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Statistical Performance Indicators and Index

A New Tool to Measure Country Statistical Capacity

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Abstract

The World Bank's Statistical Capacity Index has been widely employed to measure country statistical capacity since its inception two decades ago. This paper builds on the existing advantages of the Statistical Capacity Index, conceptually and empirically, to offer new statistical performance indicators and the Statistical Performance Index, which can better measure a country's statistical performance. The new index has clearer conceptual motivations, employs a stronger mathematical foundation, and significantly expands the number of indicators and countries covered. The paper further provides empirical evidence that illustrates the strong correlation of the new index with other commonly used development indicators of human capital, governance, poverty, and inequality. The framework can accommodate future directions to improve the index as the global data landscape evolves.

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Statistical Performance Indicators and Index: A New Tool to Measure Country Statistical Capacity

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1. Introduction

National statistical systems (NSSs) face the urgent need to adapt and develop in order to meet the rapidly evolving needs of various data users. The key task for the NSS is to provide accurate and updated data such that stakeholders, including policy makers and the general public, can make well-informed policy decisions.[1] Examples abound that abrupt changes to key indicators can lead to major policy revisions and subsequently have consequential effects on the economy and the people. Accordingly, the international community has placed much attention on assessing and improving country statistical capacity, particularly by employing an appropriate capacity assessment tool.[2]

The Statistical Capacity Index (SCI) is a tool developed by the World Bank in 2004 to assess the effectiveness of its lending projects related to improvements in countries' statistical capacity (World Bank, 2020a).[3] In particular, this index is used in various World Bank projects as a baseline indicator. The World Bank has mainstreamed these indicators in its monitoring and assessment frameworks such as the Corporate Score Card (CSC) and the IDA Results Measurement System (RMS). The SCI was also employed by different international and national agencies to measure progress with various development indicators including development trends (United Nations, 2016), or areas of statistical improvement in member countries (OIC, 2012), or tracking the Sustainable Development Goal (SDG) for child development (UNICEF, 2018). Researchers used

[1] Another no less important task for the NSS is to monitor progress on the Sustainable Development Goals (SDGs), which require high-quality and comparable data across countries. Indeed, without reliable data, a one-percentage-point decrease in the poverty rate—or a similar increase in the school enrollment rate—in one country cannot be compared with the corresponding figure in another.

[2] The challenges of weak statistical capacity are highlighted for poorer countries, especially the African economies, by Devarajan (2013).

[3] For brevity, we refer to both the Statistical Capacity Indicators and the Statistical Capacity Index as the SCI in the rest of the paper. We similarly refer to both the Statistical Performance Indicators and the Statistical Performance Index as the SPI. We will make it clear where we refer to either the indicators or the index.

the SCI as a benchmark to validate their new statistical indexes (Sanga *et al.*, 2011), or analyzed the SCI for various purposes such as investigating the relationship between good governance and statistical capacity, or the impacts of statistical capacity on reducing procyclical fiscal policy, or identifying countries where investments in statistical capacity can be most fruitful (Beegle *et al.*, 2016; Tapsoba *et al.*, 2017; Hoogeveen and Nguyen, 2019).

Table 1 compares the SCI with the statistical capacity measurement indexes used by other organizations, including PARIS21, the Food and Agriculture Organization of the United Nations (FAO), the United Nations Economic Commission for Europe (UNECE), the United Nations Economic Commission for Africa (UNECA), and the U.S. Census Bureau. Table 1 highlights several main advantages of the SCI over other indexes. It is the only tool that provides comparable data across different countries over time. Furthermore, the SCI also covers the largest number of countries (i.e., 146 countries) over the longest period (i.e., starting from 2004 to date).[4]

Yet, there are several areas in which the existing SCI can be improved. First, the various aspects of the capacity of an NSS that the SCI measures have fast become outdated. Since its launch in 2004, the SCI's methodology and coverage have remained the same, while the global data landscape has changed significantly. Technological advances with computing and data storage capacity have enabled NSSs to make significant advancements with data collection methods and better dissemination practices. The international community's adoption of the SDGs also raised the bar for NSSs regarding their capacity to produce higher-quality and more data. For example, the SCI includes no indicators of some important surveys such as the labor force surveys

[4] There is also a key methodological difference between the SCI and other assessment tools. The latter methods collect data directly from national statistical offices' staff or local experts. While this procedure may provide more in-depth analysis and uncover finer details in the organization of an NSS, it incurs high costs and is (far) more time-consuming. Furthermore, even the best evaluator can bring personal biases, non-uniform conceptions of capacity, or other subjective elements. Direct interviews of government officials might bias responses and complicate comparability across countries. On the other hand, since the SCI is based on publicly available data, it can provide an assessment of a country's statistical capacity in an internationally comparable and cost-effective manner.

and establishment surveys, which are indispensable instruments in a modern NSS's toolbox to monitor the latest trends in the economy. Second, the SCI focuses on poorer countries, which limits its relevance and application in an increasingly globalized world. This limitation with country coverage becomes even more noticeable in these modern times, when all NSSs face similar challenges to evolve to adapt to new data sources, data technology, and data partners. A standard tool to measure country statistical capacity in a consistent and comparable manner would be useful for richer and poorer countries alike. Finally, the theoretical principles of the SCI are not clearly formulated. For example, concerns were raised over the lack of a solid foundation behind the index's aggregation method as well as its practice of placing equal weights on each pillar and indicator (Ngaruko, 2008).[5]

In this paper, we aim to improve the current SCI to better suit the changing global data landscape. In particular, we aim to clearly lay out the conceptual foundation behind statistical capacity indices. We identify five key pillars regarding data usage and production in any modern economies—data use, data services, data products, data sources, and data infrastructure—which offer a new way to examine a country's statistical performance.[6] We subsequently construct an updated set of Statistical Performance Indicators to replace the SCI based on conceptual and practical considerations. The new index constructed from these indicators is hereafter referred to as the Statistical Performance Index (SPI). On the empirical front, we collect new data for the past several years, expand the number of indicators in the SCI by almost twice, and we extend the

[5] These concerns have practical relevance. For example, the scores of Cameroon and Sudan rose from 55.6 and 51.1 in 2015 to 68.9 and 63.3 in 2016, respectively, indicating a 24-percent improvement of statistical capacity over one year. This stands in sharp contrast with the common knowledge that a country's statistical capacity often improves incrementally.

[6] While measuring a country's statistical capacity is our ultimate goal, this task is difficult, if not impossible to implement at scale for all countries, given the typically unobserved inherent characteristics with an NSS. It is, however, relatively more straightforward to measure a country's statistical performance through objective and comparable indicators. This challenge is highlighted by a large number of indicators with missing data that we discuss later. Also see Cameron et al. (2021) for a related discussion.

sample of countries covered in the SCI by one-fifth, from 146 countries , to include high-income countries. As such, to our knowledge, the SPI offers the most complete coverage of country statistical capacity to date, in terms of a combination of a larger number of indicators, more time periods, and more country coverage.

Existing efforts in building indexes to assess statistical capacity have focused on practical details such as data collection, organization, and legal issues.[7] There are just a couple of academic studies that rigorously discuss the underlying theoretical principles that are indispensable for the construction of a reliable, transparent, and consistent statistical capacity index. Sanga, Dosso, and Gui-Diby (2011) discuss the technical framework behind the African Statistical Development Index. Most recently, Cameron *et al.* (2021) propose a new theoretical framework for improving the SCI that discusses a statistical index's desirable characteristics and its technical foundations (including aggregation methods and axiomatic properties). Both these studies, however, provide limited discussion of the conceptual foundation regarding data usage and data production behind their indexes. We address this limitation in this paper, and we build on the technical framework offered in Cameron *et al.* (2021) to provide a new index that is both conceptually clearer and more comprehensive.[8]

This paper consists of five sections. We discuss in the next section the conceptual motivations behind the SPI (Section 2.1) and its construction (Section 2.2) before comparing it with the SCI (Section 2.3). We subsequently present the empirical analysis in Section 3 where we offer detailed

[7] For example, the UNECE, in a recent Global Assessment report, discusses only the legal basis, description of the statistical system, data source, and processing of the target country (UNECE, 2014). The FAO, in its guidelines for assessing country capacity in producing agricultural statistics, provides instructions on completing the questionnaires and on compiling the assessment indicator (FAO, 2014), but pays no attention to the axiomatic principles of these indicators. The U.S. Census Bureau developed and recently updated (2017) the Tool for Assessing Statistical Capacity (TASC) with a primary objective of measuring the overall capacity of an NSS by providing a breakdown of the areas of strength and weakness. However, the focus of this instrument is on measuring the capacity of an NSS to conduct household-based surveys and censuses.

[8] We return to more discussion on the differences between our paper and Cameron *et al.*'s (2021) study in Section 2.2.

discussion on the new index ranging from the country overall scores (Section 3.1), its decomposition into pillar scores (Section 3.2) to its correlation with other popular development indicators (Section 3.3). We offer further policy discussion and additional issues for consideration for future work on the SPI in Section 4, and we finally conclude in Section 5.

2. Description of the SPI

2.1. Conceptual Motivations

Our proposed SPI offers a framework that is forward looking, measures less mature statistical systems as well as advanced systems, covers the entire national statistical system (NSS)—not just the National Statistical Office (NSO)—and provides countries with incentives to build a modern statistical system. In particular, by helping countries and development partners identify the strengths and weaknesses of national statistical systems, the SPI can support policy advice to improve or benchmark NSSs, offer advocacy for national statistics, and facilitate investment decisions for governments and (bilateral and multilateral) donors. Importantly, the SPI is also open-data and open-code where users can freely access data and experiment with different adjustments to the index on the World Bank's website.[9]

The National Statistical System can be characterized in a similar way to other organizational systems: beneficial outcomes for stakeholders are delivered through organizational outputs (services delivered) arising from effective internal processes that draw on a variety of inputs. The whole system can flourish if there is a strong infrastructure to support it. In recent years, the United Nations Economic Commission for Europe and Eurostat have done a considerable amount of work to conceptualize the statistical value chain to help modernize statistical systems. The Generic

[9] The SPI is publicly available at www.worldbank.org/spi and the code and underlying raw data are available at our project Github page.

Statistical Business Process Model (GSBPM) has been used by many countries to guide development of their National Statistical System alongside the Generic Activity Model for Statistical Organizations (GAMSO). In the European Union, the model has been developed into a detailed handbook.

In order to understand how to make these generic models operational, PARIS21, Open Data Watch, the Global Partnership for Sustainable Development Data, the OECD and others have defined a virtuous data cycle where the end goals of data use, data value and data impact are achieved through building up each element of the data ecosystem. The approach used in the SPI draws on these underpinning concepts.

We identify five key pillars of a country's statistical performance, as shown in Figure 1. These are data use, data services, data products, data sources, and data infrastructure, which can be further disaggregated into 22 dimensions. This figure shows these pillars and dimensions in the form of a dashboard, which can help countries identify areas for development in their statistical system. We briefly describe these pillars below. More details on the dimensions of the SPI are provided in Appendix A, Table A.1.

Since statistics have no value unless they are used, the first pillar of the SPI is data use. In order to meet user needs, the statistical system must develop a range of services that connect data users and producers and facilitate dialogue between them. The second pillar of the SPI is therefore data services that are trusted by users. The dialogue between users and suppliers in turn drives the design of statistical products that are to be created including the quality of product needed for the country requirement. This will incorporate accuracy, timeliness, frequency, comparability, and levels of disaggregation. The third pillar of the SPI is therefore data products. In order to create the products required, the statistical system needs to make use of a variety of sources from both

inside and outside the government. This includes making use of typical data collection methods like censuses and surveys, but also administrative data, geospatial data, and data generated from the private sector and from citizens. The fourth pillar of the SPI is therefore data sources. For the cycle to be complete, capability needs continuously to be reviewed to ensure that it is enough to deliver the products, services and ultimately data use required. The fifth pillar of the SPI is therefore data infrastructure. In summary, a successful statistical system offers highly valued and well-used statistical services, generates high quality statistical indicators that can also track progress for the SDGs, draws on all types of data sources relevant to the indicators that are to be produced, develops both hard infrastructure (legislation, governance, standards) and soft infrastructure (skills, partnerships), and has the financial resources to deliver.

Figure B.1 in Appendix B offers an alternative visual description of the beneficial interactions of the different data pillars, which reinforce each other through stakeholders' partnership, joint accountability, better capacity, and meeting user needs. Improvements in performance can be represented as a virtuous data cycle that can become self-sustaining.

2.2. Construction of the SPI

We follow Cameron *et al.*'s (2021) nested weighting structure to construct the Statistical Performance Index (overall score). Compared to other weighting schemes, this weighting structure offers properties such as symmetry, monotonicity, and subgroup decomposability. It is based on Atkinson's (2003) counting method, which was employed to construct a social exclusion index (Chakravarty and D'Ambrosio, 2006) and to measure adjusted multi-dimensional poverty (Alkire and Foster, 2011). It was also proposed to be potentially useful for constructing an SDG index (Dang and Serajuddin, 2020). Our statistical performance indicators have a three-level structure, and the SPI overall score is formed by sequentially aggregating the indicators at each level.

To begin we produce a score for each dimension within a given pillar, which, unless otherwise stated, is an unweighted average of the indicators within that dimension.

$$SPI.DIM_{ctpd} = \sum_{i=1}^{N_I} \frac{SPI.IND_{ctpdi}}{N_I}$$

where $SPI.IND_{ctpdi}$ is an indicator i (e.g. population census score) in dimension d, pillar p, time period t, and country c, and N_I is the number of indicators in dimension d. For instance, the score for the Standards and Methods dimension is obtained by taking the unweighted average of all indicators in this dimension, including the indicators for the system of national accounts in use, national accounts base year, classification of national industry, CPI base year, and classification of household consumption (Appendix A, Table A1).

After computing a score for each dimension, a score for each pillar is computed as the average score of the dimensions in in that pillar. For pillars 1, 2, 4, and 5, the unweighted average of the dimensions within each pillar is taken. For pillar 3 on data products, we take a weighted average of the dimensions, where the weights are based on the number of SDGs in each dimension (6 SDGs in dimension 3.1 on social statistics, 6 SDGs in dimension 3.2 on economic statistics, 2 in dimension 3.3 on environmental statistics, and 2 in dimension 3.4 on institutional statistics).[10] This reflects a perspective that all SDGs are of equal importance, and therefore the dimensions are weighted accordingly. Additionally, for Pillar 4 on data sources, censuses and surveys are given separate weights, so that censuses, surveys, admin data, and geospatial data each receives a weight of 1/4. While censuses and surveys are in the same pillar in the framework, and therefore each would typically only receive a weight of 1/6 in this dimension, because of their importance in

[10] SDG 14 - Life Below Water - is omitted because land-locked countries do not report on these indicators.

producing many indicators, they are given extra weight such that each gets a weight of 1/4. The score for each pillar ($SPI.PIL_{ctp}$) is calculated as follows

$$SPI.PIL_{ctp} = \sum_{d=1}^{N_d} \frac{\omega_{pd} \times SPI.DIM_{ctpd}}{N_d}$$

ω_{dp} is the weight for dimension d in pillar p, and N_d is the number of dimensions in pillar p.

After calculating the scores for each pillar, the SPI overall score is derived by taking the average across the 5 pillars. The SPI overall score has a maximum score of 100 and a minimum of 0. A score of 100 would indicate that a country has every single element that we measure in place. A score of 0 indicates that none is in place. The SPI overall score ($SPI.INDEX_{ct}$) is calculated as follows

$$SPI.INDEX_{ct} = \sum_{p=1}^{N_p} \frac{SPI.PIL_{ctp}}{N_p}$$

where $SPI.PIL_{ctp}$ is the SPI pillar scores for country c in time t for the five pillars discussed above, and N_p is the number of pillars.[11]

2.3. Comparison with the SCI

The SPI has several advantages over the SCI on both the conceptual and empirical fronts. Conceptually, it is clearly motivated and offers a framework that is forward looking, measures less mature statistical systems as well as advanced systems. The five pillars of data use, data services, data products, data sources, and data infrastructure provide an updated characterization of a

[11] We provide more detailed discussion of the SPI indicators and potential issues with missing data in Dang *et al.* (2021).

modern NSS. It has a number of indicators related to the SDGs that are not available in the SCI. The SPI is also built on a rigorous, axiomatic foundation that satisfies all the desiderata of a statistical capacity index: simple, coherent, motivated, rigorous, implementable, replicable, and incentive consistent (Cameron *et al.,* 2021).[12] Table 2 shows that empirically, the SPI offers 51 indicators, which is more than twice the 25 indicators provided by the SCI. While the SCI covers 146 countries and includes no high-income countries, the SPI covers 174 countries including both low-income and high-income countries, which is 20 percent more countries than those of the SCI.[13]

As a check on the data, we calculate the number of unique scores for our SPI overall score. If our SPI overall score produces a large number of tied scores, for instance, then our index will be less able to distinguish between the statistical performance of countries. When calculating the number of unique values for 2019, we find that there are 174 unique scores for 174 countries. This means there are 0 tied values. In contrast, there are only 55 unique values for the 149 countries in the SCI for 2019, implying that we are able to distinguish only around one-third of these countries regarding their statistical capacity (that have a unique value).[14]

We next compare the volatility of the SPI and the SCI over time, in terms of the standard deviations of these indices over the four years, 2016 to 2019. The SCI has more volatility during this period with an average standard deviation of 4.3, while the corresponding figure for the SPI is 3.2. Alternatively, Figure 2 plots the relationship between the overall scores in 2016 and 2019 for the two indexes. The SPI (panel on the right) shows a narrower and tighter upward sloping line than the SCI (panel on the left) does. Several countries stand out as outliers with the SCI scores

[12] Compared with the SPI that we propose in this paper, Cameron *et al.* (forthcoming) offer an early, experimental version that has fewer indicators (42 indicators) for a single year only (2016).
[13] Of these 51 indicators, 44 indicators are used to construct the SPI overall score.
[14] For each specific pillar of the SPI, there are 18 unique scores for Pillar 1 on data use. The data use indicator is coming solely from pillar 1.5 on data use by international organizations. For Pillar 2, there are 163 unique scores, whereas for Pillars 3 and 4 there are 172 unique scores. Lastly, there are 20 unique scores for pillar 5.

such as Latvia, Lithuania, and the Syrian Arab Republic (i.e., these countries' SCI scores in 2019 are less correlated with those in 2016). In contrast, the SPI does not show such outliers.

We further randomly selected 15 countries and plot in Figure B.2 (Appendix B) the SPI versus the SCI values during this four-year period. While the SCI generally shows much more fluctuation than the SPI, several countries stand out where the SCI appears more volatile such as Fiji, Hungary, Mali, South Africa, and Uruguay.

3. Empirical Analysis

3.1. SPI Country Scores

We map in Figure 3 the SPI scores for all countries, which shows much heterogeneity for countries at different income levels or in different geographical regions. Consequently, we examine the SPI in more detail by income levels in Figure 4. This figure shows that countries with a higher income level have a higher SPI score. In particular, high income countries have an average SPI of 78, which is followed by upper middle income countries (61), lower middle income countries (56), and low income countries (46). In terms of relative differences, the SPI score for high income countries is 28 percent higher than that of upper middle income, 39 percent higher than that of lower middle income countries, and 70 percent higher than that of low income countries. Overall, the correlation in 2019 between (logged) GDP per capita and the SPI overall score is 0.65.[15]

Figure 5, Panel A shows that there are large differences across regions. North America is the region with the strongest average SPI (88), which is followed by Europe and Central Asia (79),

[15] We offer in Figure B.3 (Appendix B) a related ranking of the SPI by World Bank's country lending status, which shows a similar positive correlation between country income level and its SPI score. In particular, the SPI scores are lowest for IDA (poorest) countries and highest for unclassified (high-income) countries. Similarly, dividing countries into FCS (Fragile and Conflict) status versus non-FCS status respectively yields the scores of 67 and 42 for the former and latter groups of countries.

Latin America and the Caribbean (61), East Asia and the Pacific (59), South Asia (58), Middle East and North Africa (54), and Sub-Saharan Africa (51).

Yet, Figure 5, Panel B shows that within regions there is also significant variation in the SPI overall score. For instance, in the Latin America & Caribbean region, Mexico is the country with the highest SPI score of 88, while Haiti, the lowest-scoring country in the region, earns a far lower score of 37.5. In Sub-Saharan Africa, the highest-scoring country is Mauritius with a score of 75.9, while the lowest-scoring country is Somalia with a score of 19.6. In the East Asia and Pacific region, the top-scoring country is Australia with a score of 88, while the lowest-scoring country is Marshall Islands with a score of 20.9.

We examine the improvement of the SPI for countries between 2016 and 2019. Figure 6 plots the growth of countries classified into ten deciles based on their SPI score in 2016 and shows that countries in the bottom four deciles grow fastest in 2019. In particular, these countries average a growth rate of 7 percent, which is higher than the global average growth rate of 5.5 percent.

We provide full overall scores and pillar scores for all countries in 2019 in Table B1 (Appendix B), and country SPI overall scores over the period 2016-2019 in Table B2 (Appendix B). To provide a visual aid with interpretations, the countries are color-coded into five groups based on their performance.

3.2. SPI Decomposition by Pillar

We show next in Figure 7 the correlations between the SPI overall score and the SPI pillar sub-scores (Data Use, Data Services, Data Products, Data Sources, and Data Infrastructure). All pillars are positively correlated with one another. On the other hand, no pillar is perfectly correlated with any of the other pillars, which indicate that each pillar provides additional information on a country's statistical performance. The pillars with the correlation to the overall measure in a

decreasing order is pillar 5 on data infrastructure (0.88), pillars 2 and 4 on data services and data sources (0.84), and pillar 1 on data use (0.83). The indicator with the lowest overall correlation with the SPI overall score is pillar 3 on data products (0.69). We provide more visual illustration for the five data pillar scores globally and for countries within each region in Figures C.1 to C.5, Appendix C.

We further decompose the SPI into the contributions from each pillar, in both absolute and relative terms, by country income level and plot the results in Figure 8. Because the SPI overall score is the weighted average of each of the five pillar scores (with each pillar having an equal weight of one-fifth), it is possible to decompose the SPI overall score into a weighted sum of the five pillars. In Figure 8, Panel A we show the decomposition in absolute terms for countries in each income level. For a hypothetical country that scores perfectly in each pillar, the figure would show 20 points for each pillar. In low income countries, adequate data sources, measured in pillar 4, represents a severe capacity limitation. Pillar 4 contributes only 4 points out of a possible 20 for low income countries to the SPI overall score. Data infrastructure is another area of concern for low income countries, with low income countries receiving only 6.4 points out of 20, compared to 16.9 points out of 20 for high income countries.

In relative terms, low income countries are doing comparatively well in terms of the data use pillar, with 31 percent of low income countries scores coming from this pillar, and relatively poor on data sources with only 9 percent of the overall score coming from this pillar. High income countries are doing relatively poorly in terms of data products with 16 percent of the overall score coming from pillar 3.

3.3. Correlation of SPI with Some Other Development Indices

How does the SPI relate with other commonly used development indicators? We next examine the relationship between the SPI and other indexes including the World Bank's Human Capital Index (World Bank, 2020b), the Worldwide Governance Indicators (WGI) (Kraay, Kaufmann, and Mastruzzi, 2010), and the headcount poverty rate and the Gini inequality index.

The Human Capital Index (HCI) is designed to capture the amount of human capital a child born today can expect to attain by age 18 in a country. The index combines a country's child mortality, learning adjusted years of schooling, adult survival rates, and stunting into one index. We would expect a strong positive relationship between a country's HCI value and its SPI score, as countries with a more developed human capital stock are likely to have greater capacity to produce statistics. The correlation between the 2018 values of the HCI (the latest data available at the time of this writing) and the 2018 values of the SPI overall score is rather strong at 0.79. Figure 9 plots the SPI against the average values of the HCI for the period 2016-2019 (right panel). For comparison, we also plot the SPI against the average values of log GDP per capita for the period 2016-2019 (left panel). Both panels show a positive relationship between the SPI and these indices, suggesting that countries with higher per capita income and higher levels of human capital tend to have better performing statistical systems.

A common justification for improving statistical systems is that doing so can lead to better governance. A better NSS allows countries to target resources more efficiently as well as helps hold public officials more accountable for progress. The WGI include a measure of government effectiveness, which captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. The estimate gives the country's score on the aggregate indicator, in units of a standard

normal distribution, i.e., ranging from approximately -2.5 to 2.5. The government effectiveness indicator is available from 1996 to 2019. There is a strong relationship between the SPI overall score and the government effectiveness indicator. The correlation between the two in 2019 is 0.77. Figure 10 offers the visual illustration of the strong and positive relationship between the SPI overall score and the government effectiveness indicator.

Finally, Figure 11 provides a graphical description of the relationship between the SPI and poverty and inequality. Unsurprisingly, the SPI has a negative relationship with the poverty rate (which is suggested by the positive relationship between a country's SPI score and its income level discussed earlier). Yet, it is interesting to note that the SPI also has a negative, albeit somewhat weaker relationship with inequality, indicating that countries with more unequal allocation of resources have lower SPI scores. While further investigation is clearly needed, this result is encouraging. It suggests that improvements to a country's SPI score reflect a more efficient NSS that can potentially help improve inequality, perhaps through higher-quality data and more transparency on its economic activities.

4. Issues for Further Consideration

We propose in this paper to improve the World Bank's SCI—which has been widely used to measure country statistical capacity—in different aspects, both conceptually and empirically. While our proposed new SPI offers a number of advantages over the SCI such as more indicators, more country coverage, and better conceptual motivations, it leaves room for further enhancement.[16] In this section, we briefly discuss several promising directions to expand the SPI as well as its practical relevance for policy recommendations.

[16] We fully acknowledge that the increased numbers of indicators and countries covered for the SPI require more data compared to the SCI. The data for the SPI come from different sources, but mostly from established databases with

First, more understanding is needed of how statistical data are used. Some promising work has been done by PARIS21 on data use by the Executive Branch of Government and on data use by citizens but there is an important research agenda to be pursued. This research can lead to fruitful policy advice. For example, there is evidence that using volunteer data collected by citizens can encourage the public to participate more in environmental protection and enhance government ability to monitor and manage natural resources (Conrad and Hilchey, 2011). Statistics have no value unless they are used and it is only through an understanding of how they are used, the extent of that use and drivers for better use that statistical systems can be designed in a user-centered way. In this regard, we acknowledge that conceptually, while the new SPI is intended to provide the world with a new forward looking framework of how NSSs need to further evolve, the SPI scores are empirically based on the data currently available. As such, it must be further refined, based on collective investment in developing more relevant measurements and data sources.

Second, the United Nations Statistics Division global database for SDG indicators is not well populated, particularly for many high income countries.[17] A recent study suggests that data are available for just over half of all indicators and for just 19 percent of what is needed to comprehensively track progress across countries and over time (Dang and Serajuddin, 2020). In some cases it is likely that the data exists but has not found its way on to the database. This is a major problem for users and for those seeking to identify best country practice as a guide for their own statistical development. This issue is related to serious gaps in the data available on data sources. It would be important for the United Nations custodian bodies to work with countries to

international organizations. While missing data pose no serious challenge, maintaining a database with more indicators and countries requires careful work. But this task can be improved with recent advances in computing and data storage power, see our discussion below.

[17] Notably, high-income countries do not often collect data on certain indicators that are more relevant for poorer countries such as child stunting, so they do not report on these indicators to the SDGs.

improve this situation. Statistics about statistics are vital if improvements to statistical systems are to be made. This concern applies across the range of administrative data sources. In the area of geospatial data, there is an opportunity for the Global Geospatial Information Management (GGIM) community to have a significant beneficial impact.

Third, data about statistical infrastructure is patchy. In particular it will be useful to collect further data on the financing of statistical systems. One of the Sustainable Development Goal indicators (17.18.3) relates to whether the national statistics plan is fully funded but there remains incomplete data on this. Financing is also a complex issue since the costs that are associated with producing high-quality and more frequent data vary across countries and are likely to reflect, at least to some extent, country statistical capacity. For instance, a study suggests that the average cost of implementing a recent household consumption survey (in 2014 or later) ranges from approximately US$800,000 to US$5 million, depending on the context and sample sizes (Kilic *et al.*, 2017). Countries with a better data infrastructure (and higher levels of data skills) may possibly offer lower costs regarding data collection.[18]

Related to this, certain countries heavily rely on donor funds and technical assistance to implement data collection activities (e.g., household surveys). Everything else equal, these countries likely have lower statistical capacity than countries that implement surveys on their own. As such, it is useful to investigate further how each country produces its data and whether some aid-dependent countries, in a counterfactual scenario, can continue their statistical activities without interruptions in the absence of donors. Such scenarios are not far-fetched. Donors such as the Swedish Aid Agency (SIDA) or the United Kingdom Foreign, Commonwealth and

[18] On a related note, further research into the different strengths of correlation between the five data pillar scores can be useful. For example, does a stronger correlation of the overall SPI score with data infrastructure justify prioritized investment in this area?

Development Office (FCDO) are known in the past decade to have withdrawn resources from developing countries that have become richer (e.g., Vietnam) to focus more on the poorer countries (e.g., Sub-Saharan Africa). An accurate evaluation of a (poor) country's NSS statistical capacity is thus quite helpful for the donor and the government to discuss alternative aid strategies when this country raises its income level.

More generally, ongoing technological advances with computing and data storage power have made various data sources more accessible. The cycle of data collection activities has also significantly been shortened, due to decreasing costs of mobile devices and faster internet connections. In this regard, the roles of NSS may increasingly transition from the more basic tasks of data collection and dissemination to the more advanced tasks of data analysis and interpretation. Alternative methods of producing data, such as employing statistical data imputation methods, have been found to substitute for the need to collect data at least to some extent (Dang, Jolliffe, and Carletto, 2019). Consequently, future updates of the SPI can include more indicators for an NSO's analytical capacity to produce various statistical products.

Finally, a question can be raised on how often the SPI's framework (including its indicators) should be updated? For example, should it be on a five-year basis or a shorter basis? Past experience with the SCI suggests that this index has served multiple objectives well in the past two decades. But this took place in a less changing data landscape, which used to have less technology development and more expensive data equipment. Just in the past few years, we have seen all the constraints loosened with fast technological progress as discussed earlier. While we do not offer conclusive thoughts on this topic, it may be useful to open up the discussion with various stakeholders on the best ways to ensure that the SPI remains useful and relevant in a fast changing world.

5. Conclusion

We build on the existing advantages of the World Bank's widely-used SCI, both conceptually and empirically to offer a new SPI that can better measure a country's statistical performance. The SPI offers the most complete coverage of country statistical capacity to date. In particular, we present clearer conceptual motivation, employ a stronger mathematical foundation, and significantly expand the number of indicators (including adding new indicators) and countries covered by this index. We also provide some brief empirical illustrations of the strong correlation of this new index with other commonly used development indicators. The indicators can be aggregated into overall scores not just for an index, but also for 22 dimensions and five pillars, which can offer a "dashboard" roadmap that visually describes a country's statistical performance. Our framework proposes future directions to further improve the SPI as the global data landscape evolves.

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Table 1: Comparing SCIs with other statistical capacity measurement tools

Tools[19] / Criteria	PARIS21	UNECE	FAO	UNECA	US Census Bureau	WB
Country-level data	No	Yes	No[20]	Yes	No	Yes
Countries covered	NA.	10 (ECA countries)	NA.	43	NA.	146
Time covered	NA.	One year	NA.	NA.	NA.	2004-2019
Designed data collection method	Primary data collection	Primary data collection	Primary data collection	Primary data collection	Primary data collection	Secondary data collection
Selected indicators						
Number of indicators	16 (quantitative); 18 (qualitative)	5 broad categories, 40-50 specific aspects[21]	24 sub-categories	42 variables	110	25
Pillars covered	System-wide indicators; agency-related indicators; data-related indicators.	Legal Basis; National Statistical System; Statistics Authority; Data Sources and Processing Statistical Domains.	Institutional infrastructure; Resources; Statistical methods and practices; Availability of statistical information; Critical constraints	Functioning of the National Statistical Systems; Statistical infrastructure; Data dissemination; Human capital development; Funding	Institutional capacity; Planning and management; Mapping; Sampling; Questionnaire content and testing	Revised SCIs: Methodology, standards and classification; Censuses and Surveys; Dissemination Practices and Openness; Availability of Key Indicators
Operational relevance	• Useful both for national management and international comparison; • More useful to countries that are "statistically challenged". • Facilitate coordination among the organizations involved in technical assistance.	• Recommendations from the reports could be incorporated into statistical capacity-building programs and strategies; • These strategies are then made operational through annual statistical programs of work and implemented by the beneficiary countries.	• CAQ can be used to create country profiles and group countries into quartiles or to identify priority interventions that could be implemented at the regional level. • The in-depth assessment will further provide insights on agricultural and rural statistics.	• Support the monitoring and evaluation of RRSF identify for each African country weaknesses and strengths in order to support interventions; • Provide a general idea of the performance of African countries' statistical systems.	• Aid NSOs in identifying areas of improvement; • Assist NSOs and donors to justify the need for funding for training; • Provide a measure of the impact of capacity building activities by being administered at two points in time, before and after.	• Provide an assessment of country statistical capacity over time in a cost-effective, sustainable way; • Provide guidance to the WB teams in assessing the progress and sustainability of the Bank supported projects; • Inform Systematic Country Diagnostics; • Provide a monitoring tool for countries' SDGs data production capacity.

Sources: Adapted with modifications from Cameron et al. (*2021*).

[19] Partnership in Statistics for Development in the 21st Century (PARIS21): Statistical Capacity Building Indicators; United Nations Economic Commission for Europe: Global Assessment; Food and Agriculture Organization of the United Nations: Country Capacity Indicators; United Nations Economic Commission for Africa: African Statistical Development Index; US Census Bureau: Tool for Assessing Statistical Capacity, World Bank: Statistical Capacity Indicator.

[20] The pilot study was conducted in Asia Pacific countries in 2012. In-depth country assessment will be carried out, following the established guidelines.

[21] Referred to the most recent GA report on National Statistical System of Mongolia. No specific indicators were referred to, but the report focused on assessing different specific areas of the Mongolian statistical system.

Table 2: Comparing the SPI and the SCI

	SCIs	SPI
Coverage		
Country coverage	146	174+
Time covered	2004-2019	2016 onwards
Selected indicators		
Number of indicators	25	51
Pillars covered	Methodology; Source Data; Periodicity and Timeliness	Data Use, Data Services, Data Products, Data Sources, and Data Infrastructure
Aggregation method	Simple arithmetic average	Revised weighted average
Operational relevance	1) Track the strengths and weaknesses of country statistical capacity overtime in a cost-effective manner; 2) Track the progress and sustainability of Bank-financed projects in statistical capacity building; 3) With a focus on MDGs in Periodicity section, the old SCIs provided a monitoring tool for country MDGs data production capacity.	1) Provide an objective, justifiable assessment of country statistical capacity over time with comprehensive, up-to-date information; 2) Provide guidance to the WB teams in assessing the progress and sustainability of the Bank supported projects; 3) Inform Systematic Country Diagnostics; 4) Provide a monitoring tool for countries' SDGs data production capacity.
Limitations/Identified weaknesses	1) Output focused, failing to address the infrastructure/resource part of the NSOs; 2) Relative narrow scope of pillars and indicators; 3) Unable to reflect the change of data landscape and new data requirements brought up by the SDGs.	1) Selection of indicators under the pillars of data use and data infrastructure are at an early stage of development. 2) In the data sources pillar, indicators on administrative data and geospatial data availability are not comprehensive. 3) Indicators under the data products Pillar are constrained by the development stage of SDGs indicators. This leaves room for future development of the SPIs structure.

Sources: Adapted with modifications from Cameron et al. (*2021*).

Figure 1: The Pillars and Dimensions that Construct the New SPI

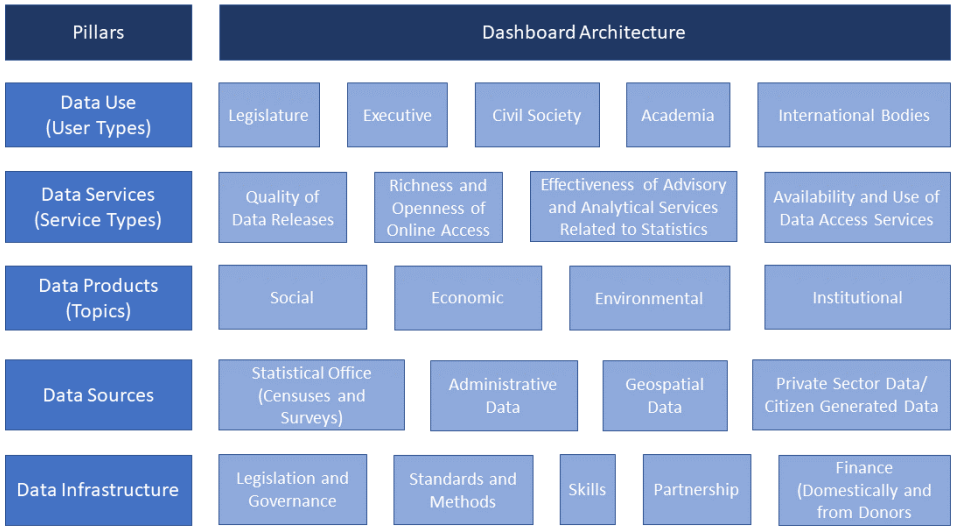


Figure 2: Volatility of SPI and SCI Scores between 2016 and 2019

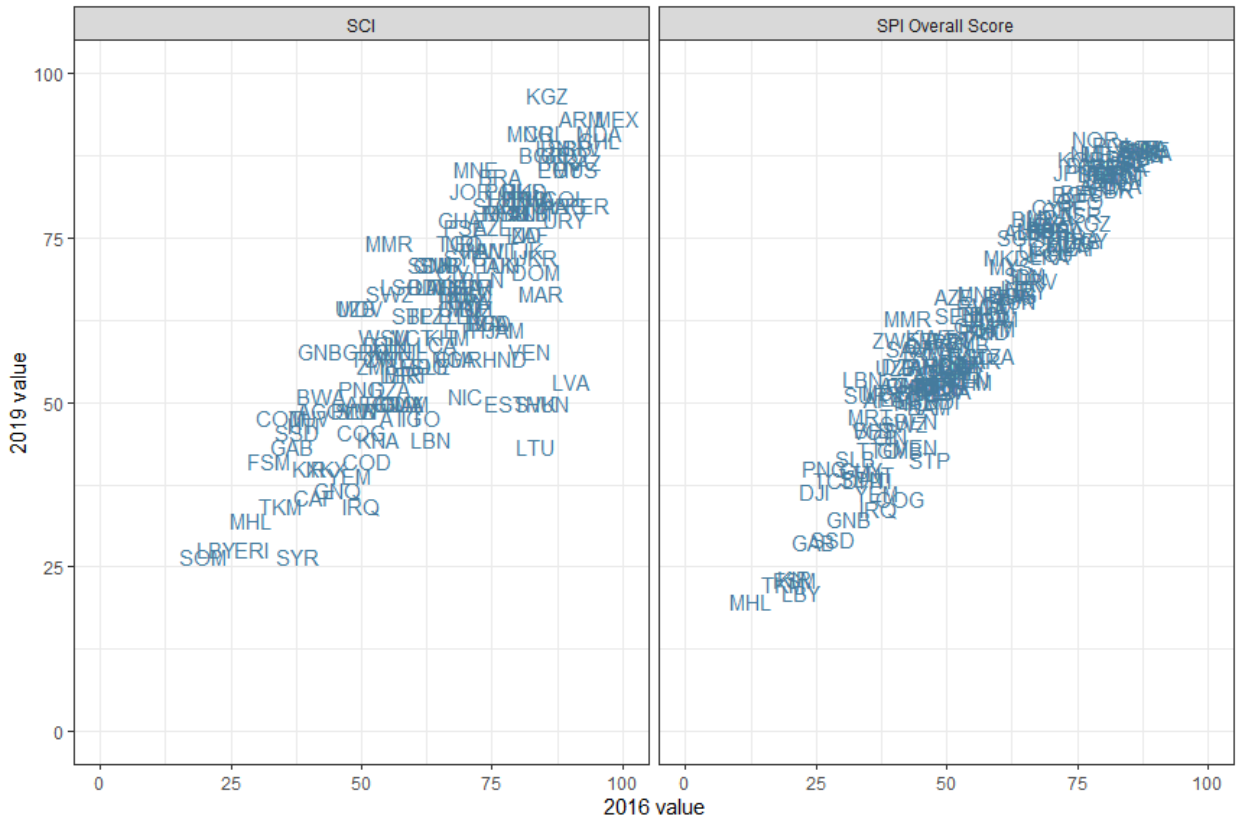
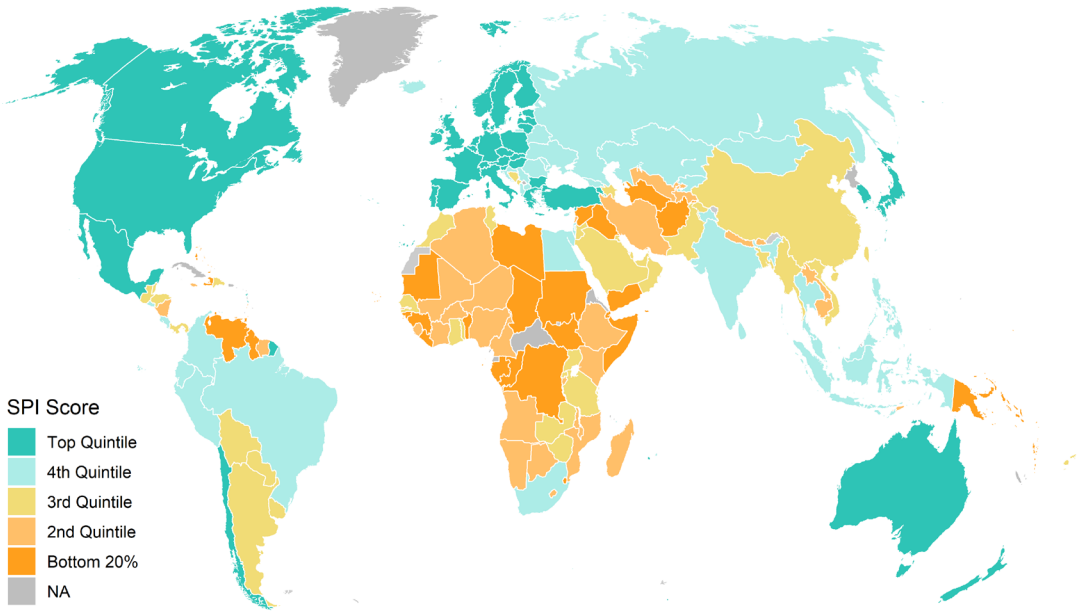


Figure 3: SPI Overall Score



Source: World Bank. Statistical Performance Indicators

Figure 4: SPI Overall Scores by Income Group

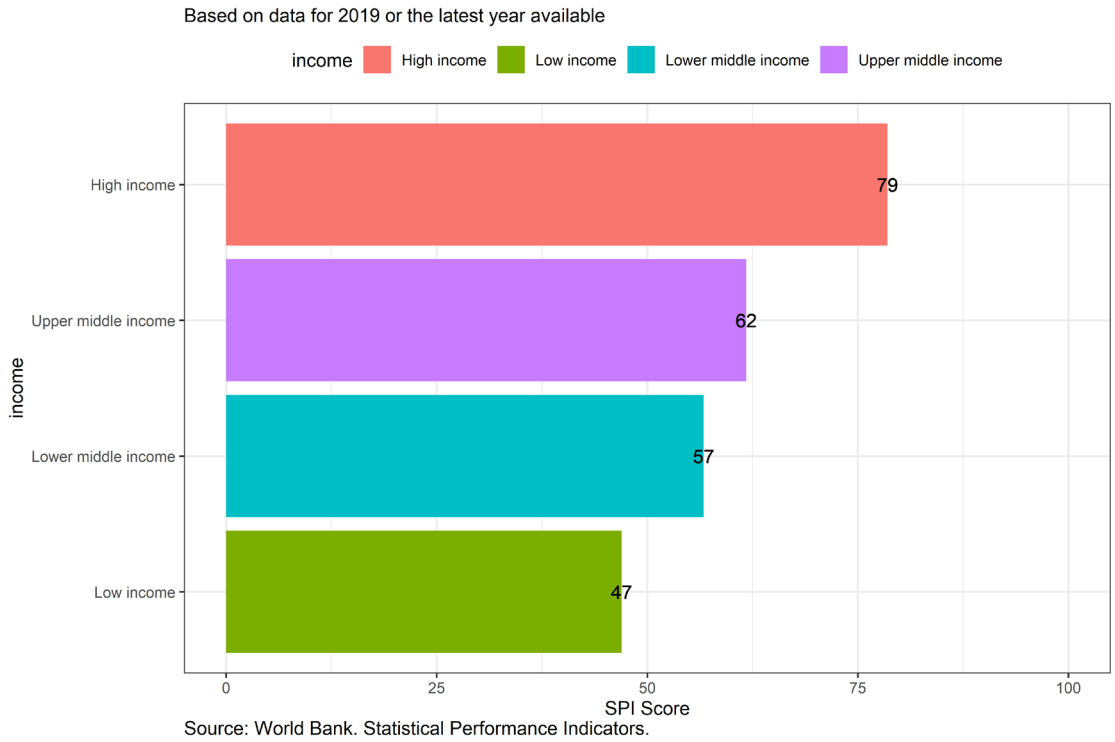
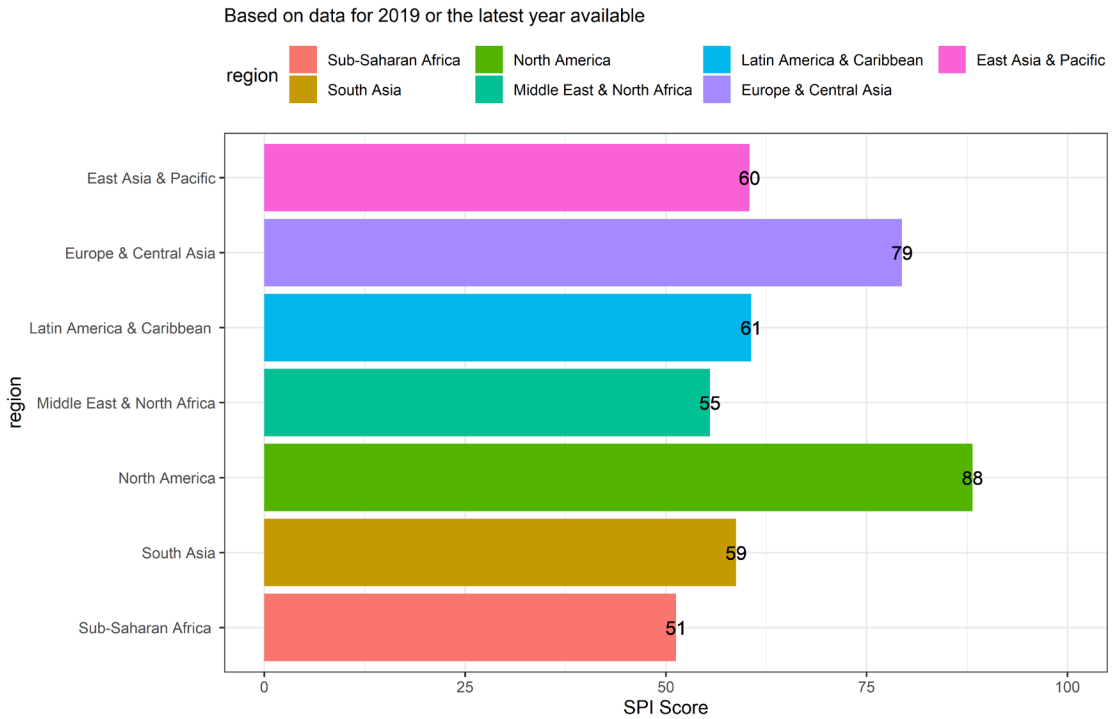


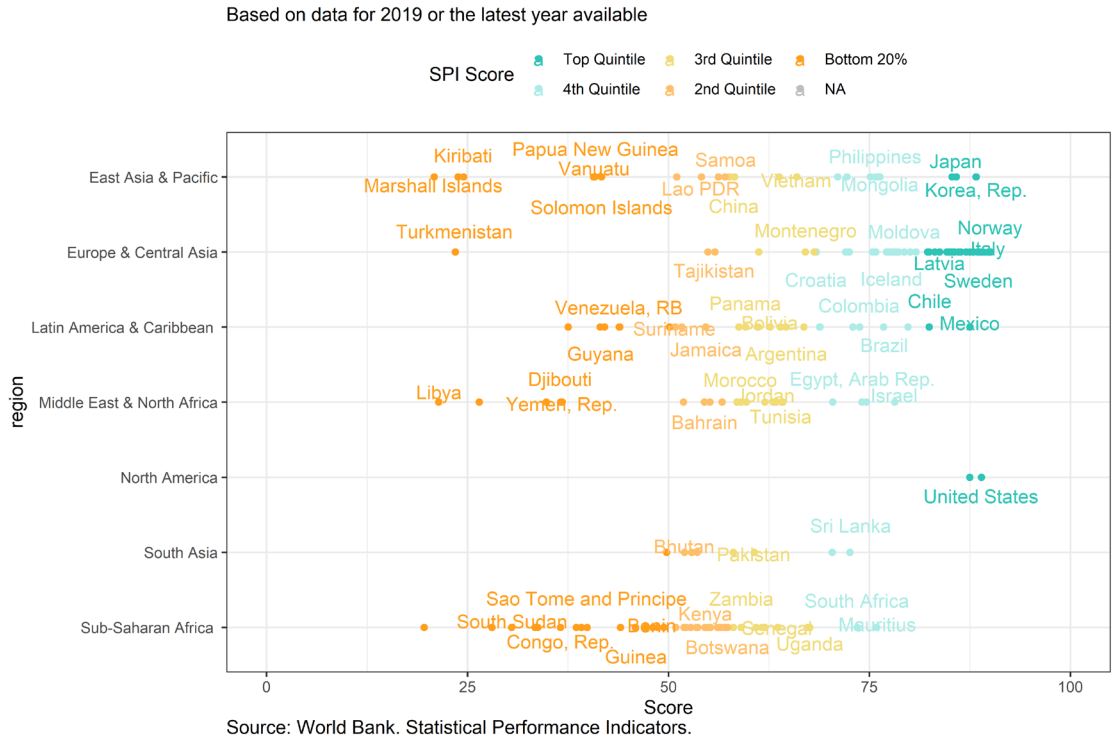
Figure 5: SPI Overall Score by Region and Country

Panel A: By Region



Source: World Bank. Statistical Performance Indicators.

Panel B: By Country within Each Region



Source: World Bank. Statistical Performance Indicators.

Figure 6: Changes with the SPI Overall Score between 2016 and 2019

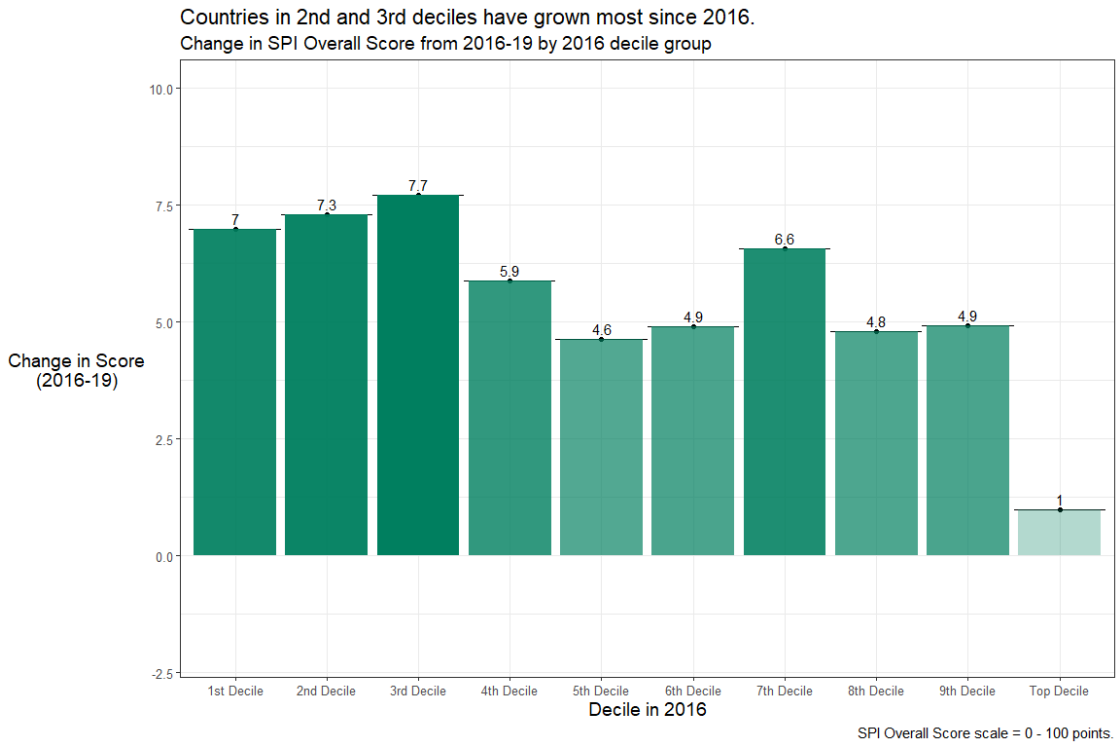


Figure 7: Correlation between the SPI Pillars

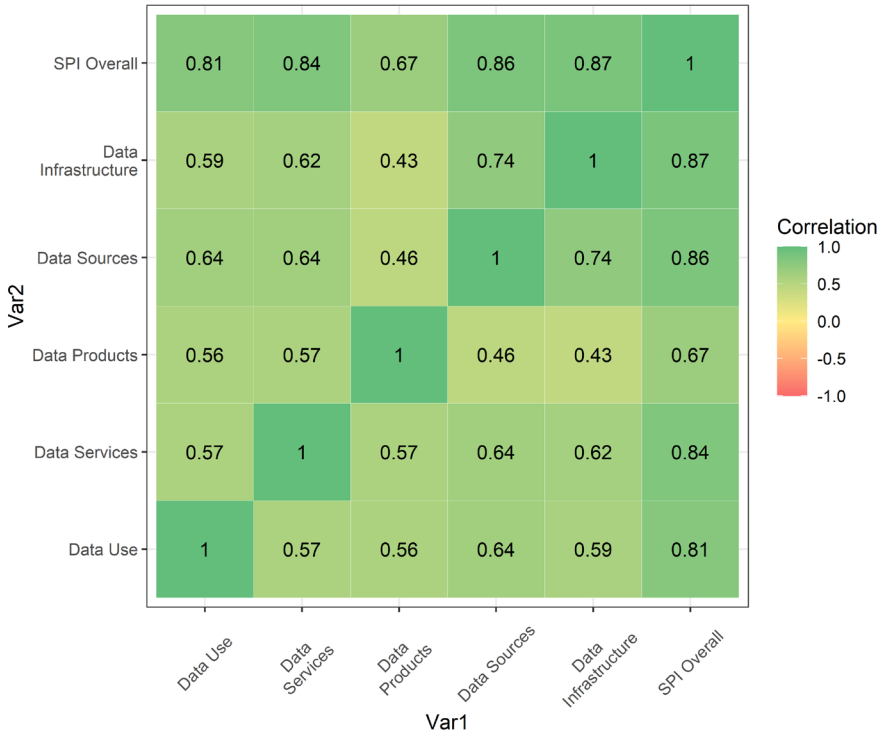
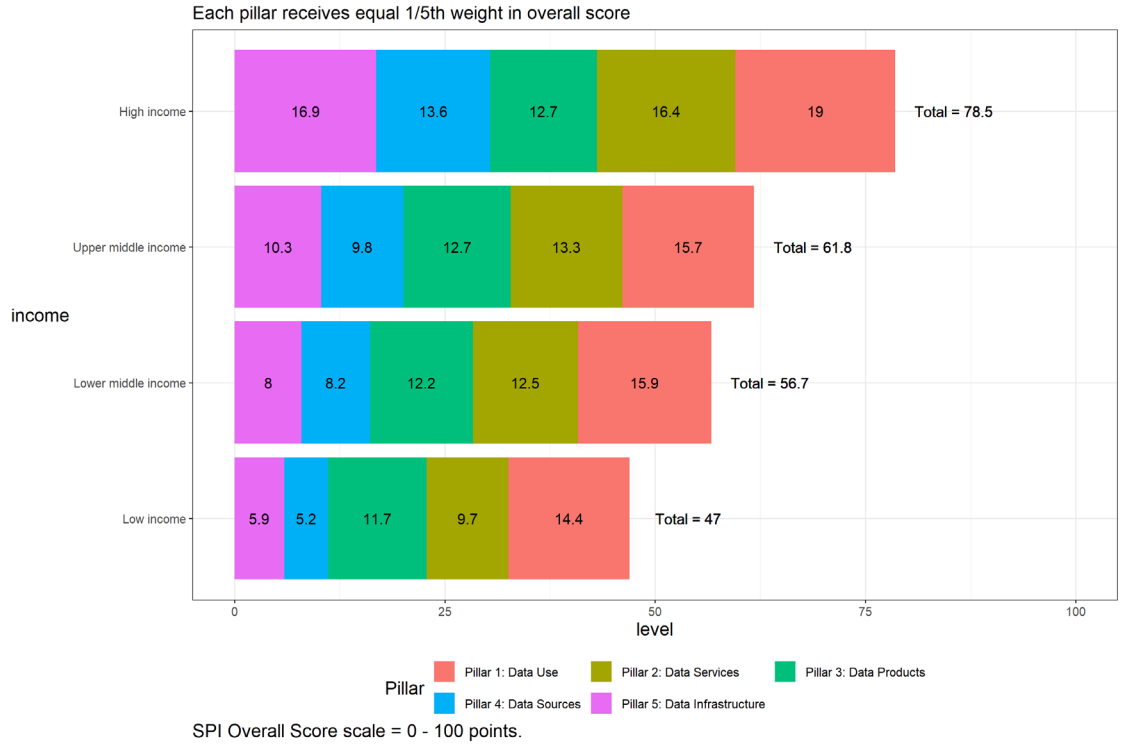


Figure 8: Contribution of Each Pillar to SPI Score, by Country Income Level

Panel A: Contribution in absolute terms



Panel B: Contribution in relative terms

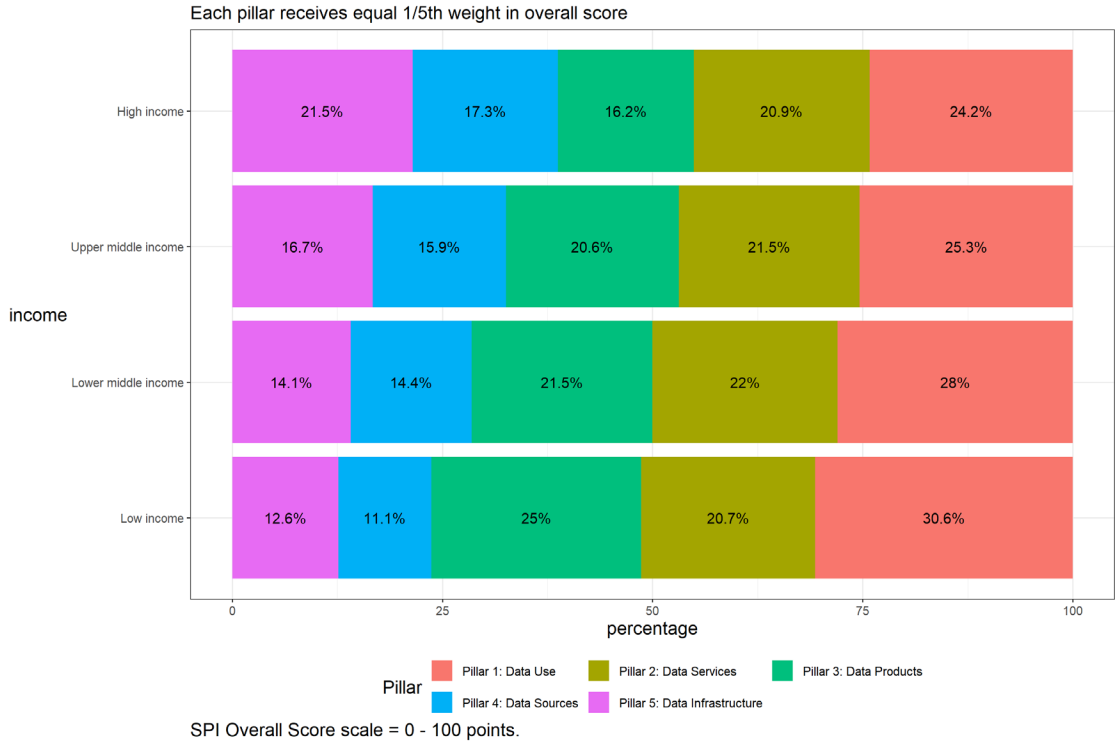


Figure 9: Correlation of SPI with Income and Human Capital Levels

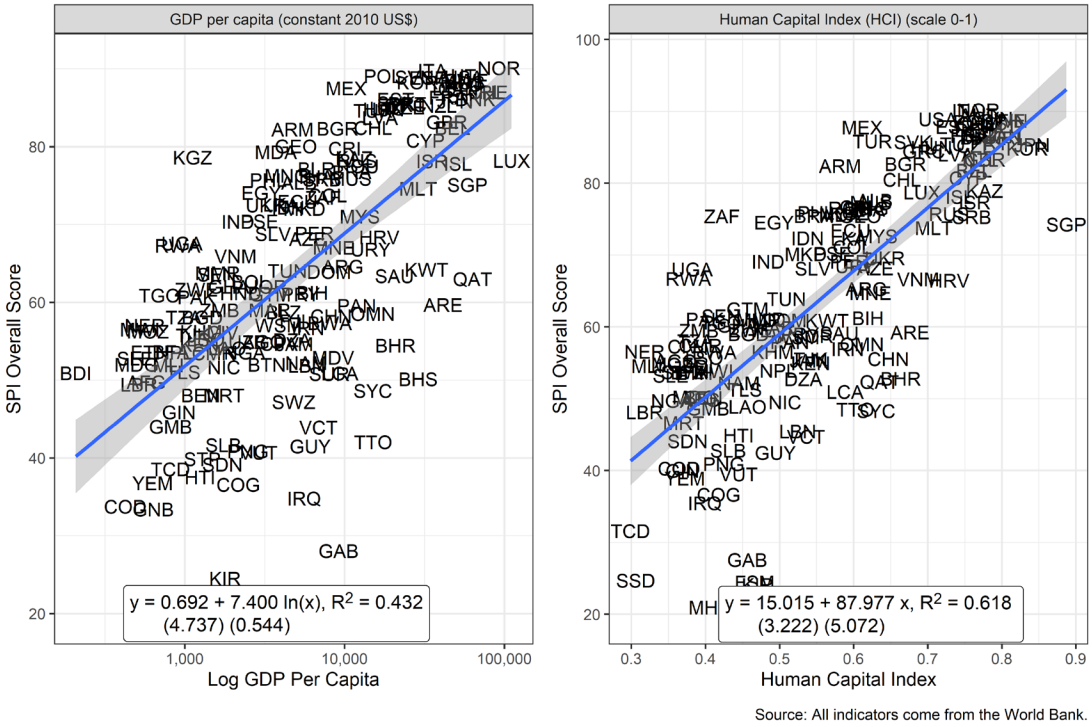
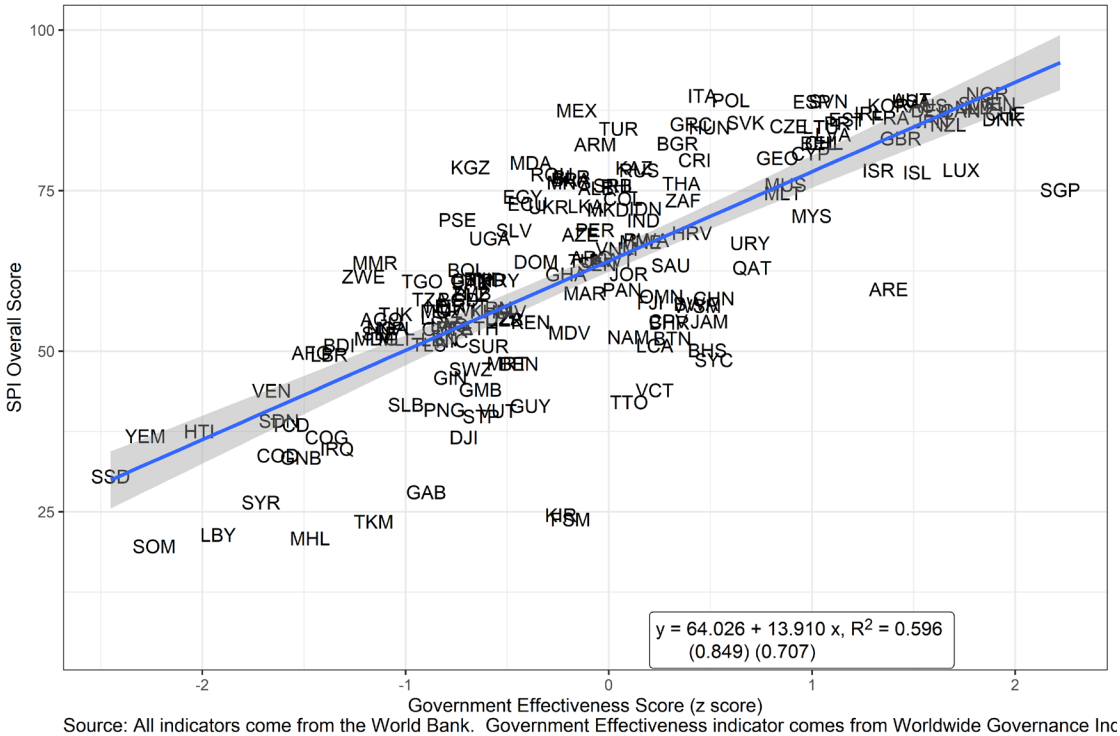
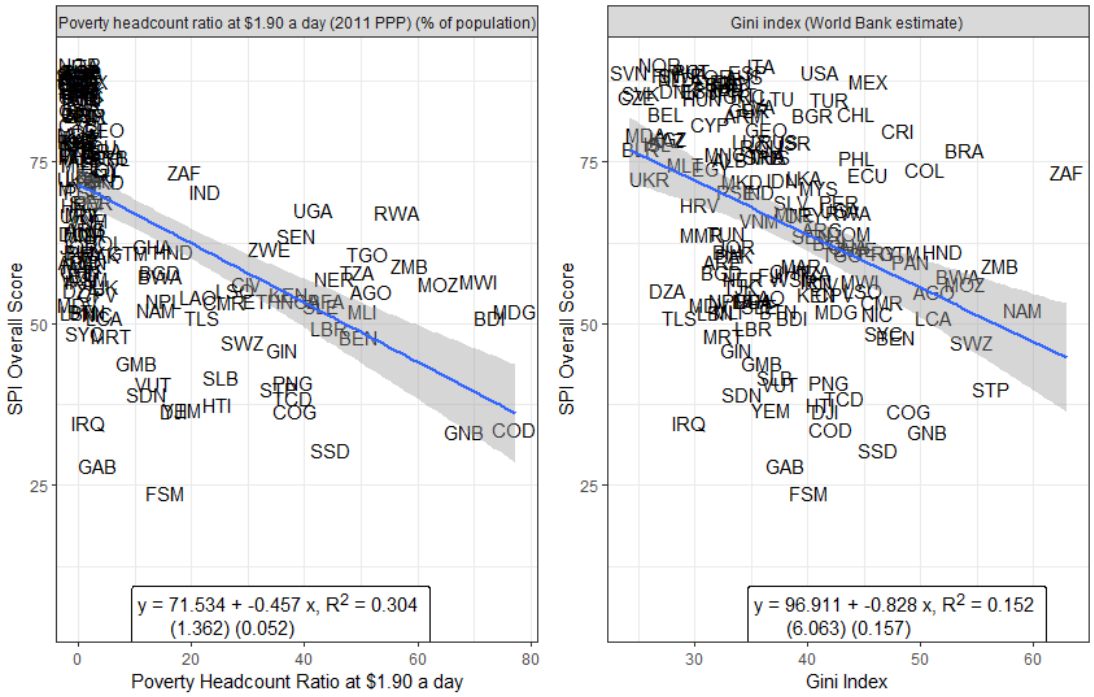


Figure 10: Correlation of SPI with Government Effectiveness



Source: All indicators come from the World Bank. Government Effectiveness indicator comes from Worldwide Governance Inc

Figure 11: Correlation of SPI with Poverty and Inequality



Source: All indicators come from the World Bank. SI.POV.DDAY & SI.POV.GINI.

Appendix A: Pillars of the SPI

A quick primer on names. We refer to the 5 rows in the framework in Figure 1 as pillars. We refer to the 22 cells in the framework in Figure 1 as dimensions. Finally, each dimension may be composed of multiple indicators. For instance, the dimension on censuses and surveys is made up of indicators on whether population censuses have been conducted, agriculture censuses, labor force surveys, etc.

3.1 Data use

The data use pillar is segmented by user type. The tiles on the Dashboard provide an indicator of use of statistics respectively by the legislature, executive, civil society (including sub-national actors), academia and international bodies. A mature system would score well across the tiles. Areas for development would be highlighted by weaker scores in that domain enabling questions to be asked about prioritization among user groups and why existing services are not resulting in higher use of national statistics in that segment.

3.2 Data services

The data services pillar is segmented by service type. The tiles on the Dashboard provide an indicator of the quality of data releases, the richness and openness of online access, the effectiveness of advisory and analytical services related to statistics and the availability and use of data access services such as secure microdata access. Advisory and analytical services might incorporate elements related to data stewardship services including ethical consideration of proposals and calling out misuse of data in accordance with the Fundamental Principles of Official Statistics.

3.3 Data products

The data products pillar is segmented by topic and organized into social, economic, environmental and institutional domains using the typology of the Sustainable Development Goals. This approach enables comparisons across countries and anchors the system in the 2030 agenda so that a global view can be generated while enabling different emphasis to be applied in different countries to reflect the user needs of that country.

3.4 Data sources

The data sources pillar is segmented between sources generated by the statistical office (censuses and surveys) and sources accessed from elsewhere (administrative data, geospatial data, private sector data and citizen generated data). The appropriate balance between these types of sources will vary depending on the institutional setting and maturity of the statistical system in each country. High scores should reflect the extent to which the sources being utilized enable the necessary statistical indicators to be generated. For example, a low score on environment statistics may reflect a lack of use of (and low score for) geospatial data. This linkage, which is inherent in the data cycle approach, should help highlight areas for investment if country needs are to be met.

3.5 Data infrastructure

The data infrastructure pillar is segmented into hard and soft infrastructure segments itemizing essential cross-cutting requirements for an effective statistical system. The segments are:

1. Legislation and governance covering the existence of laws and a functioning institutional framework for the statistical system
2. Standards and methods addressing compliance with recognized frameworks and concepts
3. Skills including level of skills within the statistical system and among users (statistical literacy)
4. Partnerships reflecting the need for the statistical system to be inclusive and coherent
5. Finance, both domestically and from donors

Table A.1: Description of SPI Dimensions

Dimension	Brief Description
Dimension 1.1: Data use by national legislature	Not included because of lack of established methodology. In principle it may be possible to utilize websites of national legislatures but this will require further work and assessment.
Dimension 1.2: Data use by national executive branch	Not included because of lack of established methodology. There are some usable data sources (as used by (PARIS21 2019)) but gaps in data across countries have prevented full adoption.
Dimension 1.3: Data use by civil society	Not included because of lack of established methodology. There are some usable data sources with good coverage, for example from social media but more data is required to help assess and allow for likely biases between and within countries.
Dimension 1.4: Data use by academia	Not included because of lack of established methodology. We have not been able to find usable data sources with global coverage on which a new methodology could be developed.
Dimension 1.5: Data use by international organizations	Five measures usefulness or reliability of country produced measures for international organizations have been included. First, on comparability of poverty estimates for the World Bank reporting on international poverty using Povcalnet. Second on usable surveys for statistics on child mortality for the UN Inter-agency Group for Child Mortality Estimation. Third on accuracy of debt reporting as classified by the World Bank (Source: World Bank WDI metadata). Fourth, on availability of safely managed drinking water data for use by WHO/UNICEF Joint Monitoring Programme. Fifth, on labor force participation data for use by ILO. While these data sources provide only a partial coverage of data used by international organizations, they do provide an indication of the performance of the national statistical system.
Dimension 2.1: Data releases	SDDS/e-GDDS subscription. This indicator is based on whether the country subscribes to IMF SDDS+, SDDS, or e-GDDS standards. The source is the IMF Dissemination Standards Bulletin Board. This is a reliable data source but we recognize that it is a proxy for the concept we are seeking to capture rather than a direct measurement.
Dimension 2.2: Online access	ODIN Open Data Openness score (Jamison Crowell et al. n.d.). This is a well-established data source with good country coverage, which scores countries based on whether indicators are available online in a format that is machine readable, in a non-proprietary format, downloadable, with metadata available and terms of use. Scores range from 0-1. For more details, consult the ODIN technical documentation
Dimension 2.3: Advisory/ Analytical Services	Not included because of lack of established methodology. This could be a new indicator of the number of non-recurring products on NSO website (ad hoc/experimental rather than regular releases). The indicator is the number of products found. No established source exists for this indicator.
Dimension 2.4: Data access services	NADA metadata. This indicator checks whether NADA microdata cataloging is available for surveys produced by NSO. NADA is an open source microdata cataloging system, compliant with the Data Documentation Initiative (DDI) and Dublin Cores RDF metadata standards. Source: NSO websites.

Dimension	Brief Description
Dimension 3.1: social statistics	Availability of Goal 1-6 indicators, measured by an average score. The primary data source is the UN SDG database. While this is a database with comprehensive coverage that all countries have signed up to, many countries are not yet submitting all their available national data. Scores for some countries thus may not capture their performance in calculating the indicators. For OECD countries, we supplement the UN SDG database with comparable data submitted to the OECD following the methodology in Measuring Distance to the SDG Targets 2019: An Assessment of Where OECD Countries Stand.
Dimension 3.2: economic statistics	Availability of Goal 7-12 indicators, measured by an average score. See 3.1.
Dimension 3.3: environmental statistics	Availability of Goal 13 & 15 indicators, measured by an average score. Goal 14 - Life on Water - is not included because land-locked countries do not report on these indicators. See 3.1.
Dimension 3.4: institutional statistics	Availability of Goal 16-17 indicators measured by an average score. See 3.1.
Dimension 4.1: censuses and surveys	Availability of recent censuses and surveys covering broad areas. The following censuses and surveys are considered: Population & Housing census, Agriculture census, Business/establishment census, Household Survey on income/ consumption/ expenditure/ budget/ Integrated Survey, Agriculture survey, Labor Force Survey, Health/Demographic survey, Business/establishment survey. Source: NSO websites, World Bank microdata library, ILO microdata library, IHSN microdata library
Dimension 4.2: administrative data	Availability of Civil Registration and Vital Statistics (CRVS) indicator. An ideal indicator would include a score based on the density of administrative data available in sectors of social protection, education, labor, and health. However, social protection, education, health, and labor admin data indicators not included because of lack of established methodology. While several promising sources for administrative data from the World Bank's ASPIRE team, WHO, UNESCO, and ILO have been identified, the were not included due to incomplete coverage across countries. Further research and data collection effort would be needed to fill in this information, so that a more comprehensive picture of administrative data availability can be produced.
Dimension 4.3: geospatial data	Geospatial data available at 1st Admin Level. This data source from Open Data Watch focusing on data availability at the sub-national level provides a partial understanding of a country's ability to produce geospatial data. A research and data collection effort is needed to develop an more comprehensive global database of the availability of key geospatial indicators.
Dimension 4.4: Private/citizen generated data	Not included because of lack of established methodology. Currently no comprehensive source exists to measure the use of private and citizen generated data in national statistical systems, and this should be another area where more data collection is needed by the international community.
Dimension 5.1: Legislation and governance	This indicator is based on PARIS21 indicators on SDG 17.18.2 (national statistical legislation compliance with UN Fundamental Principles of Official Statistics), existence of National Statistical Council, national statistical strategy generation, national statistical plan. Limited country coverage makes cross country comparison limited. So this is included in the dashboard, but not in the overall SPI score or index.

Dimension	Brief Description
Dimension 5.2: Standards and Methods	This set of indicators is based on countries' use of internationally accepted and recommended methodologies, classifications and standards regarding data integration. These indicators help facilitate data exchange and provide the foundation for the preparation of relevant statistical indicators. The following methods and standards are considered: System of national accounts in use, National Accounts base year, Classification of national industry, CPI base year, Classification of household consumption, Classification of status of employment, Central government accounting status, Compilation of government finance statistics, Compilation of monetary and financial statistics, Business process. Further work could improve the validity of this indicator and reduce the risk that countries may be incentivized to adopt only traditional standards and methods and neglect innovative solutions that may be more valid in the current context.
Dimension 5.3: Skills	Not included because of lack of established methodology or suitable data sources. A new indicator drawing on PARIS21 indicators such as statistical society presence and data literacy could be developed and is an area of future work.
Dimension 5.4: Partnerships	Not included because of lack of established methodology or suitable data sources. A new indicator based on textual analysis of NSS reports/websites for references to partner organizations could be developed. This is an area of future work.
Dimension 5.5: Finance	The indicator is based on PARIS21 SDG indicators (SDG 17.18.3 (national statistical plan that is fully funded and under implementation). It is included in dashboard, but not in the overall SPI score or index because of insufficient country coverage.

Appendix B: Additional Tables and Figures for Overall Scores
Table B.1: SPI overall score in 2019 and Pillar Scores

Below, the full list of countries by their SPI overall score in 2019 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 174 countries with sufficient data to compute an index value. This set of countries covers 99.2 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:

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

SPI overall score in 2019 and Pillar Scores.

Country	SPI overall score	Pillar 1: Data Use	Pillar 2: Data Services	Pillar 3: Data Products	Pillar 4: Data Sources	Pillar 5: Data Infrastructure
Norway	90.1	100.0	92.2	77.6	80.7	100.0
Italy	89.8	100.0	91.9	75.3	81.8	100.0
Austria	89.1	100.0	91.3	74.6	79.8	100.0
Poland	89.1	100.0	95.1	70.5	79.7	100.0
Slovenia	88.9	100.0	96.9	76.3	71.4	100.0
United States	88.9	100.0	94.0	63.1	87.5	100.0
Spain	88.9	100.0	90.9	75.5	77.9	100.0

SPI overall score in 2019 and Pillar Scores.

Country	SPI overall score	Pillar 1: Data Use	Pillar 2: Data Services	Pillar 3: Data Products	Pillar 4: Data Sources	Pillar 5: Data Infrastructure
Sweden	88.5	100.0	94.9	75.2	72.5	100.0
Finland	88.5	100.0	94.9	75.2	72.2	100.0
Korea, Rep.	88.3	100.0	93.4	75.6	82.4	90.0
Australia	88.2	100.0	92.7	74.1	74.5	100.0
Netherlands	88.0	100.0	98.5	71.4	69.9	100.0
Mexico	87.5	100.0	92.9	89.3	80.3	75.0
Germany	87.5	100.0	96.5	71.1	74.9	95.0
Canada	87.5	100.0	93.2	60.0	84.1	100.0
Ireland	87.0	100.0	94.7	74.1	66.3	100.0
Switzerland	87.0	100.0	87.7	76.6	80.9	90.0
France	86.3	100.0	90.8	74.3	66.6	100.0
Denmark	86.1	90.0	98.7	68.0	73.9	100.0
Estonia	86.1	100.0	93.9	67.5	68.9	100.0
Japan	85.8	90.0	90.5	73.5	80.0	95.0
Slovak Republic	85.6	90.0	94.9	70.0	73.1	100.0
Portugal	85.5	100.0	90.8	71.0	65.8	100.0
Greece	85.4	100.0	87.5	68.5	70.8	100.0
New Zealand	85.3	100.0	91.6	71.5	63.2	100.0
Czech Republic	85.1	90.0	90.1	74.6	75.6	95.0
Lithuania	84.9	100.0	91.8	61.0	71.9	100.0
Hungary	84.8	100.0	86.9	69.0	68.3	100.0
Turkey	84.6	100.0	84.0	86.1	53.1	100.0
Latvia	83.7	100.0	89.2	61.4	68.0	100.0
United Kingdom	83.2	100.0	86.8	74.0	64.9	90.0
Chile	82.4	100.0	77.0	80.7	59.5	95.0

SPI overall score in 2019 and Pillar Scores.

Country	SPI overall score	Pillar 1: Data Use	Pillar 2: Data Services	Pillar 3: Data Products	Pillar 4: Data Sources	Pillar 5: Data Infrastructure
Belgium	82.4	100.0	83.9	62.2	65.9	100.0
Bulgaria	82.3	100.0	90.1	60.7	70.8	90.0
Armenia	82.2	100.0	85.0	81.2	59.9	85.0
Cyprus	80.8	100.0	92.3	53.3	73.3	85.0
Georgia	80.1	100.0	86.5	73.7	60.1	80.0
Costa Rica	79.8	100.0	86.5	76.0	66.5	70.0
Moldova	79.3	100.0	94.2	53.6	58.8	90.0
Kyrgyz Republic	78.6	100.0	81.5	73.6	53.1	85.0
Kazakhstan	78.6	100.0	82.1	78.3	62.4	70.0
Luxembourg	78.2	80.0	90.4	61.3	59.3	100.0
Russian Federation	78.2	93.4	83.7	58.5	65.4	90.0
Israel	78.1	100.0	85.7	58.5	46.5	100.0
Iceland	77.8	80.0	87.8	59.7	61.7	100.0
Romania	77.5	90.0	87.2	56.7	73.6	80.0
Belarus	77.1	100.0	79.2	67.9	53.6	85.0
Brazil	76.8	90.0	83.3	73.1	62.4	75.0
Mongolia	76.3	100.0	80.0	77.5	63.9	60.0
Thailand	76.1	100.0	76.5	76.2	57.9	70.0
Mauritius	75.9	100.0	86.2	57.0	66.4	70.0
Serbia	75.8	100.0	67.4	68.4	63.2	80.0
Philippines	75.7	100.0	88.3	75.2	80.2	35.0
Albania	75.4	100.0	69.8	72.7	59.4	75.0
Singapore	75.1	100.0	100.0	42.2	53.3	80.0
Malta	74.6	100.0	84.0	45.5	68.6	75.0
Egypt, Arab Rep.	74.1	100.0	76.8	72.6	60.9	60.0

SPI overall score in 2019 and Pillar Scores.

Country	SPI overall score	Pillar 1: Data Use	Pillar 2: Data Services	Pillar 3: Data Products	Pillar 4: Data Sources	Pillar 5: Data Infrastructure
Colombia	73.8	100.0	84.3	83.1	46.4	55.0
South Africa	73.5	76.6	85.5	75.1	65.2	65.0
Ecuador	72.9	100.0	87.7	76.4	55.6	45.0
Sri Lanka	72.6	100.0	81.0	70.5	66.4	45.0
Ukraine	72.5	100.0	46.1	67.3	49.0	100.0
Indonesia	72.2	100.0	87.3	74.9	43.8	55.0
North Macedonia	72.0	100.0	88.1	51.1	56.0	65.0
Malaysia	71.1	80.0	84.0	73.0	68.2	50.0
West Bank and Gaza	70.4	80.0	86.6	55.7	69.9	60.0
India	70.4	80.0	88.0	60.0	68.9	55.0
Peru	68.8	90.0	85.8	77.3	51.1	40.0
El Salvador	68.8	90.0	79.9	69.1	44.9	60.0
Croatia	68.4	80.0	50.8	57.3	63.9	90.0
Azerbaijan	68.1	80.0	64.6	61.0	55.1	80.0
Uganda	67.6	100.0	64.2	74.8	33.9	65.0
Rwanda	67.3	100.0	72.4	69.6	49.4	45.0
Montenegro	67.0	90.0	64.3	67.1	58.7	55.0
Uruguay	66.8	100.0	83.9	66.0	64.2	20.0
Vietnam	66.0	100.0	64.0	55.1	75.7	35.0
Argentina	64.6	70.0	79.5	79.6	58.9	35.0
Kuwait	64.2	100.0	66.3	51.7	63.1	40.0
Tunisia	64.1	90.0	85.7	64.9	49.8	30.0
Dominican Republic	63.9	100.0	65.6	60.0	34.1	60.0
Myanmar	63.8	100.0	67.1	73.8	42.9	35.0
Senegal	63.6	80.0	81.0	66.9	39.9	50.0

SPI overall score in 2019 and Pillar Scores.

Country	SPI overall score	Pillar 1: Data Use	Pillar 2: Data Services	Pillar 3: Data Products	Pillar 4: Data Sources	Pillar 5: Data Infrastructure
Saudi Arabia	63.4	80.0	60.7	47.2	79.0	50.0
Qatar	63.0	100.0	62.0	47.3	60.8	45.0
Bolivia	62.7	100.0	68.5	70.4	54.4	20.0
Jordan	62.0	80.0	80.8	71.3	47.9	30.0
Ghana	62.0	100.0	61.3	65.1	33.6	50.0
Zimbabwe	61.7	90.0	59.9	70.2	43.1	45.0
Bosnia and Herzegovina	61.2	80.0	60.7	58.1	47.4	60.0
Honduras	61.2	90.0	62.4	66.9	46.7	40.0
Paraguay	61.1	70.0	63.1	76.4	40.8	55.0
Guatemala	61.0	80.0	62.1	73.9	54.1	35.0
Togo	60.9	90.0	59.8	68.5	41.0	45.0
Pakistan	60.7	100.0	61.0	73.3	39.1	30.0
United Arab Emirates	59.7	100.0	36.9	42.2	54.2	65.0
Panama	59.6	80.0	62.8	65.2	59.9	30.0
Morocco	59.0	60.0	88.4	68.2	28.5	50.0
Zambia	59.0	90.0	57.8	70.5	36.8	40.0
Belize	58.8	80.0	62.3	55.8	65.7	30.0
Oman	58.5	100.0	44.4	44.1	64.2	40.0
China	58.2	83.4	46.4	59.7	36.6	65.0
Tanzania	58.1	76.6	60.7	68.8	39.3	45.0
Bangladesh	58.1	90.0	61.6	69.0	44.8	25.0
Fiji	57.6	80.0	59.5	52.9	50.6	45.0
Botswana	57.3	60.0	66.6	65.4	54.8	40.0
Samoa	57.0	90.0	63.5	50.4	36.3	45.0

SPI overall score in 2019 and Pillar Scores.

Country	SPI overall score	Pillar 1: Data Use	Pillar 2: Data Services	Pillar 3: Data Products	Pillar 4: Data Sources	Pillar 5: Data Infrastructure
Niger	57.0	90.0	62.0	60.8	37.3	35.0
Iran, Islamic Rep.	56.7	80.0	59.8	51.6	57.0	35.0
Malawi	56.5	90.0	61.2	66.5	34.7	30.0
Mozambique	56.2	80.0	57.6	67.4	36.2	40.0
Cambodia	56.2	70.0	59.2	60.4	46.4	45.0
Cote d'Ivoire	56.1	90.0	59.9	68.5	37.2	25.0
Tajikistan	55.8	90.0	31.4	65.5	41.9	50.0
Lesotho	55.2	80.0	63.3	53.2	39.7	40.0
Algeria	55.1	70.0	60.1	57.4	48.2	40.0
Angola	54.9	80.0	57.3	68.6	28.9	40.0
Uzbekistan	54.9	70.0	56.0	50.1	33.4	65.0
Cabo Verde	54.7	80.0	59.3	59.6	54.4	20.0
Jamaica	54.6	60.0	73.7	52.9	56.6	30.0
Kenya	54.5	70.0	60.5	61.4	35.8	45.0
Bahrain	54.5	90.0	64.3	41.6	46.5	30.0
Lao PDR	54.1	90.0	56.6	53.4	40.5	30.0
Burkina Faso	53.6	80.0	59.6	62.0	31.5	35.0
Ethiopia	53.6	90.0	60.0	71.4	31.6	15.0
Nigeria	53.6	80.0	62.4	54.8	30.6	40.0
Nepal	53.6	80.0	61.3	68.0	38.5	20.0
Cameroon	53.5	80.0	61.6	64.5	26.3	35.0
Maldives	52.9	70.0	29.9	65.5	49.1	50.0
Sierra Leone	52.8	90.0	65.2	62.0	26.6	20.0
Namibia	52.2	70.0	63.1	65.5	32.5	30.0
Bhutan	52.0	80.0	59.2	67.8	37.9	15.0

SPI overall score in 2019 and Pillar Scores.

Country	SPI overall score	Pillar 1: Data Use	Pillar 2: Data Services	Pillar 3: Data Products	Pillar 4: Data Sources	Pillar 5: Data Infrastructure
Madagascar	52.0	90.0	56.3	62.6	21.0	30.0
Mali	51.9	66.6	63.1	64.2	35.7	30.0
Lebanon	51.9	60.0	62.6	57.4	49.4	30.0
Nicaragua	51.7	90.0	60.0	45.4	27.9	35.0
Timor-Leste	51.0	50.0	58.2	59.3	32.7	55.0
Burundi	50.9	70.0	61.7	68.9	19.0	35.0
St. Lucia	50.9	80.0	55.9	46.0	47.5	25.0
Suriname	50.8	60.0	62.4	46.6	50.0	35.0
Bahamas, The	50.1	100.0	27.3	35.8	27.5	60.0
Afghanistan	49.8	70.0	59.9	68.3	15.6	35.0
Liberia	49.4	90.0	28.8	56.8	26.5	45.0
Seychelles	48.6	40.0	46.5	52.8	53.9	50.0
Mauritania	48.1	70.0	62.5	47.8	25.1	35.0
Benin	48.0	70.0	58.3	57.3	29.7	25.0
Eswatini	47.2	90.0	22.4	63.7	19.8	40.0
Guinea	45.9	70.0	61.4	57.1	20.9	20.0
Gambia, The	44.0	60.0	28.5	64.9	31.6	35.0
St. Vincent and the Grenadines	43.9	40.0	62.7	41.8	40.2	35.0
Venezuela, RB	43.9	46.6	59.9	52.1	35.8	25.0
Trinidad and Tobago	42.1	60.0	27.3	40.2	42.8	40.0
Solomon Islands	41.7	60.0	60.4	47.5	20.4	20.0
Guyana	41.5	60.0	57.4	46.1	18.9	25.0
Papua New Guinea	40.8	60.0	55.3	50.7	18.3	20.0
Vanuatu	40.7	60.0	59.1	45.7	23.6	15.0

SPI overall score in 2019 and Pillar Scores.

Country	SPI overall score	Pillar 1: Data Use	Pillar 2: Data Services	Pillar 3: Data Products	Pillar 4: Data Sources	Pillar 5: Data Infrastructure
Sao Tome and Principe	39.9	60.0	24.7	42.9	41.7	30.0
Sudan	39.2	53.4	57.9	55.7	18.8	10.0
Chad	38.5	56.6	51.5	52.4	17.2	15.0
Haiti	37.5	80.0	19.7	51.2	16.7	20.0
Yemen, Rep.	36.8	80.0	25.5	37.9	20.4	20.0
Djibouti	36.6	40.0	60.4	41.6	16.1	25.0
Congo, Rep.	36.6	60.0	27.9	47.8	27.2	20.0
Iraq	34.8	30.0	25.0	62.0	22.1	35.0
Congo, Dem. Rep.	33.8	60.0	26.3	44.3	18.2	20.0
Guinea-Bissau	33.4	60.0	27.3	42.0	17.8	20.0
South Sudan	30.5	20.0	41.8	45.8	14.9	30.0
Gabon	28.1	40.0	23.7	41.6	15.0	20.0
Syrian Arab Republic	26.5	26.6	24.8	38.1	17.7	25.0
Kiribati	24.5	20.0	25.8	46.2	15.5	15.0
Micronesia, Fed. Sts.	23.8	20.0	25.6	41.7	16.8	15.0
Turkmenistan	23.5	46.6	0.6	41.8	13.3	15.0
Libya	21.4	20.0	20.6	35.6	10.8	20.0
Marshall Islands	20.9	20.0	24.1	38.7	11.5	10.0
Somalia	19.6	16.6	36.0	45.5	0.0	0.0
American Samoa		30.0		19.9		
Andorra		60.0		26.8		
Antigua and Barbuda		20.0		46.4		25.0
Aruba		60.0		17.1		
Barbados		80.0		50.8		30.0

SPI overall score in 2019 and Pillar Scores.

Country	SPI overall score	Pillar 1: Data Use	Pillar 2: Data Services	Pillar 3: Data Products	Pillar 4: Data Sources	Pillar 5: Data Infrastructure
Bermuda		60.0		16.7		
British Virgin Islands		40.0		18.2		
Brunei Darussalam		100.0		40.7		45.0
Cayman Islands		40.0		17.1		
Central African Republic		20.0		49.2		20.0
Channel Islands		60.0				
Comoros		60.0		52.7		30.0
Cuba		70.0		46.9		
Curacao		40.0		18.5		
Dominica		20.0		39.9		35.0
Equatorial Guinea		0.0		44.9		25.0
Eritrea		6.6		37.9		10.0
Faroe Islands		60.0		11.4		
French Polynesia		60.0		14.1		
Gibraltar		60.0		12.9		
Greenland		50.0		12.5		
Grenada		50.0		43.1		25.0
Guam		60.0		15.3		
Hong Kong SAR, China		80.0		28.7		
Isle of Man		60.0		10.9		
Korea, Dem. People's Rep.		20.0		43.1		
Kosovo		40.0	66.0			60.0

SPI overall score in 2019 and Pillar Scores.

Country	SPI overall score	Pillar 1: Data Use	Pillar 2: Data Services	Pillar 3: Data Products	Pillar 4: Data Sources	Pillar 5: Data Infrastructure
Liechtenstein		60.0		24.2		
Macao SAR, China		80.0		23.9		
Monaco		60.0		27.4		
Nauru		20.0		34.9		5.0
New Caledonia		70.0		16.0		
Northern Mariana Islands		60.0		11.3		
Palau		30.0		34.1		40.0
Puerto Rico		80.0		22.2		
San Marino		60.0		21.6		60.0
Sint Maarten (Dutch part)		40.0		9.8		
St. Kitts and Nevis		20.0		28.4		25.0
St. Martin (French part)		40.0		7.1		
Taiwan, China		60.0				
Tonga		90.0		45.1		35.0
Turks and Caicos Islands		60.0		12.8		
Tuvalu		10.0		36.6		5.0
Virgin Islands (U.S.)		60.0		9.9		

Table B.2: Country SPI overall scores over time

SPI overall scores over time

Country	2019	2018	2017	2016
Norway	90.1	90.2	82.6	78.8
Italy	89.8	90.1	90.1	90.3
Austria	89.1	89.5	87.9	88.0
Poland	89.1	88.6	82.6	81.7
Slovenia	88.9	89.0	88.3	86.9
United States	88.9	88.9	87.1	89.6
Spain	88.9	87.8	86.8	86.1
Sweden	88.5	88.7	88.7	88.0
Finland	88.5	88.7	88.5	87.5
Korea, Rep.	88.3	84.8	78.5	76.2
Australia	88.2	88.4	89.1	87.4
Netherlands	88.0	87.9	80.2	78.1
Mexico	87.5	87.8	88.7	80.4
Germany	87.5	87.4	85.6	84.9
Canada	87.5	86.6	86.4	86.3
Ireland	87.0	86.3	85.6	83.9
Switzerland	87.0	88.3	86.9	86.1
France	86.3	86.6	86.5	84.9
Denmark	86.1	86.3	79.1	77.4
Estonia	86.1	86.8	80.2	80.6
Japan	85.8	85.4	76.7	75.1
Slovak Republic	85.6	85.7	85.7	82.2
Portugal	85.5	85.6	85.8	84.0
Greece	85.4	84.4	83.9	82.5
New Zealand	85.3	83.3	83.6	79.0

SPI overall scores over time

Country	2019	2018	2017	2016
Czech Republic	85.1	85.2	78.5	78.0
Lithuania	84.9	85.4	78.7	78.6
Hungary	84.8	85.0	84.5	83.8
Turkey	84.6	85.8	85.0	80.5
Latvia	83.7	84.0	84.3	83.9
United Kingdom	83.2	83.3	83.1	82.0
Chile	82.4	80.5	78.9	79.7
Belgium	82.4	81.8	75.6	75.0
Bulgaria	82.3	82.7	76.8	75.0
Armenia	82.2	82.4	81.4	79.1
Cyprus	80.8	80.7	71.6	71.3
Georgia	80.1	75.4	76.9	73.7
Costa Rica	79.8	76.7	77.9	72.0
Moldova	79.3	75.6	69.2	71.2
Kyrgyz Republic	78.6	75.8	77.6	78.6
Kazakhstan	78.6	78.9	72.1	71.0
Luxembourg	78.2	78.7	71.0	68.7
Russian Federation	78.2	75.7	73.5	71.6
Israel	78.1	77.4	77.3	74.7
Iceland	77.8	78.1	71.7	69.4
Romania	77.5	76.5	70.5	
Belarus	77.1	75.5	65.4	65.7
Brazil	76.8	75.4	72.1	72.9
Mongolia	76.3	76.5	73.8	67.8
Thailand	76.1	76.4	75.9	77.4
Mauritius	75.9	77.3	76.3	75.4

SPI overall scores over time

Country	2019	2018	2017	2016
Serbia	75.8	75.3	73.7	69.0
Philippines	75.7	75.9	74.5	73.2
Albania	75.4	77.6	67.7	63.9
Singapore	75.1	74.3	65.2	62.8
Malta	74.6	73.8	73.4	73.3
Egypt, Arab Rep.	74.1	74.5	74.4	75.9
Colombia	73.8	71.1	71.7	71.6
South Africa	73.5	75.4	75.9	76.2
Ecuador	72.9	73.4	71.5	70.9
Sri Lanka	72.6	72.3	72.5	71.0
Ukraine	72.5	69.6	68.3	67.3
Indonesia	72.2	72.4	70.5	68.6
North Macedonia	72.0	70.1	65.0	61.6
Malaysia	71.1	72.6	64.7	61.8
West Bank and Gaza	70.4	70.2	60.8	
India	70.4	69.1	64.7	67.4
Peru	68.8	69.1	67.5	64.2
El Salvador	68.8	68.1	67.1	66.0
Croatia	68.4	66.5	61.0	66.4
Azerbaijan	68.1	68.2	60.2	53.8
Uganda	67.6	68.0	69.1	65.3
Rwanda	67.3	66.7	67.4	60.1
Montenegro	67.0	64.7	60.0	56.9
Uruguay	66.8	68.5	69.0	66.2
Vietnam	66.0	66.6	64.5	60.4
Argentina	64.6	65.3	65.1	61.5

SPI overall scores over time

Country	2019	2018	2017	2016
Kuwait	64.2	60.9	55.2	50.4
Tunisia	64.1	63.9	59.5	61.6
Dominican Republic	63.9	60.9	63.4	60.2
Myanmar	63.8	60.9	53.6	43.4
Senegal	63.6	61.5	58.4	53.1
Saudi Arabia	63.4	59.1	50.9	46.4
Qatar	63.0	52.4	52.2	49.6
Bolivia	62.7	62.1	60.8	57.4
Jordan	62.0	58.7	58.2	58.7
Ghana	62.0	60.2	60.2	56.8
Zimbabwe	61.7	59.5	50.3	42.6
Bosnia and Herzegovina	61.2	61.2	55.2	54.7
Honduras	61.2	61.1	60.5	58.2
Paraguay	61.1	59.0	57.1	54.4
Guatemala	61.0	62.5	62.3	59.0
Togo	60.9	60.6	57.8	51.7
Pakistan	60.7	61.0	58.3	56.3
United Arab Emirates	59.7	59.3	58.7	51.0
Panama	59.6	57.9	52.6	49.9
Morocco	59.0	59.9	57.0	57.7
Zambia	59.0	59.5	58.8	54.4
Belize	58.8	58.5	51.7	47.7
Oman	58.5	57.6	56.6	48.9
China	58.2	55.5	55.2	53.6
Tanzania	58.1	58.0	64.8	61.6
Bangladesh	58.1	59.0	59.3	56.8

SPI overall scores over time

Country	2019	2018	2017	2016
Fiji	57.6	58.1	59.0	54.5
Botswana	57.3	56.5	56.9	45.9
Samoa	57.0	58.6	58.2	52.8
Niger	57.0	56.5	56.3	53.6
Iran, Islamic Rep.	56.7	56.9	49.1	45.7
Malawi	56.5	53.8	55.8	53.8
Mozambique	56.2	54.8	55.4	50.0
Cambodia	56.2	56.5	57.5	56.5
Cote d'Ivoire	56.1	57.3	55.7	50.4
Tajikistan	55.8	55.5	54.9	50.2
Lesotho	55.2	55.7	54.4	49.0
Algeria	55.1	52.7	45.7	41.6
Angola	54.9	55.2	46.7	43.7
Uzbekistan	54.9	51.2	44.6	38.7
Cabo Verde	54.7	54.6	55.2	52.7
Jamaica	54.6	55.3	49.8	50.7
Kenya	54.5	55.0	57.3	55.9
Bahrain	54.5	52.8	47.0	44.7
Lao PDR	54.1	48.9	48.3	44.7
Burkina Faso	53.6	53.7	51.4	49.1
Ethiopia	53.6	53.6	55.5	50.8
Nigeria	53.6	49.7	49.2	51.8
Nepal	53.6	53.9	54.9	49.4
Cameroon	53.5	57.4	57.0	53.0
Maldives	52.9	50.7	49.5	49.6
Sierra Leone	52.8	53.2	49.5	45.1

SPI overall scores over time

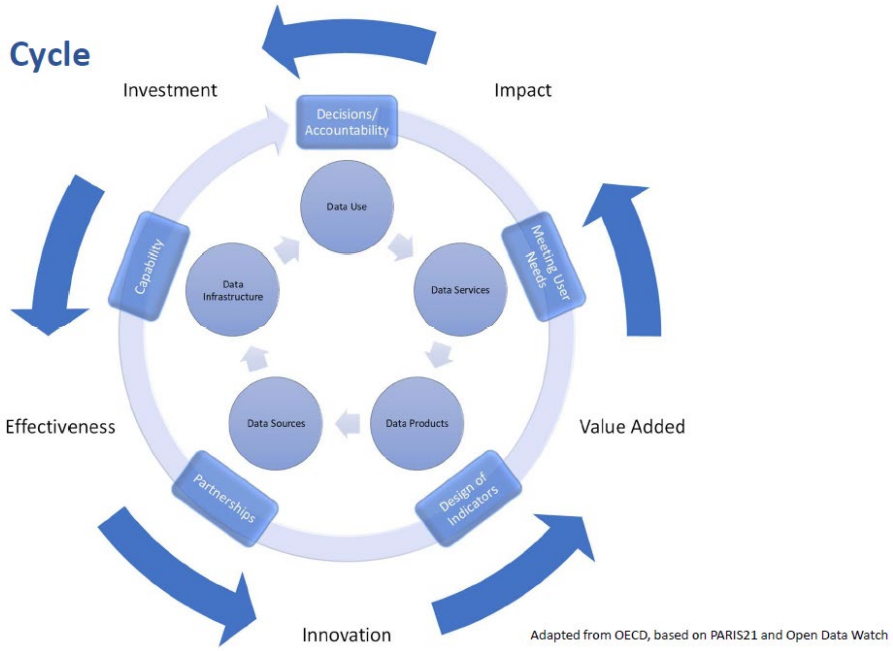
Country	2019	2018	2017	2016
Namibia	52.2	52.2	52.6	49.5
Bhutan	52.0	52.2	52.4	47.2
Madagascar	52.0	50.2	41.7	39.0
Mali	51.9	54.6	52.4	48.2
Lebanon	51.9	45.4	37.9	33.1
Nicaragua	51.7	49.5	45.6	45.2
Timor-Leste	51.0	51.3	44.8	
Burundi	50.9	54.5	54.2	50.1
St. Lucia	50.9	51.0	48.0	51.7
Suriname	50.8	52.7	41.8	35.8
Bahamas, The	50.1	52.6	42.4	40.4
Afghanistan	49.8	49.8	42.6	37.2
Liberia	49.4	48.1	47.8	44.6
Seychelles	48.6	48.3	48.3	
Mauritania	48.1	46.6	40.8	36.9
Benin	48.0	50.1	48.7	46.2
Eswatini	47.2	53.7	45.7	42.5
Guinea	45.9	40.0	41.8	39.9
Gambia, The	44.0	48.6	46.9	42.6
St. Vincent and the Grenadines	43.9	44.7	37.9	35.5
Venezuela, RB	43.9	45.0	48.2	45.2
Trinidad and Tobago	42.1	48.5	41.0	36.4
Solomon Islands	41.7	42.8	36.9	33.4
Guyana	41.5	42.5	32.7	35.6
Papua New Guinea	40.8	40.9	33.1	27.3
Vanuatu	40.7	39.5	40.5	37.8

SPI overall scores over time

Country	2019	2018	2017	2016
Sao Tome and Principe	39.9	49.7	49.4	46.2
Sudan	39.2	44.1	36.0	35.5
Chad	38.5	31.6	31.7	28.5
Haiti	37.5	44.9	38.3	36.2
Yemen, Rep.	36.8	38.9	42.4	38.3
Djibouti	36.6	37.1	29.5	25.6
Congo, Rep.	36.6	36.7	37.6	42.7
Iraq	34.8	35.5	36.0	38.5
Congo, Dem. Rep.	33.8	40.3	32.8	
Guinea-Bissau	33.4	41.7	41.1	32.3
South Sudan	30.5	24.7	23.3	30.1
Gabon	28.1	27.6	28.0	23.2
Syrian Arab Republic	26.5	26.0	21.8	
Kiribati	24.5	24.1	24.4	22.1
Micronesia, Fed. Sts.	23.8	24.5	24.0	21.5
Turkmenistan	23.5	21.0	22.6	19.5
Libya	21.4	23.4	23.2	23.9
Marshall Islands	20.9	21.0	20.2	13.5
Somalia	19.6	19.7	11.8	

Figure B.1: Virtuous Data Cycle

Virtuous Data Cycle



Adapted from OECD, based on PARIS21 and Open Data Watch

Figure B.2: Volatility of the SPI vs. the SCI for 15 Randomly Selected Countries during 2016-2019

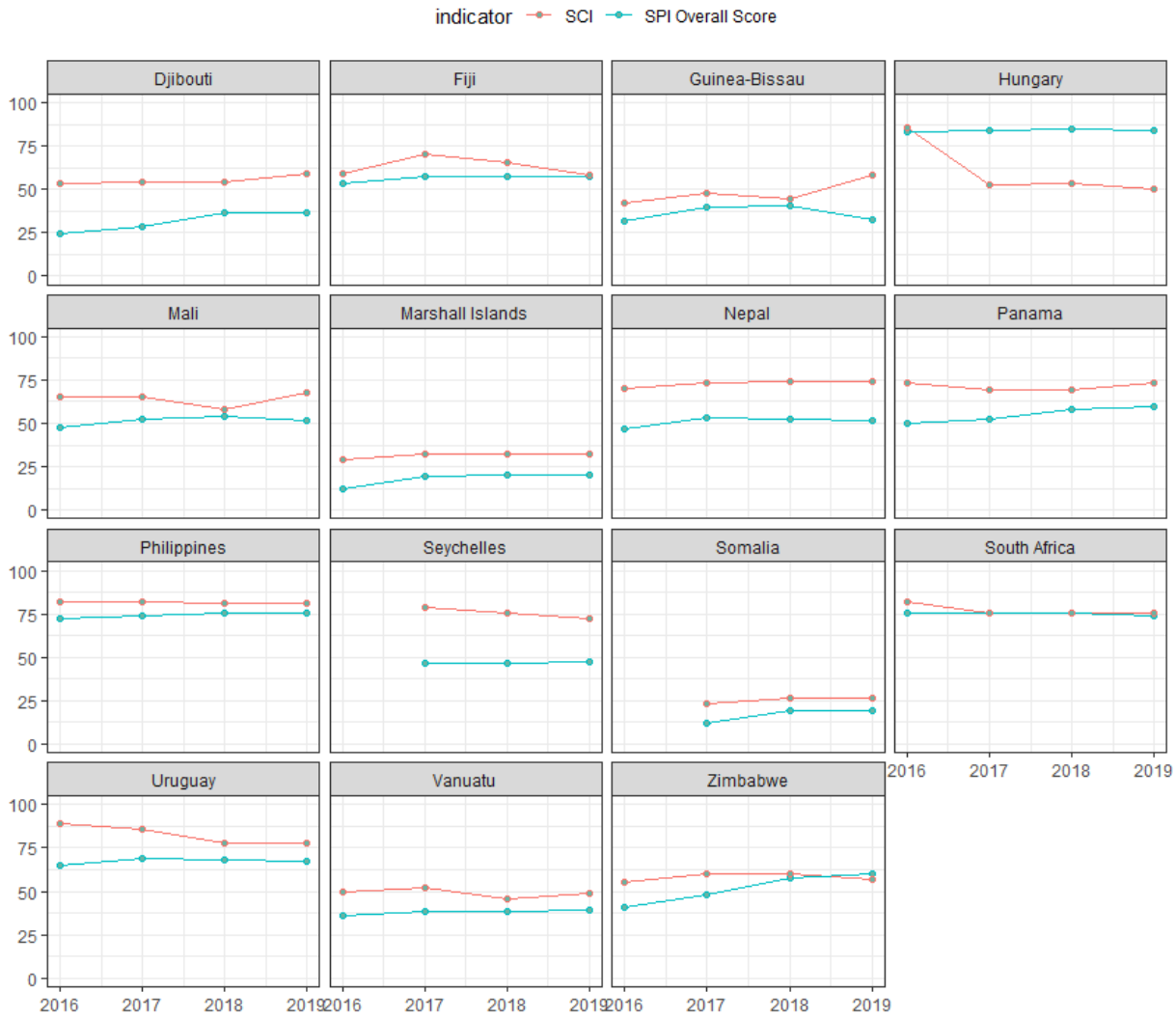
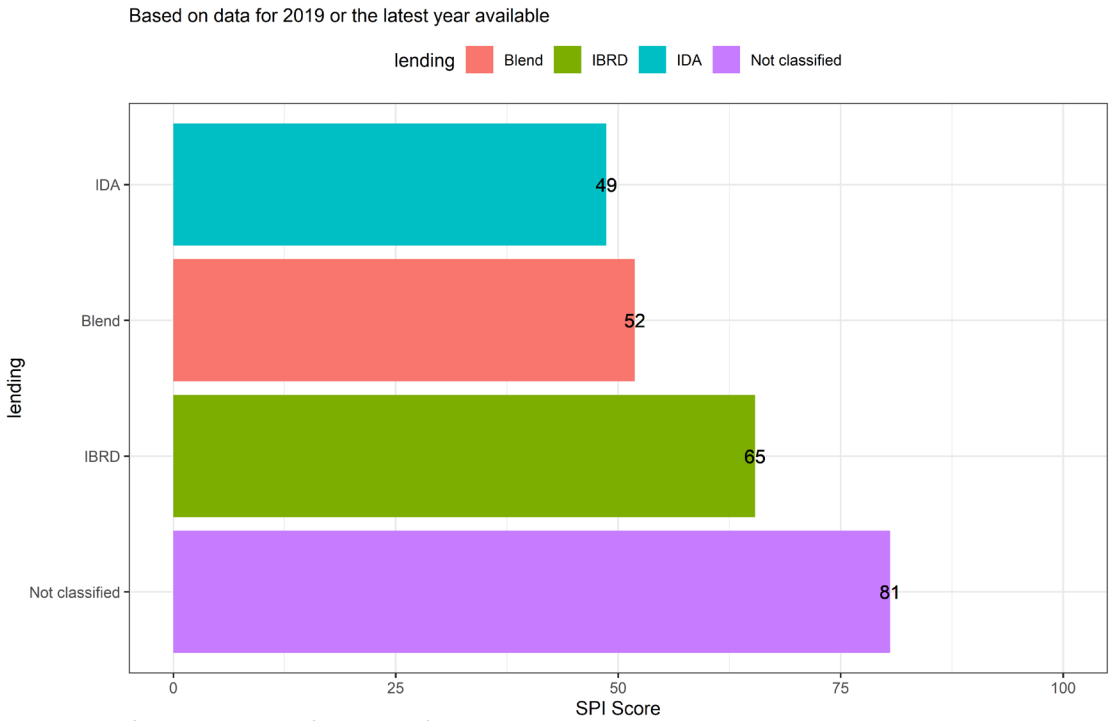
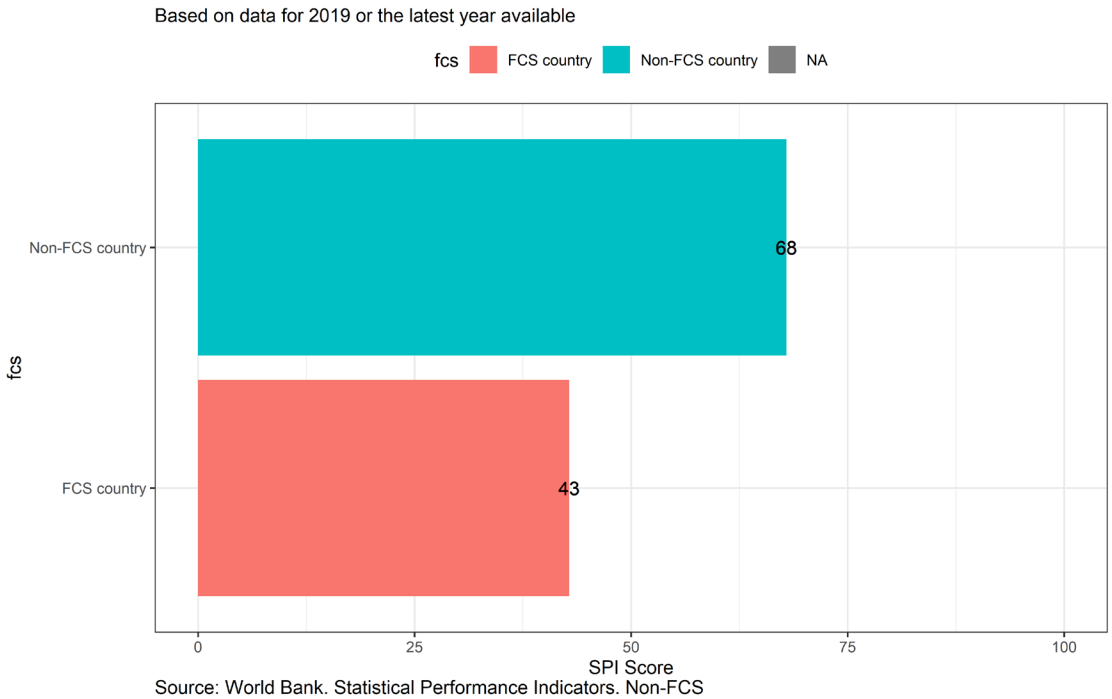


Figure B.3: SPI Overall Scores by Lending Type



Source: World Bank. Statistical Performance Indicators.

Figure B.4: SPI Overall Scores by FCS Status

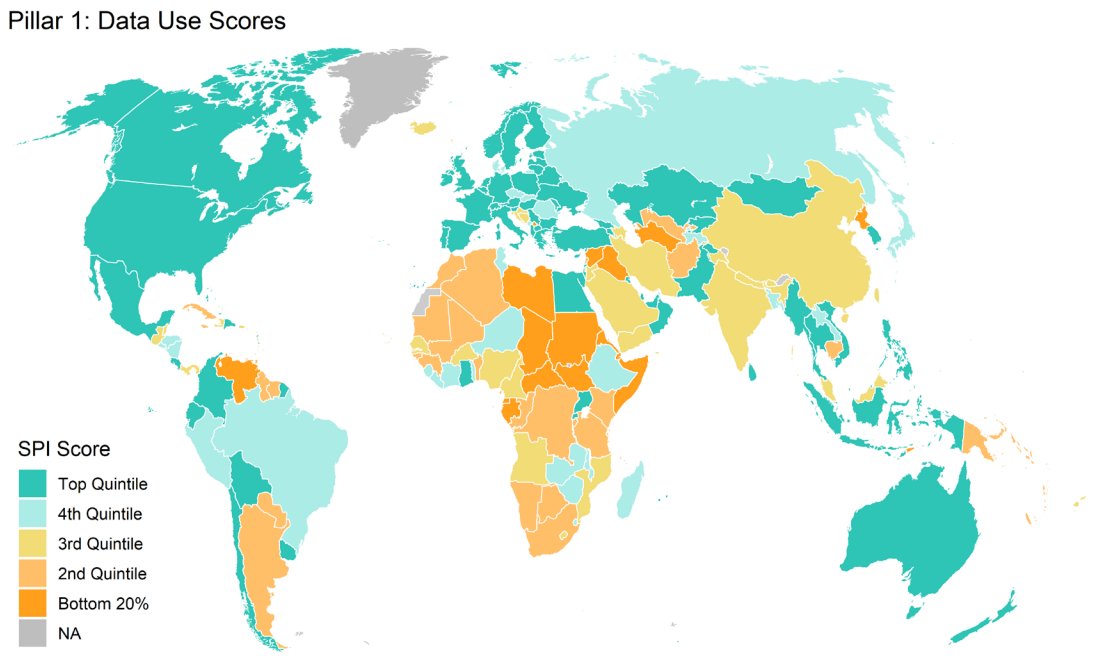


Source: World Bank. Statistical Performance Indicators. Non-FCS countries include all countries not classified as FCS. This includes high income countries.

Appendix C: Additional Tables and Figures for Pillar Scores

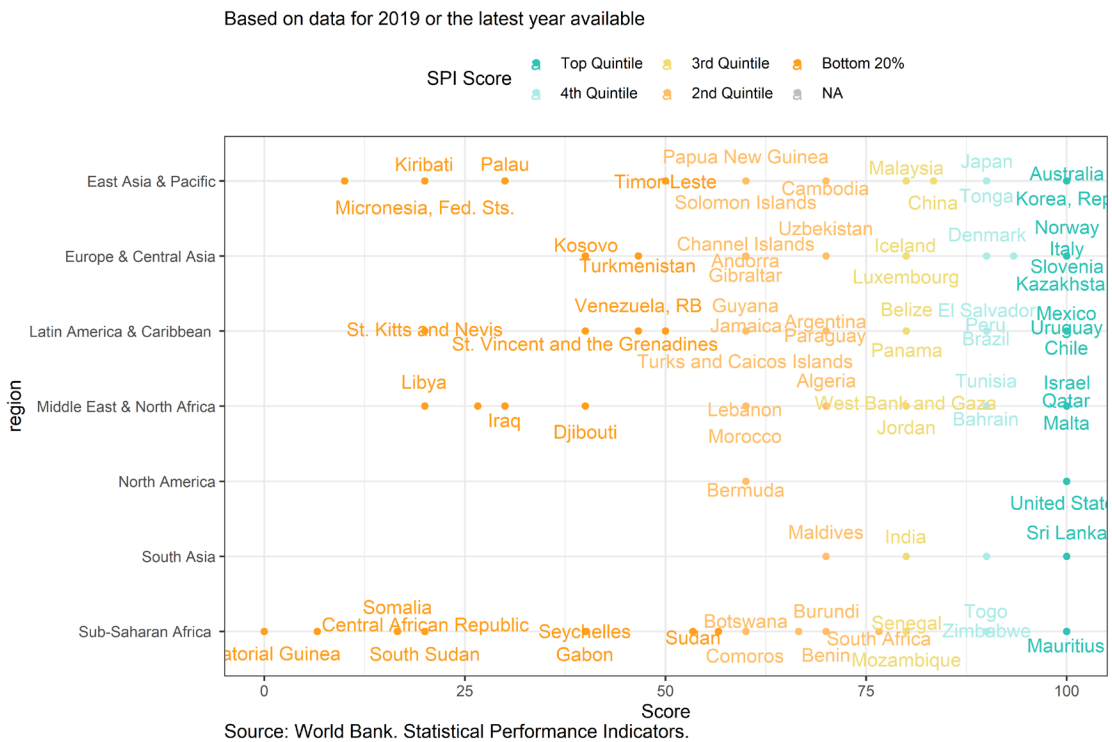
Figure C.1: Pillar 1 Scores

Panel A: Global Map



Source: World Bank. Statistical Performance Indicators

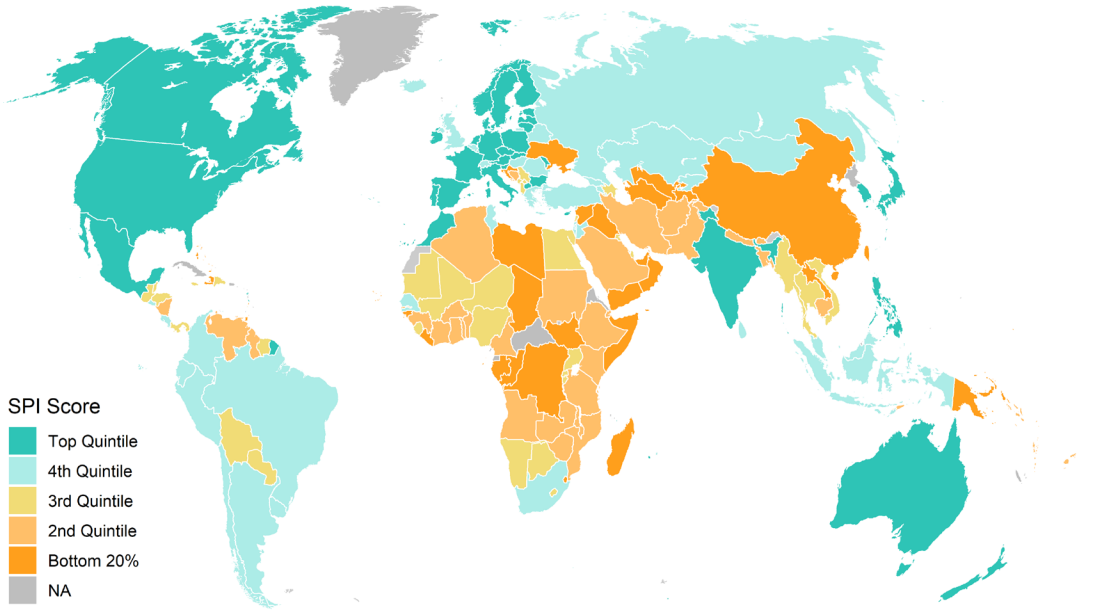
Panel B: By Country



Source: World Bank. Statistical Performance Indicators.

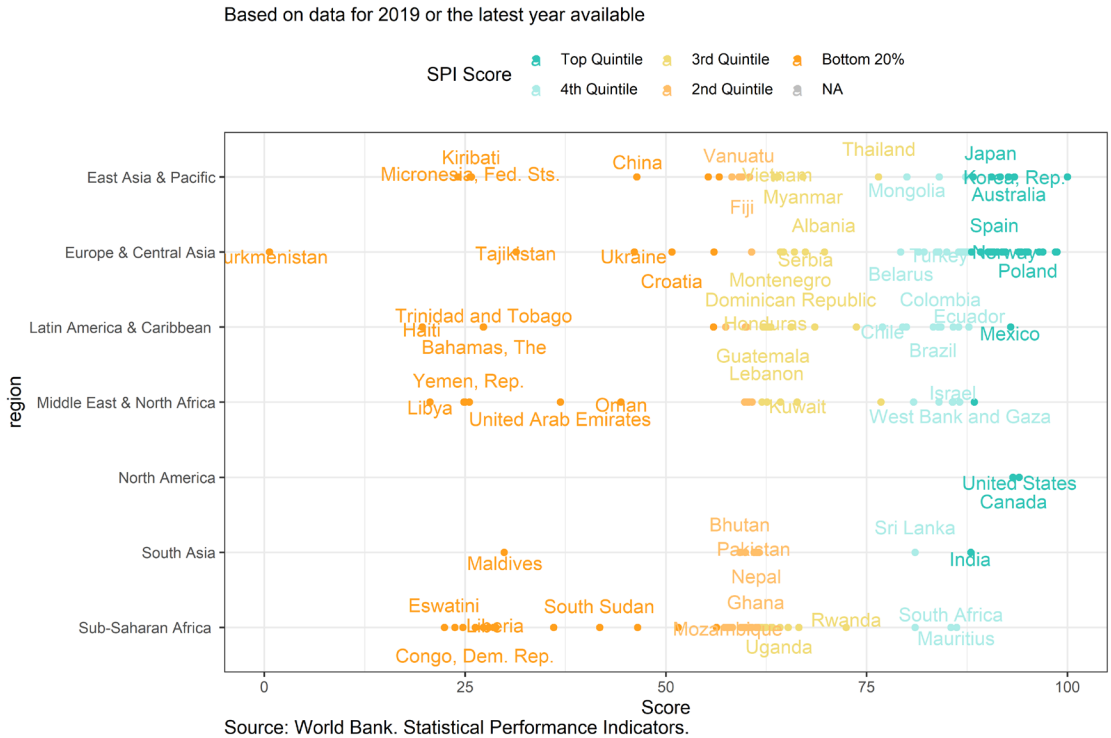
Figure C.2: Pillar 2 Scores

Panel A: Global Map



Source: World Bank. Statistical Performance Indicators

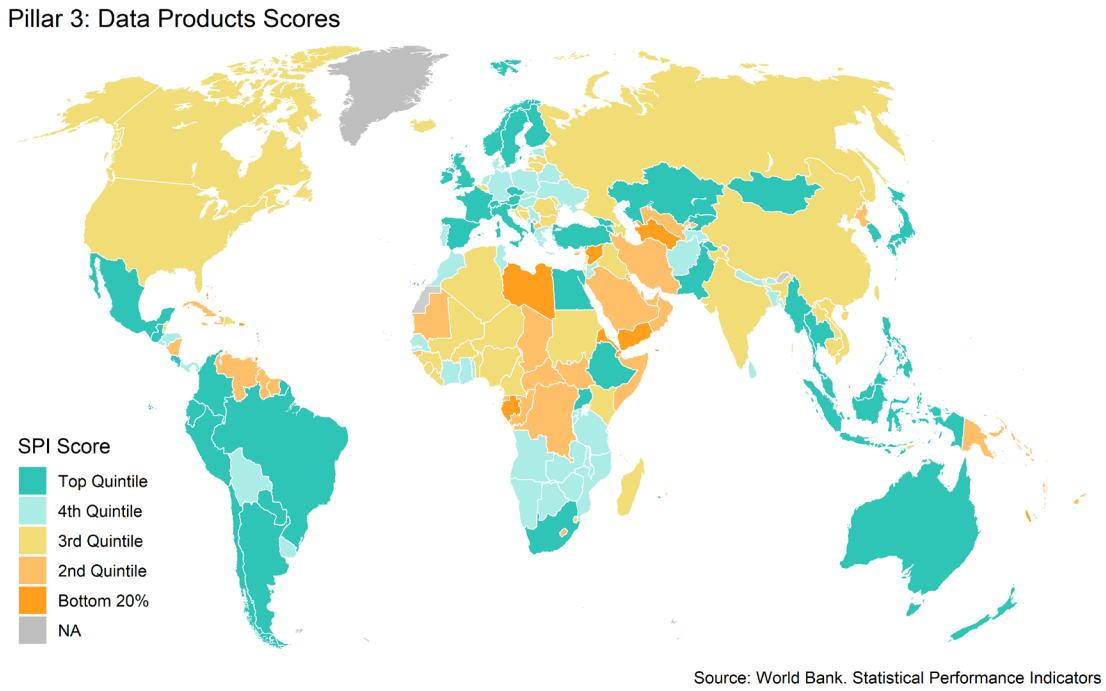
Panel B: By Country



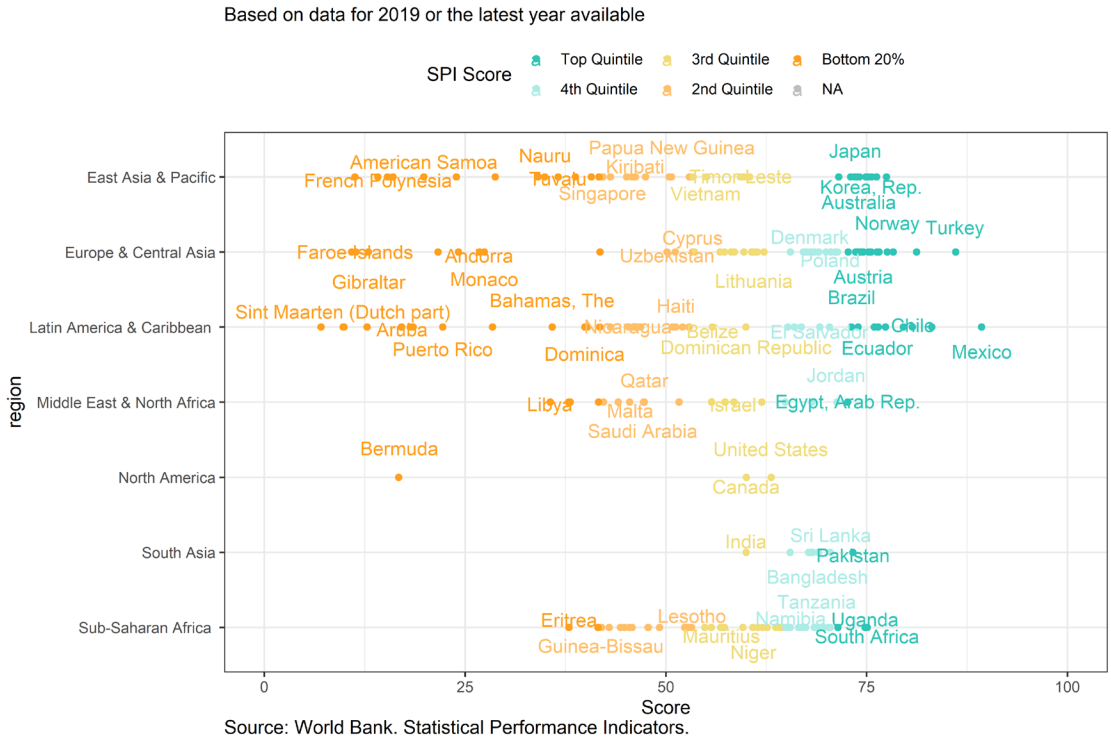
Source: World Bank. Statistical Performance Indicators.

Figure C.3: Pillar 3 Scores

Panel A: Global Map



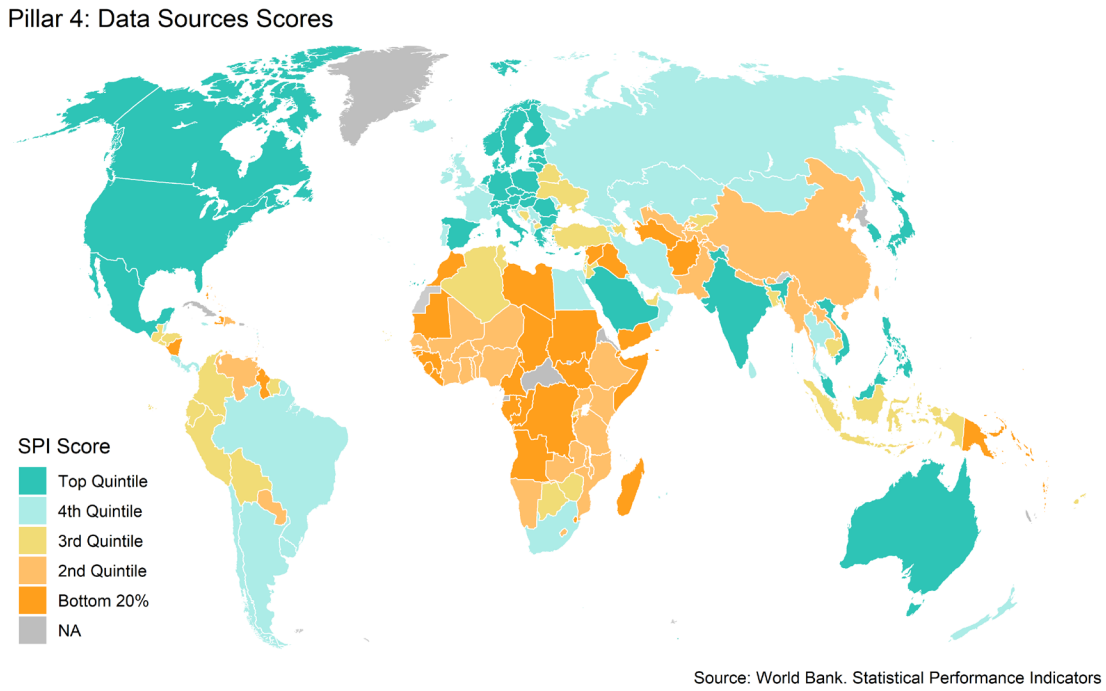
Panel B: By Country



Source: World Bank. Statistical Performance Indicators.

Figure C.4: Pillar 4 Scores

Panel A: Global Map



Panel B: By Country

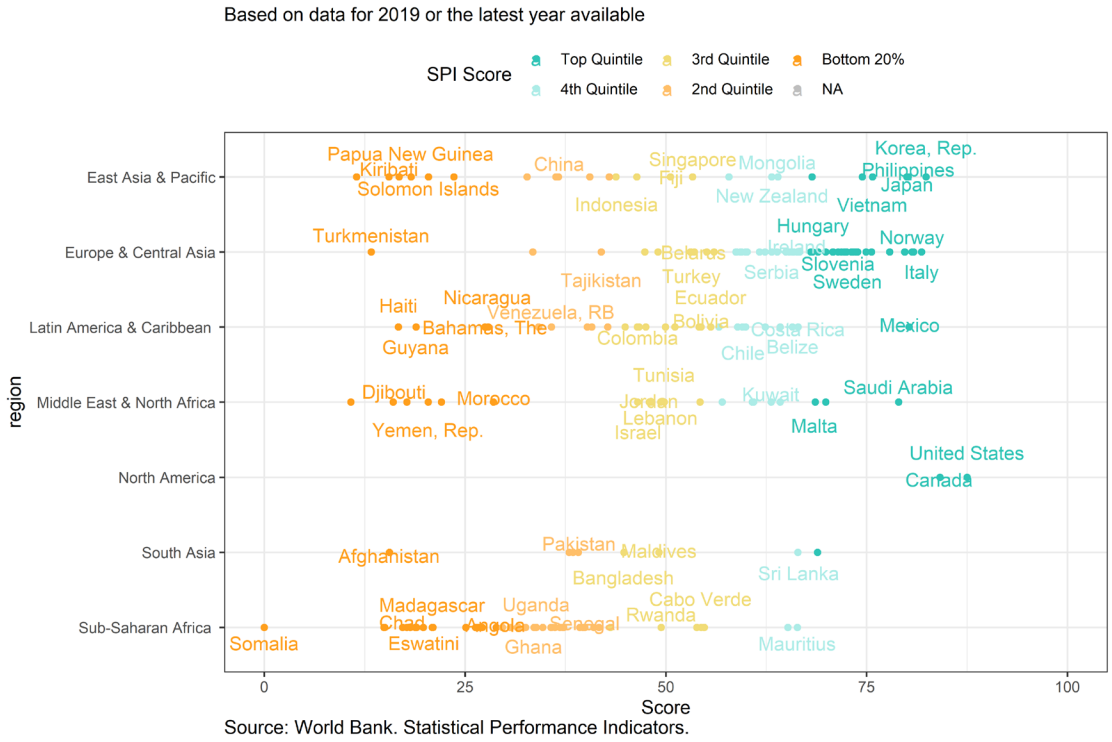
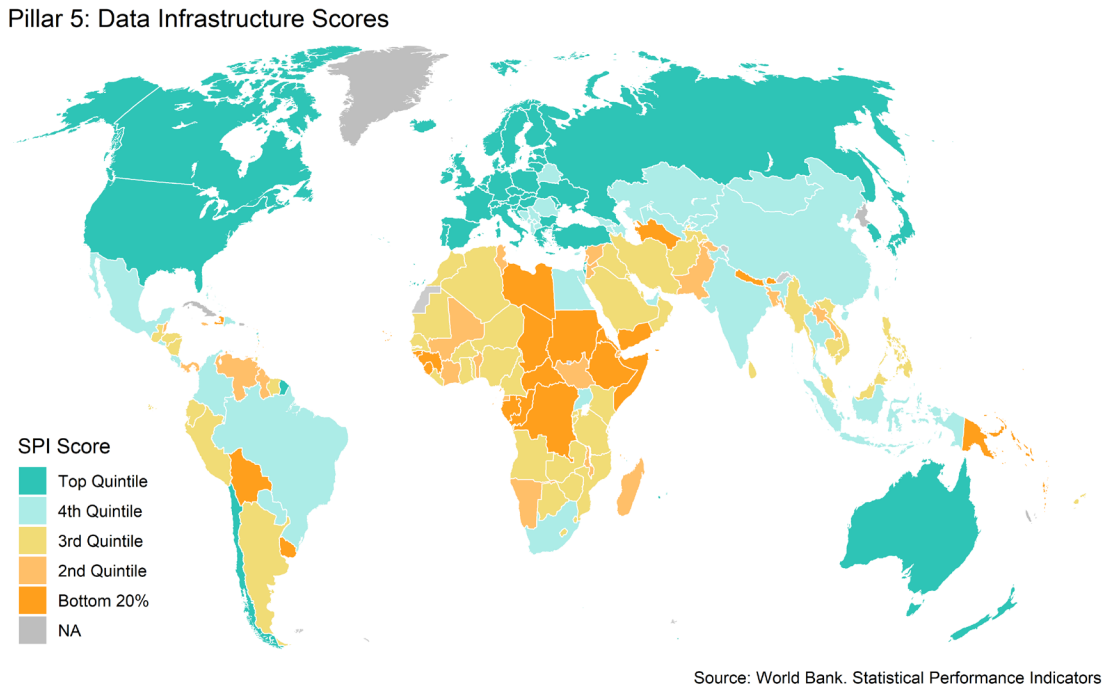


Figure C.5: Pillar 5 Scores

Panel A: Global Map



Panel B: By Country