

# The silent barrier: exploring data availability in Small Island Developing States

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## ABSTRACT

**Objective.** To quantify three aspects of data-related developmental progress across 57 Small Island Developing States (SIDS) recognized by the United Nations: statistical capacity measured using the Statistical Performance Indicators (SPI), data availability using the Sustainable Development Goal (SDG) indicators, and gender-stratified indicators.

**Methods.** SIDS as a single country group were compared with other World Bank regions, using SPI, availability of SDG metrics, and availability of gender-stratified metrics. Using population size as a proxy for “smallness,” its association with data capacity and availability was modeled.

**Results.** SPI among SIDS was lower than in any world region – broadly equivalent to Sub-Saharan Africa. Two-thirds of SDG indicators were available for SIDS in 2022; other world regions having between 71% and 87% availability. One-third of gender-stratified indicators were available for SIDS in 2022; other world regions having between 58% and 68% availability. Population size was strongly associated with each outcome, with SIDS having a statistical capacity 18.0 percentage points lower than other countries [95% CI (8.5, 27.4)], SDG data availability 17.4 percentage points lower [95% CI (13.1, 21.7)], and gender-stratified indicator availability 28.8 percentage points lower [95% CI (24.5, 33.0)].

**Conclusions.** As global demand and associated rewards for electronic data increase, our analysis highlights the challenges introduced by island “smallness” in the global push for digital transformation. Regional cooperation mechanisms, sustained international support, and systematic monitoring of data availability are urgently required to monitor capacity development.

## Keywords

Information science; statistics as topic; development indicators; developing countries; Pacific islands; Caribbean region.

The United Nations recognizes 57 Small Island Developing States (SIDS), with 28 located in the Caribbean (1). The classification identifies countries considered to have specific challenges related to their geographic remoteness and small size (2, 3). While considerable debate continues on whether “smallness” restricts the potential for economic growth, there is consensus that it limits the ability to benefit from economies of scale (4). The ongoing climate crisis has encouraged a renewed focus on SIDS, recognizing their particular susceptibility to external economic and (increasingly) environmental shocks. The focus of much international collaboration is currently on

how to mitigate the risk of such events (vulnerability), and how to improve the ability to adapt to this risk and recover from these events (resilience) (5, 6).

For governments, an evidence base is key to guiding these and other national priorities, making the availability of data for decision-making a developmental necessity. Among the SIDS, limited data availability has been repeatedly recognized as a perennial limitation (7), yet – somewhat paradoxically – there have been few attempts to quantify this limitation. In this article we aim to provide one such quantification, comparing the situation in the SIDS with countries in other world regions. We use

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three broad themes for our comparisons: the capacity of national statistical systems, the completeness of data for the Sustainable Development Goal (SDG) indicators, and the availability of gender-disaggregated national data. We then explore the extent to which smallness – represented by population size – is associated with our three indicators for data availability: national data capacity, availability of SDG data, and availability of gender-disaggregated data.

## MATERIALS AND METHODS

### Data sources

Our chosen data themes are the capacity of national statistical systems, the availability of data to report SDG indicators, and the availability of gender-disaggregated national data.

To report national statistical capacity we use the World Bank Statistical Performance Indicators (SPI) framework, which is described in detail elsewhere (8). Briefly, the SPI framework combines assessments in 22 dimensions grouped into five pillars: data use, data services, data products, data sources, and data infrastructure. These assessments are combined into an SPI overall score. We use the score for 2022 as the most recent information at the time of writing, and the score from 2018 to assess five-year change in capacity. A score of 100 means all measured elements of statistical capacity are in place, and a score of 0 means none are in place.

To report data availability for the SDG indicators, we use one aspect of the SPI (pillar 3, data products), which assesses the availability of data for each of 221 indicators contributing to 16 of the 17 SDGs (Goal 14, Life Below Water, is excluded from our analysis, as land-locked countries cannot contribute to the associated indicators). Using the United Nations Global SDG Monitoring Database, 2022 data availability is assumed if one or more data points exist within a five-year window (so between 2018 and 2022). For each country in our analysis we extract the percentage availability score, with 100% meaning that data for every indicator are available (9).

To report the availability of gender-disaggregated national data, we draw on metrics from a wide range of sources, covering themes such as demographics, education, health, violence, working lives, and country norms, and maintained as a database of over 900 indicators by the World Bank (10). We extracted the percentage data availability for all listed indicators over the previous five years. At the time of writing, the most recent database update was 19 December 2023, giving five-year data availability between 2019 and 2023, with each indicator considered available if it existed at least once during this time.

### World regions

The World Bank collates metrics on 217 countries in 7 regions: East Asia and Pacific (37 countries), Europe and Central Asia (58 countries), Latin America and Caribbean (42 countries), Middle East and North Africa (21 countries), North America (3 countries), South Asia (8 countries), and Sub-Saharan Africa (48 countries). Following the classification of the United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS), we reclassified 51 SIDS into a new regional grouping and the remaining 166 countries

according to their World Bank world regions (11, 12). We removed 7 countries/territories (Channel Islands, Faroe Islands, Gibraltar, Greenland, Isle of Man, Saint Martin, Taiwan) because their political or non-self-governing status limited our ability to understand their data availability. None of these excluded nations are identified as SIDS in the UN-OHRLLS classification. This left 51 SIDS and 159 comparison countries for which we assessed data capacity and availability. We assessed all 51 SIDS for SDG and gender data availability. A subset of the 51 SIDS did not have enough information to allow the calculation of the SPI overall score – only 26 (51%) had an SPI score in 2018, increasing to 35 (69%) by 2022. This compared to around 80% in East Asia and Pacific region and always over 90% in other regions. Additional country-level detail for 57 SIDS identified by the UN-OHRLLS is provided in a supplement to this article. Six countries/territories officially self-identifying as SIDS were not represented in the World Bank data capacity or data availability databases (Anguilla, Cook Islands, Guadeloupe, Martinique, Montserrat, Niue), leaving 51 SIDS used in our analyses.

### Statistical analysis

Our analysis is primarily descriptive. For each of our three themes (SPI overall score, SDG metrics availability, gender metrics availability) we calculated percentile summary scores by country and by region. We tabulated the median SPI overall score by region, presenting absolute and relative change over five years between 2018 and 2022. We visualized median SDG data availability by region in 2018 and 2022 to highlight the level of availability and the change over time, and ranked SDG availability at the country level for 2022. We visualized gender data availability in 2022, presenting medians with interquartile ranges.

We next explored the association of each data availability theme with population size, the criterion most widely recognized as a key descriptor of economic smallness (13). Thresholds have been suggested for categorizing smallness; for example, in preparation for the 2005 United Nations Mauritius Conference on SIDS, UN Trade and Development (UNCTAD) formally defined smallness as having a population less than 5 million people (4, 14). In our analysis we ran quantile (median) regressions to quantify the size of the relationship between each data availability theme and population size, first using population size as a continuous measure then using two categorizations: countries classified as SIDS (yes/no) and countries with a population in 2022 of less than 5 million people (yes/no). We used the natural logarithm of population size as our continuous measure to improve the linear fit of our regression models. All analyses were performed using Stata Statistical Software, Release 18 (College Station, TX: StataCorp; 2023).

## RESULTS

### National statistical capacity

National statistical capacity among the 51 SIDS was lower than in any World Bank region (Table 1). The median score in 2018 was 50.2 rising to 55.3 by 2022, an absolute increase of 5.1 points. This SIDS capacity was broadly equivalent to Sub-Saharan Africa (regional SPI score of 54.0 in 2018, 59.1 in 2022, an absolute increase of 5.1 points). This developmental similarity exists despite the rather different regional economic profiles,

with 41/48 (85%) of countries in Sub-Saharan Africa classified as low or lower-middle income and 7/48 (15%) classified as upper-middle or high income by the World Bank, compared to 12/51 (24%) low or lower-middle income and 39/51 (76%) upper-middle and high income among the SIDS. All other world regions had a statistical capacity score at least 15 points higher than among the SIDS, ranging from 69.2 in Middle East

and North Africa and 69.7 in South Asia to 87.9 in Europe and Central Asia and 92.9 in North America.

**SDG data availability**

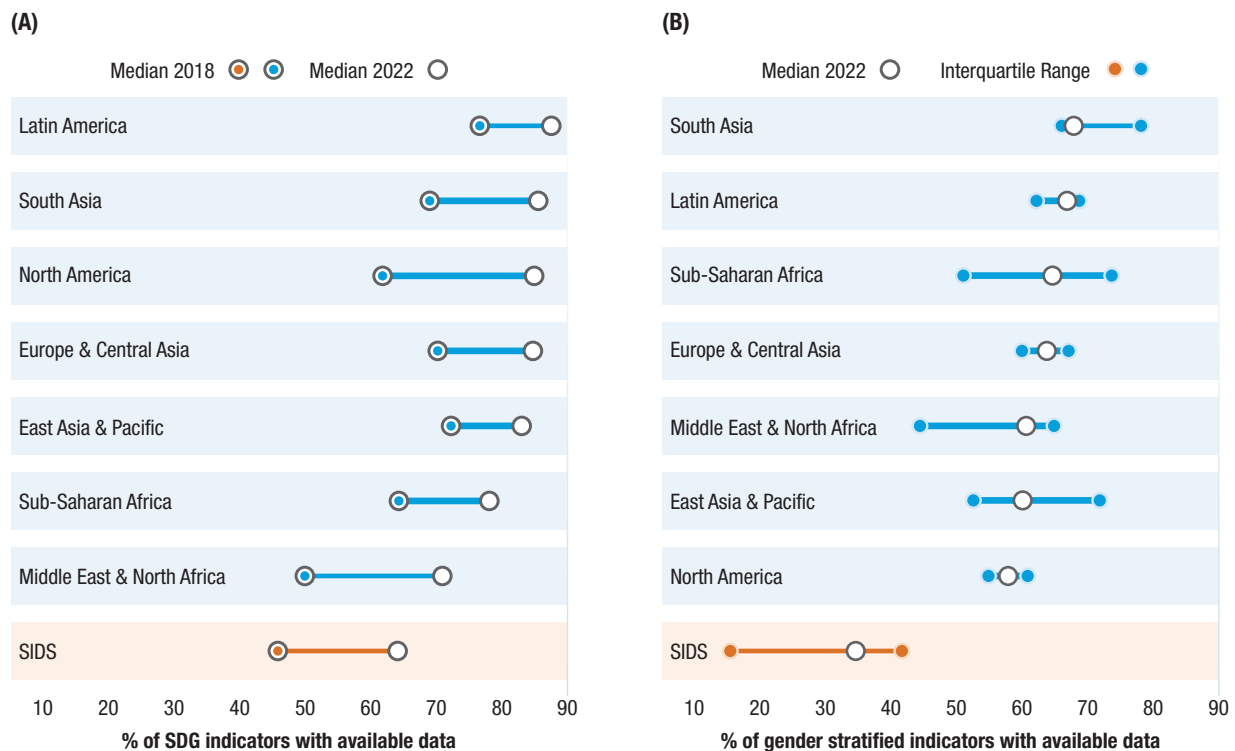
We present the SDG indicator percentage data availability for 2018 and 2022 in Figure 1A. Percentage availability among

**TABLE 1. Assessment of national statistical capacity using the World Bank Statistical Performance Indicators (SPI) overall score in 2018 and in 2022 for 7 world regions and for 51 Small Island Developing States (SIDS)**

World region	Countries in region	2018			2022			Absolute improvement (% point change) <sup>a</sup>	Relative improvement (% change) <sup>a</sup>
		Countries with score	SPI score (median)	SPI score (mean)	Countries with score	SPI score (median)	SPI score (mean)		
SIDS	51	26	50.2	48.8	35	55.3	54.5	5.1	10.1
Sub-Saharan Africa	42	39	54.0	51.4	41	59.1	58.1	5.1	9.5
South Asia	7	7	59.0	59.9	7	69.7	67.7	10.7	18.2
North America	2	2	87.7	87.7	2	92.9	92.9	5.1	5.8
Middle East and North Africa	21	21	57.6	54.1	21	69.2	64.3	11.6	20.1
Latin America	17	17	68.1	66.6	17	73.8	74.3	5.7	8.3
Europe and Central Asia	52	48	83.1	78.9	48	87.9	84.6	4.8	5.8
East Asia and Pacific	18	14	74.2	71.7	15	79.0	77.0	4.7	6.3

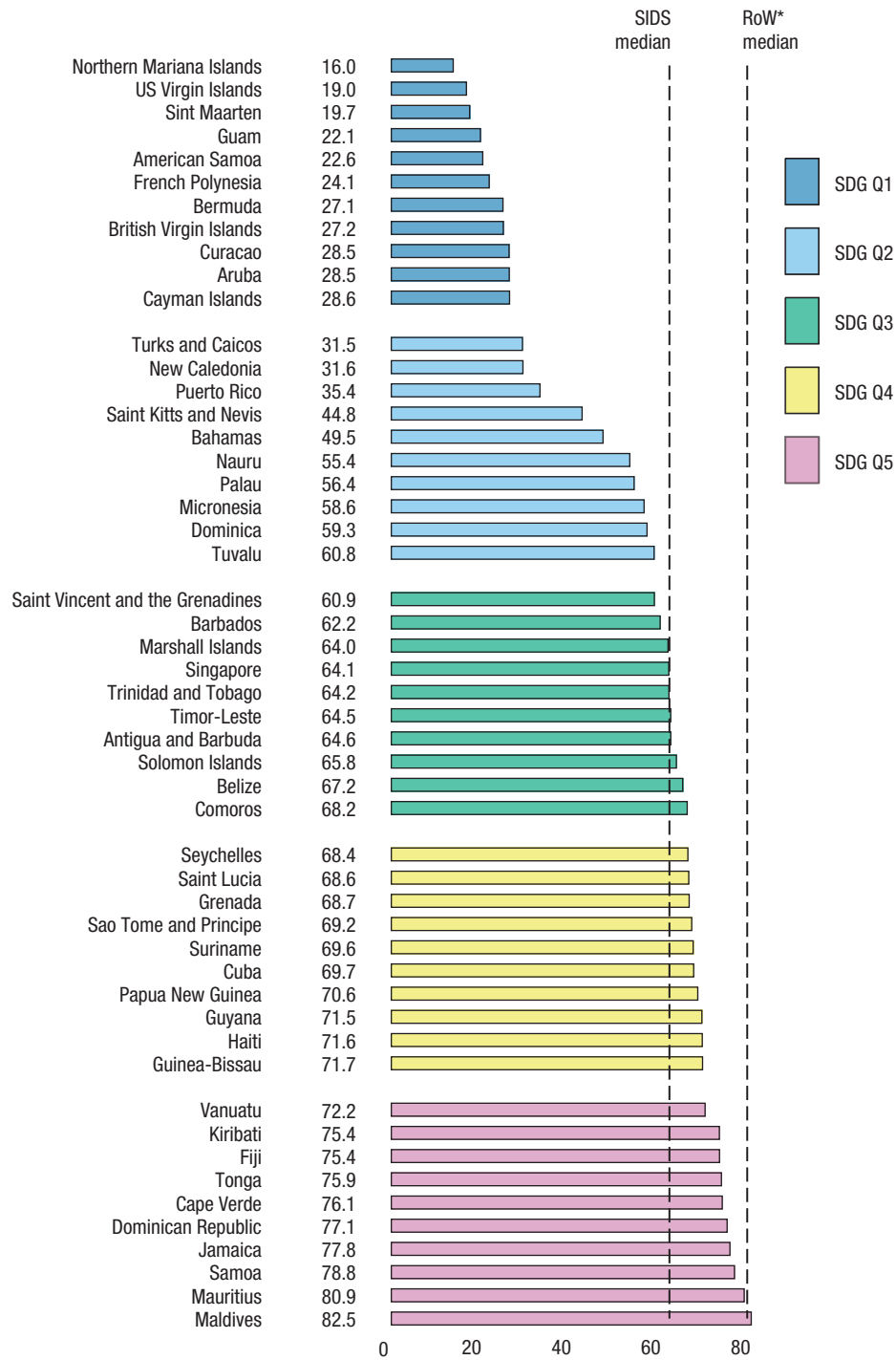
**Note:** <sup>a</sup> Absolute and relative improvement in median score between 2018 and 2022.  
**Source:** Prepared by the authors based on the study data.

**FIGURE 1. Percentage availability of data among 7 world regions (159 countries) and among 51 Small Island Developing States (SIDS): (A) Sustainable Development Goal (SDG) indicator data availability in 2018 and in 2022; (B) Gender indicator data availability in 2022**



**Source:** Prepared by the authors based on the study data.

**FIGURE 2. Percentage availability of data in 2022 to measure 221 Sustainable Development Goal (SDG) indicators among 51 Small Island Developing States (SIDS)**

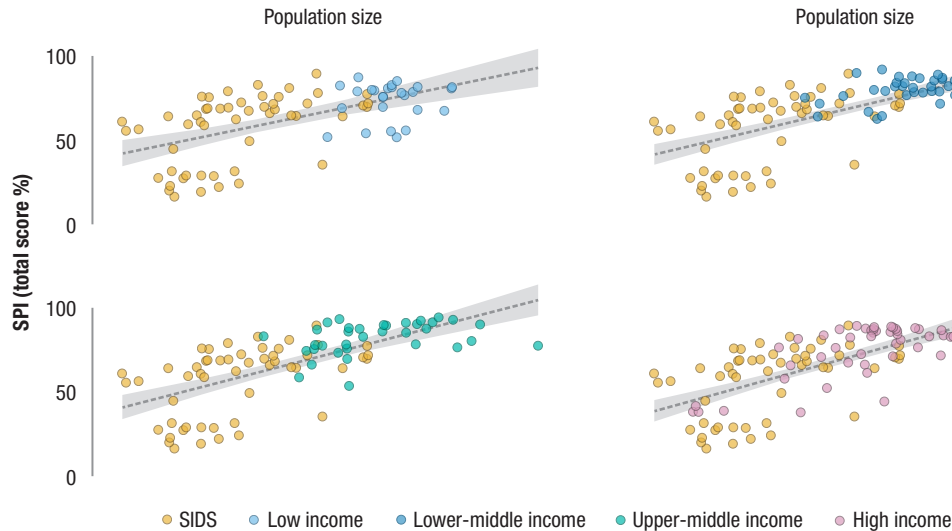


**Note:** \*RoW: Rest of the World, 159 countries.  
**Source:** Prepared by the authors based on the study data.

the 51 SIDS was 45.9% in 2018 and 64.2% in 2022, an increase of 18 percentage points over this five-year period. Availability in other world regions was always higher, ranging in 2022 from 70.9% in Middle East and North Africa and 78.0% in Sub-Saharan Africa to between 80% and 90% in all other regions. The regional disparities in data availability for these SDG indicators

may be decreasing. The difference between the regions with the highest and lowest data availability (Latin America and SIDS, respectively) in 2018 was 30.6 percentage points and dropped to 23.2 percentage points by 2022. The range of SDG data availability across the 51 SIDS is presented in Figure 2, with percentage availability lowest in Northern Mariana Islands

**FIGURE 3.** The relationship between population size and Statistical Performance Indicators (SPI) overall score, for 51 Small Island Developing States (SIDS) and for 159 “Rest of the World” countries stratified by World Bank income groups (low income, lower-middle income, upper-middle income, high income)



Source: Prepared by the authors based on the study data.

(16.0%) and U.S. Virgin Islands (19.0%) and highest in Mauritius (80.9%) and Maldives (82.5%) – an absolute difference between lowest and highest of 66.5 percentage points, which is larger than other world regions. The difference between countries with highest and lowest SDG data availability in other world regions in 2022 were: Europe and Central Asia (minimum 38.1, maximum 94.2, absolute difference 56.1), East Asia and Pacific (min 37.7, max 91.5, difference 53.7), Sub-Saharan Africa (min 51.7, max 89.4, difference 37.7), Middle East and North Africa (min 52.3, max 87.6, difference 35.3), Latin America (min 62.3, max 93.1, difference 30.8), South Asia (min 75.2, max 86.8, difference 11.6), North America (min 83.7, max 86.0, difference 2.3).

### Data availability for gender indicators

The percentage availability of data for gender indicators is presented for 2022 in Figure 1B. Median availability among the SIDS was 34.5%, around half that of availability in other world regions, which ranged from 58% in North America to 68% in South Asia.

### Data availability is associated with country smallness

In Table 2 we present the association of population size with each of our three outcomes (SPI overall score, SDG data availability, gender data availability). In Figure 3 we visualize one of these associations, plotting fitted regression lines for the association of population size with SPI overall score, highlighting SIDS and each of the four World Bank income groups (low income, lower-middle income, upper-middle income, high income).

Population size as a continuous measure is strongly associated with the SPI score, with the score increasing by 3.3 points [95% CI (1.8, 4.9)] for every 1 unit increase in the log population size. This regression model allows us to predict statistical

capacity scores of between 55.2 for a country with a population of 100 000 people to 68.1 for a country with a population of 5 million people, with capacity continuing to increase (at a decreasing rate) as population size increases further. For example, predicted statistical capacity for a country with a population of 50 million is 75.1, and for 100 million people is 78.0. Population size matters, and its importance increases as the absolute size of a population gets smaller. Modeling SPI score and SIDS (yes/no) suggests that SIDS on average will have a statistical capacity that is 18 points below that of non-SIDS [95% CI (8.5, 27.4)]. Modeling SPI score and population size below 5 million people (yes/no) suggests that these smaller countries on average will have a statistical capacity that is 10.6 points below that of larger countries [95% CI (3.4, 17.8)]. Similar patterns are seen when modeling SDG or gender data availability. On average SIDS have SDG data availability 17.4 percentage points below that of non-SIDS [95% CI (13.1, 21.7)] and have gender data availability 28.8 percentage points below that of non-SIDS [95% CI (24.5, 33.0)].

## DISCUSSION

We have used three broad themes to assess data capacity and availability, which collectively cover a range of global developmental priorities. First, to understand national capacity for generating data, we used the World Bank SPI framework, which correlates strongly with traditional development indicators such as GDP per capita and indicators of human capital such as the Human Development Index (HDI) (8). The SPI having many dimensions allows a nuanced understanding of structural limitations, and it is specifically tailored to understanding the strength of national statistical systems. Second, we explored data availability for the SDG indicators. The SDG metrics possibly represent a “best case” scenario for national data availability, given the level of international support available



**TABLE 2. The association between population size and three measures of data capacity: Statistical Performance Indicators (SPI) overall score, Sustainable Development Goal (SDG) indicator data availability, and gender indicators data availability, using median regression**

Population	SPI <sup>a</sup> Effect size (95% CI)	SDG <sup>a</sup> Effect size (95% CI)	Gender <sup>a</sup> Effect size (95% CI)
SIDS (yes vs. no)	17.98 (8.53, 27.43) $p < 0.001$	17.39 (13.09, 21.68) $p < 0.001$	28.76 (24.51, 33.01) $p < 0.001$
Population size <5 million (yes vs. no)	10.61 (3.39, 17.82) $p < 0.001$	15.93 (11.54, 20.32) $p < 0.001$	26.42 (22.05, 30.79) $p < 0.001$
Population size (log scale)	3.30 (1.75, 4.86) $p < 0.001$	3.51 (2.65, 4.37) $p < 0.001$	6.28 (5.38, 7.17) $p < 0.001$
Predicted outcome			
100 000	55.2 (47.8, 62.5)	62.4 (58.5, 66.3)	30.7 (26.7, 34.7)
250 000	58.2 (52.1, 64.3)	65.6 (62.4, 68.9)	36.4 (33.1, 39.8)
500 000	60.5 (55.2, 65.7)	68.0 (65.2, 70.9)	40.8 (37.9, 43.7)
750 000	61.8 (57.0, 66.6)	69.5 (66.9, 72.1)	43.3 (40.6, 46.0)
1 000 000	62.8 (58.3, 67.2)	70.5 (68.0, 72.9)	45.1 (42.6, 47.7)
2 500 000	65.8 (62.1, 69.5)	73.7 (71.6, 75.8)	50.9 (48.6, 53.1)
5 000 000	68.1 (64.7, 71.4)	76.1 (74.1, 78.2)	55.2 (53.0, 57.4)

**Note:** <sup>a</sup> The effect sizes for SPI total score, SDG data availability, and availability of gender-stratified data are each on a scale of 0–100. For SPI total score, a score of 100 means all measured elements of statistical capacity are in place, and a score of 0 means none are in place. For SDG data availability, 100% means that data for every SDG indicator are available. For gender-stratified data availability, 100% means that data for all measured indicators are available.

**Source:** Prepared by the authors based on the study data.

globally for SDG monitoring and their use in guiding national and regional priorities. Third, we explored data availability for gender indicators. Gender inequity is a global development priority but does not have the same advanced level of data standardization as for the SDGs, and therefore arguably represents something closer to a data availability norm for the SIDS compared to other world regions.

We show that the SIDS have less developed statistical capacity, less SDG data availability, and less gender-stratified data than any other world region. Statistical capacity among the SIDS was broadly equivalent to that of Sub-Saharan Africa despite the rather different economic development indicators of these two regions. Among the SIDS, roughly two-thirds (64%) of the SDG metrics had data in 2022 – between 7 and 23 percentage points lower than other world regions. And SIDS data availability was markedly lower for gender-stratified metrics, with roughly one-third of metrics having available data in 2023 – between 23 and 33 percentage points lower than other world regions.

These capacity and data availability shortfalls are strongly associated with country smallness, measured in this instance by population size. SIDS (median population in 2022: 222 000) on average had a national statistical capacity around 18 points lower, SDG data availability around 17 percentage points lower, and gender data availability around 29 percentage points lower than non-SIDS (median population in 2022: 6.8 million) – all strongly statistically significant differences independent of World Bank income groups. When modeling population size as a continuous predictor, this effect of smallness is not linear – it becomes more pronounced as population size decreases. These differences make sense. SIDS mostly have small national statistical offices with fewer resources to produce the very wide range of data products now formally monitored by international agencies (15, 16). As the reliance on data-driven evidence increases, this structural limitation will feed data poverty and information-driven inequity.

Population size also varies greatly within the SIDS country grouping; in 2022 estimated population sizes ranged from 11 000 people in Tuvalu and less than 50 000 in 10 SIDS, to 11.5 million in Haiti and more than 1 million in 11 SIDS (17). This within-SIDS population variation contributed to the largest variation in data availability of all world regions; for example, SDG data availability ranged from less than 20% in Northern Mariana Islands, U.S. Virgin Islands, and Sint Maarten to over 80% in Mauritius and Maldives. Many of the smallest SIDS are also non-sovereign states, (overseas territories of France, Netherlands, New Zealand, United Kingdom, and United States of America) and this complicates the data capacity story further. In an additional regression model for data availability, non-sovereign SIDS had SDG data availability 35.8 percentage points lower [95% CI (–43.7, –27.8)] and gender data availability 19.8 percentage points lower [95% CI (–27.3, –12.4)] than sovereign SIDS. It is possible that some metrics for the non-sovereign SIDS are subsumed within their associated sovereign state, but with most non-sovereign SIDS having a significant degree of internal self-government, this will be the exception rather than the rule. It is more likely that the non-sovereign SIDS – as some of the smallest SIDS globally – struggle to meet their data reporting needs and have fewer available avenues for international support. It would be wrong then to class all SIDS as having the same data capacity challenges. Others have suggested that instead of the broad “all-purpose” SIDS category, it would be beneficial to create smaller subgroups along issues-based categorization (18). In the same vein, keeping the distinction between sovereign and non-sovereign state SIDS could be useful. Ultimately, while identifying specific characteristics and indicators for development has a technical and evidence-based dimension, politics plays a role in available support networks.

Considering the specific case of the Caribbean SIDS, subsuming the Caribbean into a wider Latin American geographical grouping is common for global monitoring and can mask vulnerability. For many years, there has been anecdotal

but consistent concern about the lack of data for evidence-based decision-making across the Caribbean. For example, the Caribbean has been labeled “data poor,” partly because of limited access to locally relevant data, and also due to capacity limitations that restrict the use of data as evidence for policy-making and decision-making (19). Improved regional data availability and reuse has been highlighted as a priority area for strengthening community decision-making and resilience (20). The wide-ranging Data Gaps Initiative, funded by the International Monetary Fund, included 14 recommendations that addressed priority policy needs including “access to private sources of data and administrative data, and data sharing to improve the timeliness and granularity of official statistics” (21). A United Nations report identified four priority areas for strengthening disaster preparedness, including the promotion of data and network management and sharing (22). The extent of the problem may seem obvious to regional data professionals, but to the global data community this dearth of data is regularly masked by the practice of including the Caribbean in a wider Latin American region, a process that can hide the statistical contributions of smaller places. Latin America had the highest SDG data availability in 2022 (at 87%) and the Caribbean SIDS among the lowest data availability (median availability for the Caribbean SIDS in 2022 was 54%). Averaging across this region hides the very different developmental challenges of the Caribbean SIDS. The situation is exacerbated when – as is common – statistical methodology weights according to population size, downsizing and effectively eliminating the contribution of the region’s SIDS.

If small places lack the absolute resources needed to produce data in quantity and with the quality needed for effective digital transformation, it seems sensible to consider joint ventures that can afford much-needed economies of scale. Regional cooperation has long been a feature of the Caribbean SIDS. For example, since 1973, the Caribbean Community (CARICOM) has provided a framework for regional economic integration, foreign policy coordination, human and social development, and security. There are a wide range of affiliated regional organizations covering, for example, areas including health (Caribbean Public Health Agency, CARPHA), disaster response (Caribbean Disaster Emergency Management Agency, CDEMA), tourism (Caribbean Tourism Organization, CTO), and law (Caribbean Court of Justice, CCJ). Similar structures exist for the Pacific SIDS, with, for example, the Pacific Community (SPC) supporting sustainable regional development through science, research, and technology. Uniquely, the Caribbean and the Pacific have the only two regional universities in the world: The University of the West Indies and The University of the South Pacific. In the Pacific, the Secretariat of the Pacific Regional Environment Programme (SPREP) and the United Nations have completed

the Inform Project, which recognized three challenges for environmental data: data availability, information management, timely information. The project facilitated reliable access for Pacific islands to their own national datasets for environmental information, as well as a process and guide for information use standards, and its sustainability is a now a feature of ongoing work via phase 2, known as Inform Plus (23).

## Conclusion

The long-standing but mostly informal recognition of limited data availability among many of the world’s SIDS is supported by our more formal comparison of statistical capacity. As the global demand and associated rewards for electronic data continue to increase, our analysis highlights and reminds us of the challenges introduced by island smallness in the global push for digital transformation. Without solutions, this limitation will drive data poverty and information-driven inequity. Example collaborations, driven by the regions themselves and with international mechanisms to encourage sustainability, show us pathways for improvement, and formal monitoring of data availability and accessibility must now be built into regional data-handling structures. Thorough treatment of policy initiatives is beyond the scope of this particular article, but a discussion is provided in a companion article published in this special issue (24).

**Author contributions.** Both authors conceived the original idea for the article and wrote and revised the manuscript. IRH performed all analyses. Both authors reviewed and approved the final version.

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## REFERENCES

1. MacFeely S, Peltola A, Barnat N, Hoffmeister O, Hopp D. Constructing a criteria-based classification for Small Island Developing States: An Investigation. *J Mar Isl Cult.* 2021;10(1):9. <https://doi.org/10.21463/jmic.2021.10.1.09>.
2. Organisation for Economic Co-operation and Development, World Bank. Climate and Disaster Resilience Financing in Small Island Developing States. A report jointly authored by the Organization for Economic Co-operation and Development (OECD) and the Small Island States Resilience Initiative (SISRI) team in the Climate Change Group of the World Bank. Washington, D.C.: World Bank; 2016. <https://doi.org/10.1787/9789264266919-en>.
3. Organisation for Economic Co-operation and Development. Making Development Co-operation Work for Small Island Developing States. Paris: OECD; 2018. <https://doi.org/10.1787/9789264287648-en>.
4. World Trade Organization. Small Economies: A Literature Review. Note by the Secretariat to the Committee on Trade and Development.

- [Document WT/COMTD/SE/W/4]. Geneva: WTO; 2002 Jul 23. Available from: <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/COMTD/SEW4.pdf&Open=True>.
5. Kelman I. Islands of vulnerability and resilience: Manufactured stereotypes? *Area*. 2020; 52(1):6–13. <https://doi.org/10.1111/area.12457>.
  6. Encontre P. The vulnerability and resilience of small island developing states in the context of globalization. *Nat Resour Forum*. 1999;23(3):261–270. <https://doi.org/10.1111/j.1477-8947.1999.tb00914.x>.
  7. United Nations Department of Economic and Social Affairs, United Nations Office for Disaster Risk Reduction. Gaps, Challenges and Constraints in Means of Implementing the Sendai Framework for Disaster Risk Reduction in Small Island Developing States. [New York]: United Nations; 2022. Available from: <https://www.undrr.org/publication/small-island-developing-states-sids-gaps-challenges-and-constraints-means-implementing>.
  8. Dang HAH, Pullinger J, Serajuddin U, Stacy B. Statistical performance indicators and index—a new tool to measure country statistical capacity. *Sci Data*. 2023;10(1):146. <https://doi.org/10.1038/s41597-023-01971-0>.
  9. United Nations Statistics Division. E-Handbook on SDG Indicators. [New York]: United Nations; c2024 [cited 2024 Feb 13]. Available from: <https://unstats.un.org/wiki/display/SDGeHandbook/Home>.
  10. World Bank. Gender Data Portal. Washington, D.C.: World Bank Group; c2024 [cited 2024 Feb 12]. Available from: <https://gender-data.worldbank.org/>.
  11. United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States. List of Small Island Developing States (SIDS). New York: United Nations; [date unknown] [cited 2024 Feb 16]. Available from: <https://www.un.org/ohrills/content/list-sids>.
  12. World Bank. Countries and Economies. Washington, D.C.: World Bank Group; c2024 [cited 2024 Feb 16]. Available from: <https://data.worldbank.org/country>.
  13. Guillaumont P. An Economic Vulnerability Index: Its Design and Use for International Development Policy. [Research Paper No. 2008/99]. Helsinki: United Nations University, World Institute for Development Economics Research; 2008. Available from: <https://www.wider.unu.edu/publication/economic-vulnerability-index>.
  14. United Nations Conference on Trade and Development. Is a special treatment of SIDS possible? [Document UNCTAD/LDC/2004/1]. New York and Geneva: United Nations; 2004. Available from: <https://unctad.org/publication/special-treatment-small-island-developing-states-possible>.
  15. Pink B, Potaka L, Sykes K. Challenges for National Statistical Offices collecting and providing data requested by international agencies - “One size does not fit all”. [Paris]: Paris21; c2024 [cited 2024 May 24]. Available from: <https://www.paris21.org/sites/default/files/challenges-NZ-aug2003.pdf>.
  16. United Nations Economic Commission for Europe. Common challenges in managing statistical information systems in Asian developing countries. [Working Paper No. 17]. Meeting on the Management of Statistical Information Systems (MSIS 2010, Daejeon, Republic of Korea; 26–29 April 2010). Geneva: UNECE; 2010. Available from: <https://unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.50/2010/wp.17.e.pdf>.
  17. United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2022, Online Edition. New York: United Nations; 2022 [cited 2024 May 24]. Available from: <https://population.un.org/wpp/Download/Standard/MostUsed/>.
  18. Alonso JA, Cortez AL, Klasen S. LDC and other country groupings: How useful are current approaches to classify countries in a more heterogeneous developing world? [CDP Background Paper No. 21]. New York: United Nations Department of Economic and Social Affairs; 2014. Available from: <https://www.un.org/development/desa/dpad/publication/cdp-background-paper-no-22/>.
  19. Fumega S, McNaughton M. Open Data Around the World: Latin America and the Caribbean. In: Davies T, Walker SB, Rubinstein M, Perini F, editors. *The State of Open Data: Histories and Horizons*. Cape Town and Ottawa: African Minds and International Development Research Centre; 2019. Available from: <http://www.africanminds.co.za/state-of-open-data/>.
  20. United States Agency for International Development. Progress to Strengthen Disaster Resilience in the Caribbean Region, FY 2022. Washington, D.C.: USAID; 2023 [cited 2024 Mar 20]. Available from: <https://www.usaid.gov/reports/disaster-resilience-caribbean/fy-2022>.
  21. International Monetary Fund, G20 Data Gaps Initiative. People. Planet. Economy. Third Phase of the G20 Data Gaps Initiative (DGI-3) First Progress Report. Washington, D.C.: IMF; 2023 [cited 2024 Mar 20]. Available from: <https://www.imf.org/en/News/Seminars/Conferences/DGI/g20-dgi-progress-reports-and-other-documents>.
  22. United Nations Office for Disaster Risk Reduction – Regional Office for the Americas and the Caribbean, European Commission’s Directorate-General for European Civil Protection and Humanitarian Aid Operations. Workshop report: Evidence in disaster preparedness - anticipating complex crises in a context of systemic risk. [place unknown]; UNDRR and DG ECHO; 2023. Available from: <https://www.undrr.org/publication/workshop-report-evidence-disaster-preparedness-anticipating-complex-crisis-context>.
  23. Secretariat of the Pacific Regional Environment Programme. The Inform Project. Apia: SPREP; c2024 [cited 2024 Mar 23]. Available from: <https://www.sprep.org/inform>.
  24. Hambleton IR, Jeyaseelan S. Islands of data: cultivating an open data landscape for sustainable development in the Caribbean. *Rev Panam Salud Publica*. 2024;48:e64. <https://doi.org/10.26633/RPSP.2024.64>.

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## La barrera silenciosa: examen de la disponibilidad de datos en los pequeños Estados insulares en desarrollo

### RESUMEN

**Objetivo.** Cuantificar los avances en cuanto a los datos en materia de desarrollo en 57 pequeños Estados insulares en desarrollo reconocidos por las Naciones Unidas, en lo que respecta a: capacidad estadística determinada mediante los indicadores estadísticos de desempeño, disponibilidad de datos mediante los indicadores de los Objetivos de Desarrollo Sostenible (ODS) e indicadores estratificados por género.

**Métodos.** Se compararon los pequeños Estados insulares en desarrollo, considerados como un único grupo de países, con otras regiones del Banco Mundial. Para ello se tuvieron en cuenta los indicadores estadísticos de desempeño, la disponibilidad de parámetros de medición de los ODS y la disponibilidad de indicadores estratificados por género. Se elaboró un modelo de la asociación entre el tamaño de la población y la capacidad y disponibilidad de datos, para lo cual se tomó el tamaño de la población como un indicador indirecto de la "pequeñez".

**Resultados.** El indicador estadístico del desempeño en los pequeños Estados insulares en desarrollo fue más bajo que en cualquier otra región del mundo y, en términos generales, equivalente al del África subsahariana. En el 2022, los pequeños Estados insulares en desarrollo disponían de dos tercios de los indicadores de los ODS; la disponibilidad en otras regiones del mundo oscilaba entre el 71% y el 87%. En el 2022, los pequeños Estados insulares en desarrollo disponían de un tercio de los indicadores estratificados por género; la disponibilidad en otras regiones del mundo oscilaba entre el 58% y el 68%. El tamaño de la población guardaba una relación estrecha con cada uno de estos resultados: la capacidad estadística de los pequeños Estados insulares en desarrollo era 18,0 puntos porcentuales inferior a la de otros países [IC del 95%: (8,5; 27,4)], la disponibilidad de datos sobre los ODS era 17,4 puntos porcentuales inferior [IC del 95%: (13,1; 21,7)], y la disponibilidad de indicadores estratificados por género era 28,8 puntos porcentuales inferior [IC del 95% (24,5; 33,0)].

**Conclusiones.** Nuestro análisis pone de relieve los desafíos que, ante la creciente demanda mundial de datos electrónicos y sus consiguientes beneficios, plantea la "pequeñez" de las islas en el contexto del impulso mundial a la transformación digital. Se necesitan urgentemente mecanismos regionales de cooperación, un apoyo internacional sostenido y un seguimiento sistemático de la disponibilidad de datos para realizar un seguimiento de la creación de capacidad.

### Palabras clave

Ciencia de la información; estadística como asunto; indicadores de desarrollo; países en desarrollo; islas del Pacífico; región del Caribe.

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## Entrave silencioso: examinando a disponibilidade de dados nos pequenos Estados insulares em desenvolvimento

### RESUMO

**Objetivo.** Quantificar o progresso no desenvolvimento relacionado a dados em 57 pequenos Estados insulares em desenvolvimento (PEID) reconhecidos pelas Nações Unidas em termos de: capacidade estatística, avaliada pelos indicadores de desempenho estatístico do Banco Mundial; disponibilidade de dados, usando os indicadores dos Objetivos de Desenvolvimento Sustentável (ODS); e indicadores desagregados por gênero.

**Métodos.** Os PEID foram analisados como um único grupo de países e comparados com outras regiões do Banco Mundial com base nos indicadores de desempenho estatístico, na disponibilidade de indicadores dos ODS e na disponibilidade de dados desagregados por gênero. Foi desenvolvido um modelo para analisar a associação entre o tamanho populacional (usado como uma medida da “pequenez”) e a capacidade estatística e a disponibilidade de dados.

**Resultados.** Observou-se que, nos PEID, os indicadores de desempenho estatístico eram inferiores aos indicadores de outras regiões do mundo, e praticamente equivalentes aos indicadores da África Subsaariana. Em relação aos indicadores dos ODS, dois terços estavam disponíveis para os PEID em 2022, em comparação a 71% a 87% nas outras regiões do mundo. Já no caso dos indicadores desagregados por gênero, um terço estava disponível nos PEID em 2022, em comparação a 58% a 68% nas outras regiões do mundo. Observou-se uma forte associação entre o tamanho populacional e cada um dos resultados considerados. A capacidade estatística dos PEID era 18,0 pontos percentuais menor que a dos outros países [IC 95% (8,5; 27,4)]; a disponibilidade de dados dos ODS era 17,4 pontos percentuais menor [IC 95% (13,1; 21,7)]; e a disponibilidade de indicadores desagregados por gênero era 28,8 pontos percentuais menor [IC 95% (24,5; 33,0)].

**Conclusões.** Com o aumento da demanda mundial por dados digitais, e considerando os ganhos associados, esta análise chama atenção para os desafios decorrentes da “pequenez” insular no esforço global de transformação digital. Mecanismos de cooperação regional, apoio internacional sustentado e monitoramento sistemático da disponibilidade de dados são urgentemente necessários para monitorar o desenvolvimento da capacidade dos países.

### Palavras-chave

Ciência da informação; estatística como assunto; indicadores de desenvolvimento; países em desenvolvimento; ilhas do Pacífico; região do Caribe.