0.653 |  | 0.648 | 0.658 |
| R2 Within Adj. |  | 0.640 | 0.648 |  | 0.643 | 0.652 |
| AIC | 8636.7 | 6487.4 | 6467.3 | 8082.6 | 6481.6 | 6458.1 |
| BIC | 8646.7 | 7311.7 | 7316.6 | 8112.6 | 7325.9 | 7327.4 |
| RMSE | 12.60 | 4.06 | 4.00 | 9.74 | 4.03 | 3.97 |
| 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=5.96. sigma\_u=8.82"

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"))  
  
Unbalanced Panel: n = 158, T = 2-7, N = 1092  
  
Effects:  
 var std.dev share  
idiosyncratic 35.575 5.964 0.314  
individual 77.788 8.820 0.686  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.5686 0.7524 0.7524 0.7513 0.7524 0.7524   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-21.7884 -5.9583 1.4390 -0.0097 5.9106 14.5729   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 69.846087 2.498482 27.955 < 2.2e-16 \*\*\*  
SPI.INDEX -0.264549 0.034952 -7.569 3.762e-14 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 62850  
Residual Sum of Squares: 59301  
R-Squared: 0.056558  
Adj. R-Squared: 0.055693  
Chisq: 57.2895 on 1 DF, p-value: 3.7617e-14

[1] "Model 3: sigma\_e=5.94. sigma\_u=5.2"

[1] "Model 5: sigma\_e=5.28. sigma\_u=6.7"

[1] "Model 6: sigma\_e=5.25. sigma\_u=4.96"

## Table A.12. 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 | 0.091\*\*\* | 0.000 | 0.000 |  |  |  |
|  | (0.03) | (0.01) | (0.01) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | 0.015 | -0.004 | 0.001 |
|  |  |  |  | (0.03) | (0.00) | (0.00) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.008 | 0.002 | 0.001 |
|  |  |  |  | (0.01) | (0.00) | (0.00) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.040\*\*\* | 0.012\* | 0.009 |
|  |  |  |  | (0.01) | (0.01) | (0.01) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.039\*\* | 0.001 | -0.003 |
|  |  |  |  | (0.02) | (0.01) | (0.01) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.051\*\*\* | -0.008 | -0.004 |
|  |  |  |  | (0.01) | (0.01) | (0.01) |
| Log GDP per capita (constant 2015 US$) |  |  | 2.439\*\* |  |  | 2.228\*\* |
|  |  |  | (1.00) |  |  | (1.04) |
| Trade (% of GDP) |  |  | 0.000 |  |  | -0.001 |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | 0.054 |  |  | 0.082 |
|  |  |  | (0.05) |  |  | (0.05) |
| Manufacturing value added (% of GDP) |  |  | -0.051 |  |  | -0.038 |
|  |  |  | (0.03) |  |  | (0.03) |
| School Enrollment, Primary (% gross) |  |  | 0.019 |  |  | 0.014 |
|  |  |  | (0.02) |  |  | (0.02) |
| Year 2017 |  | -0.122\*\*\* | -0.187\*\*\* |  | -0.173\*\*\* | -0.230\*\*\* |
|  |  | (0.03) | (0.04) |  | (0.05) | (0.06) |
| Year 2018 |  | -0.218\*\* | -0.329\*\*\* |  | -0.292\*\*\* | -0.373\*\*\* |
|  |  | (0.09) | (0.08) |  | (0.08) | (0.08) |
| Year 2019 |  | -0.218\*\* | -0.376\*\*\* |  | -0.256\*\*\* | -0.391\*\*\* |
|  |  | (0.09) | (0.09) |  | (0.09) | (0.08) |
| Year 2020 |  | -0.218\*\* | -0.273\*\*\* |  | -0.294\*\*\* | -0.335\*\*\* |
|  |  | (0.10) | (0.08) |  | (0.09) | (0.09) |
| Year 2021 |  | -0.222\* | -0.386\*\*\* |  | -0.423\*\*\* | -0.501\*\*\* |
|  |  | (0.13) | (0.12) |  | (0.13) | (0.12) |
| Year 2022 |  | -0.222\* | -0.450\*\*\* |  | -0.424\*\*\* | -0.560\*\*\* |
|  |  | (0.13) | (0.13) |  | (0.13) | (0.13) |
| Constant | -0.919 |  |  | 0.126 |  |  |
|  | (2.72) |  |  | (2.80) |  |  |
| Num.Obs. | 287 | 287 | 287 | 287 | 287 | 287 |
| R2 | 0.127 | 0.978 | 0.981 | 0.432 | 0.979 | 0.982 |
| R2 Adj. | 0.124 | 0.973 | 0.977 | 0.421 | 0.975 | 0.977 |
| R2 Within |  | 0.129 | 0.262 |  | 0.188 | 0.284 |
| R2 Within Adj. |  | 0.104 | 0.224 |  | 0.150 | 0.234 |
| AIC | 952.7 | -5.1 | -42.5 | 837.7 | -17.2 | -43.2 |
| BIC | 960.0 | 177.9 | 158.8 | 859.7 | 180.4 | 172.7 |
| RMSE | 1.26 | 0.20 | 0.19 | 1.02 | 0.19 | 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=1.16"

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"))  
  
Unbalanced Panel: n = 43, T = 2-7, N = 287  
  
Effects:  
 var std.dev share  
idiosyncratic 0.05215 0.22837 0.037  
individual 1.35508 1.16408 0.963  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8626 0.9261 0.9261 0.9247 0.9261 0.9261   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.54927 -0.11422 0.01423 0.00199 0.13597 0.76382   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 7.8231417 0.3775853 20.7189 <2e-16 \*\*\*  
SPI.INDEX -0.0126296 0.0038697 -3.2637 0.0011 \*\*   
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 16.589  
Residual Sum of Squares: 15.808  
R-Squared: 0.050844  
Adj. R-Squared: 0.047513  
Chisq: 10.6519 on 1 DF, p-value: 0.0010996

[1] "Model 3: sigma\_e=0.22. sigma\_u=0.6"

[1] "Model 5: sigma\_e=0.22. sigma\_u=0.98"

[1] "Model 6: sigma\_e=0.22. sigma\_u=0.52"

## Table A.13. 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 | 0.007\*\*\* | 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) |  |  |  | -0.003\*\*\* | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.005\*\*\* | 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$) |  |  | 0.040\*\*\* |  |  | 0.040\*\*\* |
|  |  |  | (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 |  | 0.004\*\*\* | 0.003\*\*\* |  | 0.003\*\*\* | 0.002\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2018 |  | 0.007\*\*\* | 0.006\*\*\* |  | 0.007\*\*\* | 0.005\*\*\* |
|  |  | (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 |  | 0.006\*\*\* | 0.006\*\*\* |  | 0.005\*\*\* | 0.005\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2021 |  | 0.005\*\*\* | 0.004\*\*\* |  | 0.004\*\* | 0.003\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2022 |  | 0.005\*\*\* | 0.003\*\* |  | 0.004\*\* | 0.002 |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Constant | 0.283\*\*\* |  |  | 0.566\*\*\* |  |  |
|  | (0.04) |  |  | (0.04) |  |  |
| Num.Obs. | 1113 | 1113 | 1113 | 1113 | 1113 | 1113 |
| R2 | 0.525 | 0.999 | 0.999 | 0.761 | 0.999 | 0.999 |
| R2 Adj. | 0.524 | 0.999 | 0.999 | 0.759 | 0.999 | 0.999 |
| R2 Within |  | 0.297 | 0.434 |  | 0.301 | 0.440 |
| R2 Within Adj. |  | 0.292 | 0.427 |  | 0.293 | 0.430 |
| AIC | -1837.9 | -8307.9 | -8539.7 | -2592.7 | -8306.4 | -8542.4 |
| BIC | -1827.9 | -7465.4 | -7672.2 | -2562.6 | -7443.8 | -7654.8 |
| 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=0.1"

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"))  
  
Unbalanced Panel: n = 161, T = 2-7, N = 1113  
  
Effects:  
 var std.dev share  
idiosyncratic 4.073e-05 6.382e-03 0.004  
individual 1.004e-02 1.002e-01 0.996  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9550 0.9759 0.9759 0.9758 0.9759 0.9759   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-3.06e-02 -4.37e-03 8.61e-04 -2.48e-05 4.95e-03 2.08e-02   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 7.1570e-01 9.0191e-03 79.3538 < 2.2e-16 \*\*\*  
SPI.INDEX 1.7975e-04 4.0784e-05 4.4073 1.047e-05 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.056631  
Residual Sum of Squares: 0.053672  
R-Squared: 0.054356  
Adj. R-Squared: 0.053505  
Chisq: 19.4244 on 1 DF, p-value: 1.0466e-05

[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 A.14. 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 | 0.545\*\*\* | 0.033\*\* | 0.033\*\*\* |  |  |  |
|  | (0.03) | (0.01) | (0.01) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | 0.066 | 0.006 | 0.004 |
|  |  |  |  | (0.04) | (0.00) | (0.00) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.013 | 0.001 | 0.003 |
|  |  |  |  | (0.02) | (0.00) | (0.00) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.044 | 0.014 | 0.012 |
|  |  |  |  | (0.03) | (0.01) | (0.01) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.265\*\*\* | 0.005 | 0.001 |
|  |  |  |  | (0.03) | (0.01) | (0.01) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.139\*\*\* | 0.013\*\*\* | 0.013\*\*\* |
|  |  |  |  | (0.02) | (0.00) | (0.00) |
| Log GDP per capita (constant 2015 US$) |  |  | 3.636\*\*\* |  |  | 3.689\*\*\* |
|  |  |  | (0.85) |  |  | (0.84) |
| Trade (% of GDP) |  |  | -0.008\*\* |  |  | -0.007\*\* |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.024 |  |  | -0.027 |
|  |  |  | (0.04) |  |  | (0.04) |
| Manufacturing value added (% of GDP) |  |  | -0.025 |  |  | -0.019 |
|  |  |  | (0.03) |  |  | (0.03) |
| School Enrollment, Primary (% gross) |  |  | 0.022\*\* |  |  | 0.021\*\* |
|  |  |  | (0.01) |  |  | (0.01) |
| Year 2017 |  | 0.593\*\*\* | 0.532\*\*\* |  | 0.610\*\*\* | 0.524\*\*\* |
|  |  | (0.05) | (0.05) |  | (0.07) | (0.06) |
| Year 2018 |  | 0.831\*\*\* | 0.714\*\*\* |  | 0.905\*\*\* | 0.734\*\*\* |
|  |  | (0.09) | (0.08) |  | (0.11) | (0.09) |
| Year 2019 |  | 1.229\*\*\* | 1.045\*\*\* |  | 1.290\*\*\* | 1.050\*\*\* |
|  |  | (0.10) | (0.09) |  | (0.11) | (0.10) |
| Year 2020 |  | 1.368\*\*\* | 1.353\*\*\* |  | 1.383\*\*\* | 1.348\*\*\* |
|  |  | (0.12) | (0.10) |  | (0.15) | (0.13) |
| Year 2021 |  | 1.593\*\*\* | 1.483\*\*\* |  | 1.495\*\*\* | 1.383\*\*\* |
|  |  | (0.14) | (0.12) |  | (0.24) | (0.20) |
| Year 2022 |  | 1.684\*\*\* | 1.515\*\*\* |  | 1.584\*\*\* | 1.401\*\*\* |
|  |  | (0.15) | (0.14) |  | (0.25) | (0.22) |
| Constant | 30.576\*\*\* |  |  | 41.483\*\*\* |  |  |
|  | (2.50) |  |  | (3.92) |  |  |
| Num.Obs. | 1015 | 1015 | 1015 | 1015 | 1015 | 1015 |
| R2 | 0.656 | 0.997 | 0.997 | 0.745 | 0.997 | 0.997 |
| R2 Adj. | 0.656 | 0.996 | 0.997 | 0.744 | 0.996 | 0.997 |
| R2 Within |  | 0.589 | 0.638 |  | 0.593 | 0.640 |
| R2 Within Adj. |  | 0.586 | 0.633 |  | 0.588 | 0.634 |
| AIC | 6538.3 | 2074.6 | 1956.1 | 6242.6 | 2072.3 | 1956.6 |
| BIC | 6548.2 | 2832.7 | 2738.8 | 6272.2 | 2850.0 | 2759.0 |
| RMSE | 6.05 | 0.58 | 0.54 | 5.21 | 0.57 | 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=0.74. sigma\_u=5.59"

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"))  
  
Unbalanced Panel: n = 147, T = 2-7, N = 1015  
  
Effects:  
 var std.dev share  
idiosyncratic 0.5457 0.7387 0.017  
individual 31.2619 5.5912 0.983  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9070 0.9501 0.9501 0.9499 0.9501 0.9501   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-3.6903 -0.4322 0.1094 -0.0025 0.5395 2.4315   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 59.1594587 0.6146655 96.247 < 2.2e-16 \*\*\*  
SPI.INDEX 0.1264668 0.0050228 25.178 < 2.2e-16 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 1156.7  
Residual Sum of Squares: 673.2  
R-Squared: 0.41816  
Adj. R-Squared: 0.41759  
Chisq: 633.95 on 1 DF, p-value: < 2.22e-16

[1] "Model 3: sigma\_e=0.69. sigma\_u=4.67"

[1] "Model 5: sigma\_e=0.72. sigma\_u=5.03"

[1] "Model 6: sigma\_e=0.67. sigma\_u=4.57"

## Table A.15. 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 | 0.007\*\*\* | 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\*\*\* | 0.001\*\*\* |
|  |  |  |  | (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) |  |  |  | 0.003\*\*\* | 0.000\*\*\* | 0.000\*\*\* |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| Log GDP per capita (constant 2015 US$) |  |  | -0.011 |  |  | -0.011 |
|  |  |  | (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) |  |  | -0.001 |  |  | -0.001 |
|  |  |  | (0.00) |  |  | (0.00) |
| School Enrollment, Primary (% gross) |  |  | 0.000 |  |  | 0.000 |
|  |  |  | (0.00) |  |  | (0.00) |
| Year 2017 |  | 0.019\*\*\* | 0.019\*\*\* |  | 0.018\*\*\* | 0.018\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2018 |  | 0.018\*\*\* | 0.019\*\*\* |  | 0.019\*\*\* | 0.019\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2019 |  | 0.018\*\*\* | 0.018\*\*\* |  | 0.018\*\*\* | 0.018\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2020 |  | 0.013\*\*\* | 0.013\*\*\* |  | 0.011\*\*\* | 0.011\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2021 |  | 0.010\*\*\* | 0.011\*\*\* |  | 0.004 | 0.004 |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2022 |  | 0.010\*\*\* | 0.011\*\*\* |  | 0.004 | 0.004 |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Constant | 0.121\*\*\* |  |  | 0.401\*\*\* |  |  |
|  | (0.03) |  |  | (0.03) |  |  |
| Num.Obs. | 1050 | 1050 | 1050 | 1050 | 1050 | 1050 |
| R2 | 0.567 | 0.992 | 0.992 | 0.766 | 0.992 | 0.992 |
| R2 Adj. | 0.567 | 0.990 | 0.990 | 0.765 | 0.990 | 0.990 |
| R2 Within |  | 0.229 | 0.233 |  | 0.250 | 0.255 |
| R2 Within Adj. |  | 0.222 | 0.223 |  | 0.241 | 0.241 |
| AIC | -1955.7 | -5793.6 | -5789.6 | -2593.0 | -5815.5 | -5811.8 |
| BIC | -1945.7 | -5005.5 | -4976.7 | -2563.3 | -5007.6 | -4979.1 |
| 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"))  
  
Unbalanced Panel: n = 152, T = 2-7, N = 1050  
  
Effects:  
 var std.dev share  
idiosyncratic 0.0002476 0.0157345 0.03  
individual 0.0079195 0.0889913 0.97  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8759 0.9333 0.9333 0.9330 0.9333 0.9333   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.07591 -0.00969 -0.00143 -0.00006 0.00981 0.09959   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 0.50095263 0.01042878 48.0356 < 2.2e-16 \*\*\*  
SPI.INDEX 0.00099633 0.00010187 9.7806 < 2.2e-16 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.34464  
Residual Sum of Squares: 0.3063  
R-Squared: 0.11175  
Adj. R-Squared: 0.1109  
Chisq: 95.6601 on 1 DF, p-value: < 2.22e-16

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

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

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

## Table A.16. 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 | 0.394\*\*\* | -0.012 | -0.008 |  |  |  |
|  | (0.06) | (0.05) | (0.05) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | -0.033 | 0.031 | 0.030 |
|  |  |  |  | (0.07) | (0.03) | (0.03) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.120\*\* | 0.005 | 0.007 |
|  |  |  |  | (0.05) | (0.01) | (0.01) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.070 | -0.008 | 0.000 |
|  |  |  |  | (0.08) | (0.05) | (0.05) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.016 | 0.004 | -0.001 |
|  |  |  |  | (0.09) | (0.03) | (0.03) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.193\*\*\* | -0.048\*\* | -0.047\*\* |
|  |  |  |  | (0.06) | (0.02) | (0.02) |
| Log GDP per capita (constant 2015 US$) |  |  | 3.836 |  |  | 3.995 |
|  |  |  | (4.24) |  |  | (4.20) |
| Trade (% of GDP) |  |  | 0.022 |  |  | 0.018 |
|  |  |  | (0.02) |  |  | (0.02) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.006 |  |  | 0.017 |
|  |  |  | (0.16) |  |  | (0.16) |
| Manufacturing value added (% of GDP) |  |  | -0.153 |  |  | -0.174 |
|  |  |  | (0.17) |  |  | (0.17) |
| School Enrollment, Primary (% gross) |  |  | 0.012 |  |  | 0.010 |
|  |  |  | (0.04) |  |  | (0.04) |
| Year 2017 |  | 0.027 | -0.109 |  | 0.058 | -0.107 |
|  |  | (0.13) | (0.16) |  | (0.19) | (0.23) |
| Year 2018 |  | 0.056 | -0.202 |  | 0.025 | -0.259 |
|  |  | (0.26) | (0.33) |  | (0.31) | (0.39) |
| Year 2019 |  | -0.261 | -0.596 |  | -0.153 | -0.510 |
|  |  | (0.37) | (0.47) |  | (0.38) | (0.49) |
| Year 2020 |  | -0.086 | -0.066 |  | 0.077 | 0.002 |
|  |  | (0.49) | (0.49) |  | (0.61) | (0.62) |
| Year 2021 |  | -0.464 | -0.728 |  | 0.098 | -0.291 |
|  |  | (0.70) | (0.75) |  | (1.07) | (1.12) |
| Year 2022 |  | -7.171\*\*\* | -7.683\*\*\* |  | -6.598\*\*\* | -7.209\*\*\* |
|  |  | (0.87) | (0.98) |  | (1.26) | (1.35) |
| Constant | 38.721\*\*\* |  |  | 52.571\*\*\* |  |  |
|  | (4.33) |  |  | (7.26) |  |  |
| Num.Obs. | 1057 | 1057 | 1057 | 1057 | 1057 | 1057 |
| R2 | 0.171 | 0.956 | 0.957 | 0.207 | 0.957 | 0.957 |
| R2 Adj. | 0.170 | 0.949 | 0.949 | 0.204 | 0.949 | 0.949 |
| R2 Within |  | 0.390 | 0.396 |  | 0.398 | 0.404 |
| R2 Within Adj. |  | 0.385 | 0.388 |  | 0.391 | 0.393 |
| AIC | 8522.7 | 5725.3 | 5724.5 | 8482.7 | 5718.8 | 5718.6 |
| BIC | 8532.7 | 6519.4 | 6543.4 | 8512.5 | 6532.8 | 6557.4 |
| RMSE | 13.61 | 3.12 | 3.10 | 13.30 | 3.10 | 3.08 |
| 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=4.11. sigma\_u=12.6"

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"))  
  
Unbalanced Panel: n = 153, T = 2-7, N = 1057  
  
Effects:  
 var std.dev share  
idiosyncratic 16.913 4.113 0.096  
individual 158.813 12.602 0.904  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.7752 0.8776 0.8776 0.8770 0.8776 0.8776   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-26.4695 -1.1286 1.0280 -0.0002 2.5203 13.0720   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 76.192168 1.972767 38.6220 < 2.2e-16 \*\*\*  
SPI.INDEX -0.161314 0.024468 -6.5929 4.313e-11 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 20351  
Residual Sum of Squares: 19404  
R-Squared: 0.046536  
Adj. R-Squared: 0.045632  
Chisq: 43.4664 on 1 DF, p-value: 4.3129e-11

[1] "Model 3: sigma\_e=4.09. sigma\_u=11.61"

[1] "Model 5: sigma\_e=3.97. sigma\_u=12.14"

[1] "Model 6: sigma\_e=3.94. sigma\_u=10.78"

## Table A.17. Relationship between Log GDP per capita and ODIN, Open Data Barometer, and Global Data Barometer scores, 2016-2022

|  | ODIN - Model 1 | ODIN - Model 2 | ODIN - Model 3 | ODB - Model 1 | ODB - Model 2 | ODB - Model 3 | GDB - Model 1 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ODIN Score | 0.052\*\*\* | 0.000 | 0.000 |  |  |  |  |
|  | (0.00) | (0.00) | (0.00) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.049\*\*\* | 0.000 | 0.000 |  |
|  |  |  |  | (0.00) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.057\*\*\* |
|  |  |  |  |  |  |  | (0.01) |
| Trade (% of GDP) |  |  | 0.001\*\*\* |  |  | 0.001 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.001 |  |  | -0.027\*\*\* |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Manufacturing value added (% of GDP) |  |  | -0.001 |  |  | 0.009\*\*\* |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| School Enrollment, Primary (% gross) |  |  | 0.001 |  |  | 0.001 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| WGI Index |  |  | 0.132\*\*\* |  |  | 0.162\* |  |
|  |  |  | (0.04) |  |  | (0.10) |  |
| Year 2014 |  |  |  |  | 0.020\*\*\* | 0.014\*\*\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2015 |  |  |  |  | 0.029\*\*\* | 0.023\*\* |  |
|  |  |  |  |  | (0.01) | (0.01) |  |
| Year 2016 |  |  |  |  | 0.045\*\*\* | 0.043\*\*\* |  |
|  |  |  |  |  | (0.01) | (0.01) |  |
| Year 2017 |  | 0.021\*\*\* | 0.018\*\*\* |  | 0.064\*\*\* | 0.063\*\*\* |  |
|  |  | (0.00) | (0.00) |  | (0.01) | (0.01) |  |
| Year 2018 |  | 0.043\*\*\* | 0.039\*\*\* |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2019 |  | 0.062\*\*\* | 0.057\*\*\* |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2020 |  | 0.010 | 0.017\* |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2021 |  | 0.052\*\*\* | 0.050\*\*\* |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2022 |  | 0.078\*\*\* | 0.068\*\*\* |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Constant | 6.157\*\*\* |  |  | 7.273\*\*\* |  |  | 6.856\*\*\* |
|  | (0.21) |  |  | (0.18) |  |  | (0.23) |
| Num.Obs. | 1095 | 1095 | 1095 | 376 | 376 | 376 | 96 |
| R2 | 0.401 | 0.999 | 0.999 | 0.558 | 0.999 | 1.000 | 0.490 |
| R2 Adj. | 0.401 | 0.999 | 0.999 | 0.557 | 0.999 | 0.999 | 0.485 |
| R2 Within |  | 0.218 | 0.277 |  | 0.177 | 0.487 |  |
| R2 Within Adj. |  | 0.212 | 0.268 |  | 0.161 | 0.468 |  |
| AIC | 3286.9 | -3150.9 | -3226.8 | 1040.9 | -1161.4 | -1329.4 | 261.9 |
| BIC | 3296.9 | -2306.1 | -2357.1 | 1048.8 | -733.1 | -881.4 | 267.0 |
| RMSE | 1.08 | 0.05 | 0.05 | 0.96 | 0.04 | 0.03 | 0.93 |
| 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=0.06. sigma\_u=1.02"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = log(NY.GDP.PCAP.KD) ~ ODIN\_score, data = odin\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 162, T = 1-7, N = 1095  
  
Effects:  
 var std.dev share  
idiosyncratic 0.003568 0.059734 0.003  
individual 1.038834 1.019232 0.997  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9415 0.9779 0.9779 0.9776 0.9779 0.9779   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.32477 -0.03812 0.00628 -0.00012 0.04311 0.30188   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 8.63084921 0.08612107 100.2176 < 2.2e-16 \*\*\*  
ODIN\_score 0.00128703 0.00028197 4.5645 5.007e-06 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 4.9802  
Residual Sum of Squares: 4.3981  
R-Squared: 0.11714  
Adj. R-Squared: 0.11633  
Chisq: 20.8345 on 1 DF, p-value: 5.0073e-06

[1] "ODIN Model 3: sigma\_e=0.06. sigma\_u=0.54"

[1] "ODB Model 2: sigma\_e=0.05. sigma\_u=0.92"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = log(NY.GDP.PCAP.KD) ~ odb, data = odb\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 104, T = 1-5, N = 376  
  
Effects:  
 var std.dev share  
idiosyncratic 0.002492 0.049916 0.003  
individual 0.847663 0.920686 0.997  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9459 0.9729 0.9729 0.9721 0.9758 0.9758   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.31890 -0.03137 0.00730 0.00237 0.03799 0.19531   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 8.7999024 0.1069979 82.244 < 2e-16 \*\*\*  
odb 0.0012068 0.0005022 2.403 0.01626 \*   
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 1.9091  
Residual Sum of Squares: 1.2782  
R-Squared: 0.3552  
Adj. R-Squared: 0.35347  
Chisq: 5.77431 on 1 DF, p-value: 0.016262

[1] "ODB Model 3: sigma\_e=0.04. sigma\_u=0.54"

## Table A.18. Relationship between Government Effectiveness from Worldwide Governance Indicators 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 | 0.032\*\*\* | 0.000 | 0.000 |  |  |  |  |
|  | (0.00) | (0.00) | (0.00) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.032\*\*\* | 0.001\* | 0.001\* |  |
|  |  |  |  | (0.00) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.034\*\*\* |
|  |  |  |  |  |  |  | (0.00) |
| Trade (% of GDP) |  |  | -0.001 |  |  | -0.001 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.006\*\* |  |  | 0.005 |  |
|  |  |  | (0.00) |  |  | (0.01) |  |
| Manufacturing value added (% of GDP) |  |  | -0.002 |  |  | -0.009\*\* |  |
|  |  |  | (0.01) |  |  | (0.00) |  |
| School Enrollment, Primary (% gross) |  |  | 0.000 |  |  | 0.002 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Year 2014 |  |  |  |  | 0.004 | -0.006 |  |
|  |  |  |  |  | (0.01) | (0.01) |  |
| Year 2015 |  |  |  |  | 0.000 | -0.015 |  |
|  |  |  |  |  | (0.01) | (0.01) |  |
| Year 2016 |  |  |  |  | -0.001 | -0.028 |  |
|  |  |  |  |  | (0.01) | (0.02) |  |
| Year 2017 |  | 0.000 | -0.004 |  | -0.005 | -0.040\* |  |
|  |  | (0.01) | (0.01) |  | (0.02) | (0.02) |  |
| Year 2018 |  | -0.005 | -0.016\* |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2019 |  | -0.003 | -0.021\* |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2020 |  | -0.006 | -0.012 |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2021 |  | -0.007 | -0.019 |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2022 |  | -0.007 | -0.023 |  |  |  |  |
|  |  | (0.01) | (0.02) |  |  |  |  |
| Constant | -1.544\*\*\* |  |  | -0.861\*\*\* |  |  | -1.107\*\*\* |
|  | (0.14) |  |  | (0.09) |  |  | (0.11) |
| Num.Obs. | 1095 | 1095 | 1095 | 376 | 376 | 376 | 96 |
| R2 | 0.402 | 0.994 | 0.994 | 0.588 | 0.996 | 0.996 | 0.499 |
| R2 Adj. | 0.401 | 0.993 | 0.993 | 0.587 | 0.994 | 0.995 | 0.493 |
| R2 Within |  | 0.001 | 0.048 |  | 0.016 | 0.129 |  |
| R2 Within Adj. |  | -0.006 | 0.035 |  | -0.002 | 0.095 |  |
| AIC | 2217.9 | -2498.0 | -2540.5 | 660.2 | -858.5 | -894.2 | 159.1 |
| BIC | 2227.9 | -1653.3 | -1670.8 | 668.1 | -430.2 | -446.2 | 164.2 |
| RMSE | 0.66 | 0.07 | 0.06 | 0.58 | 0.06 | 0.05 | 0.54 |
| 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=0.07. sigma\_u=0.62"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = WGI.OVL ~ ODIN\_score, data = odin\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 162, T = 1-7, N = 1095  
  
Effects:  
 var std.dev share  
idiosyncratic 0.005166 0.071876 0.013  
individual 0.385051 0.620525 0.987  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8849 0.9563 0.9563 0.9557 0.9563 0.9563   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.43322 -0.04585 0.00051 -0.00016 0.04957 0.27248   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)  
(Intercept) -0.00599042 0.05448999 -0.1099 0.9125  
ODIN\_score 0.00044534 0.00033928 1.3126 0.1893  
  
Total Sum of Squares: 6.4271  
Residual Sum of Squares: 6.4168  
R-Squared: 0.0016099  
Adj. R-Squared: 0.00069642  
Chisq: 1.72294 on 1 DF, p-value: 0.18931

[1] "ODIN Model 3: sigma\_e=0.07. sigma\_u=0.41"

[1] "ODB Model 2: sigma\_e=0.07. sigma\_u=0.55"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = WGI.OVL ~ odb, data = odb\_reg\_df, model = "random",   
 index = c("country", "date"))  
  
Unbalanced Panel: n = 104, T = 1-5, N = 376  
  
Effects:  
 var std.dev share  
idiosyncratic 0.004645 0.068154 0.015  
individual 0.301438 0.549034 0.985  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8768 0.9381 0.9381 0.9363 0.9446 0.9446   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.38661 -0.04540 0.00378 0.00336 0.06002 0.18362   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 0.05656750 0.06725978 0.8410 0.4003   
odb 0.00271219 0.00067798 4.0004 6.324e-05 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 2.4924  
Residual Sum of Squares: 2.4174  
R-Squared: 0.032357  
Adj. R-Squared: 0.02977  
Chisq: 16.003 on 1 DF, p-value: 6.3242e-05

[1] "ODB Model 3: sigma\_e=0.07. sigma\_u=0.4"

## Table A.19. 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 | 0.037\*\*\* | 0.003\*\* | 0.002 |  |  |  |  |
|  | (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 |  |  |  |  |  |  | 0.036\*\*\* |
|  |  |  |  |  |  |  | (0.00) |
| Trade (% of GDP) |  |  | 0.000 |  |  | 0.000 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.013 |  |  | -0.001 |  |
|  |  |  | (0.01) |  |  | (0.02) |  |
| Manufacturing value added (% of GDP) |  |  | 0.029\*\*\* |  |  | 0.012 |  |
|  |  |  | (0.01) |  |  | (0.01) |  |
| School Enrollment, Primary (% gross) |  |  | -0.002 |  |  | 0.002 |  |
|  |  |  | (0.00) |  |  | (0.01) |  |
| Year 2014 |  |  |  |  | 0.003 | 0.006 |  |
|  |  |  |  |  | (0.01) | (0.02) |  |
| Year 2015 |  |  |  |  | 0.021 | 0.024 |  |
|  |  |  |  |  | (0.02) | (0.02) |  |
| Year 2016 |  |  |  |  | -0.012 | -0.004 |  |
|  |  |  |  |  | (0.02) | (0.03) |  |
| Year 2017 |  | -0.006 | -0.006 |  | 0.001 | 0.021 |  |
|  |  | (0.01) | (0.02) |  | (0.03) | (0.03) |  |
| Year 2018 |  | -0.017 | -0.018 |  |  |  |  |
|  |  | (0.02) | (0.03) |  |  |  |  |
| Year 2019 |  | -0.010 | -0.011 |  |  |  |  |
|  |  | (0.02) | (0.02) |  |  |  |  |
| Year 2020 |  | -0.024 | -0.013 |  |  |  |  |
|  |  | (0.03) | (0.03) |  |  |  |  |
| Year 2021 |  | -0.030 | -0.029 |  |  |  |  |
|  |  | (0.03) | (0.03) |  |  |  |  |
| Year 2022 |  | -0.032 | -0.033 |  |  |  |  |
|  |  | (0.03) | (0.04) |  |  |  |  |
| Constant | -1.847\*\*\* |  |  | -0.752\*\*\* |  |  | -1.193\*\*\* |
|  | (0.18) |  |  | (0.12) |  |  | (0.16) |
| Num.Obs. | 854 | 854 | 854 | 354 | 354 | 354 | 87 |
| R2 | 0.392 | 0.982 | 0.983 | 0.444 | 0.991 | 0.992 | 0.413 |
| R2 Adj. | 0.391 | 0.979 | 0.979 | 0.443 | 0.988 | 0.988 | 0.406 |
| R2 Within |  | 0.011 | 0.055 |  | 0.015 | 0.035 |  |
| R2 Within Adj. |  | 0.001 | 0.039 |  | -0.004 | -0.004 |  |
| AIC | 1990.1 | -751.0 | -779.9 | 788.2 | -485.6 | -482.7 | 182.7 |
| BIC | 1999.6 | -138.2 | -143.4 | 795.9 | -90.9 | -68.7 | 187.7 |
| RMSE | 0.77 | 0.13 | 0.13 | 0.73 | 0.09 | 0.09 | 0.68 |
| 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=0.72"

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"))  
  
Balanced Panel: n = 122, T = 7, N = 854  
  
Effects:  
 var std.dev share  
idiosyncratic 0.02108 0.14518 0.039  
individual 0.51602 0.71834 0.961  
theta: 0.9238  
  
Residuals:  
 Min. 1st Qu. Median 3rd Qu. Max.   
-0.717070 -0.075765 0.015432 0.091282 0.665047   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) -0.08337349 0.07901962 -1.0551 0.2913802   
ODIN\_score 0.00283072 0.00076044 3.7225 0.0001973 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 20.302  
Residual Sum of Squares: 19.977  
R-Squared: 0.016004  
Adj. R-Squared: 0.014849  
Chisq: 13.8567 on 1 DF, p-value: 0.00019729

[1] "ODIN Model 3: sigma\_e=0.14. sigma\_u=0.53"

[1] "ODB Model 2: sigma\_e=0.11. sigma\_u=0.71"

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 = 97, T = 1-5, N = 354  
  
Effects:  
 var std.dev share  
idiosyncratic 0.01172 0.10828 0.023  
individual 0.50140 0.70810 0.977  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8488 0.9238 0.9238 0.9220 0.9318 0.9318   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.3944 -0.0727 0.0133 0.0031 0.0788 0.4423   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 0.1611060 0.0861599 1.8698 0.06150 .  
odb 0.0021698 0.0010105 2.1474 0.03177 \*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 5.0303  
Residual Sum of Squares: 5.0067  
R-Squared: 0.0065652  
Adj. R-Squared: 0.003743  
Chisq: 4.61111 on 1 DF, p-value: 0.031765

[1] "ODB Model 3: sigma\_e=0.11. sigma\_u=0.47"

## Table A.20. 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 | 0.464\*\*\* | -0.030 | -0.012 |  |  |  |  |
|  | (0.04) | (0.04) | (0.04) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.459\*\*\* | 0.000 | 0.000 |  |
|  |  |  |  | (0.04) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.750\*\*\* |
|  |  |  |  |  |  |  | (0.06) |
| Trade (% of GDP) |  |  | 0.002 |  |  | 0.000 |  |
|  |  |  | (0.02) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.040 |  |  | 0.000 |  |
|  |  |  | (0.16) |  |  | (0.00) |  |
| Manufacturing value added (% of GDP) |  |  | -0.675\*\*\* |  |  | 0.000 |  |
|  |  |  | (0.24) |  |  | (0.00) |  |
| School Enrollment, Primary (% gross) |  |  | -0.093 |  |  | 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 | -0.081 |  | 0.000 | 0.000 |  |
|  |  | (0.04) | (0.12) |  | (0.00) | (0.00) |  |
| Year 2018 |  | 0.153 | -0.182 |  |  |  |  |
|  |  | (0.21) | (0.29) |  |  |  |  |
| Year 2019 |  | 0.153 | -0.373 |  |  |  |  |
|  |  | (0.21) | (0.34) |  |  |  |  |
| Year 2020 |  | -9.150\*\*\* | -9.531\*\*\* |  |  |  |  |
|  |  | (0.67) | (0.67) |  |  |  |  |
| Year 2021 |  | -9.150\*\*\* | -9.582\*\*\* |  |  |  |  |
|  |  | (0.67) | (0.68) |  |  |  |  |
| Year 2022 |  | -13.147\*\*\* | -13.696\*\*\* |  |  |  |  |
|  |  | (0.74) | (0.81) |  |  |  |  |
| Constant | 29.713\*\*\* |  |  | 44.040\*\*\* |  |  | 22.625\*\*\* |
|  | (1.91) |  |  | (1.57) |  |  | (1.99) |
| Num.Obs. | 1066 | 1066 | 1066 | 371 | 371 | 371 | 94 |
| R2 | 0.267 | 0.928 | 0.930 | 0.539 | 1.000 | 1.000 | 0.586 |
| R2 Adj. | 0.266 | 0.915 | 0.917 | 0.538 | 1.000 | 1.000 | 0.581 |
| R2 Within |  | 0.645 | 0.657 |  | 0.000 | 0.000 |  |
| R2 Within Adj. |  | 0.643 | 0.652 |  | -0.019 | -0.039 |  |
| AIC | 8481.3 | 6329.3 | 6305.0 | 2703.8 | -24246.6 | -24236.6 | 704.2 |
| BIC | 8491.3 | 7144.7 | 7145.2 | 2711.6 | -23827.6 | -23798.0 | 709.2 |
| RMSE | 12.90 | 4.04 | 3.97 | 9.20 | 0.00 | 0.00 | 10.03 |
| 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=6.49. sigma\_u=8.85"

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 = 157, T = 1-7, N = 1066  
  
Effects:  
 var std.dev share  
idiosyncratic 42.087 6.487 0.349  
individual 78.406 8.855 0.651  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.4090 0.7331 0.7331 0.7307 0.7331 0.7331   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-21.5196 -6.0952 1.6137 0.0256 6.0691 14.1463   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 60.069520 1.652558 36.3494 < 2.2e-16 \*\*\*  
ODIN\_score -0.167602 0.029424 -5.6961 1.226e-08 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 63526  
Residual Sum of Squares: 60986  
R-Squared: 0.04069  
Adj. R-Squared: 0.039788  
Chisq: 32.4454 on 1 DF, p-value: 1.2259e-08

[1] "ODIN Model 3: sigma\_e=6.44. sigma\_u=5.5"

[1] "ODB Model 2: sigma\_e=0. sigma\_u=8.85"

[1] "ODB Model 3: sigma\_e=0. sigma\_u=6.44"

## Table A.21. 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) |  |  | 0.049 |  |  | 0.009 |  |
|  |  |  | (0.05) |  |  | (0.05) |  |
| Manufacturing value added (% of GDP) |  |  | -0.068\*\* |  |  | -0.028 |  |
|  |  |  | (0.03) |  |  | (0.02) |  |
| School Enrollment, Primary (% gross) |  |  | 0.015 |  |  | 0.015 |  |
|  |  |  | (0.02) |  |  | (0.01) |  |
| Year 2014 |  |  |  |  | 0.014 | -0.013 |  |
|  |  |  |  |  | (0.04) | (0.04) |  |
| Year 2015 |  |  |  |  | 0.084\* | 0.044 |  |
|  |  |  |  |  | (0.05) | (0.05) |  |
| Year 2016 |  |  |  |  | -0.229\*\*\* | -0.283\*\*\* |  |
|  |  |  |  |  | (0.05) | (0.06) |  |
| Year 2017 |  | -0.122\*\*\* | -0.188\*\*\* |  | -0.317\*\*\* | -0.394\*\*\* |  |
|  |  | (0.03) | (0.04) |  | (0.07) | (0.08) |  |
| Year 2018 |  | -0.217\*\* | -0.333\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.08) |  |  |  |  |
| Year 2019 |  | -0.217\*\* | -0.383\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.09) |  |  |  |  |
| Year 2020 |  | -0.217\*\* | -0.284\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.08) |  |  |  |  |
| Year 2021 |  | -0.217\*\* | -0.390\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.09) |  |  |  |  |
| Year 2022 |  | -0.218\*\* | -0.443\*\*\* |  |  |  |  |
|  |  | (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 | 0.255 |  | 0.402 | 0.429 |  |
| R2 Within Adj. |  | 0.102 | 0.217 |  | 0.377 | 0.379 |  |
| AIC | 913.4 | -5.1 | -40.4 | 488.9 | -38.3 | -35.7 | 100.3 |
| BIC | 920.7 | 170.6 | 153.5 | 495.0 | 94.7 | 112.8 | 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=0.23. 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 A.22. 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 | 0.432\*\*\* | 0.010 | 0.011\* |  |  |  |  |
|  | (0.03) | (0.01) | (0.01) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.346\*\*\* | 0.011\*\* | 0.011\*\* |  |
|  |  |  |  | (0.03) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.388\*\*\* |
|  |  |  |  |  |  |  | (0.04) |
| Trade (% of GDP) |  |  | -0.009\*\* |  |  | -0.021\*\* |  |
|  |  |  | (0.00) |  |  | (0.01) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.025 |  |  | 0.004 |  |
|  |  |  | (0.04) |  |  | (0.05) |  |
| Manufacturing value added (% of GDP) |  |  | -0.012 |  |  | -0.053 |  |
|  |  |  | (0.03) |  |  | (0.05) |  |
| School Enrollment, Primary (% gross) |  |  | 0.023\*\* |  |  | -0.011 |  |
|  |  |  | (0.01) |  |  | (0.02) |  |
| Year 2014 |  |  |  |  | 0.446\*\*\* | 0.355\*\*\* |  |
|  |  |  |  |  | (0.07) | (0.07) |  |
| Year 2015 |  |  |  |  | 0.872\*\*\* | 0.702\*\*\* |  |
|  |  |  |  |  | (0.10) | (0.10) |  |
| Year 2016 |  |  |  |  | 1.119\*\*\* | 0.841\*\*\* |  |
|  |  |  |  |  | (0.12) | (0.11) |  |
| Year 2017 |  | 0.660\*\*\* | 0.602\*\*\* |  | 1.601\*\*\* | 1.282\*\*\* |  |
|  |  | (0.05) | (0.05) |  | (0.17) | (0.16) |  |
| Year 2018 |  | 0.939\*\*\* | 0.817\*\*\* |  |  |  |  |
|  |  | (0.08) | (0.08) |  |  |  |  |
| Year 2019 |  | 1.369\*\*\* | 1.177\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.10) |  |  |  |  |
| Year 2020 |  | 1.524\*\*\* | 1.491\*\*\* |  |  |  |  |
|  |  | (0.10) | (0.10) |  |  |  |  |
| Year 2021 |  | 1.875\*\*\* | 1.743\*\*\* |  |  |  |  |
|  |  | (0.11) | (0.11) |  |  |  |  |
| Year 2022 |  | 1.950\*\*\* | 1.765\*\*\* |  |  |  |  |
|  |  | (0.13) | (0.15) |  |  |  |  |
| Constant | 46.659\*\*\* |  |  | 56.231\*\*\* |  |  | 56.755\*\*\* |
|  | (1.84) |  |  | (1.18) |  |  | (1.64) |
| Num.Obs. | 1006 | 1006 | 1006 | 375 | 375 | 375 | 94 |
| R2 | 0.506 | 0.997 | 0.997 | 0.592 | 0.998 | 0.998 | 0.532 |
| R2 Adj. | 0.505 | 0.996 | 0.997 | 0.591 | 0.997 | 0.998 | 0.526 |
| R2 Within |  | 0.583 | 0.633 |  | 0.541 | 0.606 |  |
| R2 Within Adj. |  | 0.579 | 0.628 |  | 0.533 | 0.591 |  |
| AIC | 6808.8 | 2079.8 | 1960.4 | 2443.2 | 651.8 | 604.7 | 600.8 |
| BIC | 6818.7 | 2831.6 | 2736.8 | 2451.1 | 1075.9 | 1048.4 | 605.8 |
| RMSE | 7.12 | 0.58 | 0.55 | 6.25 | 0.43 | 0.40 | 5.79 |
| 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=6.57"

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 = 146, T = 1-7, N = 1006  
  
Effects:  
 var std.dev share  
idiosyncratic 0.7120 0.8438 0.016  
individual 43.1452 6.5685 0.984  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8726 0.9515 0.9515 0.9513 0.9515 0.9515   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 -4.318 -0.473 0.127 0.005 0.629 2.516   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 64.2266827 0.6196018 103.658 < 2.2e-16 \*\*\*  
ODIN\_score 0.0722132 0.0041578 17.368 < 2.2e-16 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 1102.6  
Residual Sum of Squares: 826.13  
R-Squared: 0.25153  
Adj. R-Squared: 0.25078  
Chisq: 301.655 on 1 DF, p-value: < 2.22e-16

[1] "ODIN Model 3: sigma\_e=0.77. sigma\_u=5.2"

[1] "ODB Model 2: sigma\_e=0.73. sigma\_u=5.95"

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 = 103, T = 1-5, N = 375  
  
Effects:  
 var std.dev share  
idiosyncratic 0.5312 0.7288 0.015  
individual 35.4291 5.9522 0.985  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8785 0.9389 0.9389 0.9374 0.9453 0.9453   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-3.4448 -0.5391 0.0742 0.0024 0.5779 1.8373   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 66.7203874 0.7333015 90.9863 < 2.2e-16 \*\*\*  
odb 0.0408595 0.0072713 5.6193 1.918e-08 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 579.73  
Residual Sum of Squares: 276.81  
R-Squared: 0.52261  
Adj. R-Squared: 0.52133  
Chisq: 31.5761 on 1 DF, p-value: 1.9178e-08

[1] "ODB Model 3: sigma\_e=0.59. sigma\_u=4.86"

## Table A.23. 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 |  |  | 0.000 |  |
|  |  |  | (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 2014 |  |  |  |  | 0.005\*\*\* | 0.003\*\*\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2015 |  |  |  |  | 0.009\*\*\* | 0.006\*\*\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2016 |  |  |  |  | 0.013\*\*\* | 0.008\*\*\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2017 |  | 0.004\*\*\* | 0.003\*\*\* |  | 0.015\*\*\* | 0.010\*\*\* |  |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |  |
| Year 2018 |  | 0.007\*\*\* | 0.006\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2019 |  | 0.012\*\*\* | 0.009\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2020 |  | 0.006\*\*\* | 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 | 0.426\*\*\* |  |  | 0.572\*\*\* |  |  | 0.538\*\*\* |
|  | (0.02) |  |  | (0.02) |  |  | (0.03) |
| Num.Obs. | 1094 | 1094 | 1094 | 376 | 376 | 376 | 96 |
| R2 | 0.480 | 0.999 | 0.999 | 0.572 | 0.999 | 1.000 | 0.530 |
| R2 Adj. | 0.479 | 0.999 | 0.999 | 0.571 | 0.999 | 0.999 | 0.525 |
| R2 Within |  | 0.304 | 0.458 |  | 0.570 | 0.779 |  |
| R2 Within Adj. |  | 0.298 | 0.451 |  | 0.562 | 0.771 |  |
| AIC | -1706.9 | -8176.7 | -8440.4 | -655.0 | -2829.6 | -3070.0 | -180.0 |
| BIC | -1696.9 | -7337.1 | -7575.8 | -647.1 | -2401.3 | -2622.1 | -174.9 |
| 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 = 1094  
  
Effects:  
 var std.dev share  
idiosyncratic 4.053e-05 6.366e-03 0.004  
individual 1.025e-02 1.012e-01 0.996  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9372 0.9762 0.9762 0.9760 0.9762 0.9762   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-3.10e-02 -4.16e-03 8.18e-04 2.07e-05 4.85e-03 2.10e-02   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 7.2121e-01 8.8140e-03 81.8258 < 2.2e-16 \*\*\*  
ODIN\_score 1.3327e-04 3.0807e-05 4.3258 1.52e-05 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.055376  
Residual Sum of Squares: 0.052475  
R-Squared: 0.053165  
Adj. R-Squared: 0.052298  
Chisq: 18.7124 on 1 DF, p-value: 1.5199e-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 = 104, T = 1-5, N = 376  
  
Effects:  
 var std.dev share  
idiosyncratic 5.538e-05 7.441e-03 0.006  
individual 9.275e-03 9.631e-02 0.994  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9230 0.9614 0.9614 0.9603 0.9655 0.9655   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.033975 -0.004501 0.001534 0.000185 0.005624 0.024059   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 7.3822e-01 1.1324e-02 65.1878 < 2.2e-16 \*\*\*  
odb 2.8370e-04 7.4527e-05 3.8066 0.0001409 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.040336  
Residual Sum of Squares: 0.028408  
R-Squared: 0.30259  
Adj. R-Squared: 0.30073  
Chisq: 14.4905 on 1 DF, p-value: 0.00014086

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

## Table A.24. 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 | 0.001 |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2017 |  | 0.021\*\*\* | 0.021\*\*\* |  | 0.023\*\*\* | 0.025\*\*\* |  |
|  |  | (0.00) | (0.00) |  | (0.01) | (0.01) |  |
| Year 2018 |  | 0.021\*\*\* | 0.022\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2019 |  | 0.021\*\*\* | 0.022\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2020 |  | 0.017\*\*\* | 0.018\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2021 |  | 0.017\*\*\* | 0.018\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2022 |  | 0.017\*\*\* | 0.018\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Constant | 0.263\*\*\* |  |  | 0.402\*\*\* |  |  | 0.381\*\*\* |
|  | (0.02) |  |  | (0.02) |  |  | (0.02) |
| Num.Obs. | 1034 | 1034 | 1034 | 375 | 375 | 375 | 94 |
| R2 | 0.535 | 0.992 | 0.992 | 0.611 | 0.998 | 0.998 | 0.542 |
| R2 Adj. | 0.534 | 0.990 | 0.990 | 0.610 | 0.997 | 0.997 | 0.537 |
| R2 Within |  | 0.217 | 0.219 |  | 0.408 | 0.421 |  |
| R2 Within Adj. |  | 0.210 | 0.208 |  | 0.397 | 0.399 |  |
| AIC | -1838.6 | -5683.6 | -5676.9 | -713.2 | -2466.1 | -2464.7 | -188.2 |
| BIC | -1828.7 | -4902.8 | -4871.5 | -705.3 | -2042.0 | -2020.9 | -183.1 |
| 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 = 1034  
  
Effects:  
 var std.dev share  
idiosyncratic 0.0002594 0.0161071 0.032  
individual 0.0077326 0.0879353 0.968  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8198 0.9309 0.9309 0.9304 0.9309 0.9309   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.083119 -0.009711 -0.000878 0.000065 0.009943 0.103417   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 5.4451e-01 8.8405e-03 61.5932 < 2.2e-16 \*\*\*  
ODIN\_score 4.8490e-04 8.0145e-05 6.0504 1.445e-09 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.34227  
Residual Sum of Squares: 0.32748  
R-Squared: 0.044274  
Adj. R-Squared: 0.043348  
Chisq: 36.6072 on 1 DF, p-value: 1.445e-09

[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 = 103, T = 1-5, N = 375  
  
Effects:  
 var std.dev share  
idiosyncratic 0.0001062 0.0103056 0.014  
individual 0.0076686 0.0875707 0.986  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8831 0.9413 0.9413 0.9398 0.9474 0.9474   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.030179 -0.008626 0.000097 0.000300 0.007549 0.102398   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 0.56603977 0.01093616 51.7586 < 2.2e-16 \*\*\*  
odb 0.00036770 0.00010483 3.5075 0.0004523 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.070469  
Residual Sum of Squares: 0.057377  
R-Squared: 0.19666  
Adj. R-Squared: 0.19451  
Chisq: 12.3028 on 1 DF, p-value: 0.00045229

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

## Table A.25. 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 | 0.321\*\*\* | -0.027 | -0.023 |  |  |  |  |
|  | (0.06) | (0.03) | (0.03) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.366\*\*\* | 0.000 | 0.000 |  |
|  |  |  |  | (0.05) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.398\*\*\* |
|  |  |  |  |  |  |  | (0.06) |
| Trade (% of GDP) |  |  | 0.016 |  |  | 0.000 |  |
|  |  |  | (0.02) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.042 |  |  | 0.000 |  |
|  |  |  | (0.16) |  |  | (0.00) |  |
| Manufacturing value added (% of GDP) |  |  | -0.138 |  |  | 0.000 |  |
|  |  |  | (0.18) |  |  | (0.00) |  |
| School Enrollment, Primary (% gross) |  |  | 0.026 |  |  | 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 |  | -0.006 | -0.201\*\* |  | 0.000 | 0.000 |  |
|  |  | (0.05) | (0.09) |  | (0.00) | (0.00) |  |
| Year 2018 |  | 0.120 | -0.276 |  |  |  |  |
|  |  | (0.20) | (0.25) |  |  |  |  |
| Year 2019 |  | -0.152 | -0.678\*\* |  |  |  |  |
|  |  | (0.27) | (0.33) |  |  |  |  |
| Year 2020 |  | 0.064 | 0.035 |  |  |  |  |
|  |  | (0.44) | (0.43) |  |  |  |  |
| Year 2021 |  | -0.319 | -0.746 |  |  |  |  |
|  |  | (0.46) | (0.47) |  |  |  |  |
| Year 2022 |  | -7.206\*\*\* | -7.935\*\*\* |  |  |  |  |
|  |  | (0.77) | (0.82) |  |  |  |  |
| Constant | 49.540\*\*\* |  |  | 55.428\*\*\* |  |  | 52.690\*\*\* |
|  | (3.05) |  |  | (2.47) |  |  | (2.73) |
| Num.Obs. | 1052 | 1052 | 1052 | 376 | 376 | 376 | 96 |
| R2 | 0.127 | 0.957 | 0.958 | 0.278 | 1.000 | 1.000 | 0.194 |
| R2 Adj. | 0.126 | 0.949 | 0.950 | 0.276 | 1.000 | 1.000 | 0.185 |
| R2 Within |  | 0.403 | 0.415 |  | 0.000 | 0.000 |  |
| R2 Within Adj. |  | 0.399 | 0.407 |  | -0.019 | -0.038 |  |
| AIC | 8554.3 | 5709.5 | 5699.4 | 2992.2 | -24316.7 | -24306.7 | 767.8 |
| BIC | 8564.2 | 6502.9 | 6517.5 | 3000.0 | -23888.4 | -23858.7 | 772.9 |
| RMSE | 14.08 | 3.13 | 3.11 | 12.87 | 0.00 | 0.00 | 12.92 |
| 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=4.28. sigma\_u=13.05"

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 = 153, T = 1-7, N = 1052  
  
Effects:  
 var std.dev share  
idiosyncratic 18.277 4.275 0.097  
individual 170.405 13.054 0.903  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.6888 0.8772 0.8772 0.8764 0.8772 0.8772   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-27.7428 -1.0642 1.0648 0.0133 2.5798 11.3278   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 69.846214 1.430316 48.8327 < 2.2e-16 \*\*\*  
ODIN\_score -0.096908 0.018920 -5.1219 3.025e-07 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 20831  
Residual Sum of Squares: 20222  
R-Squared: 0.029973  
Adj. R-Squared: 0.029049  
Chisq: 26.2338 on 1 DF, p-value: 3.0248e-07

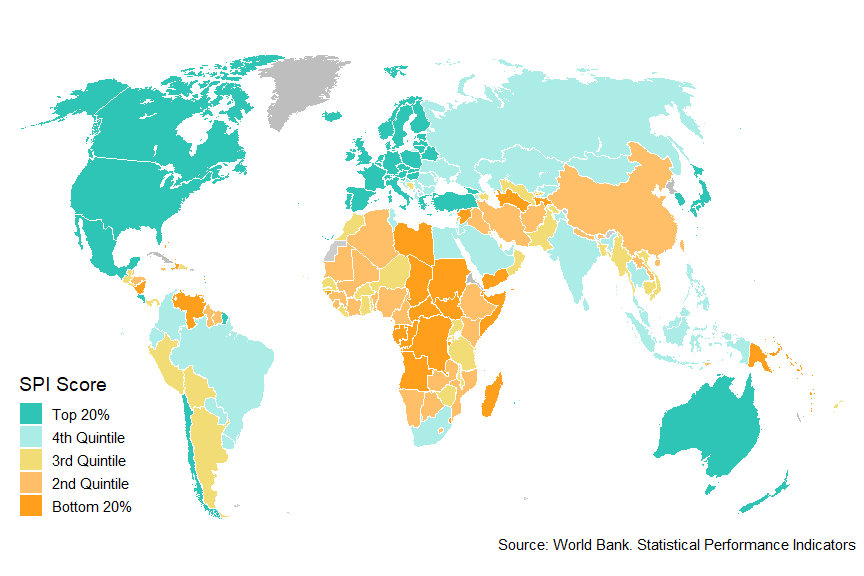
[1] "ODIN Model 3: sigma\_e=4.21. sigma\_u=12.22"

[1] "ODB Model 2: sigma\_e=0. sigma\_u=12.81"

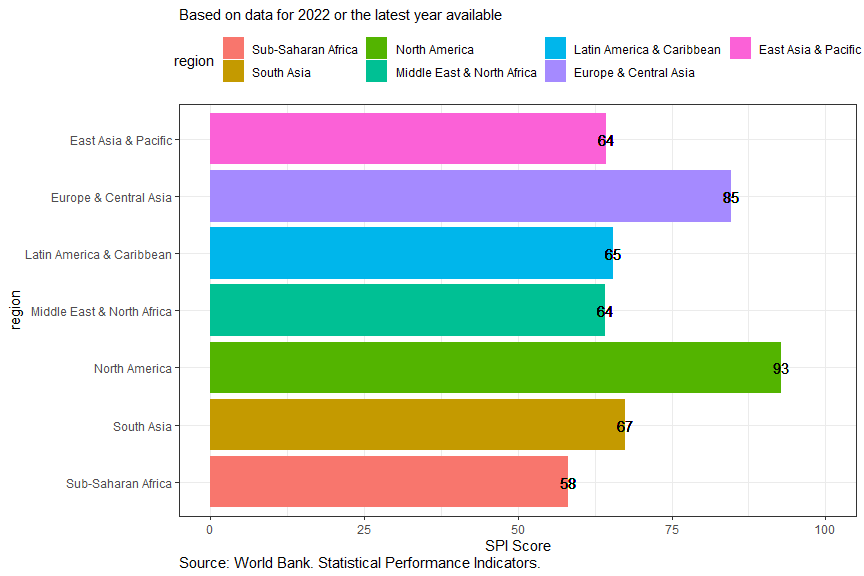
[1] "ODB Model 3: sigma\_e=0. sigma\_u=12.42"

## Figure A.1. SPI Score, by Region and Income

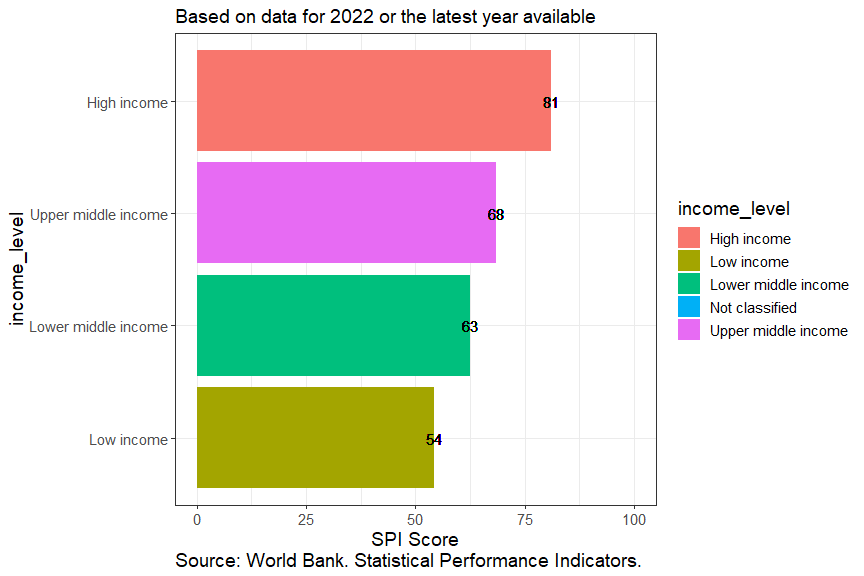
Panel A. SPI Overall Score



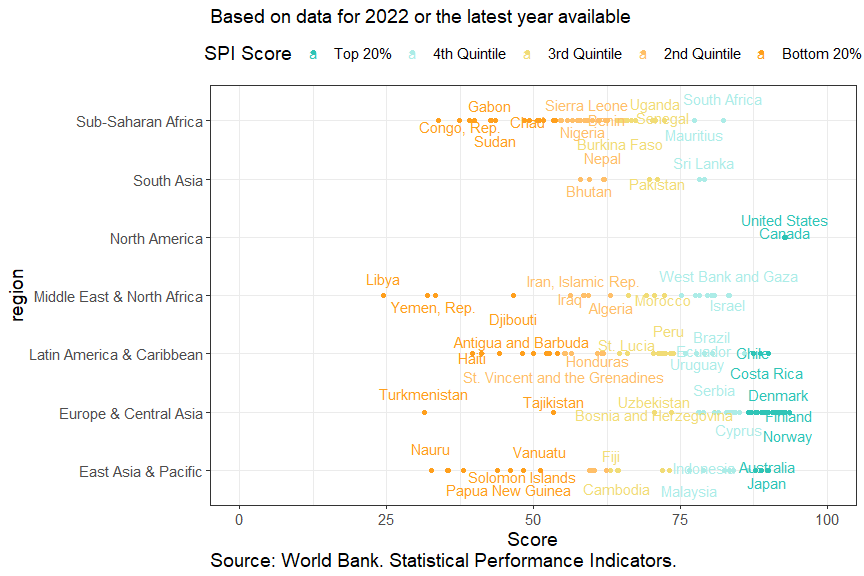
Panel B. SPI Overall Score by Region



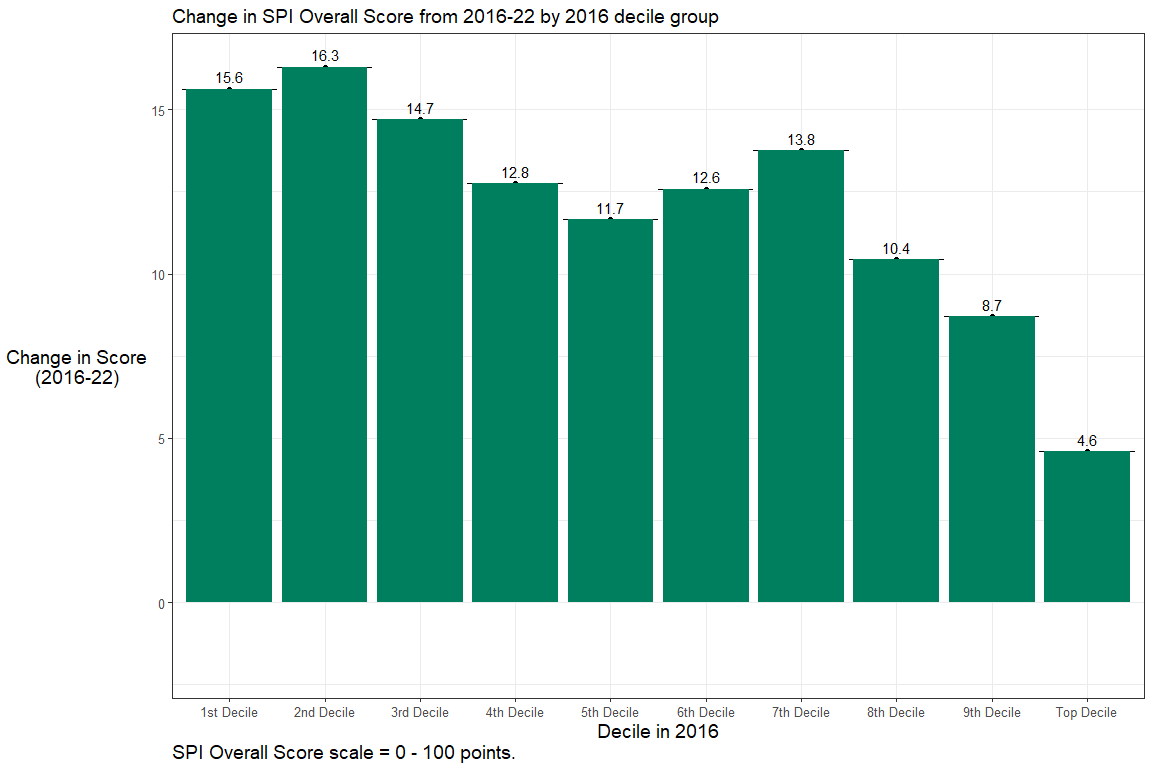
Panel C. SPI Overall Score by Income Levels



## Figure A.2. SPI Overall Score by Country within Each Region



## Figure A.3. Changes with the SPI Overall Score between 2016 and 2022



## Table B.1: Comparing the SPIs and the SCI

Table produced using Microsoft Word.

## Figure B.1: Volatility of SPI and SCI Scores between 2016 and 2020

