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

Brian Stacy

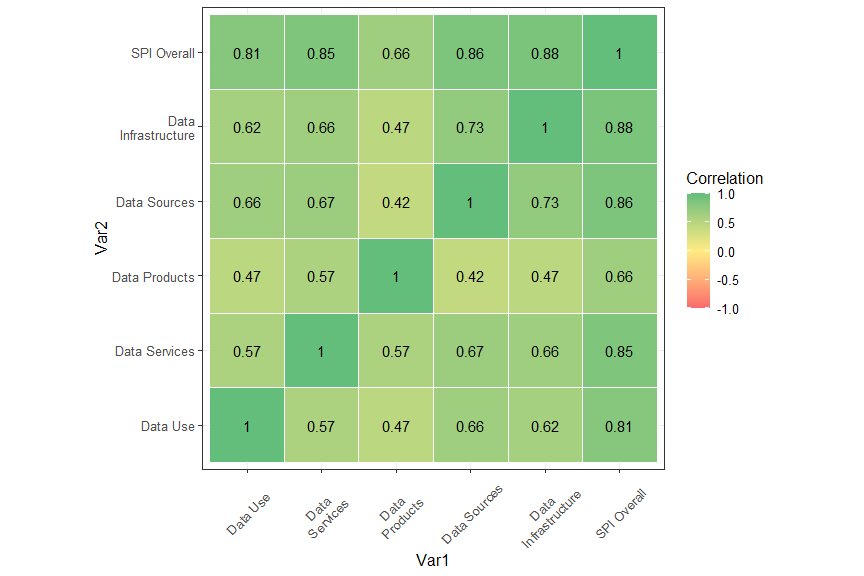
2023-08-16

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

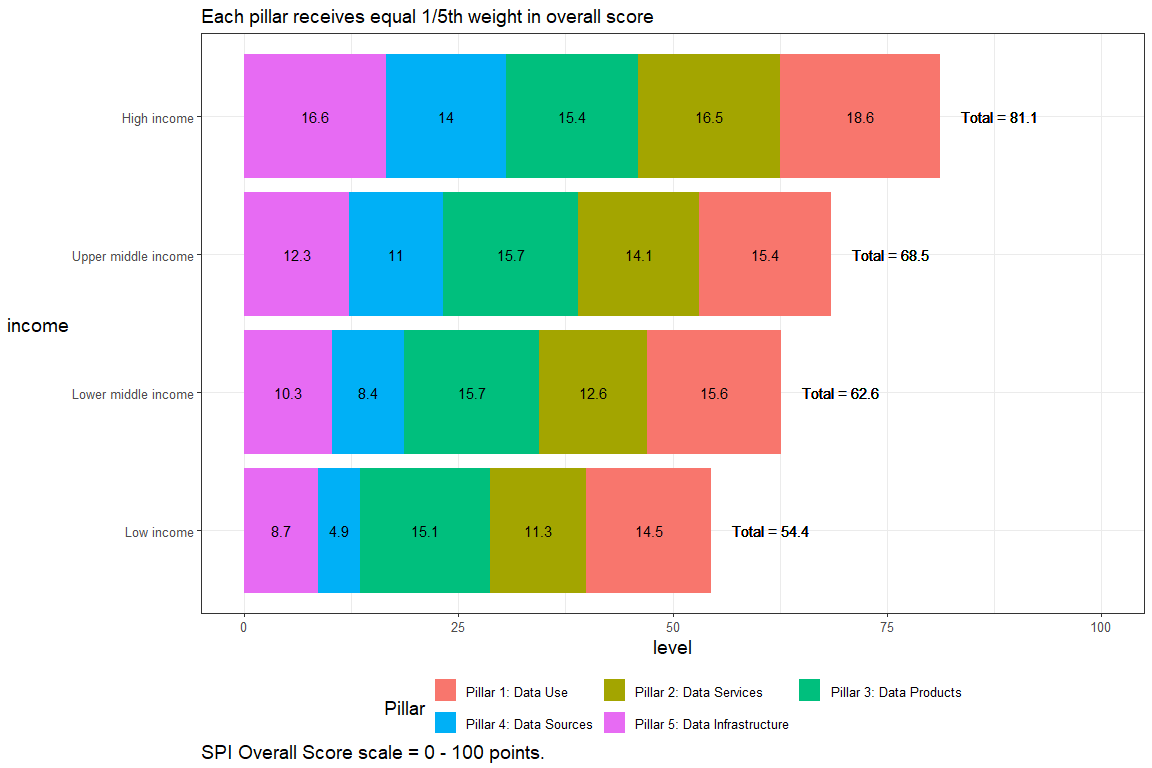
Figure produced using Microsoft Powerpoint. Figure reproduced below.

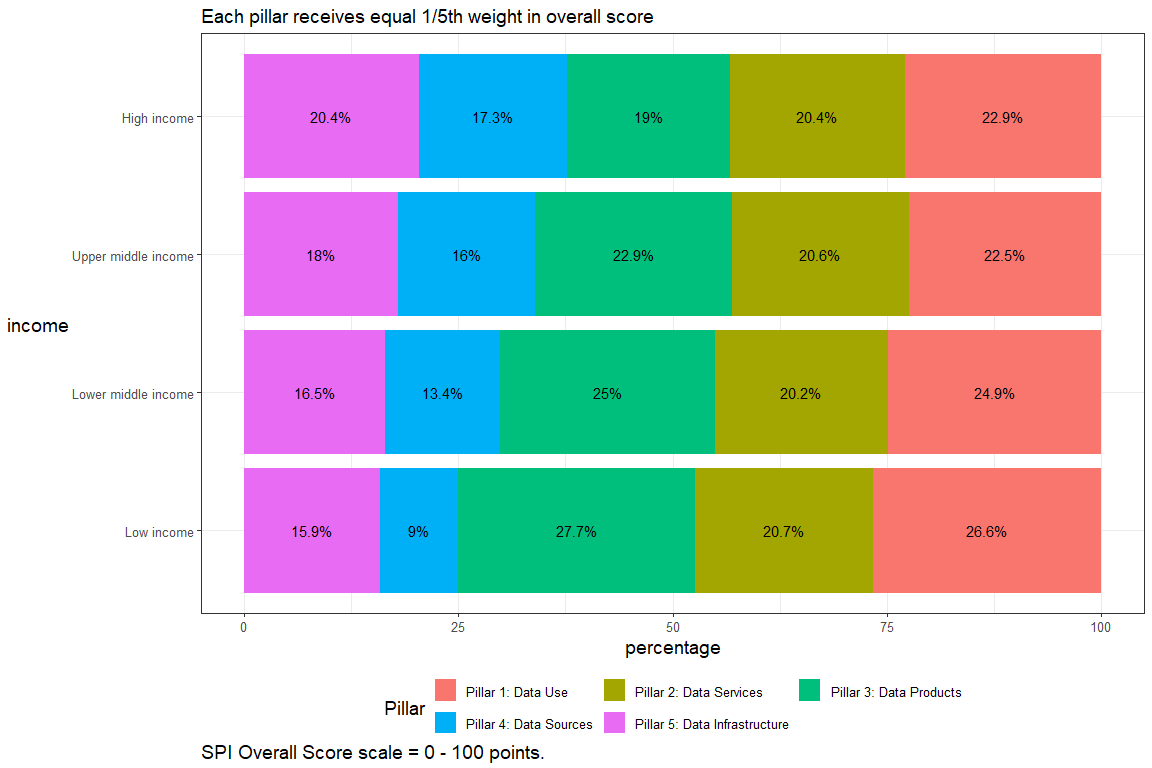


## Figure M.2. Correlation between the SPI Pillars



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

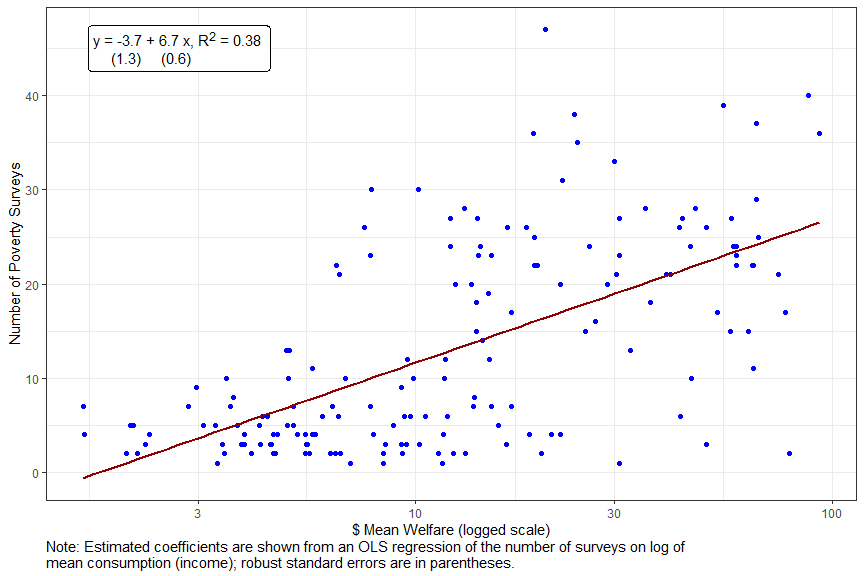




## Table 1. Comparing the SPI and Other Data and Statistics Indexes

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.

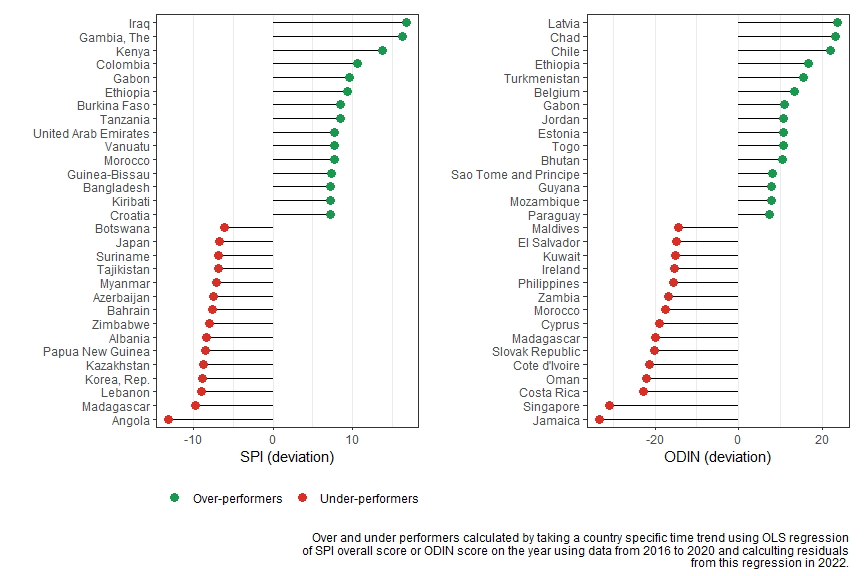
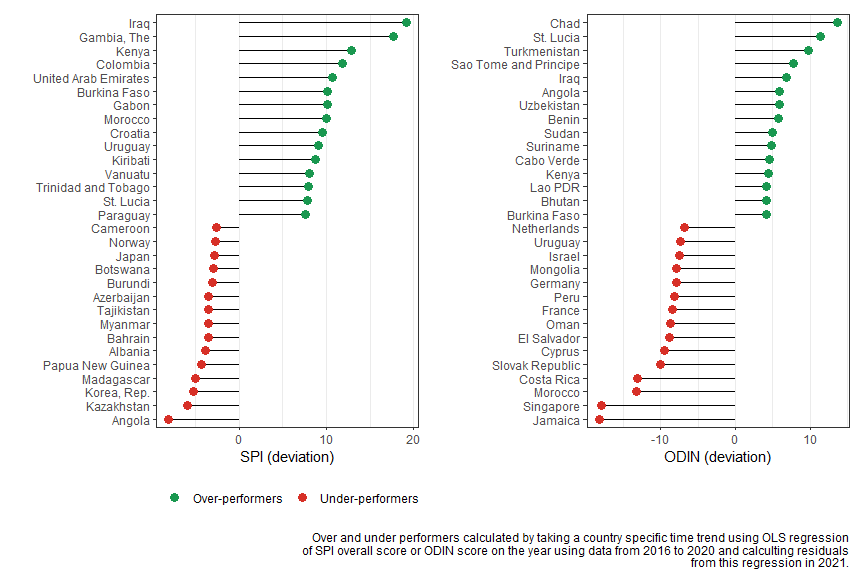


Figure. Over/Under-Performers in 2021 for SPI and ODIN overall scores compared to 5 year country trends.



| 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 |
| Kenya | 12.8 | Turkmenistan | 9.8 |
| Colombia | 11.9 | Sao Tome and Principe | 7.7 |
| United Arab Emirates | 10.7 | Iraq | 6.8 |
| Burkina Faso | 10.1 | Angola | 5.9 |
| Gabon | 10.1 | Uzbekistan | 5.8 |
| Morocco | 10.1 | Benin | 5.8 |
| Croatia | 9.5 | Sudan | 5.0 |
| Uruguay | 9.0 | Suriname | 4.8 |
| Kiribati | 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 |
| Cameroon | -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] 3.969422

[1] 6.958049

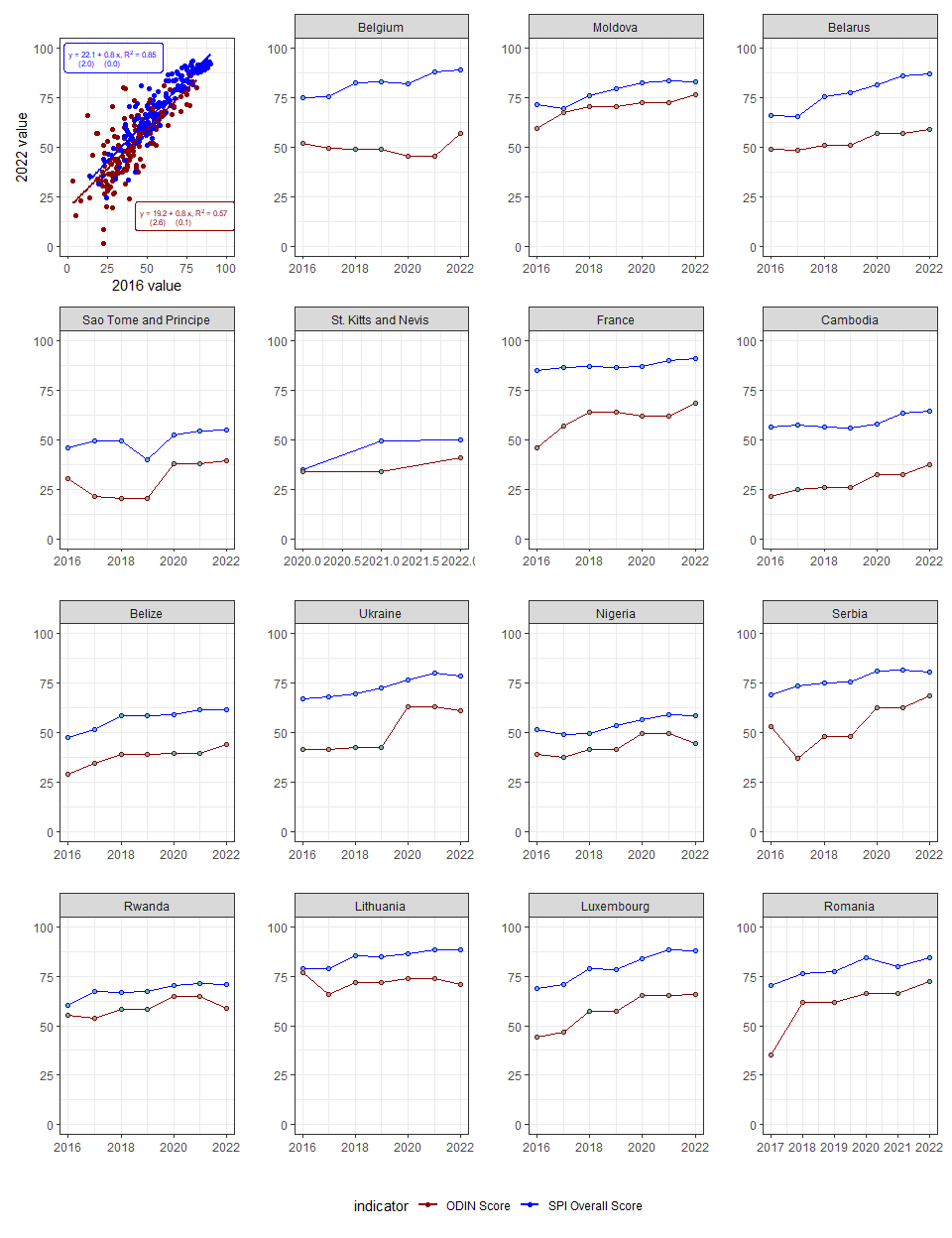
[1] 0.1759698

Movement between quintiles

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

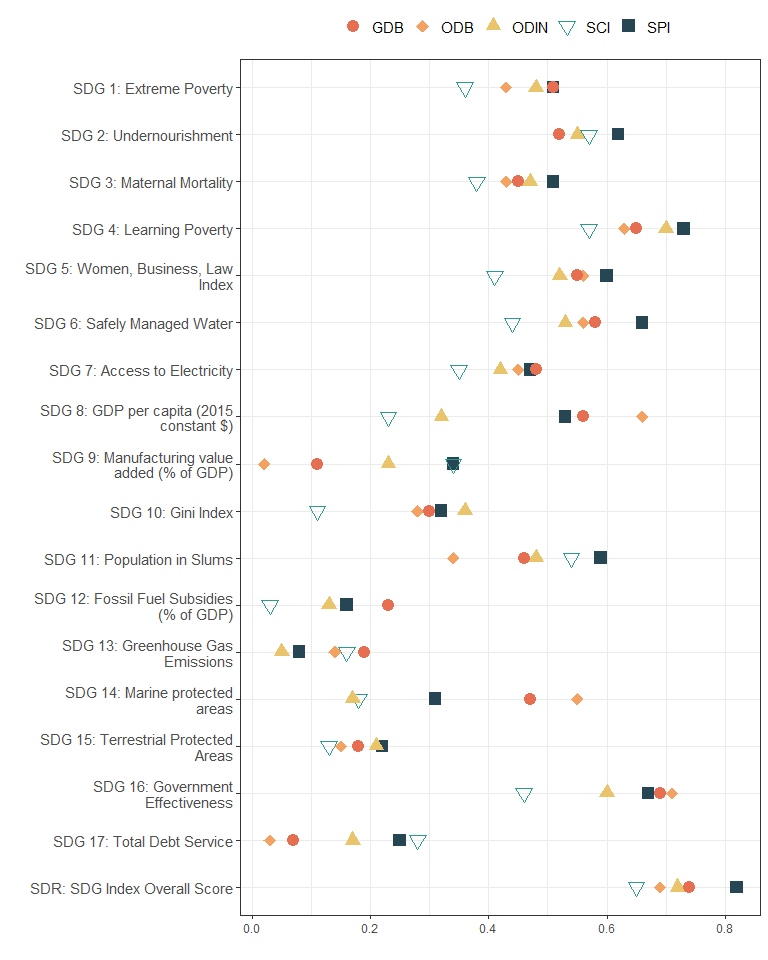
| Country | 2016 SPI overall score | 2022 SPI overall score | 2016 ODIN overall score | 2022 ODIN overall score |
| --- | --- | --- | --- | --- |
| Morocco | 3 | 3 | 2 | 5 |
| Jamaica | 2 | 2 | 1 | 4 |
| Afghanistan | 1 | 2 | 3 | 1 |
| Costa Rica | 4 | 5 | 1 | 4 |
| Iceland | 4 | 5 | 4 | 3 |
| North 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 |
| Kenya | 3 | 3 | 4 | 2 |
| Liberia | 2 | 3 | 3 | 2 |
| Fiji | 3 | 2 | 1 | 2 |
| Benin | 2 | 2 | 1 | 3 |
| Lao PDR | 2 | 2 | 1 | 3 |
| Mali | 2 | 2 | 4 | 2 |

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

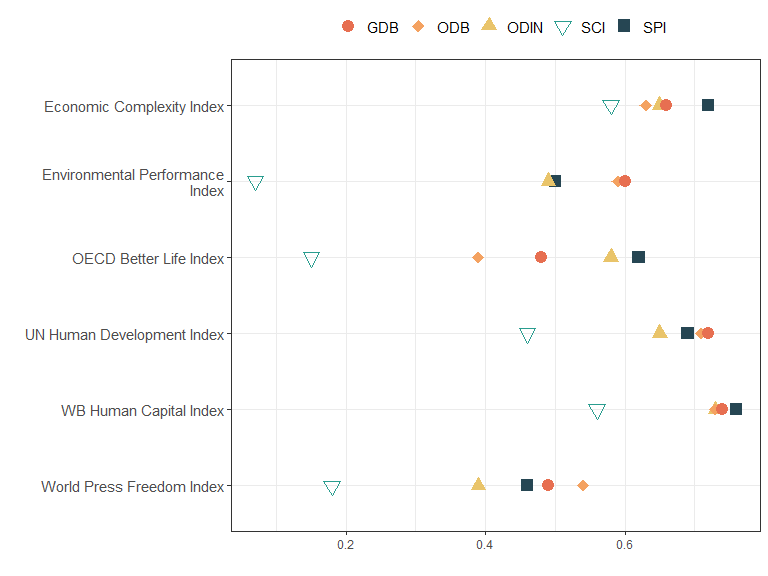


[1] 5.012917

## 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 |
| United Arab Emirates | 79.5 | 100.0 | 79.6 | 71.2 | 67.0 | 80 |
| 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 |
| 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 |
| 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 |
| India | 74.2 | 80.0 | 87.7 | 86.3 | 62.0 | 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 |
| 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 |
| Viet Nam | 72.2 | 100.0 | 69.3 | 77.2 | 74.2 | 40 |
| 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 |
| Kenya | 66.3 | 90.0 | 60.1 | 76.6 | 34.9 | 70 |
| 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 |
| Cote d'Ivoire | 62.2 | 80.0 | 57.7 | 79.1 | 29.4 | 65 |
| Zambia | 62.1 | 90.0 | 60.4 | 86.7 | 28.5 | 45 |
| 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 |
| 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 |
| Mozambique | 58.7 | 70.0 | 59.7 | 76.5 | 32.2 | 55 |
| 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 |
| 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 | -0.51\*\*\* | -0.43\*\*\* | -0.48\*\*\* | -0.36\*\*\* | -0.51\*\*\* |
| SDG 2: Undernourishment | -0.52\*\*\* | -0.52\*\*\* | -0.55\*\*\* | -0.57\*\*\* | -0.62\*\*\* |
| SDG 3: Maternal Mortality | -0.45\*\*\* | -0.43\*\*\* | -0.47\*\*\* | -0.38\*\*\* | -0.51\*\*\* |
| SDG 4: Learning Poverty | -0.65\*\*\* | -0.63\*\*\* | -0.7\*\*\* | -0.57\*\*\* | -0.73\*\*\* |
| SDG 5: Women, Business, Law Index | 0.55\*\*\* | 0.56\*\*\* | 0.52\*\*\* | 0.41\*\*\* | 0.6\*\*\* |
| SDG 6: Safely Managed Water | 0.58\*\*\* | 0.56\*\*\* | 0.53\*\*\* | 0.44\*\*\* | 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\*\*\* | 0.32\*\*\* | 0.23\*\*\* | 0.53\*\*\* |
| SDG 9: Manufacturing value added (% of GDP) | 0.11\*\* | -0.02 | 0.23\*\*\* | 0.34\*\*\* | 0.34\*\*\* |
| SDG 10: Gini Index | -0.3\*\*\* | -0.28\*\*\* | -0.36\*\*\* | -0.11\*\* | -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\*\*\* | 0.6\*\*\* | 0.46\*\*\* | 0.67\*\*\* |
| SDG 17: Total Debt Service | 0.07 | 0.03 | 0.17\* | 0.28\*\*\* | 0.25\*\*\* |
| 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 |  | GDB | ODB | ODIN |  |
| 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 | SPI | GDB |  |  |  | GDB |  | SCI | SPI | GDB |  | ODIN | SPI | GDB |  | 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 | SCI | SPI |  |  | ODIN |  | 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 | -0.51\*\*\* | | | | -0.43\*\*\* | | | | -0.48\*\*\* | | | | -0.36\*\*\* | | | | -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 | -0.52\*\*\* | | | | -0.52\*\*\* | | | | -0.55\*\*\* | | | | -0.57\*\*\* | | | | -0.62\*\*\* | | | |
| 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 | -0.65\*\*\* | | | | -0.63\*\*\* | | | | -0.7\*\*\* | | | | -0.57\*\*\* | | | | -0.73\*\*\* | | | |
| 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 | 0.58\*\*\* | | | | 0.56\*\*\* | | | | 0.53\*\*\* | | | | 0.44\*\*\* | | | | 0.66\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB | ODIN | SCI | SPI | GDB | ODB | SCI | SPI | GDB | ODB | ODIN |  | GDB | ODB | ODIN |  |
| 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\*\*\* | | | | 0.32\*\*\* | | | | 0.23\*\*\* | | | | 0.53\*\*\* | | | |
| ODB |  |  | SPI | GDB |  |  | SPI |  |  | SCI |  |  |  | ODIN |  | GDB | ODB |  |  |
| SDG 9: Manufacturing value added (% of GDP) | 0.11\*\* | | | | -0.02 | | | | 0.23\*\*\* | | | | 0.34\*\*\* | | | | 0.34\*\*\* | | | |
| ODB | ODIN | SCI | SPI | GDB |  |  |  | GDB |  | SCI | SPI | GDB |  | ODIN | SPI | GDB |  | ODIN | SCI |
| SDG 10: Gini Index | -0.3\*\*\* | | | | -0.28\*\*\* | | | | -0.36\*\*\* | | | | -0.11\*\* | | | | -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\*\*\* | | | | 0.6\*\*\* | | | | 0.46\*\*\* | | | | 0.67\*\*\* | | | |
| ODB | ODIN |  | SPI | GDB | ODIN |  | SPI | GDB | ODB | SCI | SPI |  |  | ODIN |  | GDB | ODB | ODIN |  |
| SDG 17: Total Debt Service | 0.07 | | | | 0.03 | | | | 0.17\* | | | | 0.28\*\*\* | | | | 0.25\*\*\* | | | |
| 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 | -0.51\*\*\* | ODB, ODIN, SCI, SPI | -0.43\*\*\* | GDB, ODIN, SCI, SPI | -0.48\*\*\* | GDB, ODB, SCI, SPI | -0.36\*\*\* | GDB, ODB, ODIN, | -0.51\*\*\* | GDB, ODB, ODIN, |
| SDG 2: Undernourishment | -0.52\*\*\* | ODB, ODIN, SCI, SPI | -0.52\*\*\* | GDB, ODIN, SCI, SPI | -0.55\*\*\* | GDB, ODB, SCI, | -0.57\*\*\* | GDB, ODB, ODIN, SPI | -0.62\*\*\* | GDB, ODB SCI |
| SDG 3: Maternal Mortality | -0.45\*\*\* | ODB, ODIN, SCI, SPI | -0.43\*\*\* | GDB, ODIN, SCI, SPI | -0.47\*\*\* | GDB, ODB, SCI, SPI | -0.38\*\*\* | GDB, ODB, ODIN, | -0.51\*\*\* | GDB, ODB, ODIN, |
| SDG 4: Learning Poverty | -0.65\*\*\* | ODB, ODIN, SCI, SPI | -0.63\*\*\* | GDB, ODIN, SCI, SPI | -0.7\*\*\* | GDB, ODB, SCI, SPI | -0.57\*\*\* | GDB, ODB, ODIN, | -0.73\*\*\* | GDB, ODB, 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 | 0.58\*\*\* | ODB, ODIN, SCI, SPI | 0.56\*\*\* | GDB, ODIN, SCI, SPI | 0.53\*\*\* | GDB, ODB, SCI, | 0.44\*\*\* | 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\*\*\* | , | 0.32\*\*\* | SCI, | 0.23\*\*\* | ODIN, | 0.53\*\*\* | GDB , |
| SDG 9: Manufacturing value added (% of GDP) | 0.11\*\* | , ODIN | -0.02 | , | 0.23\*\*\* | GDB SCI, | 0.34\*\*\* | ODIN, SPI | 0.34\*\*\* | , SCI |
| SDG 10: Gini Index | -0.3\*\*\* | ODB, ODIN SPI | -0.28\*\*\* | GDB, ODIN, SCI, SPI | -0.36\*\*\* | GDB, ODB SPI | -0.11\*\* | , 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 | 0.6\*\*\* | GDB, ODB | 0.46\*\*\* | , | 0.67\*\*\* | GDB, ODB |
| SDG 17: Total Debt Service | 0.07 | ODB, ODIN, SCI, | 0.03 | GDB, ODIN | 0.17\* | GDB, ODB, SCI, SPI | 0.28\*\*\* | GDB ODIN, SPI | 0.25\*\*\* | 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\*\* | 0.5\*\*\* |
| 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\*\*\* | 0.73\*\*\* | 0.73\*\*\* | 0.56\*\*\* | 0.76\*\*\* |
| World Press Freedom Index | 0.49\*\*\* | 0.54\*\*\* | 0.39\*\*\* | 0.18\*\* | 0.46\*\*\* |
| 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\*\* | | | | 0.5\*\*\* | | | |
| 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\*\*\* | | | | 0.73\*\*\* | | | | 0.73\*\*\* | | | | 0.56\*\*\* | | | | 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\*\* | | | | 0.46\*\*\* | | | |
| 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 SPI | 0.59\*\*\* | GDB, ODIN SPI | 0.49\*\*\* | GDB, ODB SPI | 0.07\*\* | , | 0.5\*\*\* | GDB, ODB, ODIN, |
| OECD Better Life Index | 0.48\*\*\* | ODB, ODIN, SCI, SPI | 0.39\*\* | GDB, ODIN, SCI, | 0.58\*\*\* | GDB, ODB, SCI, SPI | 0.15 | GDB, ODB, ODIN, | 0.62\*\*\* | 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 | 0.73\*\*\* | GDB, ODIN SPI | 0.73\*\*\* | GDB, ODB SPI | 0.56\*\*\* | , | 0.76\*\*\* | GDB, ODB, ODIN, |
| World Press Freedom Index | 0.49\*\*\* | ODB, ODIN SPI | 0.54\*\*\* | GDB , SPI | 0.39\*\*\* | GDB , SPI | 0.18\*\* | , | 0.46\*\*\* | 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\*\*\* | 0.396\*\*\* | 0.277\*\*\* | 0.006\*\*\* | 0.007\*\*\* | 0.474\*\*\* |
|  | (0.01) | (0.06) | (0.05) | (0.00) | (0.00) | (0.07) |
| SPI-SCI | -0.019\*\*\* | -0.353\*\*\* | -0.239\*\*\* | -0.003\*\*\* | -0.003\*\*\* | -0.311\*\*\* |
|  | (0.00) | (0.05) | (0.07) | (0.00) | (0.00) | (0.08) |
| SPI-ODIN | -0.009\*\* | -0.041 | -0.199\*\*\* | -0.001 | -0.001\* | -0.092\* |
|  | (0.00) | (0.03) | (0.05) | (0.00) | (0.00) | (0.05) |
| SPI-ODB | -0.014\*\* | 0.056 | -0.238\*\*\* | 0.000 | -0.001 | 0.060 |
|  | (0.01) | (0.06) | (0.05) | (0.00) | (0.00) | (0.08) |
| SPI-GDB | -0.011\*\* | 0.082 | -0.213\*\*\* | 0.000 | -0.001 | 0.030 |
|  | (0.01) | (0.06) | (0.05) | (0.00) | (0.00) | (0.07) |
| Num.Obs. | 556 | 704 | 159 | 733 | 668 | 692 |
| R2 | 0.459 | 0.280 | 0.343 | 0.462 | 0.544 | 0.199 |
| R2 Adj. | 0.450 | 0.271 | 0.303 | 0.456 | 0.538 | 0.189 |
| AIC | 1196.5 | 5293.1 | 513.3 | -1184.9 | -1292.4 | 5697.7 |
| BIC | 1239.7 | 5338.7 | 544.0 | -1138.9 | -1247.3 | 5743.1 |
| 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 | 0.052\*\*\* | 0.000 | 0.000 |  |  |  |
|  | (0.01) | (0.00) | (0.00) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | -0.005 | -0.001 | -0.001\* |
|  |  |  |  | (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) |  |  |  | -0.038\*\*\* | 0.000 | 0.000 |
|  |  |  |  | (0.01) | (0.00) | (0.00) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.042\*\*\* | 0.002\*\* | 0.001\*\* |
|  |  |  |  | (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) |  |  | -0.005 |  |  | -0.005 |
|  |  |  | (0.00) |  |  | (0.00) |
| Manufacturing value added (% of GDP) |  |  | -0.001 |  |  | -0.001 |
|  |  |  | (0.00) |  |  | (0.00) |
| School Enrollment, Primary (% gross) |  |  | 0.001 |  |  | 0.001 |
|  |  |  | (0.00) |  |  | (0.00) |
| WGI Index |  |  | 0.073\* |  |  | 0.081\*\* |
|  |  |  | (0.04) |  |  | (0.04) |
| Year 2017 |  | 0.019\*\*\* | 0.017\*\*\* |  | 0.023\*\*\* | 0.020\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2018 |  | 0.039\*\*\* | 0.033\*\*\* |  | 0.044\*\*\* | 0.039\*\*\* |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2019 |  | 0.057\*\*\* | 0.051\*\*\* |  | 0.063\*\*\* | 0.057\*\*\* |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2020 |  | 0.003 | 0.011 |  | 0.004 | 0.012 |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2021 |  | 0.043\*\*\* | 0.042\*\*\* |  | 0.042\*\* | 0.039\*\* |
|  |  | (0.02) | (0.01) |  | (0.02) | (0.02) |
| Year 2022 |  | 0.069\*\*\* | 0.057\*\*\* |  | 0.070\*\*\* | 0.055\*\*\* |
|  |  | (0.02) | (0.02) |  | (0.02) | (0.02) |
| Constant | 5.222\*\*\* |  |  | 8.267\*\*\* |  |  |
|  | (0.37) |  |  | (0.35) |  |  |
| N | 1099 | 1099 | 1099 | 1099 | 1099 | 1099 |
| R<sup>2</sup> | 0.384 | 0.999 | 0.999 | 0.662 | 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=1.07"

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 = 160, T = 2-7, N = 1099  
  
Effects:  
 var std.dev share  
idiosyncratic 0.00355 0.05958 0.003  
individual 1.15014 1.07245 0.997  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9607 0.9790 0.9790 0.9789 0.9790 0.9790   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.293944 -0.036174 0.005757 -0.000106 0.040917 0.275010   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 8.50401575 0.09194990 92.4853 < 2.2e-16 \*\*\*  
SPI.INDEX 0.00297651 0.00037237 7.9934 1.313e-15 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 4.707  
Residual Sum of Squares: 4.246  
R-Squared: 0.098171  
Adj. R-Squared: 0.097349  
Chisq: 63.8946 on 1 DF, p-value: 1.3126e-15

[1] "Model 3: sigma\_e=0.06. sigma\_u=0.53"

[1] "Model 5: sigma\_e=0.06. sigma\_u=0.78"

[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 | 0.031\*\*\* | 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) |  |  |  | -0.019\*\*\* | 0.002\* | 0.002\* |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.019\*\*\* | -0.001 | -0.001 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.011\*\*\* | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| Log GDP per capita (constant 2015 US$) |  |  | 0.132\*\* |  |  | 0.149\*\* |
|  |  |  | (0.07) |  |  | (0.07) |
| Trade (% of GDP) |  |  | 0.000 |  |  | 0.000 |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.007\*\*\* |  |  | -0.007\*\*\* |
|  |  |  | (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 |  | -0.007 | -0.009 |  | -0.013\*\* | -0.016\*\* |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2018 |  | -0.012 | -0.021\*\* |  | -0.019\* | -0.030\*\*\* |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2019 |  | -0.011 | -0.023\* |  | -0.014 | -0.028\*\* |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2020 |  | -0.018 | -0.019 |  | -0.029\* | -0.030\*\* |
|  |  | (0.01) | (0.01) |  | (0.01) | (0.01) |
| Year 2021 |  | -0.025 | -0.031\* |  | -0.042\* | -0.050\*\* |
|  |  | (0.02) | (0.02) |  | (0.02) | (0.02) |
| Year 2022 |  | -0.027 | -0.037\*\* |  | -0.044\* | -0.057\*\* |
|  |  | (0.02) | (0.02) |  | (0.02) | (0.02) |
| Constant | -2.008\*\*\* |  |  | -0.412 |  |  |
|  | (0.26) |  |  | (0.32) |  |  |
| Num.Obs. | 1099 | 1099 | 1099 | 1099 | 1099 | 1099 |
| R2 | 0.355 | 0.994 | 0.994 | 0.528 | 0.994 | 0.994 |
| R2 Adj. | 0.354 | 0.993 | 0.993 | 0.526 | 0.993 | 0.993 |
| R2 Within |  | 0.009 | 0.038 |  | 0.024 | 0.055 |
| R2 Within Adj. |  | 0.002 | 0.026 |  | 0.012 | 0.039 |
| AIC | 2280.9 | -2499.0 | -2522.0 | 1945.8 | -2507.1 | -2533.1 |
| BIC | 2290.9 | -1663.7 | -1661.7 | 1975.8 | -1651.7 | -1652.8 |
| RMSE | 0.68 | 0.07 | 0.07 | 0.58 | 0.07 | 0.07 |
| 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=0.66"

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 = 160, T = 2-7, N = 1099  
  
Effects:  
 var std.dev share  
idiosyncratic 0.005243 0.072409 0.012  
individual 0.440320 0.663566 0.988  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9231 0.9588 0.9588 0.9585 0.9588 0.9588   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.38411 -0.04534 0.00087 0.00000 0.04789 0.24205   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) -0.06529405 0.06231259 -1.0478 0.294709   
SPI.INDEX 0.00124338 0.00044862 2.7716 0.005579 \*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 6.2844  
Residual Sum of Squares: 6.2407  
R-Squared: 0.0069574  
Adj. R-Squared: 0.0060522  
Chisq: 7.68162 on 1 DF, p-value: 0.0055786

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

[1] "Model 5: sigma\_e=0.07. sigma\_u=0.57"

[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 | 0.047\*\*\* | 0.005 | 0.004 |  |  |  |
|  | (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) |  |  |  | 0.003 | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.013\*\*\* | 0.005\*\* | 0.004\*\* |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.022\*\*\* | 0.004\*\* | 0.004\*\* |
|  |  |  |  | (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$) |  |  | 0.169 |  |  | 0.087 |
|  |  |  | (0.22) |  |  | (0.22) |
| Trade (% of GDP) |  |  | 0.001 |  |  | 0.000 |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.015 |  |  | -0.015 |
|  |  |  | (0.02) |  |  | (0.02) |
| Manufacturing value added (% of GDP) |  |  | 0.019\*\*\* |  |  | 0.019\*\*\* |
|  |  |  | (0.01) |  |  | (0.01) |
| School Enrollment, Primary (% gross) |  |  | 0.000 |  |  | 0.000 |
|  |  |  | (0.00) |  |  | (0.00) |
| Year 2017 |  | -0.016 | -0.019 |  | -0.015 | -0.013 |
|  |  | (0.01) | (0.02) |  | (0.01) | (0.02) |
| Year 2018 |  | -0.024 | -0.033 |  | -0.018 | -0.018 |
|  |  | (0.03) | (0.03) |  | (0.02) | (0.03) |
| Year 2019 |  | -0.026 | -0.036 |  | -0.008 | -0.011 |
|  |  | (0.02) | (0.03) |  | (0.02) | (0.03) |
| Year 2020 |  | -0.035 | -0.025 |  | -0.048 | -0.031 |
|  |  | (0.03) | (0.03) |  | (0.03) | (0.03) |
| Year 2021 |  | -0.064 | -0.069 |  | -0.108\*\* | -0.100\*\* |
|  |  | (0.04) | (0.04) |  | (0.04) | (0.05) |
| Year 2022 |  | -0.065 | -0.085 |  | -0.105\*\* | -0.109\*\* |
|  |  | (0.04) | (0.05) |  | (0.04) | (0.05) |
| Constant | -3.257\*\*\* |  |  | -1.772\*\*\* |  |  |
|  | (0.24) |  |  | (0.35) |  |  |
| Num.Obs. | 826 | 826 | 826 | 826 | 826 | 826 |
| R2 | 0.493 | 0.982 | 0.982 | 0.598 | 0.982 | 0.983 |
| R2 Adj. | 0.492 | 0.978 | 0.979 | 0.596 | 0.979 | 0.979 |
| R2 Within |  | 0.012 | 0.046 |  | 0.044 | 0.073 |
| R2 Within Adj. |  | 0.002 | 0.030 |  | 0.029 | 0.052 |
| AIC | 1743.6 | -749.1 | -767.9 | 1559.4 | -767.8 | -783.9 |
| BIC | 1753.0 | -145.4 | -140.6 | 1587.7 | -145.2 | -137.7 |
| RMSE | 0.69 | 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 = 121, T = 2-7, N = 826  
  
Effects:  
 var std.dev share  
idiosyncratic 0.02055 0.14335 0.048  
individual 0.41087 0.64099 0.952  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8438 0.9158 0.9158 0.9150 0.9158 0.9158   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.76137 -0.07598 0.01477 -0.00082 0.09068 0.64513   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) -0.1674110 0.0994911 -1.6827 0.0924384 .   
SPI.INDEX 0.0041621 0.0010794 3.8559 0.0001153 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 20.118  
Residual Sum of Squares: 19.746  
R-Squared: 0.018529  
Adj. R-Squared: 0.017338  
Chisq: 14.8682 on 1 DF, p-value: 0.00011529

[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 | 0.498\*\*\* | -0.032 | -0.038 |  |  |  |
|  | (0.05) | (0.07) | (0.07) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | 0.011 | 0.040 | 0.044 |
|  |  |  |  | (0.04) | (0.03) | (0.03) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.073\*\* | 0.012 | 0.010 |
|  |  |  |  | (0.03) | (0.02) | (0.02) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.542\*\*\* | -0.003 | 0.005 |
|  |  |  |  | (0.04) | (0.06) | (0.06) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.309\*\*\* | -0.082 | -0.093 |
|  |  |  |  | (0.04) | (0.06) | (0.06) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.227\*\*\* | -0.036 | -0.034 |
|  |  |  |  | (0.03) | (0.03) | (0.03) |
| Log GDP per capita (constant 2015 US$) |  |  | 3.595 |  |  | 4.844 |
|  |  |  | (4.43) |  |  | (4.43) |
| Trade (% of GDP) |  |  | 0.030 |  |  | 0.030 |
|  |  |  | (0.02) |  |  | (0.03) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | 0.053 |  |  | 0.071 |
|  |  |  | (0.15) |  |  | (0.16) |
| Manufacturing value added (% of GDP) |  |  | -0.011 |  |  | -0.015 |
|  |  |  | (0.21) |  |  | (0.23) |
| School Enrollment, Primary (% gross) |  |  | -0.019 |  |  | -0.017 |
|  |  |  | (0.07) |  |  | (0.06) |
| Year 2017 |  | 0.076 | -0.060 |  | -0.155 | -0.340 |
|  |  | (0.17) | (0.21) |  | (0.28) | (0.32) |
| Year 2018 |  | 0.156 | -0.083 |  | -0.211 | -0.496 |
|  |  | (0.35) | (0.42) |  | (0.47) | (0.54) |
| Year 2019 |  | 0.165 | -0.137 |  | -0.070 | -0.436 |
|  |  | (0.37) | (0.49) |  | (0.46) | (0.59) |
| Year 2020 |  | -8.941\*\*\* | -8.849\*\*\* |  | -9.035\*\*\* | -8.996\*\*\* |
|  |  | (0.70) | (0.69) |  | (0.81) | (0.79) |
| Year 2021 |  | -8.747\*\*\* | -8.983\*\*\* |  | -8.477\*\*\* | -8.903\*\*\* |
|  |  | (0.91) | (0.93) |  | (1.26) | (1.28) |
| Year 2022 |  | -12.403\*\*\* | -12.978\*\*\* |  | -12.188\*\*\* | -12.988\*\*\* |
|  |  | (0.98) | (1.10) |  | (1.26) | (1.37) |
| Constant | 19.196\*\*\* |  |  | 54.307\*\*\* |  |  |
|  | (3.03) |  |  | (3.11) |  |  |
| Num.Obs. | 1085 | 1085 | 1085 | 1085 | 1085 | 1085 |
| R2 | 0.299 | 0.925 | 0.926 | 0.577 | 0.926 | 0.927 |
| R2 Adj. | 0.298 | 0.912 | 0.912 | 0.575 | 0.913 | 0.913 |
| R2 Within |  | 0.621 | 0.624 |  | 0.626 | 0.629 |
| R2 Within Adj. |  | 0.618 | 0.619 |  | 0.622 | 0.623 |
| AIC | 8562.7 | 6457.8 | 6460.7 | 8022.6 | 6451.1 | 6452.1 |
| BIC | 8572.7 | 7281.0 | 7308.9 | 8052.5 | 7294.3 | 7320.3 |
| RMSE | 12.49 | 4.08 | 4.06 | 9.70 | 4.05 | 4.03 |
| 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=5.91. sigma\_u=8.91"

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 = 1085  
  
Effects:  
 var std.dev share  
idiosyncratic 34.913 5.909 0.305  
individual 79.387 8.910 0.695  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.5754 0.7569 0.7569 0.7553 0.7569 0.7569   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-21.9418 -5.7057 1.4231 0.0069 5.8629 14.5442   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 68.59268 2.49412 27.5017 < 2.2e-16 \*\*\*  
SPI.INDEX -0.24567 0.03489 -7.0413 1.904e-12 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 59488  
Residual Sum of Squares: 56734  
R-Squared: 0.046358  
Adj. R-Squared: 0.045478  
Chisq: 49.5803 on 1 DF, p-value: 1.9042e-12

[1] "Model 3: sigma\_e=5.9. sigma\_u=5.23"

[1] "Model 5: sigma\_e=5.28. sigma\_u=6.8"

[1] "Model 6: sigma\_e=5.25. sigma\_u=5.08"

## 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\* | 0.006 |
|  |  |  |  | (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 | -0.003 |
|  |  |  |  | (0.01) | (0.01) | (0.01) |
| Log GDP per capita (constant 2015 US$) |  |  | 2.265\*\* |  |  | 2.120\*\* |
|  |  |  | (0.86) |  |  | (0.94) |
| Trade (% of GDP) |  |  | -0.001 |  |  | -0.001 |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | 0.090\* |  |  | 0.106\* |
|  |  |  | (0.05) |  |  | (0.05) |
| Manufacturing value added (% of GDP) |  |  | -0.050\* |  |  | -0.040 |
|  |  |  | (0.03) |  |  | (0.03) |
| School Enrollment, Primary (% gross) |  |  | 0.030 |  |  | 0.025 |
|  |  |  | (0.02) |  |  | (0.02) |
| Year 2017 |  | -0.122\*\*\* | -0.175\*\*\* |  | -0.173\*\*\* | -0.208\*\*\* |
|  |  | (0.03) | (0.04) |  | (0.05) | (0.05) |
| Year 2018 |  | -0.218\*\* | -0.300\*\*\* |  | -0.292\*\*\* | -0.336\*\*\* |
|  |  | (0.09) | (0.08) |  | (0.08) | (0.08) |
| Year 2019 |  | -0.218\*\* | -0.340\*\*\* |  | -0.256\*\*\* | -0.354\*\*\* |
|  |  | (0.09) | (0.08) |  | (0.09) | (0.08) |
| Year 2020 |  | -0.218\*\* | -0.246\*\*\* |  | -0.294\*\*\* | -0.296\*\*\* |
|  |  | (0.10) | (0.08) |  | (0.09) | (0.08) |
| Year 2021 |  | -0.222\* | -0.354\*\*\* |  | -0.423\*\*\* | -0.437\*\*\* |
|  |  | (0.13) | (0.11) |  | (0.13) | (0.11) |
| Year 2022 |  | -0.222\* | -0.413\*\*\* |  | -0.424\*\*\* | -0.492\*\*\* |
|  |  | (0.13) | (0.13) |  | (0.13) | (0.12) |
| Constant | -0.919 |  |  | 0.126 |  |  |
|  | (2.72) |  |  | (2.80) |  |  |
| Num.Obs. | 287 | 287 | 287 | 287 | 287 | 287 |
| R2 | 0.127 | 0.978 | 0.982 | 0.432 | 0.979 | 0.982 |
| R2 Adj. | 0.124 | 0.973 | 0.977 | 0.421 | 0.975 | 0.977 |
| R2 Within |  | 0.129 | 0.281 |  | 0.188 | 0.295 |
| R2 Within Adj. |  | 0.104 | 0.244 |  | 0.150 | 0.246 |
| AIC | 952.7 | -5.1 | -50.1 | 837.7 | -17.2 | -47.8 |
| BIC | 960.0 | 177.9 | 151.2 | 859.7 | 180.4 | 168.1 |
| RMSE | 1.26 | 0.20 | 0.18 | 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=0.53"

## 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$) |  |  | 0.038\*\*\* |  |  | 0.039\*\*\* |
|  |  |  | (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\*\*\* |  | 0.004\*\*\* | 0.003\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2018 |  | 0.008\*\*\* | 0.006\*\*\* |  | 0.007\*\*\* | 0.006\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2019 |  | 0.012\*\*\* | 0.010\*\*\* |  | 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\*\*\* |  | 0.005\*\* | 0.004\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2022 |  | 0.005\*\*\* | 0.003\*\*\* |  | 0.005\*\* | 0.003 |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Constant | 0.296\*\*\* |  |  | 0.583\*\*\* |  |  |
|  | (0.04) |  |  | (0.04) |  |  |
| Num.Obs. | 1099 | 1099 | 1099 | 1099 | 1099 | 1099 |
| R2 | 0.515 | 0.999 | 0.999 | 0.758 | 0.999 | 0.999 |
| R2 Adj. | 0.515 | 0.999 | 0.999 | 0.757 | 0.999 | 0.999 |
| R2 Within |  | 0.293 | 0.429 |  | 0.297 | 0.433 |
| R2 Within Adj. |  | 0.288 | 0.422 |  | 0.289 | 0.423 |
| AIC | -1825.4 | -8209.7 | -8434.8 | -2582.7 | -8208.3 | -8434.2 |
| BIC | -1815.4 | -7374.4 | -7574.4 | -2552.7 | -7352.9 | -7553.8 |
| RMSE | 0.11 | 0.00 | 0.00 | 0.07 | 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 = 160, T = 2-7, N = 1099  
  
Effects:  
 var std.dev share  
idiosyncratic 4.044e-05 6.360e-03 0.004  
individual 1.001e-02 1.001e-01 0.996  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9551 0.9760 0.9760 0.9758 0.9760 0.9760   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-3.08e-02 -4.32e-03 8.28e-04 -2.16e-05 4.86e-03 2.07e-02   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 7.2117e-01 9.0155e-03 79.993 < 2.2e-16 \*\*\*  
SPI.INDEX 1.5145e-04 4.1279e-05 3.669 0.0002435 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.055293  
Residual Sum of Squares: 0.052249  
R-Squared: 0.056516  
Adj. R-Squared: 0.055656  
Chisq: 13.4618 on 1 DF, p-value: 0.00024347

[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 | 0.540\*\*\* | 0.024\* | 0.027\*\* |  |  |  |
|  | (0.03) | (0.01) | (0.01) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | 0.062 | 0.002 | 0.002 |
|  |  |  |  | (0.04) | (0.00) | (0.00) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.015 | -0.001 | 0.002 |
|  |  |  |  | (0.02) | (0.00) | (0.00) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.060\*\* | 0.009 | 0.007 |
|  |  |  |  | (0.03) | (0.01) | (0.01) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.275\*\*\* | 0.004 | 0.000 |
|  |  |  |  | (0.03) | (0.01) | (0.01) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.133\*\*\* | 0.013\*\*\* | 0.014\*\*\* |
|  |  |  |  | (0.02) | (0.00) | (0.00) |
| Log GDP per capita (constant 2015 US$) |  |  | 3.071\*\*\* |  |  | 3.126\*\*\* |
|  |  |  | (0.86) |  |  | (0.86) |
| Trade (% of GDP) |  |  | -0.008\* |  |  | -0.007 |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.004 |  |  | -0.011 |
|  |  |  | (0.04) |  |  | (0.04) |
| Manufacturing value added (% of GDP) |  |  | -0.037 |  |  | -0.033 |
|  |  |  | (0.03) |  |  | (0.02) |
| School Enrollment, Primary (% gross) |  |  | 0.025\*\* |  |  | 0.024\*\* |
|  |  |  | (0.01) |  |  | (0.01) |
| Year 2017 |  | 0.601\*\*\* | 0.546\*\*\* |  | 0.624\*\*\* | 0.547\*\*\* |
|  |  | (0.05) | (0.05) |  | (0.07) | (0.06) |
| Year 2018 |  | 0.876\*\*\* | 0.778\*\*\* |  | 0.955\*\*\* | 0.812\*\*\* |
|  |  | (0.08) | (0.08) |  | (0.10) | (0.09) |
| Year 2019 |  | 1.267\*\*\* | 1.113\*\*\* |  | 1.321\*\*\* | 1.120\*\*\* |
|  |  | (0.09) | (0.09) |  | (0.10) | (0.10) |
| Year 2020 |  | 1.432\*\*\* | 1.393\*\*\* |  | 1.456\*\*\* | 1.410\*\*\* |
|  |  | (0.11) | (0.09) |  | (0.15) | (0.13) |
| Year 2021 |  | 1.685\*\*\* | 1.570\*\*\* |  | 1.608\*\*\* | 1.509\*\*\* |
|  |  | (0.14) | (0.12) |  | (0.24) | (0.21) |
| Year 2022 |  | 1.797\*\*\* | 1.665\*\*\* |  | 1.718\*\*\* | 1.587\*\*\* |
|  |  | (0.15) | (0.15) |  | (0.25) | (0.23) |
| Constant | 31.029\*\*\* |  |  | 42.661\*\*\* |  |  |
|  | (2.60) |  |  | (4.03) |  |  |
| Num.Obs. | 1001 | 1001 | 1001 | 1001 | 1001 | 1001 |
| R2 | 0.646 | 0.997 | 0.997 | 0.745 | 0.997 | 0.997 |
| R2 Adj. | 0.646 | 0.996 | 0.997 | 0.744 | 0.996 | 0.997 |
| R2 Within |  | 0.598 | 0.641 |  | 0.604 | 0.645 |
| R2 Within Adj. |  | 0.594 | 0.636 |  | 0.598 | 0.639 |
| AIC | 6464.0 | 2001.5 | 1897.6 | 6142.8 | 1994.8 | 1892.8 |
| BIC | 6473.8 | 2752.5 | 2673.1 | 6172.2 | 2765.5 | 2688.0 |
| RMSE | 6.10 | 0.56 | 0.53 | 5.17 | 0.56 | 0.53 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data are from the World Bank's World Development Indicators (WDI) and SPI. In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. | | | | | | |

[1] "Model 2: sigma\_e=0.73. sigma\_u=5.67"

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 = 146, T = 2-7, N = 1001  
  
Effects:  
 var std.dev share  
idiosyncratic 0.5377 0.7333 0.016  
individual 32.1263 5.6680 0.984  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9089 0.9512 0.9512 0.9508 0.9512 0.9512   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-3.6958 -0.4221 0.1086 -0.0033 0.5313 2.4165   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 59.4628280 0.6218523 95.622 < 2.2e-16 \*\*\*  
SPI.INDEX 0.1256359 0.0050678 24.791 < 2.2e-16 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 1128.6  
Residual Sum of Squares: 647.03  
R-Squared: 0.42693  
Adj. R-Squared: 0.42636  
Chisq: 614.604 on 1 DF, p-value: < 2.22e-16

[1] "Model 3: sigma\_e=0.69. sigma\_u=4.77"

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

[1] "Model 6: sigma\_e=0.66. sigma\_u=4.65"

## 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\*\* | 0.000\*\* |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.004\*\*\* | 0.000 | 0.000 |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.003\*\*\* | 0.000\*\*\* | 0.000\*\*\* |
|  |  |  |  | (0.00) | (0.00) | (0.00) |
| Log GDP per capita (constant 2015 US$) |  |  | -0.017 |  |  | -0.016 |
|  |  |  | (0.01) |  |  | (0.01) |
| Trade (% of GDP) |  |  | 0.000 |  |  | 0.000 |
|  |  |  | (0.00) |  |  | (0.00) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.001 |  |  | -0.001 |
|  |  |  | (0.00) |  |  | (0.00) |
| Manufacturing value added (% of GDP) |  |  | 0.000 |  |  | -0.001 |
|  |  |  | (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\*\*\* | 0.019\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2020 |  | 0.012\*\*\* | 0.012\*\*\* |  | 0.011\*\*\* | 0.011\*\*\* |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2021 |  | 0.009\*\*\* | 0.010\*\*\* |  | 0.004 | 0.004 |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Year 2022 |  | 0.009\*\*\* | 0.011\*\*\* |  | 0.003 | 0.003 |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |
| Constant | 0.127\*\*\* |  |  | 0.411\*\*\* |  |  |
|  | (0.03) |  |  | (0.03) |  |  |
| Num.Obs. | 1036 | 1036 | 1036 | 1036 | 1036 | 1036 |
| R2 | 0.563 | 0.991 | 0.991 | 0.767 | 0.992 | 0.992 |
| R2 Adj. | 0.562 | 0.990 | 0.990 | 0.766 | 0.990 | 0.990 |
| R2 Within |  | 0.224 | 0.229 |  | 0.247 | 0.254 |
| R2 Within Adj. |  | 0.217 | 0.218 |  | 0.237 | 0.240 |
| AIC | -1940.2 | -5688.1 | -5685.4 | -2585.8 | -5711.9 | -5711.4 |
| BIC | -1930.3 | -4907.1 | -4879.6 | -2556.2 | -4911.1 | -4885.9 |
| RMSE | 0.09 | 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 = 151, T = 2-7, N = 1036  
  
Effects:  
 var std.dev share  
idiosyncratic 0.0002542 0.0159436 0.031  
individual 0.0078560 0.0886341 0.969  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8738 0.9322 0.9322 0.9317 0.9322 0.9322   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.076135 -0.009699 -0.001402 -0.000091 0.009790 0.099465   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 0.50588915 0.01057444 47.841 < 2.2e-16 \*\*\*  
SPI.INDEX 0.00098389 0.00010499 9.371 < 2.2e-16 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.35157  
Residual Sum of Squares: 0.30958  
R-Squared: 0.12057  
Adj. R-Squared: 0.11972  
Chisq: 87.8161 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=0.06"

[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 | 0.372\*\*\* | -0.021 | -0.007 |  |  |  |
|  | (0.06) | (0.06) | (0.06) |  |  |  |
| SPI Pillar 1 Score (Data use) |  |  |  | -0.049 | 0.036 | 0.032 |
|  |  |  |  | (0.08) | (0.04) | (0.03) |
| SPI Pillar 2 Score (Data services) |  |  |  | 0.100\*\* | 0.003 | 0.006 |
|  |  |  |  | (0.05) | (0.01) | (0.01) |
| SPI Pillar 3 Score (Data products) |  |  |  | -0.095 | -0.020 | -0.005 |
|  |  |  |  | (0.08) | (0.05) | (0.05) |
| SPI Pillar 4 Score (Data sources) |  |  |  | 0.065 | 0.000 | -0.004 |
|  |  |  |  | (0.08) | (0.03) | (0.03) |
| SPI Pillar 5 Score (Data infrastructure) |  |  |  | 0.175\*\*\* | -0.045\*\* | -0.040\* |
|  |  |  |  | (0.05) | (0.02) | (0.02) |
| Log GDP per capita (constant 2015 US$) |  |  | 2.530 |  |  | 2.895 |
|  |  |  | (4.00) |  |  | (3.96) |
| Trade (% of GDP) |  |  | 0.046\*\* |  |  | 0.043\* |
|  |  |  | (0.02) |  |  | (0.02) |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.065 |  |  | -0.051 |
|  |  |  | (0.15) |  |  | (0.15) |
| Manufacturing value added (% of GDP) |  |  | -0.355\*\* |  |  | -0.347\*\* |
|  |  |  | (0.14) |  |  | (0.13) |
| School Enrollment, Primary (% gross) |  |  | 0.049 |  |  | 0.048 |
|  |  |  | (0.04) |  |  | (0.04) |
| Year 2017 |  | 0.048 | -0.139 |  | 0.107 | -0.131 |
|  |  | (0.13) | (0.18) |  | (0.19) | (0.23) |
| Year 2018 |  | 0.101 | -0.240 |  | 0.094 | -0.299 |
|  |  | (0.27) | (0.34) |  | (0.32) | (0.39) |
| Year 2019 |  | -0.232 | -0.655 |  | -0.126 | -0.595 |
|  |  | (0.38) | (0.45) |  | (0.39) | (0.45) |
| Year 2020 |  | -0.097 | -0.097 |  | 0.139 | 0.009 |
|  |  | (0.51) | (0.49) |  | (0.63) | (0.61) |
| Year 2021 |  | -0.398 | -0.747 |  | 0.309 | -0.290 |
|  |  | (0.75) | (0.76) |  | (1.10) | (1.12) |
| Year 2022 |  | -6.928\*\*\* | -7.662\*\*\* |  | -6.219\*\*\* | -7.189\*\*\* |
|  |  | (0.91) | (1.00) |  | (1.28) | (1.36) |
| Constant | 40.788\*\*\* |  |  | 55.959\*\*\* |  |  |
|  | (4.43) |  |  | (7.55) |  |  |
| Num.Obs. | 1036 | 1036 | 1036 | 1036 | 1036 | 1036 |
| R2 | 0.153 | 0.957 | 0.959 | 0.192 | 0.957 | 0.959 |
| R2 Adj. | 0.153 | 0.949 | 0.951 | 0.188 | 0.950 | 0.951 |
| R2 Within |  | 0.387 | 0.412 |  | 0.395 | 0.418 |
| R2 Within Adj. |  | 0.382 | 0.404 |  | 0.388 | 0.407 |
| AIC | 8349.7 | 5576.4 | 5544.4 | 8309.9 | 5570.6 | 5541.0 |
| BIC | 8359.6 | 6357.4 | 6350.1 | 8339.6 | 6371.4 | 6366.5 |
| RMSE | 13.58 | 3.06 | 3.00 | 13.27 | 3.04 | 2.99 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data are from the World Bank's World Development Indicators (WDI) and SPI. In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. | | | | | | |

[1] "Model 2: sigma\_e=4.02. sigma\_u=12.64"

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 = 151, T = 2-7, N = 1036  
  
Effects:  
 var std.dev share  
idiosyncratic 16.144 4.018 0.092  
individual 159.822 12.642 0.908  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.7807 0.8807 0.8807 0.8798 0.8807 0.8807   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-25.3215 -1.1048 1.0049 0.0197 2.5081 13.1181   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 77.45627 1.99156 38.8922 < 2.2e-16 \*\*\*  
SPI.INDEX -0.17335 0.02457 -7.0552 1.724e-12 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 18990  
Residual Sum of Squares: 18207  
R-Squared: 0.042468  
Adj. R-Squared: 0.041542  
Chisq: 49.7753 on 1 DF, p-value: 1.724e-12

[1] "Model 3: sigma\_e=3.95. sigma\_u=11.66"

[1] "Model 5: sigma\_e=3.88. sigma\_u=12.3"

[1] "Model 6: sigma\_e=3.83. sigma\_u=11.08"

## 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 | 0.051\*\*\* | 0.000 | 0.000 |  |  |  |  |
|  | (0.00) | (0.00) | (0.00) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.050\*\*\* | 0.000 | 0.000 |  |
|  |  |  |  | (0.00) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.055\*\*\* |
|  |  |  |  |  |  |  | (0.01) |
| Trade (% of GDP) |  |  | 0.001\*\*\* |  |  | 0.001\* |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.004 |  |  | -0.022\*\*\* |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Manufacturing value added (% of GDP) |  |  | -0.004 |  |  | 0.009\*\* |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| School Enrollment, Primary (% gross) |  |  | 0.001 |  |  | -0.001 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| WGI Index |  |  | 0.096\*\* |  |  | 0.078 |  |
|  |  |  | (0.04) |  |  | (0.06) |  |
| Year 2014 |  |  |  |  | 0.021\*\*\* | 0.015\*\*\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2015 |  |  |  |  | 0.035\*\*\* | 0.030\*\*\* |  |
|  |  |  |  |  | (0.01) | (0.01) |  |
| Year 2016 |  |  |  |  | 0.052\*\*\* | 0.050\*\*\* |  |
|  |  |  |  |  | (0.01) | (0.01) |  |
| Year 2017 |  | 0.022\*\*\* | 0.020\*\*\* |  | 0.069\*\*\* | 0.068\*\*\* |  |
|  |  | (0.00) | (0.00) |  | (0.01) | (0.01) |  |
| Year 2018 |  | 0.044\*\*\* | 0.039\*\*\* |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2019 |  | 0.063\*\*\* | 0.057\*\*\* |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2020 |  | 0.011 | 0.017\* |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2021 |  | 0.055\*\*\* | 0.053\*\*\* |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2022 |  | 0.080\*\*\* | 0.069\*\*\* |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Constant | 6.262\*\*\* |  |  | 7.265\*\*\* |  |  | 6.948\*\*\* |
|  | (0.21) |  |  | (0.19) |  |  | (0.24) |
| Num.Obs. | 1084 | 1084 | 1084 | 362 | 362 | 362 | 95 |
| R2 | 0.381 | 0.999 | 0.999 | 0.560 | 1.000 | 1.000 | 0.464 |
| R2 Adj. | 0.381 | 0.999 | 0.999 | 0.559 | 0.999 | 1.000 | 0.458 |
| R2 Within |  | 0.228 | 0.291 |  | 0.310 | 0.548 |  |
| R2 Within Adj. |  | 0.222 | 0.282 |  | 0.297 | 0.530 |  |
| AIC | 3290.7 | -3114.8 | -3197.4 | 989.9 | -1295.8 | -1438.9 | 261.0 |
| BIC | 3300.7 | -2276.8 | -2334.5 | 997.7 | -883.3 | -1006.9 | 266.1 |
| RMSE | 1.10 | 0.05 | 0.05 | 0.94 | 0.03 | 0.02 | 0.94 |
| 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=1.04"

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 = 161, T = 1-7, N = 1084  
  
Effects:  
 var std.dev share  
idiosyncratic 0.003609 0.060074 0.003  
individual 1.087577 1.042869 0.997  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9425 0.9782 0.9782 0.9779 0.9782 0.9782   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.273805 -0.037006 0.005684 -0.000212 0.042117 0.285176   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 8.66240242 0.08792382 98.5217 < 2.2e-16 \*\*\*  
ODIN\_score 0.00138882 0.00028156 4.9326 8.116e-07 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 5.0102  
Residual Sum of Squares: 4.3621  
R-Squared: 0.13006  
Adj. R-Squared: 0.12925  
Chisq: 24.3302 on 1 DF, p-value: 8.1157e-07

[1] "ODIN Model 3: sigma\_e=0.06. sigma\_u=0.53"

[1] "ODB Model 2: sigma\_e=0.04. sigma\_u=0.9"

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 = 101, T = 1-5, N = 362  
  
Effects:  
 var std.dev share  
idiosyncratic 0.00181 0.04254 0.002  
individual 0.81548 0.90304 0.998  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9529 0.9765 0.9765 0.9757 0.9789 0.9789   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.16056 -0.02680 0.00480 0.00211 0.03302 0.17629   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 8.85289276 0.10648514 83.137 < 2e-16 \*\*\*  
odb 0.00105148 0.00043521 2.416 0.01569 \*   
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 1.4188  
Residual Sum of Squares: 0.8979  
R-Squared: 0.39083  
Adj. R-Squared: 0.38914  
Chisq: 5.83702 on 1 DF, p-value: 0.015692

[1] "ODB Model 3: sigma\_e=0.04. sigma\_u=0.51"

## 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 | 0.031\*\*\* | 0.000 | 0.000 |  |  |  |  |
|  | (0.00) | (0.00) | (0.00) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.030\*\*\* | 0.001\* | 0.001\* |  |
|  |  |  |  | (0.00) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.033\*\*\* |
|  |  |  |  |  |  |  | (0.00) |
| Trade (% of GDP) |  |  | 0.000 |  |  | -0.001\*\* |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.008\*\*\* |  |  | 0.007 |  |
|  |  |  | (0.00) |  |  | (0.01) |  |
| Manufacturing value added (% of GDP) |  |  | -0.001 |  |  | -0.009\*\* |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| School Enrollment, Primary (% gross) |  |  | -0.001 |  |  | 0.004 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Year 2014 |  |  |  |  | 0.007 | 0.002 |  |
|  |  |  |  |  | (0.01) | (0.01) |  |
| Year 2015 |  |  |  |  | -0.013 | -0.022\* |  |
|  |  |  |  |  | (0.01) | (0.01) |  |
| Year 2016 |  |  |  |  | -0.012 | -0.030 |  |
|  |  |  |  |  | (0.01) | (0.02) |  |
| Year 2017 |  | 0.000 | -0.003 |  | -0.019 | -0.040 |  |
|  |  | (0.01) | (0.01) |  | (0.02) | (0.03) |  |
| Year 2018 |  | -0.002 | -0.013 |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2019 |  | -0.002 | -0.018 |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2020 |  | -0.007 | -0.012 |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2021 |  | -0.007 | -0.017 |  |  |  |  |
|  |  | (0.01) | (0.01) |  |  |  |  |
| Year 2022 |  | -0.008 | -0.021 |  |  |  |  |
|  |  | (0.01) | (0.02) |  |  |  |  |
| Constant | -1.447\*\*\* |  |  | -0.802\*\*\* |  |  | -1.066\*\*\* |
|  | (0.14) |  |  | (0.09) |  |  | (0.12) |
| Num.Obs. | 1084 | 1084 | 1084 | 362 | 362 | 362 | 95 |
| R2 | 0.376 | 0.994 | 0.994 | 0.564 | 0.996 | 0.997 | 0.476 |
| R2 Adj. | 0.376 | 0.993 | 0.993 | 0.562 | 0.995 | 0.995 | 0.470 |
| R2 Within |  | 0.002 | 0.044 |  | 0.038 | 0.098 |  |
| R2 Within Adj. |  | -0.006 | 0.032 |  | 0.019 | 0.062 |  |
| AIC | 2212.3 | -2443.3 | -2480.5 | 631.9 | -901.2 | -914.4 | 158.2 |
| BIC | 2222.3 | -1605.3 | -1617.5 | 639.7 | -488.7 | -482.5 | 163.4 |
| RMSE | 0.67 | 0.07 | 0.07 | 0.58 | 0.05 | 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=0.63"

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 = 161, T = 1-7, N = 1084  
  
Effects:  
 var std.dev share  
idiosyncratic 0.005309 0.072861 0.013  
individual 0.396354 0.629566 0.987  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8850 0.9563 0.9563 0.9557 0.9563 0.9563   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.37575 -0.04711 0.00037 -0.00023 0.04857 0.27370   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)  
(Intercept) 0.02382629 0.05511411 0.4323 0.6655  
ODIN\_score 0.00027673 0.00034119 0.8111 0.4173  
  
Total Sum of Squares: 6.4599  
Residual Sum of Squares: 6.4552  
R-Squared: 0.00074682  
Adj. R-Squared: -0.0001767  
Chisq: 0.657853 on 1 DF, p-value: 0.41732

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

[1] "ODB Model 2: sigma\_e=0.06. 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 = 101, T = 1-5, N = 362  
  
Effects:  
 var std.dev share  
idiosyncratic 0.003864 0.062158 0.013  
individual 0.300914 0.548556 0.987  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8874 0.9434 0.9434 0.9417 0.9494 0.9494   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.22402 -0.04586 0.00166 0.00348 0.05593 0.19118   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 0.10912561 0.06711615 1.6259 0.1039663   
odb 0.00221771 0.00062331 3.5579 0.0003738 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 1.9347  
Residual Sum of Squares: 1.8993  
R-Squared: 0.021992  
Adj. R-Squared: 0.019275  
Chisq: 12.6589 on 1 DF, p-value: 0.00037378

[1] "ODB Model 3: sigma\_e=0.06. sigma\_u=0.39"

## 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 | 0.036\*\*\* | 0.002\* | 0.002 |  |  |  |  |
|  | (0.00) | (0.00) | (0.00) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.028\*\*\* | 0.000 | 0.000 |  |
|  |  |  |  | (0.00) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.035\*\*\* |
|  |  |  |  |  |  |  | (0.00) |
| Trade (% of GDP) |  |  | 0.000 |  |  | -0.001 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.012 |  |  | 0.008 |  |
|  |  |  | (0.02) |  |  | (0.02) |  |
| Manufacturing value added (% of GDP) |  |  | 0.020\*\*\* |  |  | 0.002 |  |
|  |  |  | (0.00) |  |  | (0.01) |  |
| School Enrollment, Primary (% gross) |  |  | -0.001 |  |  | 0.008\*\* |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Year 2014 |  |  |  |  | 0.006 | 0.003 |  |
|  |  |  |  |  | (0.01) | (0.01) |  |
| Year 2015 |  |  |  |  | 0.018 | 0.012 |  |
|  |  |  |  |  | (0.02) | (0.02) |  |
| Year 2016 |  |  |  |  | -0.017 | -0.026 |  |
|  |  |  |  |  | (0.02) | (0.03) |  |
| Year 2017 |  | -0.011 | -0.017 |  | -0.021 | -0.025 |  |
|  |  | (0.01) | (0.02) |  | (0.02) | (0.03) |  |
| Year 2018 |  | -0.019 | -0.031 |  |  |  |  |
|  |  | (0.02) | (0.03) |  |  |  |  |
| Year 2019 |  | -0.016 | -0.030 |  |  |  |  |
|  |  | (0.02) | (0.03) |  |  |  |  |
| Year 2020 |  | -0.031 | -0.023 |  |  |  |  |
|  |  | (0.03) | (0.03) |  |  |  |  |
| Year 2021 |  | -0.038 | -0.055 |  |  |  |  |
|  |  | (0.03) | (0.04) |  |  |  |  |
| Year 2022 |  | -0.040 | -0.071 |  |  |  |  |
|  |  | (0.03) | (0.05) |  |  |  |  |
| Constant | -1.753\*\*\* |  |  | -0.658\*\*\* |  |  | -1.153\*\*\* |
|  | (0.18) |  |  | (0.12) |  |  | (0.17) |
| Num.Obs. | 833 | 833 | 833 | 340 | 340 | 340 | 85 |
| R2 | 0.378 | 0.982 | 0.982 | 0.411 | 0.992 | 0.992 | 0.405 |
| R2 Adj. | 0.377 | 0.978 | 0.979 | 0.410 | 0.989 | 0.989 | 0.398 |
| R2 Within |  | 0.011 | 0.047 |  | 0.026 | 0.059 |  |
| R2 Within Adj. |  | 0.001 | 0.030 |  | 0.006 | 0.020 |  |
| AIC | 1931.2 | -753.4 | -774.3 | 749.2 | -520.4 | -522.3 | 175.5 |
| BIC | 1940.7 | -158.1 | -155.4 | 756.8 | -141.3 | -124.1 | 180.4 |
| RMSE | 0.77 | 0.13 | 0.13 | 0.72 | 0.08 | 0.08 | 0.66 |
| 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=0.14. sigma\_u=0.71"

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 = 119, T = 7, N = 833  
  
Effects:  
 var std.dev share  
idiosyncratic 0.0206 0.1435 0.039  
individual 0.5104 0.7144 0.961  
theta: 0.9243  
  
Residuals:  
 Min. 1st Qu. Median 3rd Qu. Max.   
-0.717350 -0.072949 0.015081 0.090435 0.657829   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) -0.01899433 0.07916258 -0.2399 0.81038   
ODIN\_score 0.00236556 0.00074738 3.1651 0.00155 \*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 19.202  
Residual Sum of Squares: 18.973  
R-Squared: 0.011912  
Adj. R-Squared: 0.010723  
Chisq: 10.018 on 1 DF, p-value: 0.0015502

[1] "ODIN Model 3: sigma\_e=0.14. sigma\_u=0.52"

[1] "ODB Model 2: sigma\_e=0.1. sigma\_u=0.7"

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 = 94, T = 1-5, N = 340  
  
Effects:  
 var std.dev share  
idiosyncratic 0.01007 0.10036 0.02  
individual 0.49330 0.70236 0.98  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8585 0.9287 0.9287 0.9269 0.9362 0.9362   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.39387 -0.06871 0.01585 0.00299 0.07469 0.28695   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 0.25587628 0.08560410 2.9891 0.002798 \*\*  
odb 0.00126668 0.00094629 1.3386 0.180708   
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 4.0406  
Residual Sum of Squares: 4.0616  
R-Squared: 0.00018382  
Adj. R-Squared: -0.0027742  
Chisq: 1.79179 on 1 DF, p-value: 0.18071

[1] "ODB Model 3: sigma\_e=0.1. sigma\_u=0.46"

## 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 | 0.467\*\*\* | -0.027 | -0.024 |  |  |  |  |
|  | (0.04) | (0.04) | (0.04) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.464\*\*\* | 0.000 | 0.000 |  |
|  |  |  |  | (0.04) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.747\*\*\* |
|  |  |  |  |  |  |  | (0.06) |
| Trade (% of GDP) |  |  | 0.028 |  |  | 0.000 |  |
|  |  |  | (0.02) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | 0.008 |  |  | 0.000 |  |
|  |  |  | (0.15) |  |  | (0.00) |  |
| Manufacturing value added (% of GDP) |  |  | -0.297 |  |  | 0.000 |  |
|  |  |  | (0.21) |  |  | (0.00) |  |
| School Enrollment, Primary (% gross) |  |  | -0.046 |  |  | 0.000 |  |
|  |  |  | (0.07) |  |  | (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 |  | 0.017 | -0.092 |  | 0.000 | 0.000 |  |
|  |  | (0.03) | (0.12) |  | (0.00) | (0.00) |  |
| Year 2018 |  | 0.142 | -0.076 |  |  |  |  |
|  |  | (0.21) | (0.30) |  |  |  |  |
| Year 2019 |  | 0.142 | -0.150 |  |  |  |  |
|  |  | (0.21) | (0.37) |  |  |  |  |
| Year 2020 |  | -8.864\*\*\* | -8.906\*\*\* |  |  |  |  |
|  |  | (0.66) | (0.66) |  |  |  |  |
| Year 2021 |  | -8.864\*\*\* | -9.078\*\*\* |  |  |  |  |
|  |  | (0.66) | (0.68) |  |  |  |  |
| Year 2022 |  | -12.648\*\*\* | -13.080\*\*\* |  |  |  |  |
|  |  | (0.75) | (0.84) |  |  |  |  |
| Constant | 29.690\*\*\* |  |  | 43.746\*\*\* |  |  | 22.852\*\*\* |
|  | (1.92) |  |  | (1.67) |  |  | (2.03) |
| Num.Obs. | 1059 | 1059 | 1059 | 361 | 361 | 361 | 93 |
| R2 | 0.275 | 0.927 | 0.927 | 0.535 | 1.000 | 1.000 | 0.579 |
| R2 Adj. | 0.274 | 0.913 | 0.914 | 0.534 | 1.000 | 1.000 | 0.574 |
| R2 Within |  | 0.625 | 0.629 |  | 0.000 | 0.000 |  |
| R2 Within Adj. |  | 0.622 | 0.624 |  | -0.020 | -0.040 |  |
| AIC | 8406.5 | 6302.4 | 6302.0 | 2638.0 | -23831.7 | -23821.7 | 696.8 |
| BIC | 8416.5 | 7111.7 | 7136.1 | 2645.8 | -23423.3 | -23393.9 | 701.8 |
| RMSE | 12.78 | 4.07 | 4.05 | 9.29 | 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=6.41. sigma\_u=8.86"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = env\_perform\_index ~ ODIN\_score, data = odin\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 156, T = 1-7, N = 1059  
  
Effects:  
 var std.dev share  
idiosyncratic 41.088 6.410 0.344  
individual 78.418 8.855 0.656  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.4136 0.7361 0.7361 0.7337 0.7361 0.7361   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-21.4646 -5.8526 1.4164 0.0253 5.9381 14.1248   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 59.468601 1.632544 36.4270 < 2.2e-16 \*\*\*  
ODIN\_score -0.152599 0.028957 -5.2698 1.366e-07 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 60791  
Residual Sum of Squares: 58589  
R-Squared: 0.03701  
Adj. R-Squared: 0.036099  
Chisq: 27.7711 on 1 DF, p-value: 1.3655e-07

[1] "ODIN Model 3: sigma\_e=6.35. sigma\_u=5.49"

[1] "ODB Model 2: sigma\_e=0. sigma\_u=8.93"

[1] "ODB Model 3: sigma\_e=0. sigma\_u=6.41"

## 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) |  |  | 0.077 |  |  | 0.017 |  |
|  |  |  | (0.06) |  |  | (0.05) |  |
| Manufacturing value added (% of GDP) |  |  | -0.066\*\* |  |  | -0.032 |  |
|  |  |  | (0.03) |  |  | (0.02) |  |
| School Enrollment, Primary (% gross) |  |  | 0.026 |  |  | 0.009 |  |
|  |  |  | (0.02) |  |  | (0.01) |  |
| Year 2014 |  |  |  |  | 0.014 | -0.017 |  |
|  |  |  |  |  | (0.04) | (0.04) |  |
| Year 2015 |  |  |  |  | 0.084\* | 0.041 |  |
|  |  |  |  |  | (0.05) | (0.05) |  |
| Year 2016 |  |  |  |  | -0.229\*\*\* | -0.287\*\*\* |  |
|  |  |  |  |  | (0.05) | (0.06) |  |
| Year 2017 |  | -0.122\*\*\* | -0.178\*\*\* |  | -0.317\*\*\* | -0.400\*\*\* |  |
|  |  | (0.03) | (0.04) |  | (0.07) | (0.08) |  |
| Year 2018 |  | -0.217\*\* | -0.313\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.08) |  |  |  |  |
| Year 2019 |  | -0.217\*\* | -0.359\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.08) |  |  |  |  |
| Year 2020 |  | -0.217\*\* | -0.262\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.08) |  |  |  |  |
| Year 2021 |  | -0.217\*\* | -0.368\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.09) |  |  |  |  |
| Year 2022 |  | -0.218\*\* | -0.420\*\*\* |  |  |  |  |
|  |  | (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 | 0.273 |  | 0.402 | 0.427 |  |
| R2 Within Adj. |  | 0.102 | 0.236 |  | 0.377 | 0.377 |  |
| AIC | 913.4 | -5.1 | -47.4 | 488.9 | -38.3 | -35.2 | 100.3 |
| BIC | 920.7 | 170.6 | 146.6 | 495.0 | 94.7 | 113.3 | 103.1 |
| RMSE | 1.18 | 0.20 | 0.19 | 1.07 | 0.17 | 0.16 | 1.20 |
| Std.Errors | by: country | by: country | by: country | by: country | by: country | by: country | by: country |
| FE: country |  | X | X |  | X | X |  |
| Note: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the country level. Data from the World Bank's World Development Indicators (WDI), Open Data Watch (ODIN), Global Data Barometer (GDB), and Open Data Barometer (ODB). In cases where data are missing for a particular covariate, the data are imputed forward using the nearest available value. Estimates with country fixed effects not available for the Global Data Barometer, because the indicator contains on ly one time period. | | | | | | | |

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

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

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

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

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

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

## Table 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 | 0.424\*\*\* | 0.005 | 0.008 |  |  |  |  |
|  | (0.03) | (0.01) | (0.01) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.328\*\*\* | 0.011\*\* | 0.011\*\* |  |
|  |  |  |  | (0.03) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.375\*\*\* |
|  |  |  |  |  |  |  | (0.04) |
| Trade (% of GDP) |  |  | -0.009\* |  |  | -0.018\* |  |
|  |  |  | (0.00) |  |  | (0.01) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.006 |  |  | 0.012 |  |
|  |  |  | (0.05) |  |  | (0.06) |  |
| Manufacturing value added (% of GDP) |  |  | -0.029 |  |  | -0.060 |  |
|  |  |  | (0.03) |  |  | (0.04) |  |
| School Enrollment, Primary (% gross) |  |  | 0.026\*\* |  |  | 0.000 |  |
|  |  |  | (0.01) |  |  | (0.03) |  |
| Year 2014 |  |  |  |  | 0.483\*\*\* | 0.409\*\*\* |  |
|  |  |  |  |  | (0.07) | (0.07) |  |
| Year 2015 |  |  |  |  | 0.903\*\*\* | 0.758\*\*\* |  |
|  |  |  |  |  | (0.09) | (0.10) |  |
| Year 2016 |  |  |  |  | 1.148\*\*\* | 0.907\*\*\* |  |
|  |  |  |  |  | (0.11) | (0.13) |  |
| Year 2017 |  | 0.649\*\*\* | 0.605\*\*\* |  | 1.577\*\*\* | 1.316\*\*\* |  |
|  |  | (0.04) | (0.05) |  | (0.17) | (0.18) |  |
| Year 2018 |  | 0.968\*\*\* | 0.878\*\*\* |  |  |  |  |
|  |  | (0.07) | (0.08) |  |  |  |  |
| Year 2019 |  | 1.383\*\*\* | 1.239\*\*\* |  |  |  |  |
|  |  | (0.09) | (0.11) |  |  |  |  |
| Year 2020 |  | 1.569\*\*\* | 1.529\*\*\* |  |  |  |  |
|  |  | (0.10) | (0.10) |  |  |  |  |
| Year 2021 |  | 1.919\*\*\* | 1.817\*\*\* |  |  |  |  |
|  |  | (0.11) | (0.12) |  |  |  |  |
| Year 2022 |  | 2.016\*\*\* | 1.904\*\*\* |  |  |  |  |
|  |  | (0.13) | (0.16) |  |  |  |  |
| Constant | 47.217\*\*\* |  |  | 57.217\*\*\* |  |  | 57.382\*\*\* |
|  | (1.86) |  |  | (1.24) |  |  | (1.63) |
| Num.Obs. | 992 | 992 | 992 | 361 | 361 | 361 | 93 |
| R2 | 0.503 | 0.997 | 0.997 | 0.566 | 0.998 | 0.998 | 0.523 |
| R2 Adj. | 0.502 | 0.996 | 0.997 | 0.565 | 0.997 | 0.997 | 0.517 |
| R2 Within |  | 0.597 | 0.640 |  | 0.568 | 0.605 |  |
| R2 Within Adj. |  | 0.593 | 0.635 |  | 0.559 | 0.589 |  |
| AIC | 6704.3 | 1996.4 | 1893.2 | 2342.2 | 590.4 | 568.1 | 589.8 |
| BIC | 6714.1 | 2736.2 | 2657.6 | 2349.9 | 998.7 | 995.8 | 594.8 |
| RMSE | 7.09 | 0.57 | 0.54 | 6.17 | 0.41 | 0.39 | 5.64 |
| 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=6.53"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = sdg\_index\_score ~ ODIN\_score, data = odin\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 144, T = 1-7, N = 992  
  
Effects:  
 var std.dev share  
idiosyncratic 0.7132 0.8445 0.016  
individual 42.6617 6.5316 0.984  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8718 0.9512 0.9512 0.9510 0.9512 0.9512   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-4.2931 -0.4760 0.1312 0.0052 0.6253 2.5013   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 64.6306837 0.6206879 104.127 < 2.2e-16 \*\*\*  
ODIN\_score 0.0687770 0.0041546 16.555 < 2.2e-16 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 1070.9  
Residual Sum of Squares: 816.75  
R-Squared: 0.23829  
Adj. R-Squared: 0.23752  
Chisq: 274.052 on 1 DF, p-value: < 2.22e-16

[1] "ODIN Model 3: sigma\_e=0.77. sigma\_u=5.24"

[1] "ODB Model 2: sigma\_e=0.71. sigma\_u=5.89"

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = sdg\_index\_score ~ odb, data = odb\_reg\_df,   
 model = "random", index = c("country", "date"))  
  
Unbalanced Panel: n = 100, T = 1-5, N = 361  
  
Effects:  
 var std.dev share  
idiosyncratic 0.5105 0.7145 0.014  
individual 34.7204 5.8924 0.986  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8796 0.9395 0.9395 0.9378 0.9459 0.9459   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-3.4457 -0.5219 0.0679 0.0031 0.5595 1.7990   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 67.5265527 0.7279034 92.7686 < 2.2e-16 \*\*\*  
odb 0.0373737 0.0071319 5.2404 1.602e-07 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 559.39  
Residual Sum of Squares: 249.11  
R-Squared: 0.55481  
Adj. R-Squared: 0.55357  
Chisq: 27.4617 on 1 DF, p-value: 1.6024e-07

[1] "ODB Model 3: sigma\_e=0.57. sigma\_u=4.81"

## 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 |  |  | -0.001 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Manufacturing value added (% of GDP) |  |  | 0.000 |  |  | 0.001 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| School Enrollment, Primary (% gross) |  |  | 0.000\*\*\* |  |  | 0.000 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Year 2014 |  |  |  |  | 0.005\*\*\* | 0.004\*\*\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2015 |  |  |  |  | 0.009\*\*\* | 0.007\*\*\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2016 |  |  |  |  | 0.013\*\*\* | 0.010\*\*\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2017 |  | 0.004\*\*\* | 0.003\*\*\* |  | 0.016\*\*\* | 0.012\*\*\* |  |
|  |  | (0.00) | (0.00) |  | (0.00) | (0.00) |  |
| Year 2018 |  | 0.007\*\*\* | 0.006\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2019 |  | 0.011\*\*\* | 0.009\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2020 |  | 0.006\*\*\* | 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 | 0.440\*\*\* |  |  | 0.579\*\*\* |  |  | 0.550\*\*\* |
|  | (0.02) |  |  | (0.02) |  |  | (0.02) |
| Num.Obs. | 1083 | 1083 | 1083 | 362 | 362 | 362 | 95 |
| R2 | 0.470 | 0.999 | 0.999 | 0.569 | 0.999 | 1.000 | 0.519 |
| R2 Adj. | 0.470 | 0.999 | 0.999 | 0.568 | 0.999 | 0.999 | 0.514 |
| R2 Within |  | 0.297 | 0.445 |  | 0.671 | 0.769 |  |
| R2 Within Adj. |  | 0.292 | 0.438 |  | 0.664 | 0.760 |  |
| AIC | -1705.7 | -8099.5 | -8345.6 | -657.9 | -2856.1 | -2975.0 | -183.9 |
| BIC | -1695.7 | -7266.6 | -7487.7 | -650.1 | -2443.6 | -2543.1 | -178.8 |
| 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 = 160, T = 1-7, N = 1083  
  
Effects:  
 var std.dev share  
idiosyncratic 4.009e-05 6.332e-03 0.004  
individual 1.017e-02 1.008e-01 0.996  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9373 0.9763 0.9763 0.9760 0.9763 0.9763   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-3.12e-02 -4.22e-03 7.17e-04 1.67e-05 4.69e-03 2.08e-02   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 7.2638e-01 8.7794e-03 82.737 < 2.2e-16 \*\*\*  
ODIN\_score 1.2035e-04 3.0475e-05 3.949 7.848e-05 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.054237  
Residual Sum of Squares: 0.051078  
R-Squared: 0.058741  
Adj. R-Squared: 0.05787  
Chisq: 15.5945 on 1 DF, p-value: 7.8481e-05

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

[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 = hdi\_value ~ odb, data = odb\_reg\_df, model = "random",   
 index = c("country", "date"))  
  
Unbalanced Panel: n = 101, T = 1-5, N = 362  
  
Effects:  
 var std.dev share  
idiosyncratic 5.033e-05 7.094e-03 0.006  
individual 8.566e-03 9.255e-02 0.994  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.9236 0.9617 0.9617 0.9605 0.9657 0.9657   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.027867 -0.004417 0.001353 0.000181 0.005318 0.023753   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 7.4749e-01 1.1046e-02 67.669 < 2.2e-16 \*\*\*  
odb 2.5439e-04 7.1983e-05 3.534 0.0004093 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.037482  
Residual Sum of Squares: 0.024827  
R-Squared: 0.34407  
Adj. R-Squared: 0.34225  
Chisq: 12.4894 on 1 DF, p-value: 0.00040926

[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 |  |  | 0.001 |  |
|  |  |  | (0.00) |  |  | (0.00) |  |
| Year 2014 |  |  |  |  | 0.001 | 0.001\*\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2015 |  |  |  |  | 0.000 | 0.002\*\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2016 |  |  |  |  | 0.000 | 0.002\* |  |
|  |  |  |  |  | (0.00) | (0.00) |  |
| Year 2017 |  | 0.021\*\*\* | 0.021\*\*\* |  | 0.023\*\*\* | 0.026\*\*\* |  |
|  |  | (0.00) | (0.00) |  | (0.01) | (0.01) |  |
| Year 2018 |  | 0.021\*\*\* | 0.022\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2019 |  | 0.022\*\*\* | 0.022\*\*\* |  |  |  |  |
|  |  | (0.00) | (0.00) |  |  |  |  |
| Year 2020 |  | 0.017\*\*\* | 0.017\*\*\* |  |  |  |  |
|  |  | (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 | 0.271\*\*\* |  |  | 0.408\*\*\* |  |  | 0.389\*\*\* |
|  | (0.02) |  |  | (0.02) |  |  | (0.02) |
| Num.Obs. | 1020 | 1020 | 1020 | 361 | 361 | 361 | 92 |
| R2 | 0.532 | 0.991 | 0.991 | 0.595 | 0.998 | 0.998 | 0.531 |
| R2 Adj. | 0.531 | 0.990 | 0.990 | 0.594 | 0.997 | 0.997 | 0.526 |
| R2 Within |  | 0.210 | 0.214 |  | 0.392 | 0.420 |  |
| R2 Within Adj. |  | 0.203 | 0.203 |  | 0.380 | 0.397 |  |
| AIC | -1829.1 | -5575.5 | -5571.0 | -687.4 | -2361.9 | -2369.1 | -186.5 |
| BIC | -1819.3 | -4806.8 | -4777.7 | -679.6 | -1953.6 | -1941.4 | -181.4 |
| 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 = 149, T = 1-7, N = 1020  
  
Effects:  
 var std.dev share  
idiosyncratic 0.0002659 0.0163076 0.034  
individual 0.0075803 0.0870649 0.966  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8159 0.9294 0.9294 0.9288 0.9294 0.9294   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.083453 -0.009841 -0.000742 0.000071 0.010024 0.103279   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 0.54921605 0.00883959 62.1314 < 2.2e-16 \*\*\*  
ODIN\_score 0.00046008 0.00008074 5.6983 1.21e-08 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.34503  
Residual Sum of Squares: 0.33136  
R-Squared: 0.040945  
Adj. R-Squared: 0.040003  
Chisq: 32.4707 on 1 DF, p-value: 1.21e-08

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

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

Oneway (individual) effect Random Effect Model   
 (Swamy-Arora's transformation)  
  
Call:  
plm::plm(formula = HD.HCI.OVRL ~ odb, data = odb\_reg\_df, model = "random",   
 index = c("country", "date"))  
  
Unbalanced Panel: n = 100, T = 1-5, N = 361  
  
Effects:  
 var std.dev share  
idiosyncratic 0.0001069 0.0103371 0.014  
individual 0.0076709 0.0875834 0.986  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.8828 0.9411 0.9411 0.9395 0.9473 0.9473   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-0.031245 -0.007649 -0.000045 0.000311 0.007340 0.102231   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 0.57462875 0.01103239 52.0856 < 2.2e-16 \*\*\*  
odb 0.00033872 0.00010565 3.2062 0.001345 \*\*   
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 0.068759  
Residual Sum of Squares: 0.054576  
R-Squared: 0.21717  
Adj. R-Squared: 0.21499  
Chisq: 10.2798 on 1 DF, p-value: 0.0013449

[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 | 0.308\*\*\* | -0.030 | -0.027 |  |  |  |  |
|  | (0.06) | (0.03) | (0.03) |  |  |  |  |
| Open Data Barometer Score |  |  |  | 0.336\*\*\* | 0.000 | 0.000 |  |
|  |  |  |  | (0.05) | (0.00) | (0.00) |  |
| Global Data Barometer Score |  |  |  |  |  |  | 0.393\*\*\* |
|  |  |  |  |  |  |  | (0.07) |
| Trade (% of GDP) |  |  | 0.041\* |  |  | 0.000 |  |
|  |  |  | (0.02) |  |  | (0.00) |  |
| Agriculture, forestry, fishing value added (% of GDP) |  |  | -0.108 |  |  | 0.000 |  |
|  |  |  | (0.15) |  |  | (0.00) |  |
| Manufacturing value added (% of GDP) |  |  | -0.185 |  |  | 0.000 |  |
|  |  |  | (0.13) |  |  | (0.00) |  |
| School Enrollment, Primary (% gross) |  |  | 0.060 |  |  | 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 |  | -0.004 | -0.225\*\* |  | 0.000 | 0.000 |  |
|  |  | (0.05) | (0.11) |  | (0.00) | (0.00) |  |
| Year 2018 |  | 0.139 | -0.290 |  |  |  |  |
|  |  | (0.20) | (0.28) |  |  |  |  |
| Year 2019 |  | -0.151 | -0.669\* |  |  |  |  |
|  |  | (0.27) | (0.35) |  |  |  |  |
| Year 2020 |  | 0.015 | 0.095 |  |  |  |  |
|  |  | (0.44) | (0.42) |  |  |  |  |
| Year 2021 |  | -0.314 | -0.739 |  |  |  |  |
|  |  | (0.45) | (0.49) |  |  |  |  |
| Year 2022 |  | -7.029\*\*\* | -7.898\*\*\* |  |  |  |  |
|  |  | (0.77) | (0.86) |  |  |  |  |
| Constant | 50.789\*\*\* |  |  | 57.233\*\*\* |  |  | 53.384\*\*\* |
|  | (3.01) |  |  | (2.51) |  |  | (2.81) |
| Num.Obs. | 1031 | 1031 | 1031 | 362 | 362 | 362 | 94 |
| R2 | 0.121 | 0.957 | 0.959 | 0.242 | 1.000 | 1.000 | 0.186 |
| R2 Adj. | 0.120 | 0.950 | 0.951 | 0.240 | 1.000 | 1.000 | 0.177 |
| R2 Within |  | 0.401 | 0.422 |  | 0.000 | 0.000 |  |
| R2 Within Adj. |  | 0.396 | 0.414 |  | -0.020 | -0.040 |  |
| AIC | 8366.6 | 5560.6 | 5533.8 | 2877.7 | -23395.4 | -23385.4 | 752.7 |
| BIC | 8376.5 | 6335.9 | 6333.8 | 2885.4 | -22982.9 | -22953.4 | 757.8 |
| RMSE | 13.97 | 3.08 | 3.03 | 12.81 | 0.00 | 0.00 | 12.98 |
| 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=4.19. sigma\_u=12.98"

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 = 150, T = 1-7, N = 1031  
  
Effects:  
 var std.dev share  
idiosyncratic 17.568 4.191 0.094  
individual 168.421 12.978 0.906  
theta:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
 0.6927 0.8788 0.8788 0.8780 0.8788 0.8788   
  
Residuals:  
 Min. 1st Qu. Median Mean 3rd Qu. Max.   
-25.9092 -0.9829 1.0381 0.0143 2.5162 11.2378   
  
Coefficients:  
 Estimate Std. Error z-value Pr(>|z|)   
(Intercept) 70.530561 1.423272 49.5552 < 2.2e-16 \*\*\*  
ODIN\_score -0.097026 0.018533 -5.2354 1.646e-07 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
  
Total Sum of Squares: 19611  
Residual Sum of Squares: 19014  
R-Squared: 0.031321  
Adj. R-Squared: 0.03038  
Chisq: 27.4094 on 1 DF, p-value: 1.6463e-07

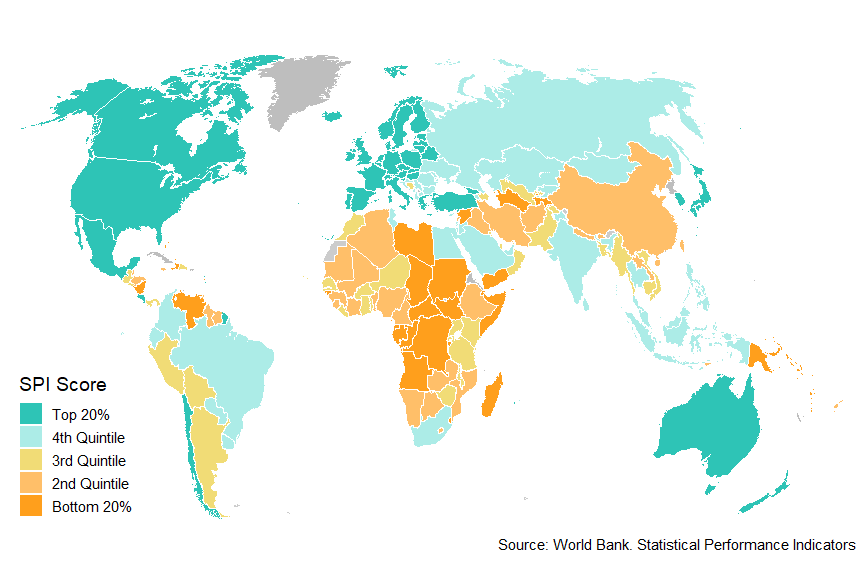
[1] "ODIN Model 3: sigma\_e=4.08. sigma\_u=12.12"

[1] "ODB Model 2: sigma\_e=0. sigma\_u=12.78"

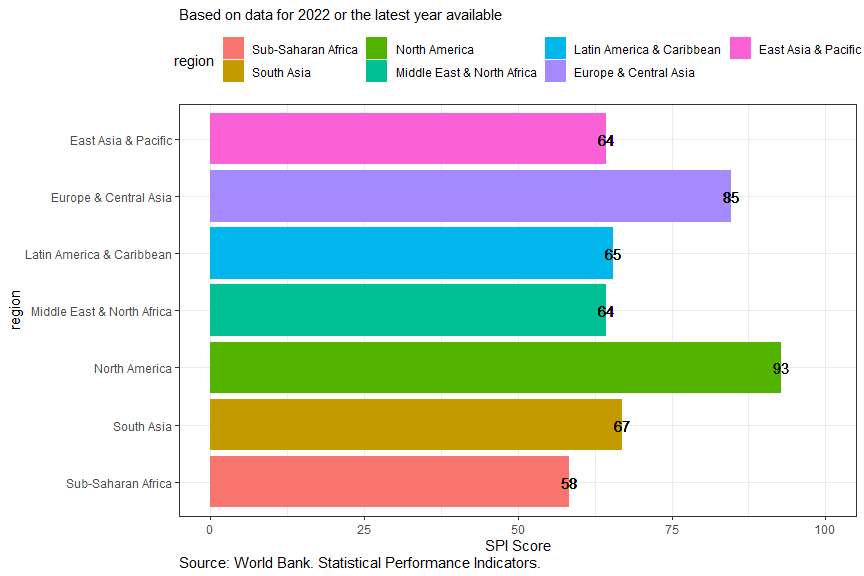
[1] "ODB Model 3: sigma\_e=0. sigma\_u=12.03"

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

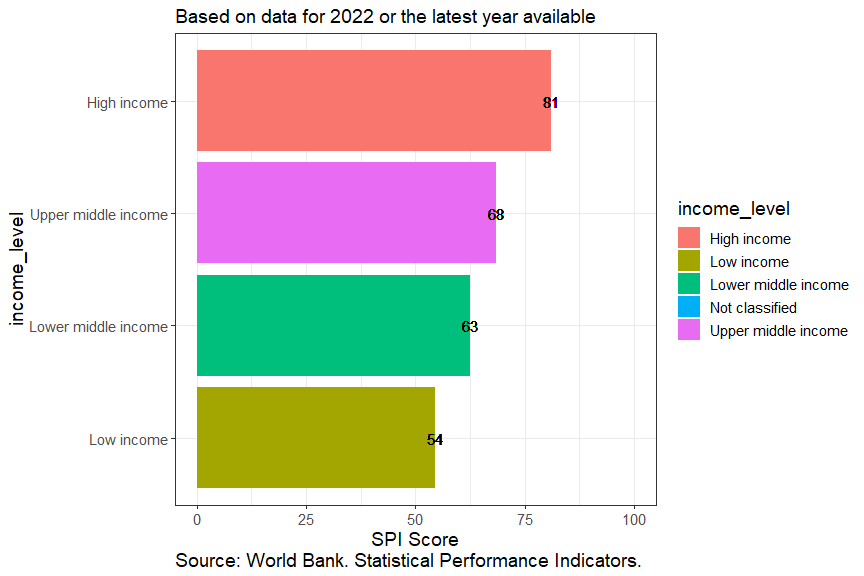
Panel A. SPI Overall Score



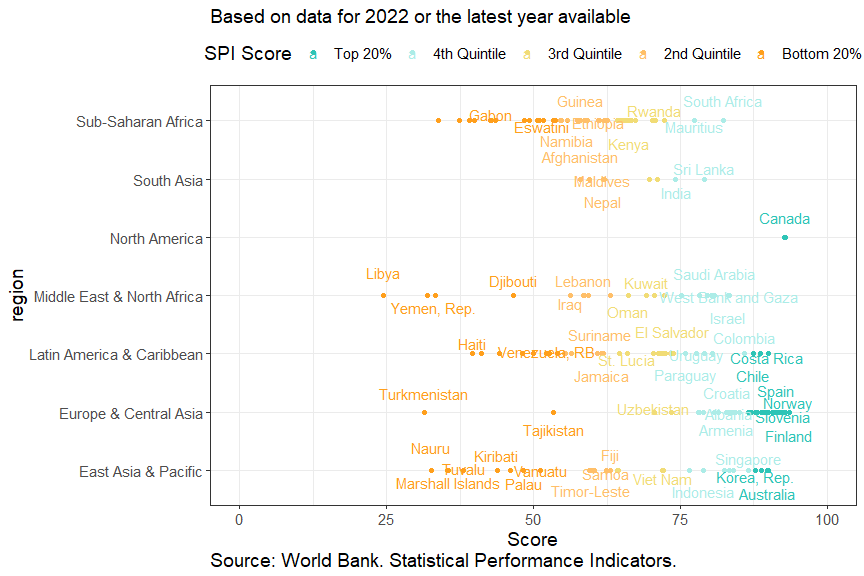
Panel B. SPI Overall Score by Region



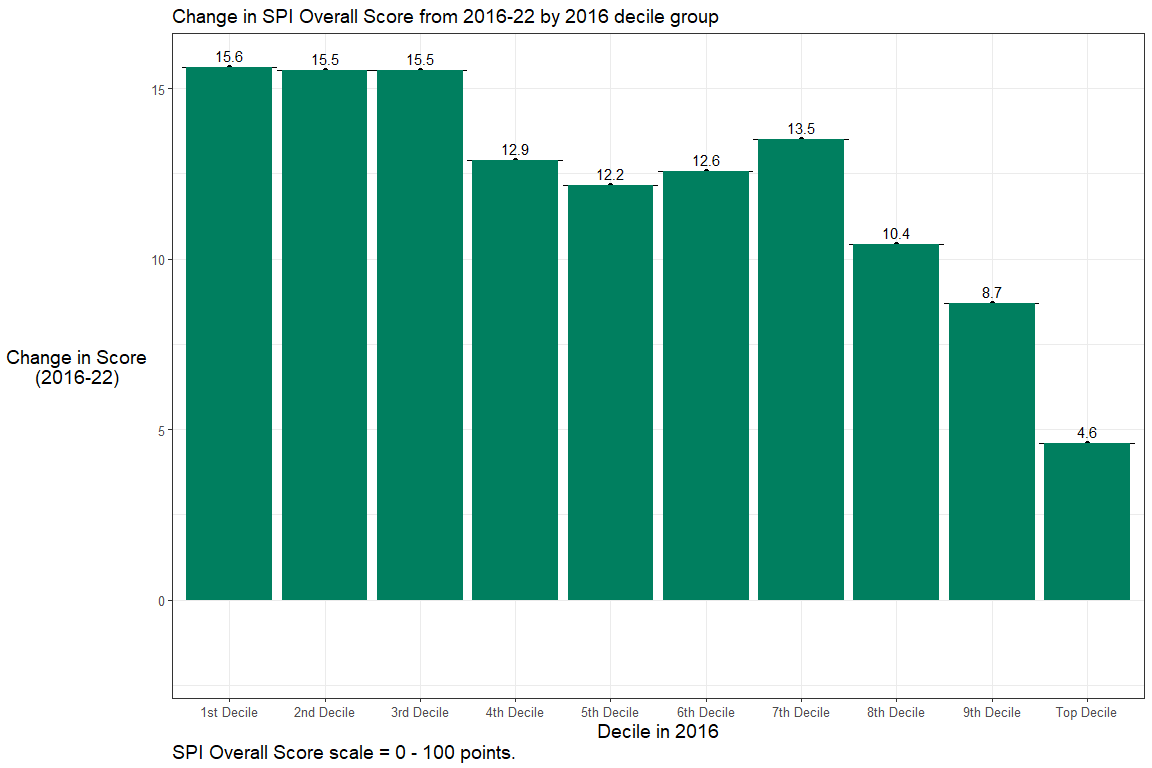
Panel C. SPI Overall Score by Income Levels



## 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

