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Data Resource Profile: The Disability Statistics – Estimates Database (DS-E Database). An innovative database of internationally comparable statistics on disability inequalities

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Abstract

Introduction
The Disability Statistics (DS) Database provides internationally comparable statistics to monitor the rights of persons with disabilities. The Disability Statistics – Estimates (DS-E) Database includes national and subnational descriptive statistics based on the analysis and disaggregation of national population and housing censuses and household surveys. The database can inform policies and programs to advance the rights of persons with disabilities.

Methods
As of 2024, the DS-E Database includes estimates for 29 indicators providing information on the prevalence of disability and associations with education, personal activities, health, standards of living, insecurity, and multidimensional poverty. Estimates are based on 53 national datasets, including 23 population and housing censuses and 30 household surveys for 40 countries. The results were disaggregated by type and severity for adults and population subgroups (women, men, rural and urban residents, age groups 15 to 29, 30 to 44, 45 to 64, 65 and older). Estimates are also available at the first subnational level for all countries and at the second subnational level for 17 countries.

Results
At the time of publication, the DS-E Database includes 40 countries and 6,584 subnational locations, with more than 4.3 million estimates of indicators by disability status for adults and population subgroups. Results are in an interactive platform and in downloadable tables where both means and standard errors are available. The DS-E Database results indicate consistent inequalities within and across countries that show that persons with disabilities are more likely to experience deprivations and multidimensional poverty.

Conclusion
The DS-E Database provides statistics on the disparities people with disabilities experience, which can be used to support advocacy for disability-inclusive policy and practice. It provides statistics on outcomes such as education, health, employment. Outcomes can be matched with environmental, service delivery and other datasets to provide insights into, for example, where people with disabilities are left behind and where services are needed.

Keywords
Disability statistics; disability data; functional difficulties; functioning; human rights

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Key features

- **What is unique about the dataset**

  The Disability Statistics – Estimates (DS-E) Database provides internationally comparable estimates of 29 indicators disaggregated by disability status for 40 countries at both national and 6,584 subnational levels based on data from population censuses and household surveys currently.

- **Why the dataset was created**

  The DS-E Database was created to document the situation of persons with disabilities across and within countries and to inform policies and programs to advance the rights of persons with disabilities.

- **Details about the dataset: location, size, composition of the population**

  As of 2024, the DS-E Database includes more than 2.8 million estimates of indicators by disability status for adults ages 15 and older and population subgroups for 40 countries and 6,584 subnational locations. Results are in an interactive platform and in downloadable tables where both means and standard errors are available.

- **Description of any data linkage**

  The DS-E Database can be linked with national and subnational datasets for further research on disability and its correlates, determinants, and consequences.

- **Main categories of data**

  The DS-E Database includes disability prevalence and disability-disaggregated indicators on education, personal activities, health, standard of living, insecurity and multidimensional poverty.

- **How to collaborate and access the dataset and contact details**

  The DS-E Database is accessible at this link: https://www.ds-e.disabilitydatainitiative.org/ Email: disabilitydatainitiative.help@gmail.com

Background

There are six years left to achieve the proposed 2030 Sustainable Development Agenda, which pledges to "leave no one behind". Sustainable Development Goal (SDG) 10 states that "inequality within and among countries is a persistent cause for concern." While the achievement of the 17 SDGs needs to be monitored for persons with disabilities, the paucity of statistics disaggregated by disability status makes it challenging to study their situation at both national and subnational levels and to factor those statistics into budgetary, policy, and program decisions [1].

Specifically, disability-disaggregated data is key to achieve SDG target 17.18. It stresses the need to significantly increase the availability of high-quality and reliable data, disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location, and other characteristics relevant to national contexts. Disability-disaggregated data is also central to Article 31 of the United Nations (UN) Convention on the Rights of Persons with Disabilities (CRPD), which requires that States Parties "collect appropriate information, including statistical and research data." In addition, subnational statistics are crucial for Article 19 of the CRPD, which requires state parties to facilitate the full enjoyment of the rights of persons with disabilities, including guaranteed access to community services and facilities.

Previously, the lack of disaggregated data on disability has been a concern for countries around the world. Without data, countries cannot provide information on the actual number of persons with disabilities and the inequalities that persons with disabilities may experience [2]. It has been noted that national governments and international organizations need to use available resources and increase investment towards disability data disaggregation and analysis efficiently. Hence, national statistics offices and other relevant stakeholders need to ensure that disability data are collected and analysed, producing information on the status of persons with disabilities and enabling reporting on disability-disaggregated indicators at both national and subnational levels [3].

The Disability Statistics – Estimates (DS-E) Database was created to document the status of persons with disabilities across and within countries and to inform policies and programs to advance the rights of persons with disabilities. It serves as a critical tool for shaping evidence-based policies and programs aimed at advancing the rights and inclusion of persons with disabilities. Documenting the situation of persons with disabilities is important for several reasons. Firstly, disability-disaggregated statistics provide information on inequalities or gaps and can inform the development and implementation of disability-inclusive policies and programs at the global, regional, national, and subnational levels. Secondly, they can serve as a baseline for evaluating the impact of national strategic plans and frameworks on persons with disabilities in different areas of life. Lastly, disability statistics can be used by national and local governments to report on the obligations of the CRPD and if policies or programs have enhanced the inclusion of persons with disabilities [4]. Even in countries that have not ratified the CRPD, such as the USA, subnational estimates can inform policies. For example, in the USA, some state legislatures have enacted statutes consistent with the CRPD principles [5].

Evidence suggests that the inequalities persons with disabilities experience vary between and within countries [6, 7]. Subnational disability statistics are essential to understanding and addressing this within-country variation. Inequalities may also change over time or in times of crisis. During crises, persons with disabilities are disproportionately more at risk than persons without disabilities so disability-inclusive planning, accessible information, early warning systems, and transportation are needed, and discriminatory attitudes within institutions and among individuals must be minimised. The COVID-19 pandemic revealed the need for disability statistics as this group faced deepened inequalities during the pandemic. The geographically heterogeneous and detrimental effects of the COVID-19 pandemic also underscore the local environment's role in mitigating or exacerbating social

vulnerabilities in particular for persons with disabilities [8–10]. Hence, national and subnational statistics on the situation of persons with disabilities are important to inform and monitor national and international laws, policies, and commitments, including the UN CRPD, the 2030 Agenda for Sustainable Development as well as responses to crisis or building systems that develop pandemic preparedness.

Many local and international organisations have been advocating for more inclusive data to ensure equitable progress for everyone and guarantee no one is left behind. The Inclusive Data Charter, which aims to mobilise political support to improve the production of quality disaggregated data to support the 2030 Agenda's ambition of leaving no one behind, is one such example. The Charter has more than 30 signatories, including NSOs, civil society organisations and international organisations (e.g. UNICEF, World Bank). Another example is the Office of the High Commissioner for Human Rights, which has called on states to ensure sustainable and comprehensive data collection regarding persons with disabilities [11].

Currently, statistics on the rights of persons with disabilities remain scarce, and no database provides internationally comparable estimates on the situation of persons with disabilities across and within countries. Scattered and incomplete information is a barrier to developing and advocating for inclusive policies and practices and evaluating existing policies and strategies in terms of their impacts on persons with disabilities in all their diversities by type of disability, age, gender, ethnic group and more.

To fill this gap, the Disability Data Initiative (DDI) developed the Disability Statistics – Estimates Database (DS-E Database), which can be used to develop and access internationally comparable statistics on the rights of persons with disabilities, identify disability inequalities or gaps and inform sustainable development for all.

Methods

Conceptual frameworks

Our analysis of inequalities is grounded in a human rights approach to disability, which focuses on the inherent dignity of the human being and is broad in scope covering civil and political rights as well as economic, social, and cultural rights [12]. Our analysis is also informed by the capability approach and its application to disability through the human development model [13] for the definition, measurement and understanding of deprivations and wellbeing and how they may relate to health conditions, impairments and functional difficulties.

More broadly, the analysis in DS-E is aligned with modern definitions of disability that frame disability as an interactional phenomenon, one that results from an individual with a health condition interacting with environmental factors [14]. Understanding disability as an interactional phenomenon, disability gaps are expected to vary across contexts due to the interplay of cultural, economic, legal, and social environmental factors. For example, across different cultural environments, attitudes towards disability are expected to lead to different levels of stigma and exclusion against persons with disabilities. These factors shape how persons with disabilities access resources, and thus their deprivations across countries. Legal protections and access to services also vary widely, affecting for instance access to education, health services, social protection and employment.

Data

Through a review of questionnaires [15], we identified population and household censuses and household surveys that meet the United Nations (2017) *Principles and Recommendations for Population and Housing Censuses* with questions in at least four core domains (seeing, hearing, walking, cognition) and have graded answer scales that capture the severity of functional disability.

DS-E presents results of an analysis of a subset of such censuses and surveys for which the research team had access to microdata. Microdatasets were obtained from IPUMS International [16], the Demographic and Health Programme, the World Bank, and several National Statistics Offices (NSOs)[1]. The data analysis for each dataset was conducted using Stata 16.0 and R[2]. The analysis applies disability disaggregation techniques that allow for disaggregation via type and severity of disability, age, gender and geographical locations. Results are representative at the national and first subnational level as per ISO (International Organisation for Standardisation) 3166-2 for subnational divisions[3]. For some countries, results are also representative and available at a second subnational level below the ISO 3166-2 level[4] and at an alternative subnational level that is relevant to the country's policy or historical context[5]. When applicable, estimates were adjusted for complex survey design.

Table 1 presents the 53 datasets that were used for the analysis as of 2024. Forty-two datasets have the internationally tested Washington Group Short Set (WG-SS) covering six domains (seeing, hearing, walking, cognition, self-care, and communication) [17][6]. The WG-SS is included in Appendix Table 1. The other 11 datasets have other functional difficulty questions. These are similar to the WG-SS but with differences in the wording of the answer scale or the questions. Five datasets do not have a question for the self-care domain while four datasets do not cover the communication domain.

Developing a disability disaggregation approach

Disability is diverse, both in terms of the type and severity of disability. Severity requires the establishment of a threshold using the answer scale of functional difficulties. Disability

[1] Guatemala, Kenya, Kiribati, Mexico, Mongolia, the Philippines, Tonga, Vanuatu.

[2] Codes are available on GitHub at this link: https://github.com/bscarp/DDI/tree/main/Estimate%20scripts.

[3] One exception is the Mongolia 2020 Population and Housing Census dataset, which is representative at the national level and not at the subnational level.

[4] Cambodia, Guatemala, Ghana, Kenya, Kiribati, Mauritius, Mexico, Morocco, Myanmar, Philippines, Tanzania, Senegal, South-Africa, Uganda, Uruguay, Vanuatu, Vietnam.

[5] This is available for Guatemala, Haiti, Maldives, Mauritania, Mexico, Nigeria, Pakistan, Palestine, Uganda, Vietnam.

[6] More information is available at www.washingtongroup-statistics.com.

Table 1: Datasets under analysis and their disability questions

Country	Dataset	Year	Disability questions
Afghanistan	Living Conditions Survey	2016-2017	WG-SS
Bangladesh	Household Income and Expenditure Survey	2016-2017	WG-SS
Cambodia	Demographic and Health Survey (DHS)	2014	WG-SS
Cambodia	Demographic and Health Survey (DHS)	2021-2022	WG-SS
Cambodia	General population census	2019	WG-SS
Djibouti	Enquête Djiboutienne auprés des ménages pour les indicateurs sociaux	2017	Other functional (S)
Ethiopia	Socioeconomic Survey	2018-2019	WG-SS
Gambia	Labour Force Survey (LFS)	2018	WG-SS
Ghana	Population and Housing Census	2021	WG-SS
Guatemala	National Census of Population and Housing	2018	WG-SS
Haiti	Demographic and Health Survey (DHS)	2016-2017	WG-SS
Kenya	Demographic and Health Survey (DHS)	2022	WG-SS
Kenya	Population and Housing Census	2019	WG-SS
Kiribati	Population and Housing Census	2015	Other functional (A) (W)
Kiribati	Population and Housing Census	2020	WG-SS
Liberia	Household Income and Expenditure Survey	2016-2017	WG-SS
Malawi	Integrated Household Survey	2019-2020	WG-SS
Maldives	Demographic and Health Survey (DHS)	2009	WG-SS
Mali	Demographic and Health Survey (DHS)	2018	WG-SS
Mauritania	Demographic and Health Survey (DHS)	2019-2020	WG-SS
Mauritius	Housing and population census	2011	Other functional (W)
Mexico	Population and Housing Census	2020	WG-SS
Mongolia	Labour Force and Forced Labour Survey (LFS)	2022	WG-SS
Mongolia	Population and Housing Census	2020	WG-SS
Morocco	General Census of Population and Housing	2014	Other functional (A) (W)
Myanmar	Population and Housing Census	2014	Other functional (S)(C)
Namibia	Household Income and Expenditure Survey	2015-2016	WG-SS
Nepal	Demographic and Health Survey (DHS)	2022	WG-SS
Nigeria	Demographic and Health Survey (DHS)	2018	WG-SS
Nigeria	General Household Survey	2018-2019	WG-SS
Pakistan	Demographic and Health Survey (DHS)	2017-2018	WG-SS
Palestine	Household Income and Expenditure Survey	2009	Other functional (S)
Philippines	Census of Population and Housing	2020	WG-SS
Rwanda	Demographic and Health Survey (DHS)	2019-2020	WG-SS
Rwanda	Labour Force Survey (LFS)	2018	WG-SS
Senegal	Demographic and Health Survey (DHS)	2018	WG-SS
Senegal	General Census of Population and Housing, Agriculture and Livestock	2013	WG-SS
South Africa	Census	2011	WG-SS
South Africa	Community Survey	2016	WG-SS
South Africa	Demographic and Health Survey (DHS)	2016	WG-SS
Suriname	Census	2012	Other functional (A)
Tajikistan	Poverty Diagnostic of Water Supply, Sanitation, and Hygiene Conditions	2016	WG-SS
Tanzania	Demographic and Health Survey (DHS)	2022	WG-SS
Tanzania	Population and Housing Census	2012	WG-SS
Timor-Leste	Demographic and Health Survey (DHS)	2016	WG-SS
Tonga	Population and Housing Census	2016	WG-SS
Uruguay	General Population Census	2011	Other functional (S) (C)
Uganda	Demographic and Health Survey (DHS)	2016	WG-SS
Uganda	National Population and Housing Census	2014	WG-SS
Vanuatu	National Population and Housing Census	2009	Other functional (A)(S) (C)

Continued

Table 1: Continued

Country	Dataset	Year	Disability questions
Vietnam	Population and Housing census	2009	Other functional (A)(S) (C)
Vietnam	Population and Housing census	2019	WG-SS
Zimbabwe	Poverty Income Consumption and Expenditure Survey	2017	Other functional (W)

Note: For datasets with other functional difficulty questions, the legend is as follows: (A) Answer scale is different from that in the WGSS (W) Wording of one question or more is different from the WGSS (S) Does not have the self-care domain (C) Does not have the communication domain.

Table 2: Disability disaggregation methods and groups

Disability disaggregation or breakdown	Disability group(s)	Reference group
Disability versus No Disability	"Disability" refers to persons who were reported to have a difficulty in at least one domain of any degree (some difficulty, a lot of difficulty or unable to do).	"No Disability" refers to persons who were reported to have no difficulty in all the domains.
Disability by type	"Disability by type" refers to persons who were reported to have a difficulty of any degree (some difficulty, a lot of difficulty or unable to do) for each of the six functional domains (seeing, hearing, mobility, cognition, self-care, communication). Persons with disabilities in more than one domain will be part of more than one category.	"No Disability" refers to persons who were reported to have no difficulty in all the domains.
Severe versus Moderate versus No Disability	"Severe Disability" refers to persons who were reported to have "a lot of difficulty" or to be "unable to do" in at least one domain. "Moderate Disability" refers to persons who are reported to have "some difficulty" in one or more domain but no "a lot of difficulty" or "unable to do" responses in all domains.	"No Disability" refers to persons who were reported to have no difficulty in all the domains.
Severe versus Moderate or No Disability	"Severe Disability" refers to persons who were reported to have "a lot of difficulty" or to be "unable to do" in at least one domain.	"Moderate or No Disability" includes persons who are reported to have "some difficulty" in one or more domain but no "a lot of difficulty" or "unable to do" responses in all domains and persons who were reported to have no difficulty in all the domains.

classification is challenging [18] and variation in the threshold of functional difficulty under consideration may lead to varying results regarding group sizes and inequalities [19]. Therefore, the DS-E Database uses four ways to group adults based on answers to functional difficulty questions: (i) Disability versus No Disability; (ii) Disability by type; (iii) Severe versus Moderate versus No Disability; (iv) Severe versus Moderate or No Disability.

The disaggregation methods or breakdowns are detailed in Table 2 and summarised below.[7]The first breakdown ((i) Disability versus No Disability) compares persons with any level of difficulty to persons with no difficulty in all domains. It is the most inclusive in that persons with any level of difficulty are considered to have a disability. The second breakdown ((ii) Disability by type) compares persons with any level of difficulty in each functional domain (seeing, hearing, walking, cognition, self-care, and communication) to persons with no difficulty in all domains. The third breakdown ((iii) Severe versus Moderate versus No Disability) is a three-way disaggregation comparing persons with a lot of difficulty or unable to do, persons with some difficulty, and persons with no difficulty. This method makes the comparison of prevalence and disaggregated indicators possible for two levels of severity. In particular, it has the advantage of highlighting the situation of persons with moderate disability, who have been found in recent studies to be worse off than persons with no difficulty [19]. The fourth breakdown ((iv) Severe versus Moderate or No Disability) follows the initial recommendation of the Washington Group [20]. However,

[7]The analysis conducted at the household level categorises households depending on the functional difficulty status of all its members aged 15 and older along the ways of partitioning the population described in Table 2.

Table 3: Indicators

Topic	Indicator	Relevant CRPD Article	Relevant SDG indicator
Proportion with disabilities (Prevalence)			
	Adults with disabilities		
	Households with disabilities		
Education			
	Adults who have ever attended school	24	
	Adults ages 25+ who have completed primary school or higher	24	
	Adults ages 25+ who have completed upper secondary school or higher	24	
	Literacy rate/ Able to Read and Write	24	4.6.1
Personal activities			
	Adults who have or use a computer	9	4.4.1
	Adults who have or use the internet	9	17.8.1
	Adults who own a mobile phone	9	5.b.1
	Employment population ratio	27	
	Youth idle rate	27	8.6.1
	Workers in manufacturing	27	9.2.2
	Women in managerial positions	27	5.5.2
	Informal workers	27	8.3.1
Health			
	Adults in households using safely managed drinking water	25	6.1.1
	Adults in households using safely managed sanitation services	25	6.2.1
	Women with family planning needs met	6, 25	5.6.1
	Women subjected to violence in the previous 12 months	16, 25	16.1.3
Standard of living			
	Adults in households with electricity	28	7.1.1
	Adults in households with clean cooking fuel	28	7.1.2
	Adults in households with adequate housing	28	
	Mean percentage of assets owned by households	28	
	Adults in households with a mobile phone	28	5.b.1
Insecurity			
	Adults covered by health insurance	28	3.8.1 & 3.8.2
	Adults in households receiving social protection	28	1.3.1
	Adults in food insecure households	28	2.1.2
	Adults in households that experienced a shock recently	28	
	Household health expenditures out of total consumption expenditures	28	3.8.2
Multidimensional Poverty			
	Adults who experience multidimensional poverty	24, 25, 27, 28	1.2.2

Note: Definitions of indicators are included in Appendix Table 2. All indicators are at the individual level, except for two indicators at the household level: Households with disabilities and Household health expenditures out of total consumption expenditures. Relevant SDG indicators are listed. The SDG indicators maybe different from the indicators measured in this database. For instance, SDG indicator 5.5.2 measures the proportion of managers who are women. "Women in managerial positions" in the DS-E Database measures the proportion of women workers who are managers as the number of managers with disabilities was small (below 50) in many of the samples under study. We used the Alike and Foster method [26] for measuring adults who experience multidimensional poverty, i.e. deprivations in more than one dimension of wellbeing (education, health, work, standard of living).

by grouping persons with moderate disability with persons with no disability, persons with moderate disability are not included as part of the population of persons with disabilities. It mixes the experience of people with moderate and no disabilities and captures only the inequalities that persons with severe disability face. Additionally, as noted above, when

people with moderate disabilities are worse off than persons with no difficulty, combining them in this way artificially reduces the size of the disability gap for persons with a lot of difficulty.

Methods (i) and (iii) are used in some of the highlighted results below, while the database includes results using all four disaggregation methods. The three-way disaggregation via degree ((iii) Severe versus Moderate versus No Disability) provides the most informative approach to identifying potential disadvantages that may vary with the degree of functional difficulty [19]. When sample sizes of persons with moderate disability and severe disability taken separately are too small (under 50 observations) for further disaggregation or analysis by gender, ethnicity, geography and other circumstances, disaggregating based on the first method (i) Disability versus No Disability) makes further disaggregation and intersectional analyses possible.

Developing indicators and analysing data

The DS-E Database 2024 results report on 29 indicators related to the rights and human development situation of persons with disabilities. The list of indicators, presented in Table 3, was developed after the review of questionnaires. This review identified which information is available to report on the indicators developed to monitor the CRPD and SDGs [21, 22]. Indicators known to be particularly suited to assess the situation of persons with disabilities were included, such as the employment-population ratio [23–25], as well as indicators that may reflect the extra costs of living with disabilities for households (health expenditures as a share of total consumption expenditures) and their material well-being (asset ownership, living conditions) [24, 25].

It should be noted that national prevalence estimates in the DS-E database are available both unadjusted as well as adjusted for age and sex[8]. Unadjusted and adjusted results were however similar as the countries under study have overall homogeneous population structures. Unadjusted prevalence estimates are relevant for within country analysis while adjusted prevalence estimates are more suitable for cross-country comparisons.

The analysis was conducted at national and subnational levels. For subnational levels, we had to consider the sample size of the groups with and without disabilities. Following standard practice, we set 50 observations as the minimum number of observations required to produce estimates for each subgroup. Thus, estimates are not given for a particular disaggregation method/population group if the sample size for that specific disaggregation method and population group is below the minimum sample size. Estimates are also not given when a relevant question is unavailable for a particular indicator in a dataset/country.

[8]We first calculate prevalence estimates for each sex-age groups. The age categories are as follows: 15–19, 20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 54–69, 70–74, 75–79, 80 and older. We use the 14 age groups above and have thus 28 sex-age group disability prevalence estimates for each country. Second, for each country, we apply population weights to the estimated prevalence estimates for the 28 sex-age groups. Population weights come from the United Nations population structure for low- and middle-income countries. The weighted prevalence estimate for each country is then age/sex adjusted.

Results

At the time of this publication, the DS-E Database presents data from 40 countries and 6,584 subnational locations, presenting more than 4.3 million estimates of indicators by disability status for adults aged 15 years or older. The DS-E database [27] is available in an interactive platform and in downloadable files for 29 indicators, four disability disaggregation methods, and nine population groups. The first set of files includes a single set of estimates (means and standard errors (s.e.)) for each of the 40 countries under analysis at the national and subnational levels. A single set of results was selected for 11 countries with more than one available dataset based on the sampling frame[9], disability questions[10], and data collection considerations[11]. For the 11 countries with more than one dataset, the default data source for each indicator presented in the single estimate file is noted in Appendix Table 3.

In a second set of files, the full set of estimates from all datasets under analysis are included as well as their standard errors at national and subnational levels. For countries with two or more datasets, users can access estimates from all datasets. The full set of estimates is recommended for data analysts interested in conducting in-depth country studies or investigating differences in estimates across different datasets. A third set of files includes prevalence estimates adjusted for sex and age (means and s.e.).

The DS-E Database includes a variety of indicators. For this paper, we highlight the results of two indicators to provide a snapshot of the database. The prevalence estimate or proportion of adults with disabilities indicates the size of the community with disabilities. The multidimensional poverty headcount indicates the proportion of adults who experience multiple deprivations by disability status[9].

Figure 1 illustrates the age/sex adjusted prevalence estimates of disability in 40 countries by severity. Overall, prevalence estimates range from 4.9% in Mauritius to 33.7% in Nepal. The median prevalence estimate across countries stands at 16.3%. In all 40 countries, moderate disabilities are more common than severe disabilities.

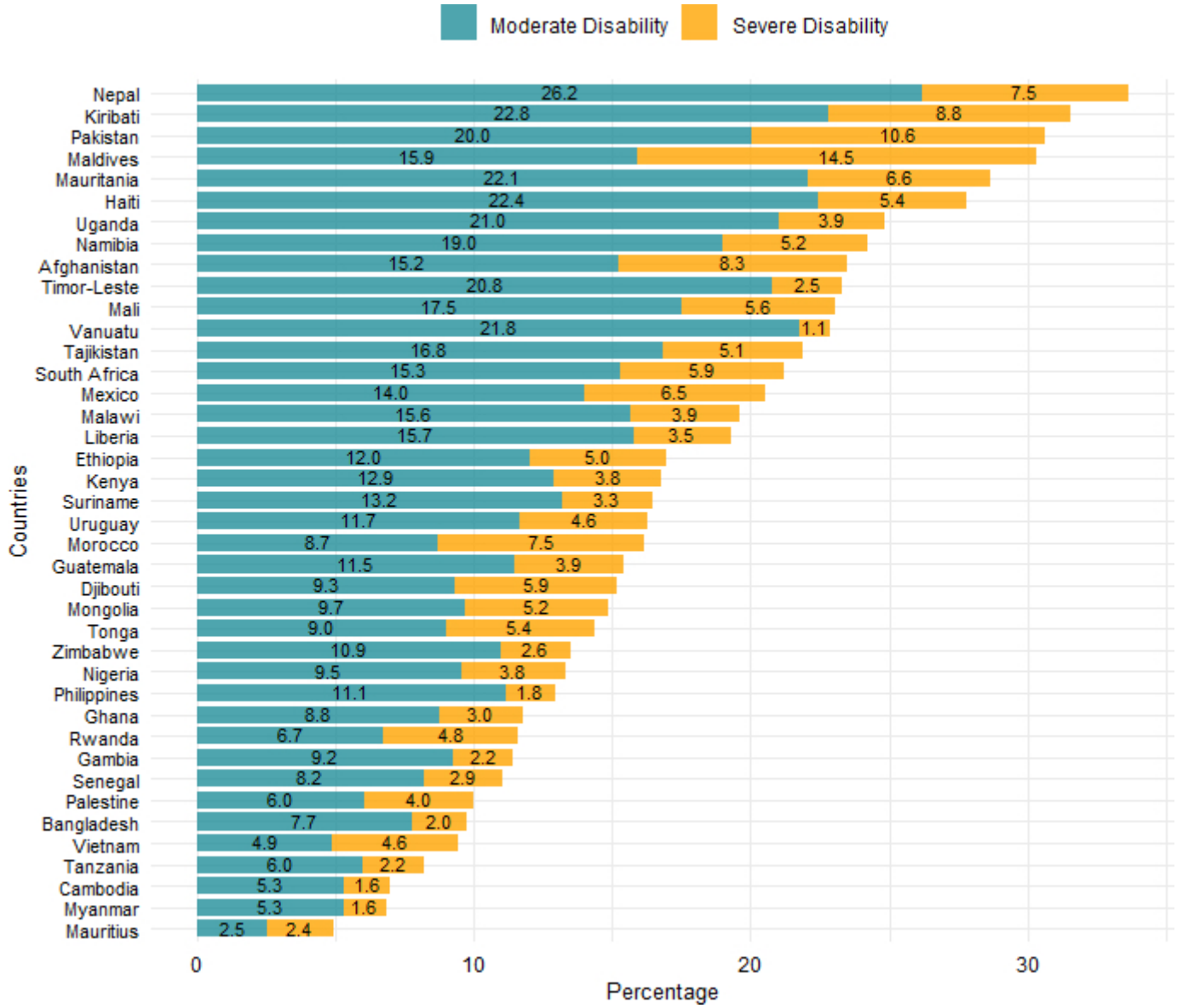
Table 4 presents the percentage of adults who experience multidimensional poverty by disability status. This outcome refers to the percentage of persons experiencing deprivations

[9]Household surveys are typically not sampled to be representative of persons with disabilities. Population censuses that cover an entire population are thus better able to represent the situation of persons with disabilities than household surveys, which may not be representative of persons with disabilities due to their sampling frame, and given that the samples may provide estimates with high sampling errors. In general, when available in a given country, we prioritise using population census data. However, given the limitations of census data (e.g., short questionnaires), we also use survey data to produce additional indicators. For instance, the Demographic and Health Survey can be used to produce indicators on domestic violence and family planning for women with disabilities, topics that, given their length and complexity, are not covered in household and population censuses.

[10]Datasets with the WG-SS are preferred to datasets with other functional difficulty questions given their greater international comparability.

[11]We reviewed reports related to the implementation of the survey or census such as instructions for interviewers and training manuals. While, in principle, we prioritise datasets that allocated training to interviewers on how to ask functional difficulty questions, such information was rarely found in interviewers training manual and therefore was not used as a decisive factor for selecting datasets.

Figure 1: Prevalence of disability among adults ages 15 and older by severity level (%)



Source: Authors' compilation using [27].

in more than one dimension. The multidimensional poverty measure includes four dimensions of poverty (education, employment, health, and standard of living) integrating eight sub-indicators. The results reveal a 'disability gap' in all countries, with persons with disabilities being disproportionately more likely to experience multidimensional poverty and deprivation in all dimensions and indicators included in the measure.

In addition, Figure 2 shows the percentage of adults who experience multidimensional poverty by severity status using disaggregation (iii) (Severe versus Moderate versus No Disability). Two patterns can be seen in this figure. Countries with lower multidimensional poverty levels are more likely to have larger disability gaps than countries with higher multidimensional poverty headcounts. In addition, there is a severity gradient in the association between multidimensional poverty and disability at the national and subnational levels in all countries. Thus, persons with moderate disability have a higher rate of multidimensional poverty compared with persons with no disability, but a lower rate of multidimensional poverty than persons with severe disability.

Figure 3 shows the disability gap (or difference) in adults who experience multidimensional poverty between persons with and without disability for 714 first subnational levels (geographical areas), which are typically called regions in the international literature. Within some countries (e.g. Djibouti), the disability gap shows limited variation across regions, while in other countries (e.g. Vietnam), it does vary. In addition, 12 of the 714 regions have reverse gaps, meaning that persons with disabilities have lower headcounts than persons without disabilities. In those regions, the reverse gap is not statistically significant (results not shown) and typically take place when the headcount is very high. For example, in Mali, in the Mopti region, the multidimensional poverty headcount stands at 94.5% for persons with disabilities and at 95% for persons without disabilities.

Table 4: Percentages of adults who experience multidimensional poverty disaggregated by disability status

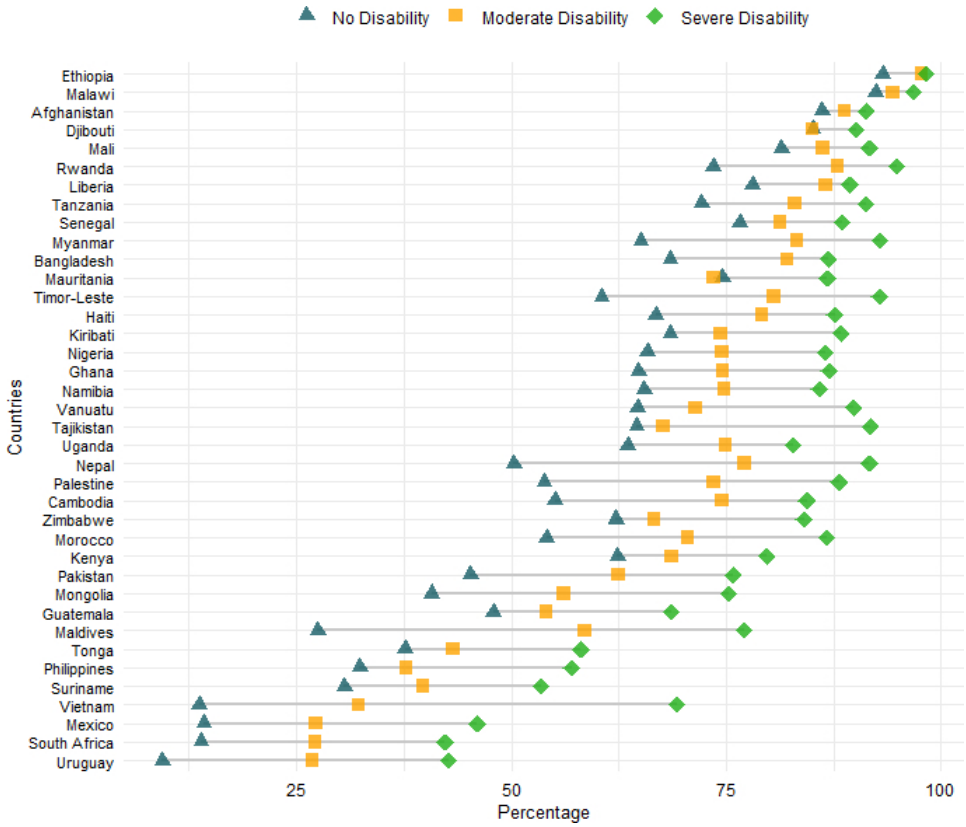
Country	No disability	Moderate disability	Severe disability
Afghanistan	86.12 (0.4)	88.75 (0.72)	91.31 (0.86)
Bangladesh	68.5 (0.6)	82.08 (1.04)	86.92 (1.1)
Cambodia	55.05 (0.05)	74.51 (0.20)	84.39 (0.30)
Djibouti	85.13 (0.99)	85.07 (1.9)	90.15 (2.76)
Ethiopia	93.22 (0.62)	97.77 (0.45)	98.3 (0.48)
Ghana	64.44 (0.04)	74.27 (0.14)	86.77 (0.19)
Guatemala	47.9 (NA)	54.03 (NA)	68.66 (NA)
Haiti	66.81 (1.22)	79.18 (1.07)	87.65 (1.22)
Kenya	62.33 (0.03)	68.63 (0.09)	79.69 (0.14)
Kiribati	68.5 (NA)	74.34 (NA)	88.32 (NA)
Liberia	78.05 (0.59)	86.61 (1.14)	89.43 (1.95)
Malawi	92.36 (0.44)	94.4 (0.56)	96.84 (0.72)
Maldives	27.47 (0.61)	58.51 (1.07)	77.1 (1.05)
Mali	81.41 (1.06)	86.22 (1.1)	91.71 (1.19)
Mauritania	74.59 (0.96)	73.57 (1.41)	86.8 (1.27)
Mexico	28.24 (0.02)	43.36 (0.04)	62.56 (0.06)
Mongolia	40.75 (0.35)	56.14 (1.08)	75.34 (1.23)
Morocco	54.07 (0.05)	70.49 (0.11)	86.72 (0.09)
Myanmar	65.08 (0.04)	83.21 (0.11)	92.98 (0.13)
Namibia	65.43 (1.2)	74.75 (1.37)	85.86 (1.67)
Nepal	50.28 (1.15)	77.09 (1.02)	91.7 (0.82)
Nigeria	65.83 (0.58)	74.48 (0.90)	86.56 (1.00)
Pakistan	45.23 (1.32)	62.44 (1.41)	75.83 (1.18)
Palestine	53.84 (1.17)	73.58 (2.53)	88.13 (2.19)
Philippines	32.38 (0.01)	37.74 (0.04)	57.03 (0.11)
Rwanda	73.5 (0.65)	87.93 (1.29)	94.93 (0.83)
Senegal	76.58 (0.05)	81.29 (0.19)	88.55 (0.27)
South Africa	13.89 (0.03)	27.21 (0.08)	42.33 (0.13)
Suriname	29.93 (0.27)	38.75 (0.73)	52.59 (1.53)
Tajikistan	64.59 (1.15)	67.69 (1.7)	91.8 (1.49)
Tanzania	72.15 (0.03)	83.01 (0.11)	91.34 (0.13)
Timor-Leste	60.51 (1.12)	80.54 (0.88)	92.87 (1.22)
Tonga	37.62 (NA)	43.23 (NA)	58.13 (NA)
Uganda	63.55 (0.04)	74.95 (0.08)	82.87 (0.17)
Uruguay	9.39 (0.07)	26.83 (0.24)	42.78 (0.42)
Vanuatu	64.67 (NA)	71.44 (NA)	89.89 (NA)
Vietnam	13.67 (0.02)	32.19 (0.09)	69.31 (0.08)
Zimbabwe	62.21 (0.48)	66.62 (1.0)	84.06 (1.36)

Source: Authors' compilation using [27].

Finally, Appendix Table 4 presents the results for 11 countries with more than one dataset for prevalence estimates and multidimensional poverty headcounts using disaggregation method (i) (Disability versus No Disability). Mongolia presents a prevalence estimate slightly above 14% (unadjusted), according to both census and survey data. For the other 10 countries, prevalence estimates are statistically different[12] across datasets, with relatively lower prevalence estimates with census data and higher rates with survey data, especially DHS data (e.g. Cambodia, South Africa). No matter what the data source is, for each country, the multidimensional poverty headcount is consistently higher among persons with disabilities compared to persons with no disability. However, the level of the headcount and the disability gap vary across datasets. For example, in Vietnam, the poverty headcount decreased from the 2009 Census to the 2019 Census for both persons with disability (61.6% and 49.7%, respectively) and persons without disability (48.5% and 13.7%, respectively). Thus, although the country reduced poverty, the disability gap is larger in 2019 (36 percentage points (p.p.)) compared to 2009 (13 p.p.). We don't understand yet why such differences emerge as many factors may contribute, from policy reforms to data collection procedures.

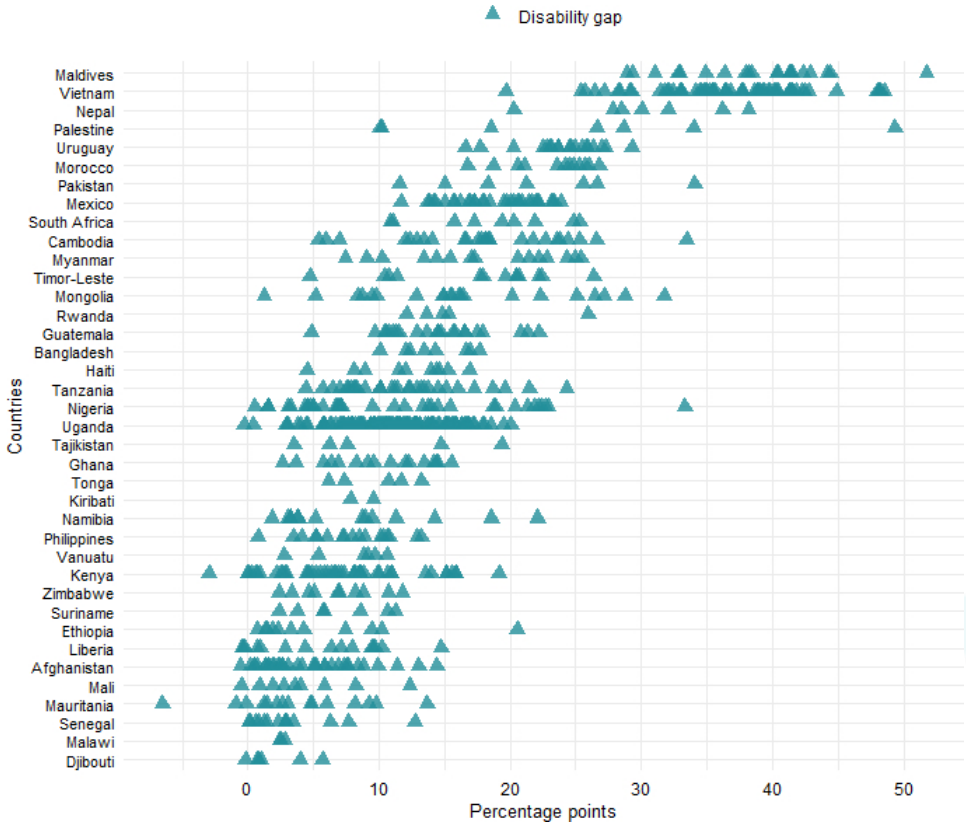
[12]The 95% confidence intervals of the estimated prevalence estimates from two datasets in a given country do not overlap.

Figure 2: Percentages of adults who experience multidimensional poverty by severity status



Source: Authors' compilation using [27].

Figure 3: Disability gap in the percentage of adults who experience multidimensional poverty at the first subnational level (percentage points)



Source: Authors' compilation using [27].

Discussion

The DS-E Database builds upon earlier literature producing estimates of disability prevalence and disability-disaggregated statistics [28, 29]. The DS-E Database is the first international database of disability statistics that uses internationally comparable questions on disability to document the situation of persons with disabilities across and within countries. For 40 countries and 6,584 subnational locations, the DS-E Database includes more than 3.8 million estimates of indicators by disability status for adults ages 15 and older and population subgroups, providing a comprehensive source of disability statistics for indicators rooted in the CRPD and SDGs. The DS-E Database complements other databases, such as the Global Burden of Disease (GBD), a study grounded in a medical understanding of disability that provides data on health conditions and estimates of years lived with disabilities [30]. In contrast, the DS-E Database provides information on the inequalities that persons with disabilities experience in different spheres of life.

The DS-E Database results indicate a median prevalence estimate across countries at 16.4%, in line with recent global estimates [31]. The proportion of adults with disabilities within countries does vary from region to region (not shown here), but is sizeable (above 5%) in the regions of the 40 countries under study. This result suggests that persons with disabilities are geographically spread out within countries and implies that disability rights as per the CRPD need to be monitored within countries in all regions, province, districts and villages. The data also show that, for some indicators, disability gaps are consistently experienced across and within countries. This is the case for educational attainment and multidimensional poverty. National and subnational policymaking in general, and in various sectors from education to poverty reduction, needs to be inclusive of persons with disabilities and take account of disability inequalities across and within geographies.

Within countries, national estimates can hide heterogeneity at the subnational level as shown by variations in the disability gap in multidimensional poverty, highlighting the need for context-sensitive research and policies to address the unique challenges faced by individuals with disabilities across different settings within and across countries. More research is needed on the drivers of the heterogeneity of estimates within countries for some indicators. The barriers persons with disabilities face and the resources they have (e.g. access to assistive technology and information) vary across geographies and may contribute to diverse inequality and human rights outcomes within countries. Understanding these barriers as well as enablers of inclusion across geographies is important to inform policies to reduce disability gaps.

The DS-E Database results suggest a severity gradient in the disability gap for some indicators, including educational and multidimensional poverty indicators, i.e. that persons with moderate disability are worse off than persons with no disability, but better off than persons with severe disability. The group of persons with moderate disability ("some difficulty") should not be ignored in research and policy and lumped together with persons with no disability ("no difficulty") [19]. For instance, people can have different degrees of difficulty walking, and face varying degrees of exclusion or need different accommodations to improve accessibility in their environments. Having data that quantifies degrees of difficulty helps to better assess the need for, or success of, specific interventions. Therefore, data on functional difficulties should be collected and analysed using a graded answer scale rather than yes/no answers to measure how the level of functional difficulty may relate to deprivations and exclusions and thus to provide insights for developing policies [32]. Not all salient results of the DS-E database are shown in this article. For instance, thanks to its disaggregation by disability status for population subgroups (by sex, urban/rural residence, age group), the DS-E Database can highlight intersectional inequalities. For instance, DS-E results suggest that women, rural residents and older persons with disabilities are disproportionately more likely to be multidimensionally poor than men, urban residents and younger persons with disabilities, respectively.

The DS-E Database has limitations. While we produce standardised disability measures and 29 indicators, some differences exist in what is captured across countries. While we use the internationally comparable WG-SS and other functional difficulty questions that follow the UN (2017) guidelines, there are differences in questions among the latter. There is no question on self-care for eight countries, while for six countries, there is no question on communication. Among countries that use the WG-SS, we have no information on how such questions were implemented, such as the training that survey enumerators received.

As for indicators, there can be differences across countries in what is being captured. For example, for the standard of living indicators, adequate housing is measured through the quality of materials used for three housing components (roofs, floors and walls): for five countries, we did not have information for one or more component. The list of assets we have information on also varies from country to country. For informal work, the information on the types of work under consideration (e.g. self-employment, unpaid family worker) did vary across datasets.

As more countries collect functional difficulty data in their population censuses and household surveys, the DS-E Database will be updated to include more countries and time periods. Researchers can use the database to investigate cross-country and within-country patterns in disability prevalence estimates as well as the deprivations or inequalities experienced by persons with disabilities.

For example, the DS-E Database can help to identify differences in estimates retrieved in different surveys/censuses. For 11 countries, the DS-E Database already includes results from more than one dataset. Researchers can investigate the variation in results across datasets for these countries. For example, the DS-E Database shows that surveys such as the Demographic and Health Survey (DHS) tend to elicit higher prevalence estimates of disability compared to other datasets, population censuses, or Labour Force Surveys (LFS) in particular. The reasons for this pattern are unclear, but the DS-E Database can provide a starting point for further research.

The DS-E Database can be utilised to conduct research that advances our understanding of which demographic factors (e.g. age), resources, and environmental factors contribute to within-country variation in the prevalence and experience of disability. For instance, the DSE Database can be combined

with geospatial data (e.g. the location of clinics or schools) to determine if services are located where they are needed. Researchers can match the inequality outcomes for persons with disabilities provided in the DS-E Database with national or subnational macro-level data on development [33] to investigate whether disability-related inequalities change as countries develop.

In addition, results at the subnational level may make it possible to rigorously evaluate the effects of subnational policies, whether they are mainstream or targeted at persons with disabilities. Subnational estimates offer research opportunities for a geographic approach to disability research. Such research can help identify drivers of the disability gaps in some of the abovementioned indicators. Towards this end, the DS-E Database may help uncover how the barriers persons with disabilities face and the resources available, such as assistive technology and information, vary across geographies and may contribute to diverse inequality and human rights outcomes within and across countries.

Conclusions

There is a global need to produce and analyse statistics disaggregated by disability status and a growing opportunity as more countries collect population data with internationally comparable disability questions. As of 2024, the DS-E Database provides statistics disaggregated by disability status for 40 countries and 6,584 subnational locations. The DSE Database can help inform policy and advocacy efforts by enabling researchers to investigate various economic and human development outcomes for persons with disabilities. Lastly, the DS-E Database can be matched with other datasets at the national and subnational levels to advance research on the relationship between disability prevalence, inequality, and macro-level development outcomes across and within countries. In the future, it is planned that the DS-E Database will be expanded to include additional estimates from more datasets.

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Data Availability

The DS-E Database is accessible at this link: https://www.ds-e.disabilitydatainitiative.org/.

Ethics approval

Ethics approval was not needed as authors used secondary data.

Conflict of interests

Authors have no conflicts of interest to declare.

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Supplementary appendices

Supplementary tables are in downloadable files described below

File name	Description of content	Note
S1 Default Estimates Means	This file includes estimated means for default datasets at national and subnational levels. Default datasets are listed in Appendix Table 3 below.	For countries with more than one dataset, default estimates include those from datasets that are considered more appropriate for the estimation at hand.
S2 Default Estimates SE	This file includes estimated standard errors for default datasets at national and subnational levels. Default datasets are listed in Appendix Table 3 below.	For countries with more than one dataset, default estimates include those from datasets that are considered more appropriate for the estimation at hand.
S3 All Estimates Means	This file includes estimated means for all datasets at national and national levels.	
S4 All Estimates SE	This file includes estimated standard errors for all datasets at national and subnational levels.	
S5 Adjusted Prevalence estimates Means	This file includes estimated means for prevalence estimates adjusted for sex and age at the national level for all datasets.	
S6 Adjusted Prevalence estimates SE	This file includes estimated standard errors for prevalence estimates adjusted for sex and age at the national level for all datasets.	

Appendix Table 1: The Washington group short set of questions on disability

Introductory Statement: "The next questions ask about difficulties you may have doing certain activities because of a HEALTH PROBLEM."			
(a) Vision	[Do/Does] [you/he/she] have difficulty seeing, even if wearing glasses?	**(d) Cognition**	[Do/does] [you/he/she] have difficulty remembering or concentrating?
(b) Hearing	[Do/Does] [you/he/she] have difficulty hearing, even if using a hearing aid(s)?	**(e) Self-Care**	[Do/does] [you/he/she] have difficulty with self-care, such as washing all over or dressing?
(c) Mobility	[Do/Does] [you/he/she] have difficulty walking or climbing steps?	**(f) Communication**	Using [your/his/her] usual language, [do/does] [you/he/she] have difficulty-communicating, for example understanding or being understood?
For each question in (a) through (f), respondents are asked to answer with one of the following: 1. No Difficulty, 2. Some Difficulty, 3. A lot of difficulty, 4. Unable to do			

Appendix Table 2: Definitions of indicators

Topic/ Indicator	Definition
Proportion with disabilities (Prevalence)	
Adults with disabilities	Proportion of adults ages 15 and older with disabilities. The proportion is available for adults with any disability (disability), by disability type, and by degree (moderate and severe disability). More details on the disability groups are in Table 2.
Households with disabilities	Proportion of households who have at least one adult aged 15 and older with disabilities. The proportion is available for households with adults with any disability (disability), and by degree (moderate and severe disability). More details on the disability groups are in Table 2.
Education	
Adults who have ever attended school	Proportion of adults ages 15 and older who have ever been to school.
Adults ages 25+ who have completed primary school or higher	Proportion of adults ages 25 and older who at least completed primary school.
Adults ages 25+ who have completed upper secondary school or higher	Proportion of adults ages 25 and older who completed upper secondary school, whether or not they also attended tertiary school
Literacy rate/ Able to Read and Write	Proportion of adults 15 and older who can read and write in any language.
Personal activities	
Adults who have or use a computer	Proportion of adults ages 15 and older who have or use a computer.
Adults who have or use the internet	Proportion of adults ages 15 and older who have or use the internet.
Adults who own a mobile phone	Proportion of adults ages 15 and older who have their own mobile phone.
Employment population ratio (or employment rate)	Proportion of the adult population ages 15 and older who work for pay, profit (self-employed) or for a family business/farm (whether paid or unpaid).
Youth idle rate	Proportion of youth ages 15 to 24 who are not enrolled in school and not employed.
Workers in manufacturing	Proportion of workers ages 15 and older who work in the manufacturing sector.
Women in managerial positions	Proportion of women workers ages 15 and older who have managerial positions.
Informal workers	Proportion of workers ages 15 and older who do informal work, i.e. who are self-employed, those who work for a microenterprise of five or fewer employees or in a firm that is unregistered, and those who have no written contract with their employers. Family workers without pay are included as informal workers.
Health	
Adults in households using safely managed drinking water	Proportion of adults ages 15 and older who live in households that have safely managed drinking water [34].
Adults in households using safely managed sanitation services	Proportion of adults ages 15 and older who live in households that have safely managed sanitation services [35].
Women with family planning needs met	Proportion of women who report that they have their family planning needs met: they want and have access to modern contraceptive methods.
Women subjected to violence in the previous 12 months	Proportion of ever-married women who report being subject to domestic violence by their intimate partner in the past 12 months. Domestic violence may be physical, psychological or sexual.
Standard of living	
Adults in households with electricity	Proportion of adults ages 15 and older who live in households with access to electricity [36].
Adults in households with clean cooking fuel	Proportion of adults ages 15 and older who live in households that use clean cooking fuel [37].
Adults in households with adequate housing	Proportion of adults ages 15 and older who live in households with quality floor, roof and wall materials.
Mean proportion of assets owned by households	Proportion of assets owned by an adult's household among the following assets: a radio, TV, telephone, mobile phone, bike, motorbike, refrigerator, car (or truck) and computer.
Adults in households with a mobile phone	Proportion of adults ages 15 and older who live in households with a mobile phone.

Continued

Appendix Table 2: Continued

Topic/ Indicator	Definition
Insecurity	
Adults covered by health insurance	Proportion of adults ages 15 and older who live in households with health insurance.
Adults in households receiving social protection	Proportion of adults ages 15 and older who live in households that received social protection benefits in the past year or who currently receive them (e.g. cash benefits, in kind transfers). Benefits may be from Government or Non-Government institutions.
Adults in food insecure households	Proportion of adults ages 15 and older who live in households that recently (in the past week, month or 12 months) did not have access to adequate food.
Adults in households that experienced a shock recently	Proportion of adults ages 15 and older who live in households that were recently exposed to at least one negative shock. The time frame is usually the past 12 months and shocks include: • shocks related to the weather (drought, flood, heavy rains), • negative events affecting household members (death of a household member, illness of a household member), • economic hardships (loss of a job, crop damage) and disasters (e.g. fire, landslide).
Household health expenditures out of total consumption expenditures	Proportion of a household's total consumption expenditures that are dedicated to health (inpatient care and outpatient care out of pocket expenditures, medicines).
Multidimensional Poverty	
Adults who experience multidimensional poverty	Proportion of adults ages 15 and older who experience more than one deprivation dimension among the following: education, personal activities, health, standard of living.

Appendix Table 3: Data sources of default estimates for countries with more than one dataset

Country	Cambodia			Kenya		Kiribati		Mongolia		Nigeria			Rwanda	Senegal		South Africa		Tanzania		Uganda		Vietnam	
Indicator/Dataset	Census 2019	DHS 2014	DHS 2021–2022	Census 2019	DHS 2022	Census 2015	Census 2020	Census 2020	LFS 2022	GHS 2018	DHS 2018	DHS 2019–2020	LFS 2018	Census 2013	DHS 2018	Census 2011	CS 2016	DHS 2016	Census 2012	DHS 2022	Census 2014	DHS 2016	Census 2009	Census 2019
Prevalence																								
Adults with disabilities	1	×	×	1	×	×	1	×	1	1	×	×	1	1	×	×	1	×	1	×	1	×	×	1
Adults with disabilities by type of disability	1	×	×	1	×	×	1	×	1	1	×	×	1	1	×	×	1	×	1	×	1	×	×	1
Households with disabilities	1	×	×	1	×	×	1	×	1	1	×	×	1	1	×	×	1	×	1	×	1	×	×	1
Education																								
Ever attended school	1	×	×	1	×	×	1	×	1	1	×	×	1	1	×	×	1	×	1	×	1	×	×	1
Primary school or higher	1	×	×	1	×	×	1	×	1	1	×	×	1	1	×	×	1	×	1	×	1	×	×	1
Secondary school or higher	1	×	×	1	×	×	1	×	1	1	×	×	1	1	×	×	1	×	1	×	1	×	×	1
Literacy	1	×	×		1	×	1			1	×	×	1	1	×			1	1	×	1	×	1	
Personal activities																								
Computer				1																				
Internet		1	×	1	×	×	1	1			1	1			1			1		1		1		
Own mobile			×	1	×		1	1			1	1			1			1		1		1		
Employment	1	×	×	1	×	×	1	×	1	1	×	×	1	1	×	1		×	1	×	1	×	×	1
Youth idle	1			1		×	1	×	1	1			1	1		1			1		1		×	1
Manufacturing work	1			1		×	1	×	1	1			1	1					1				×	1
Managerial work	1					×	1	×	1	1			1	1					1				×	1
Informal work	1			1			1	1		1			1	1					1		1		×	1
Health																								
Water	1	×	×	1	×	×	1	1		1	×	×	1	1	×	×	1	×	1	×	1	×	×	1
Sanitation	1	×	×	1	×	×	1	1		1	×	×	1	1	×	×	1	×	1	×	1	×	×	1
Family planning		1	×		1						1	1			1			1		1		1		
Violence		1	×		1							1			1			1		1		1		
Standard of living																								
Electricity	1	×	×	1	×	×	1	1		1	×	×	1	1	×	×	1	×	1	×	1	×	×	1
Clean cooking fuel	1	×	×	1	×	×	1	1		1	×	×	1	1	×	×	1	×	1	×	1	×	×	1
Adequate housing		1	×	1	×		1			1	×	×	1	1	×	1		×	1	×	1	×	×	1
Assets owned	1	×	×	1	×	×	1			1	×	×	1	1	×	×	1	×	1	×	1	×	×	1
Household mobile	1	×	×	1	×	×	1	1		1	×	×	1	1	×	×	1	×	1	×		1		
Insecurity																								
Health insurance		1	×							1	×	1						1		1		1		
Social protection										1														
Food insecure										1														
Experienced shock										1														
Health expenditures										1														
Poverty																								
Multidimensional poverty	1	×	×	1	×	×	1	1		1	×	×	1	1	×	×	1	×	1	×	1	×	×	1

Notes: An empty cell indicates the indicator cannot be estimated due to missing relevant questions; a number 1 or x indicates that the indicator was estimated; a number 1 indicates the default estimate for a given indicator.

Appendix Table 4: Selected results for countries with more than one dataset Mean (%) (S.E)

Country	Dataset	Proportion of adults with disability	Multidimensional poverty headcount among adults with no disability	Multidimensional poverty headcount among adults with disability
Cambodia	General population census 2019	5.99 (0.02)	55.05 (0.05)	76.83 (0.17)
Cambodia	DHS 2014	12.05 (0.35)	72.54 (0.88)	85.95 (0.81)
Cambodia	DHS 2021-2022	30.17 (0.35)	47.77 (0.82)	72.93 (0.78)
Kenya	Population and Housing Census 2019	12.71 (0.0)	62.33 (0.0)	71.02 (0.0)
Kenya	DHS 2022	23.93 (0.34)	54.67 (0.83)	70.68 (1.03)
Kiribati	Population and Housing Census 2015	15.77 (NA)	77.3 (NA)	83.07 (NA)
Kiribati	Population and Housing Census 2020	26.89 (NA)	68.5 (NA)	77.8 (NA)
Mongolia	Population and Housing Census 2020	14.49 (0.23)	40.75 (0.35)	63.2 (0.83)
Mongolia	LFS 2022	14.24 (0.8)		
Nigeria	DHS 2018	11.41 (0.23)	60.65 (0.84)	63.41 (0.2)
Nigeria	General Household Survey 2018-2019	11.14 (0.18)	65.83 (0.58)	77.87 (0.76)
Rwanda	DHS 2019-2020	25.16 (0.34)	73.85 (0.93)	83.28 (0.73)
Rwanda	LFS 2018	8.88 (0.37)	73.5 (0.65)	90.82 (0.84)
Senegal	DHS 2018	14.45 (0.48)	73.45 (0.57)	76.56 (0.28)
Senegal	General Census of Population and Housing, Agriculture and Livestock 2013	8.03 (0.03)	76.58 (0.05)	83.16 (0.16)
South Africa	DHS 2016	22.44 (0.48)	22.94 (0.07)	42.01 (0.23)
South Africa	Census 2011	18.25 (0.02)	44.98 (0.03)	52.22 (0.07)
South Africa	Community Survey 2016	20.43 (0.03)	13.89 (0.03)	31.29 (0.07)
Tanzania	DHS 2022	15.07 (0.31)	64.89 (0.25)	68.56 (0.32)
Tanzania	Population and Housing Census 2012	6.05 (0.02)	72.15 (0.03)	85.23 (0.09)
Uganda	DHS 2016	32.82 (0.5)	79.14 (0.99)	89.99 (0.57)
Uganda	National Population and Housing Census 2014	17.8 (0.03)	63.55 (0.04)	76.07 (0.07)
Vietnam	Population and Housing census 2009	11.67 (0.01)	48.48 (0.01)	61.64 (0.03)
Vietnam	Population and Housing census 2019	9.73 (0.01)	13.67 (0.02)	49.72 (0.06)

Source: Authors' compilation using [27].