

THE DATA DISABILITY REPORT

Hanass-Hancock J, Murthy GVS, Palmer M, Pinilla-Roncancio M,
Rivas Velarde M, Mitra S



Fordham Research
Consortium on Disability



disabilitydatainitiative

ACKNOWLEDGEMENTS

This study received funding from the Wellspring Philanthropic Fund. Analyses presented in the report reflect the views of the report’s editors and not necessarily those of its contributors and of the steering committee. Comments on drafts from the steering committee are greatly appreciated.

SUGGESTED CITATION

Hanass-Hancock, J., Murthy GVS., Palmer, M., Pinilla-Roncancio M., Rivas Velarde M., Mitra, S. (2023). The Disability Data Report. Disability Data Initiative. Fordham Research Consortium on Disability: New York.

FORDHAM RESEARCH CONSORTIUM ON DISABILITY

Fordham University, Dealy E524, 441 East Fordham Road, Bronx, NY 10458, USA rcd@fordham.edu | <http://www.ace.disabilitydata.fordham.edu>

The Disability Data Report © 2023 by Sophie Mitra is licensed under CC BY-NC-SA 4.0. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-sa/4.0/>

EDITORS

STUDY DESIGN, ANALYSIS AND WRITING

Jill Hanass-Hancock, Sophie Mitra, GVS
Murthy, Michael Palmer, Monica Pinilla-
Roncancio, Minerva Rivas Velarde

TEAM LEADER

Sophie Mitra

CONTRIBUTORS

Bradley Carpenter
Amanda Dial
Sureshkumar Kamalakannan
Douglas Teodoro
Shailaja Tetali
Katherine Theiss

RESEARCH ASSISTANCE

Priyanka Agarwal
Jim Billingham
Gustavo Cedeno Ocampo
Racha Gouareb
Ayanda Nzuza
Nicolás Rodríguez Caicedo
David Vicente Alvarez

REPORT AND WEBSITE DESIGN

Dina Becaj

STEERING COMMITTEE

Ola Abualghaib
Aude Brus
Tsitsi Chataika
Nora Groce
Jill Hanass-Hancock
Jody Heymann
Pamela Kakande
Erik Kinnhammar
Mitchell Loeb
Charlotte McClain-Nhlapo
Maria Martinho
Margaret Mbogoni
Daniel Mont
Monica Pinilla-Roncancio
Diana Samarasan
Esterban Tromel

TABLE OF CONTENTS

1. SUMMARY 6

2. INTRODUCTION..... 9

3. REVIEW OF DATASETS AND THEIR DISABILITY QUESTIONS 11

4. ANALYSIS OF MICRO DATASETS: METHOD 18

5. THE GEOGRAPHIC DISTRIBUTION OF THE SHARE OF ADULTS WITH FUNCTIONAL DIFFICULTIES..... 23

6. INDICATORS DISAGGREGATED BY FUNCTIONAL DIFFICULTY STATUS..... 29

7. CONCLUSIONS..... 39

8.REFERENCES..... 42

9. APPENDICES..... 45

Appendix 1: Tables supporting graphs 45

Appendix 2: Methodology of the review of datasets 64

Appendix 3: Countries in the microdata analysis 65

ACRONYMS

ADL	Activity of Daily Living
CRPD	Convention on the Rights of Persons with Disabilities
DDI	Disability Data Initiative
DHS	Demographic and Health Survey
GNI	Gross National Income
HDI	Human Development Index
HFPS	High Frequency Phone Survey
IADL	Instrumental Activity of Daily Living
LSMS	Living Standard Measurement Study
NEET	Not in Education, Employment or Training
SDG	Sustainable Development Goals
UNICEF	United Nations Children's Fund
WG	Washington Group on Disability Statistics
WG-SS	Washington Group Short Set of questions

1. SUMMARY

Producing national and subnational statistics on the situation of persons with disabilities is important to inform and monitor national and international laws, policies and commitments, including the United Nations (UN) Convention on the Rights of Persons with Disabilities and the 2030 Agenda for Sustainable Development by national as well as local governments.

However, there is a general dearth of information on the inequalities that persons with disabilities face across and within countries. National statistics offices rarely disaggregate statistics by disability status and survey or census reports often only focus on prevalence rates. This makes it challenging to develop, and advocate for, disability-inclusive policies and practices at national and local levels and to evaluate existing policies in terms of their impacts on persons with disabilities.

This Report has two main objectives. First, it maps the availability of internationally comparable disability data by reviewing national surveys and censuses and their disability questions across world regions and over time. Secondly, it explores the potential to produce disability disaggregated indicators at both national and subnational levels with survey and census data for 15 countries. The key findings and recommendations are summarized below.

A. Dataset review

This Report examines the questionnaires of 1,288 datasets from 188 countries to identify those with functional difficulty questions (e.g. difficulty seeing, hearing). Functional difficulty questions include those that at least follow the UN guidelines for disability measurement in

censuses and those that employ the internationally comparable and tested Washington Group Short Set (WG-SS) of questions.

Key findings

1. About one in five of the datasets reviewed for the 2009-2022 period have functional difficulty questions.
2. 125 countries were identified as having at least one dataset with functional difficulty questions, including 70 countries with at least one dataset with the WG-SS.
3. Global trends suggest an increase in the share of datasets with the WG-SS in national censuses and surveys during the 2010s. However, in the early 2020s, High Frequency Phone Surveys rolled out by countries and international organizations during the COVID-19 pandemic did not include the WG-SS.
4. Results show considerable heterogeneity in the collection of functional difficulty questions across world regions. For instance, in Europe & Central Asia, functional difficulty questions continue to be a rarity in surveys and censuses, while in Sub-Saharan Africa their availability has markedly increased.

Recommendations for data collection

- a. It should become standard practice for questions on functional difficulties such as the WG-SS to be included in national surveys and population censuses, including during emergencies such as the COVID-19 pandemic, to monitor the inequalities persons with disabilities experience and inform and monitor policies.

- b. In some countries, more resources may be needed to strengthen the national capacity to collect functional disability data through surveys and censuses.

B. Disaggregated indicators

Key findings

1. Using Demographic and Health Survey (DHS) data for 12 countries and population census data for three countries, this report shows that it is possible to produce disability disaggregated indicators at the regional level to document within country inequalities based on functional difficulty status and for subgroups of persons with disabilities based on gender, rural/urban residence and age.
2. With census data in three countries, indicators could be disaggregated based on disability and for intersectional groups (e.g. women with disabilities) at both regional and district levels.

Recommendations for data analysis

- a. DHS and population censuses should be regularly used to document and understand the inequalities persons with disabilities experience as well as subgroups by gender, rural/urban residence and age at national and subnational levels.
- b. Datasets that were not analyzed in this Report should be explored for their potential to produce disability disaggregated indicators at subnational levels. Many of the datasets in the 125 countries that have at least one dataset with functional difficulty questions are designed to be representative of their populations at both the national and regional level.

- c. National governments and international organizations need to allocate on-going resources and capacity building towards disability data analysis for national statistics offices and other relevant stakeholders to analyze a growing body of data that can produce disability disaggregated statistics at both national and subnational levels.

C. Share of adults with functional difficulties

Key finding

1. The share of adults with functional difficulties within countries does vary from region to region, but is significant (above 5%) in the regions of the 15 countries under study. Persons with disabilities are geographically spread out within countries. This means that they are not absent in certain sub-national areas and highly concentrated in others.

Recommendations for policy and research

- a. Disability rights as per the CRPD need to be upheld within countries in all regions, districts and villages.
- b. Local policy making 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.
- c. More research is needed on the variation of the share of persons with functional difficulties within countries to find out the extent to which demographic factors (e.g. age, migration patterns, fertility), resources, and environmental factors contribute to the variation.

D. Disability gaps

Key findings

1. In the 15 countries under study, the multidimensional poverty headcount among persons with functional difficulties is consistently high (above 50%) at national and regional levels.
2. We find a gradient in the association between multidimensional poverty and functional difficulties at national and regional levels in all countries. In other words, persons with some difficulty have higher poverty headcounts than persons with no difficulty, but lower than persons with at least a lot of difficulty.
3. Among persons with disabilities, women, older adults and people in rural areas have on average higher multidimensional poverty headcounts than men, younger adults and people in urban areas respectively.
4. For some indicators, results suggest that disability gaps are consistently experienced across and within countries. This is the case for educational attainment and multidimensional poverty.
5. For other indicators (e.g. water, sanitation), results on disability gaps do vary across and within countries. Within countries, national estimates can hide heterogeneity at the regional level.

Recommendations for policy and research

- a. Policies, programs and practices, no matter where they take place within a country, need to be inclusive of persons with disabilities.
- b. At both national and subnational levels, persons with disabilities and their representative organizations should be included in policymaking.
- c. 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 drivers as well as enablers of inclusion is important to inform policies to reduce disability gaps.

2. INTRODUCTION

Seven years are left to achieve the 2030 Agenda for Sustainable Development and its pledge to “leave no one behind”. In particular, Sustainable Development Goal (SDG) 10 states that “inequality within and among countries is a persistent cause for concern.” Persons with disabilities are a group at risk of being left behind. 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 assess their situation at both national and subnational levels, and to be factored into budgetary, policy and program decisions (UNPRPD 2022).

Specifically, disability disaggregated data is key to target 17.18 of the SDGs to increase significantly the availability of high-quality and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts. Disability disaggregated data is also central to Article 31 of the 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 that state parties take measures to facilitate the full enjoyment by persons with disabilities of the right to be included in the community, including through access to community services and facilities.

Yet, there has been concern for many countries about the lack of disaggregated data on

persons with disabilities, with existing data neither reflecting the actual number of persons with disabilities nor the inequalities they may experience (CRPD Committee 2023). National statistics offices rarely disaggregate statistics by disability status to monitor the situation of persons with disabilities at national and subnational levels. There is, therefore, a lack of information on the inequalities that persons with disabilities experience across and within countries. In the absence of this information, it is challenging to develop, and advocate for, inclusive policies and practices at national and local levels and to evaluate existing policies in terms of their impacts on persons with disabilities in all their diversities by type of disability, age, gender and more.

Producing both national and subnational statistics on the situation of persons with disabilities is important for several reasons. In general, disability disaggregated statistics can inform the development and the implementation of disability-inclusive policies and programs, notably by serving as a baseline for the evaluation of future policies. More specifically, the CRPD may be a tool used by national as well as local governments to make their policies inclusive of persons with disabilities (Weber et al 2022). In fact, even in countries that have not ratified the CRPD, subnational estimates can inform policies as some local entities use the CRPD to uphold disability rights¹.

Some studies suggest that the inequalities persons with disabilities experience vary within countries (e.g. Mont and Nguyen (2018) (Vietnam); Hoogeveen (2005) (Uganda), Sevak et

¹ See for instance Barsky 2018 on the U.S.

al (2018) (US)). Recent evidence shows that the COVID-19 pandemic has had geographically heterogeneous effects underscoring the role of the local environment on social vulnerabilities (ILO 2022; Parcha et al 2020). The climate emergency also has varied effects depending on geography and there is growing evidence that persons with disabilities are more at risk during natural disasters and extreme climate events due to a lack of inclusive planning, accessible information, early warning systems, transportation, and discriminatory attitudes within institutions and among individuals (Stein and Stein 2022).

This report first reviews the availability of questions on disability in national censuses and household surveys globally and documents their availability overtime between 2009 and 2022. Second, this report shows that it is feasible to produce statistics on the situation of persons with disabilities in subnational geographic areas from household surveys and censuses and to derive insights on within country inequalities that may affect persons with disabilities. In this report, we present results at the sub-national level, which is derived from Demographic and Health Survey (DHS) data for 12 countries² and census data for three countries (Guatemala, Kenya, Tonga). We analyze data that covers more than 20 indicators in 179 sub-national regions in 15 countries.

The main text of the report covers: dataset review (section 3), the geographic distribution of the share of adults with functional difficulties (section 4), human development and rights indicators disaggregated by functional difficulty

² Cambodia, Haiti, Maldives, Mali, Mauritania, Nigeria, Pakistan, Rwanda, Senegal, South Africa, Timor-Leste and Uganda.

status at national and subnational levels (section 5), and conclusions (section 6). More results are available in [Results Tables](#) and [Country Briefs](#).

3. REVIEW OF DATASETS AND THEIR DISABILITY QUESTIONS

This section reports on a systematic analysis of disability questions in national censuses and household surveys globally. As national censuses and household surveys are the backbone of statistics on socioeconomic status, health and demographic changes, reviewing disability questions in such datasets is crucial to analyze the visibility of persons with disabilities within and across countries in statistical systems, to inform efforts to improve the quality and the quantity of data that may inform policy and advocacy with respect to the disabled community. This review of datasets reports on how countries are aligned with article 31 of the CRPD and how countries respond to the request of the Agenda 2030 to disaggregate data by disability status.

Disability can be defined in various ways and the manner in which it is defined can have implications for the results of the ensuing analysis. Questions in surveys can vary depending on the definition of disability and on the objectives of the measurement exercise. Each dataset questionnaire was searched for disability questions that are internationally comparable as per the United Nations Principles and Recommendations for Population and Housing Censuses (2017, p. 207) for censuses. If disability questions were found, they were categorized as follows:

- (i) questions of the Washington Group (WG) Short Set (WG-SS) covering six domains (seeing, hearing, walking,

concentrating/remembering, self-care, communication);

- (ii) Other functional difficulty questions (four to six of the domains in (i) but not the same wording as in the WG-SS questions and/or answers) need to cover at least the four essential domains of functional difficulties (seeing, hearing, walking, concentrating/remembering);

More information regarding the methodology is in Appendix 2.

This section adds to the work of the 2021 and 2022 Disability Data Reports (Mitra and Yap 2021, 2022) and includes 256 additional datasets (598 dataset-waves³): these datasets include recent datasets for 2022 and any additional datasets that were found for the 2009-2022 period. The resulting pool of censuses and surveys under consideration has 1,288 datasets and 2,616 dataset-waves from 188 countries and territories (countries thereafter) across all world regions. Of note for recent years are High Frequency Phone Surveys, which many countries collected during the pandemic. For High Frequency Phone Surveys, a pool of 91 datasets and 292 dataset-waves from 72 countries were screened for disability questions.

The overall results are presented and discussed below globally and by region. The entire set of

³ For datasets that are rolled-out as part of several rounds, each round is reviewed separately; we use the term dataset-wave to refer to one individual round of collection for a given dataset. Dataset-waves may be part of a longitudinal dataset or repeated cross-sections.

results is available in the [Dataset Review Results Tables](#).

Table 3.1 presents the numbers and shares of countries and datasets with functional difficulty questions based on our review: 125 out of 188 countries and 216 out of 1,288 datasets under review have functional difficulty questions in their surveys or censuses. Separating countries and surveys with the WG-SS and other functional difficulty questions, 70 countries and 141 datasets have the WG-SS while 77 countries and 142 datasets have other functional difficulty questions. Among datasets, 22% include functional difficulty questions, including 11% with the WG-SS.

Figure 3.1 illustrates these findings with a map of the world with countries categorized based on whether we found datasets with WG-SS, other functional difficulty questions or no functional difficulty questions.

Figure 3.2 shows the breakdown of datasets depending on whether they have the WG-SS, other functional difficulty questions or no functional difficulty questions for three periods: 2010-2014, 2015-2019 and 2020-2022.

The share of datasets with functional difficulty questions shows an increase from 13% to 31% between 2010-2014 and 2015-2019 and then down to 26% in 2020-2022. This is driven by a sharp growth in the share of datasets with the WG-SS from 3% in 2010-2014 to 20% in 2015-2019, and down to 14% in 2020-2022. There was less variation in the share of datasets with other functional difficulty questions at about 10% during the three periods.

Figure 3.3 presents the share of datasets with functional difficulty questions, whether the WG-SS or other questions,

globally and by region in 2010-2014, 2015-2019 and 2020-2022. Between 2010-2014 and 2015-2019, an increase is found in all regions except Europe & Central Asia. East Asia & the Pacific, the Middle East & North Africa, and Sub-Saharan Africa show the sharpest increases.

Between 2015-2019 and 2020-2022, the decline that is observed globally is not consistently found across regions: North America, Sub-Saharan Africa and Middle East & North Africa continue to show an increase. These recent trends have contributed to growing heterogeneity across regions in terms of the availability of functional difficulty questions: in 2020-2022, the share of datasets with functional difficulty questions ranges from a low of 4% in Latin America & the Caribbean to a high of 63% in North America.

The 2020-2022 dataset period coincides with the COVID-19 pandemic when fewer data sets were available and many of the data sets under review are High Frequency Phone Surveys, which tend to disproportionately exclude disability questions. As shown in Figure 3.4, when removing High Frequency Phone Surveys, globally the share of datasets with functional difficulty questions is at 35% for 2020-22 (21% with WG-SS, 14% with other functional difficulty questions). This result is higher compared to when High Frequency Phone Surveys are included in the analysis at 26% (Figure 3.2).

Figure 3.4 also illustrates that, without High Frequency Phone Surveys, Sub-Saharan Africa is the region with the highest share of datasets with functional difficulty questions, followed by North America and Middle East & North Africa.

Recent changes for other regions are overall similar to those in Figure 3.3.

Conclusion

Results show considerable heterogeneity in the availability of functional difficulty questions across regions and over time: for instance, in Europe & Central Asia, functional difficulty questions continue to be a rarity in surveys and censuses, while in Sub-Saharan Africa their availability has markedly increased.

Global trends suggest an increase in the usage of the WG-SS in national censuses and surveys during the 2010s. High Frequently Phone Surveys which were launched by countries and some international organizations to track populations' situations and evaluate the

impacts of lockdowns and other COVID-19 related policies largely did not include the WG-SS. This seems to have driven the share of datasets with the WG-SS down during the 2020-2022 period.

Some countries prepare to implement their censuses after a halt of statistical activities due to the COVID 19 pandemic. There is now a window of opportunity to collect data on persons with disabilities by including questions on functional difficulties to inform policy development and implementation in accordance with Article 31 of the CRPD and the 2030 Agenda.

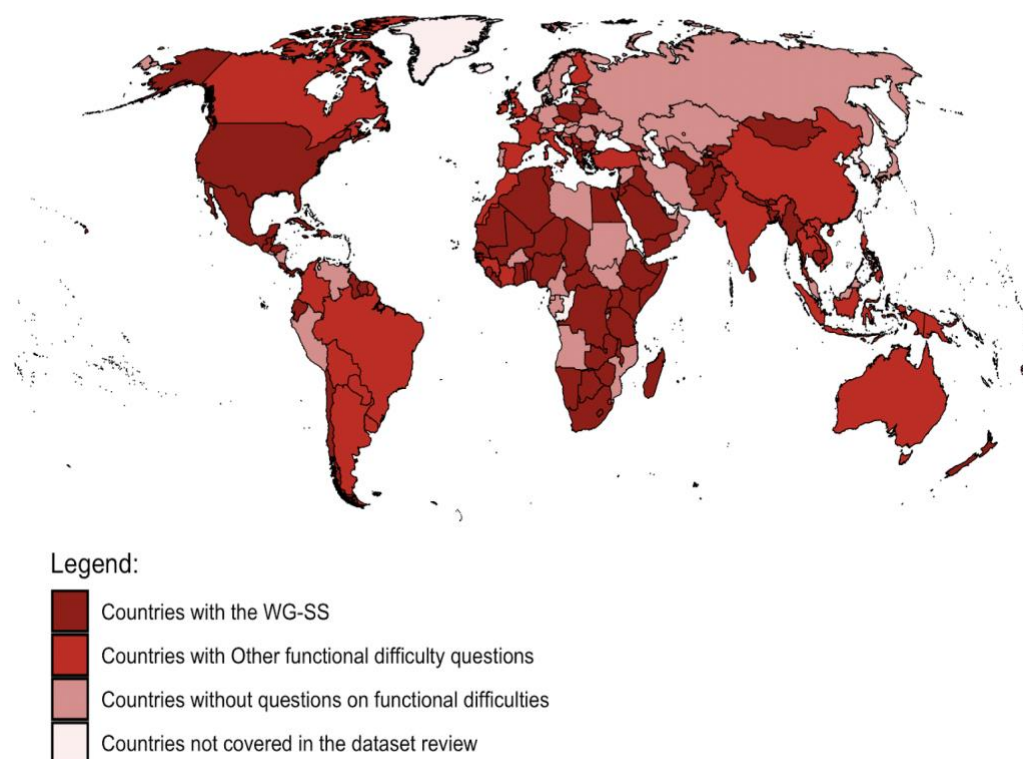
Table 3.1: Overall results of the dataset review

Countries or datasets	Number of countries	Share of countries	Number of datasets	Share of datasets
Under review in the study	188	100.0%	1288	100.0%
With functional difficulty questions	125	66.5%	283	22.0%
- With the Washington Group Short Set (WG-SS)	70	37.2%	141	10.9%
- With other functional difficulty questions	77	41.0%	142	11.0%

Notes: Functional difficulty questions could be the WG-SS or other functional difficulty questions. The number of countries with functional difficulty questions does not add up to the numbers of countries with the WG-SS and with other functional difficulty questions as some countries have both.

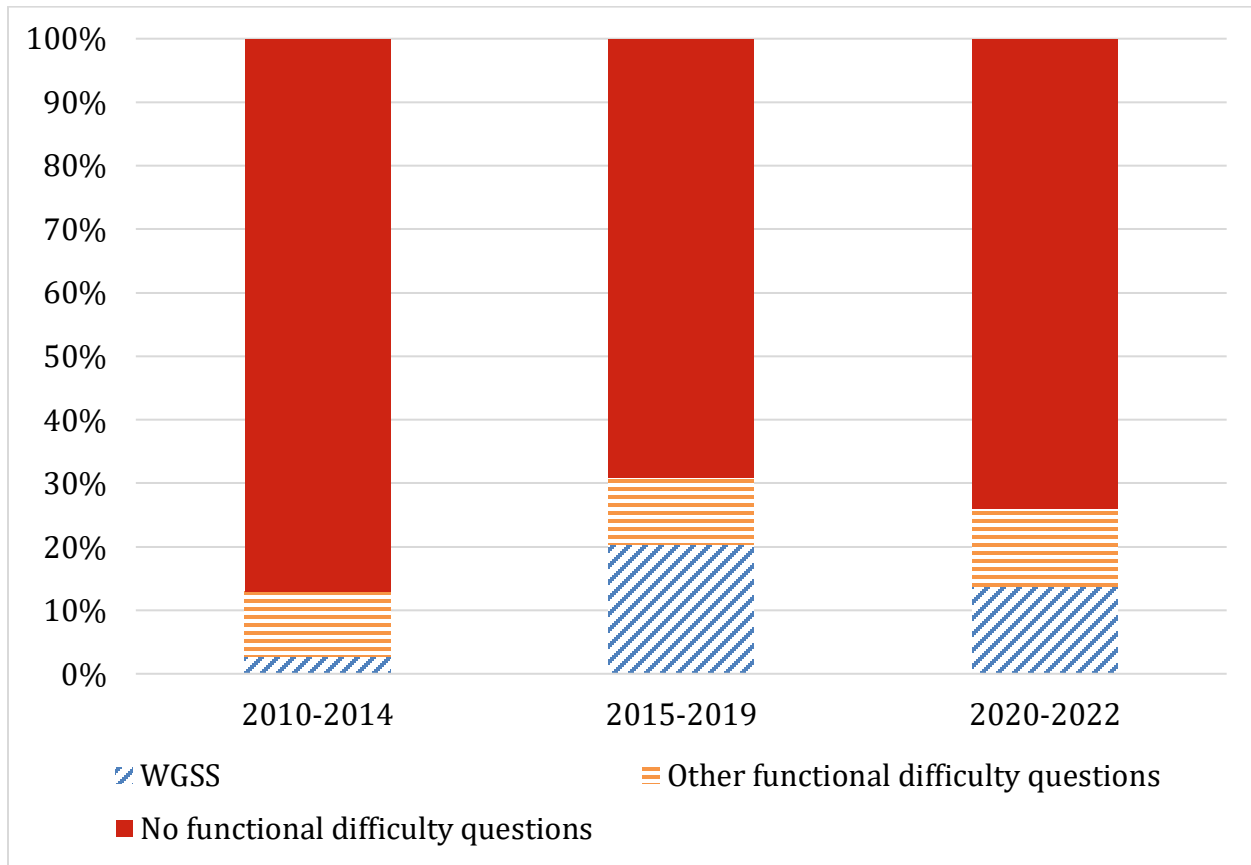
Source: Own calculations based on dataset questionnaire review, as described in the text.

Figure 3.1. Countries with functional difficulty questions (WG-SS or Other functional difficulty questions) and without functional difficulty questions in national censuses and surveys (2009-2022)



Source: Own calculations based on dataset questionnaire review, as described in the text.

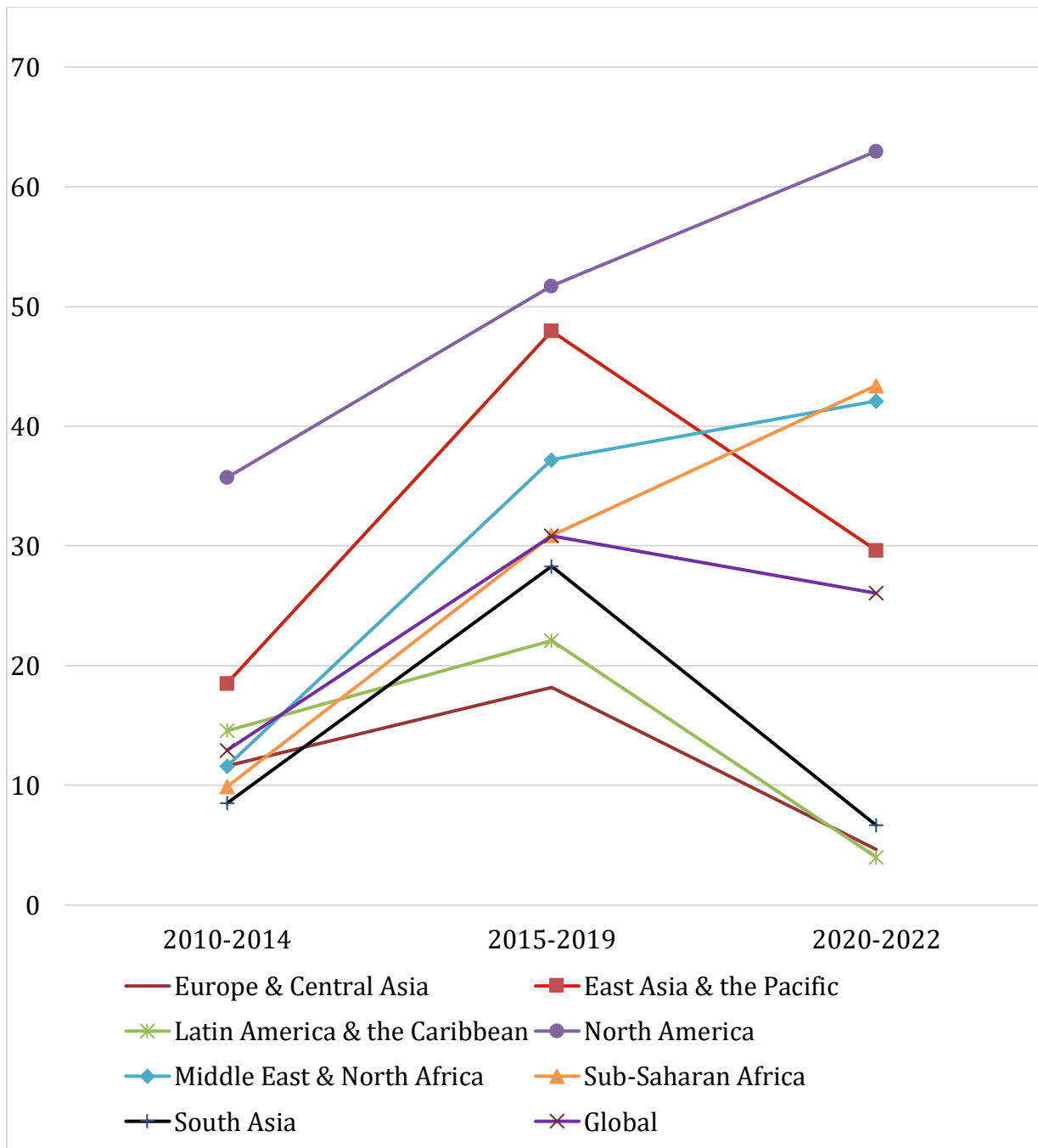
Figure 3.2: Share of datasets with WG-SS and Other functional difficulty questions over time



Source: Own calculations based on dataset questionnaire review, as described in the text.

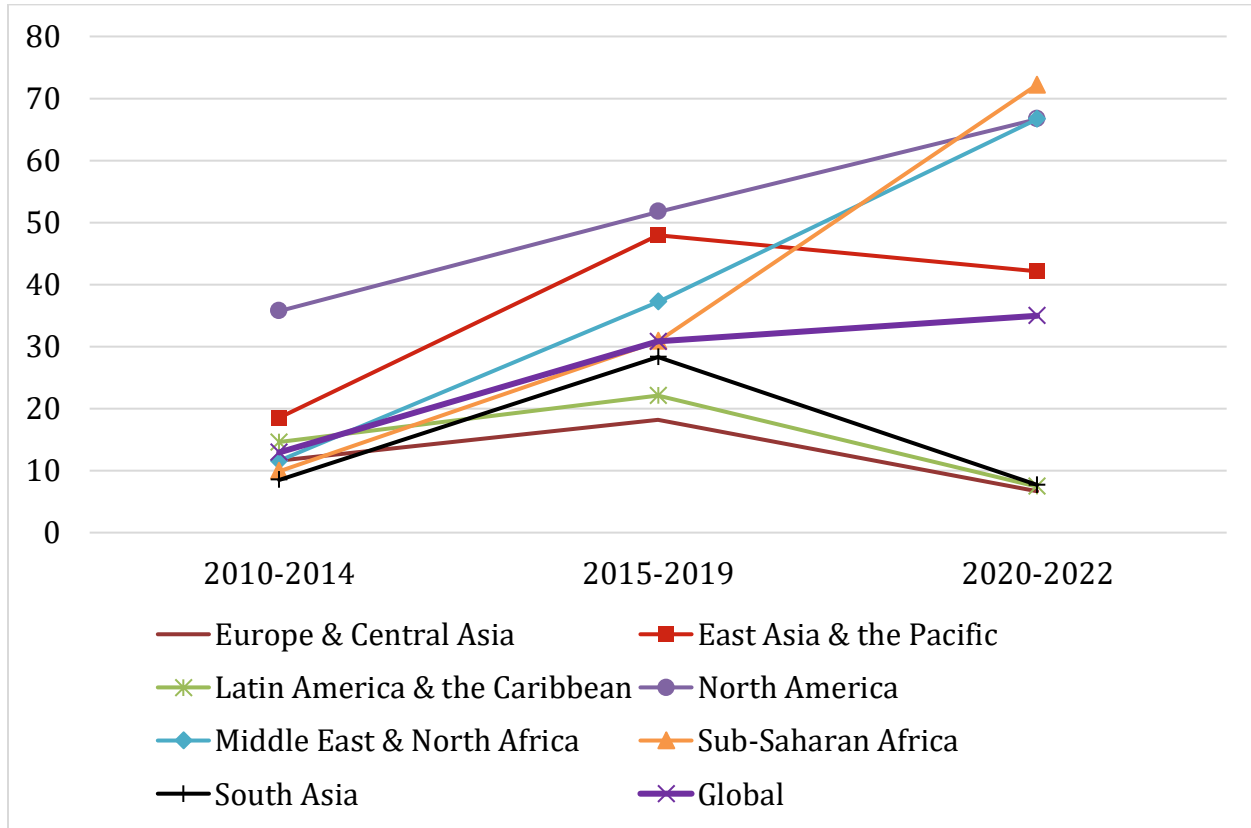
Notes: The number of datasets reviewed for each period is as follows: 727 for 2010-2014, 574 for 2015-2019 and 234 for 2020-2022.

Figure 3.3: Share of datasets with functional difficulty questions globally and by region (%)



Source: Own calculations based on dataset questionnaire review, as described in the text. Notes: The number of datasets reviewed for each region is as follows: 213 in Europe & Central Asia, 150 in East Asia & the Pacific, 198 in Latin America & the Caribbean, 72 in North America, 107 in Middle East & North Africa, 450 in Sub-Saharan Africa and 98 in South Asia.

Figure 3.4: Share of datasets with functional difficulty questions globally and by region, after excluding HFPS datasets (%)



Source: Own calculations based on dataset questionnaire review, as described in the text.

Notes: The numbers of datasets reviewed for each region without High Frequency Phone Surveys are as follows: 200 in Europe & Central Asia, 142 in East Asia & the Pacific, 175 in Latin America & the Caribbean, 69 in North America, 100 in Middle East & North Africa, 415 in Sub-Saharan Africa and 96 in South Asia.

4. ANALYSIS OF MICRO DATASETS: METHOD

This report uses population census and Demographic and Health Survey (DHS) data for 15 countries in Sub-Saharan Africa, Asia & the Pacific, and Latin America & the Caribbean. Countries are predominantly lower-middle income countries. All countries have a Human Development Index rank at 90 or above and all except Tonga have ratified the CRPD (Appendix 3).

We use three population census datasets of the 2020 census round (2015 to 2024): Guatemala (2018), Kenya (2018) and Tonga (2016). We use data from the DHS program for 12 countries: Cambodia (2014), Haiti (2016-17), Maldives (2009), Mali (2018), Mauritania (2019-2021), Nigeria (2018), Pakistan (2017-18), Rwanda (2019), Senegal (2018), South Africa (2016), Timor-Leste (2016) and Uganda (2016). The 15 countries were selected given the availability of a dataset representative at both national and regional levels and has the WG-SS^{4,5}. We focus on adults 15 years and older as the WG-SS may not be adequate to capture disability among children (Loeb et al 2018).

What indicators does the report produce?

⁴ The DHS follows a complex survey design: for each of the 12 countries under study, DHS data is representative at the national, regional, for rural and urban areas, for women and men. For Guatemala and Tonga, each population census includes the entire population. The Kenya population census dataset is a 10% random sample of the entire population.

⁵ For some countries with DHS data (e.g. Haiti, Pakistan), the short set has been modified by adding two questions on whether the person wears glasses and hearing aids. In this setting, seeing difficulties are captured as follows: We consider a person to

This report produces various indicators to capture the rights and human development situation of persons with disabilities. The indicators are in Table 4.1 and are further described in Method Brief 2. The list of indicators was developed by reviewing the questionnaires of datasets in light of the provisions of the CRPD and the SDGs that they could capture (IWGHS 2018; OHCHR 2021). Indicators reflect a variety of achievements (e.g., access to safely managed water) and deprivations (e.g., less than primary school completion). Taking the difference of indicators between persons with no difficulties and persons with difficulties may give a gap associated with disability, i.e. the disability gap or inequalities associated with disability⁶. How indicators are disaggregated by disability status is explained in Box 1 and Method Brief 1.

have seeing difficulties whether they wear glasses or not but report to have difficulty seeing. Similarly, we consider a person to have difficulty hearing whether they wear a hearing aid or not, but report having difficulty hearing. This allows us to create homogeneous cross-country indicators to capture functional difficulty seeing or hearing.

⁶ The difference and its statistical significance are noted in the results tables. Positive/negative differences respectively reflect a disability gap in achievement/deprivation indicators respectively.

Box 1: How were indicators disaggregated by disability status?

All the datasets have the WG-SS. The WG-SS measures functional difficulties for individuals in six domains: (a) seeing, (b) hearing, (c) walking/climbing stairs, (d) concentrating or remembering things, (e) selfcare, and (f) communication. A household respondent reports the degree of difficulty in each domain on a four-point answer scale: 1-‘No difficulty’, 2-‘Some difficulty’, 3-‘A lot of difficulty’, and 4-‘Unable to do’.

To identify functional difficulty status groups, at least one cutoff has to be set on the answer scale of functional difficulties. Where the threshold is set can lead to varying results and may answer different data needs. This report’s Results Tables consistently present disaggregations using three ways to categorize individuals based on functional status and place them into mutually exclusive categories.

In disaggregation a, individuals are in two categories:

- No difficulty includes people who report ‘No difficulty’ in all domains.
- Any difficulty includes people who report ‘Some difficulty’, ‘A lot of difficulty’ or ‘Unable to do’ for at least one domain.

In disaggregation b, individuals are in three categories:

- No difficulty includes people who report ‘No difficulty’ in all domains.
- Some difficulty includes persons who report ‘Some difficulty’ in at least one domain but no ‘A lot of difficulty’ or ‘Unable to do’ in other domains.
- At least a lot of difficulty includes people who answer ‘A lot of difficulty’ or ‘Unable to do’ in at least one domain.

In disaggregation c, individuals are in two categories as follows:

- No difficulty or some difficulty includes persons who report no or some difficulty for all domains.
- At least a lot of difficulty includes people who answer ‘A lot of difficulty’ or ‘Unable to do’ in at least one domain.

In the results described below, we mostly use disaggregations a and b. Due to sample size constraints, disaggregation a is useful to compare persons with no difficulty to persons with any level of difficulty to enable disaggregations by functional domains and also for some subgroups (e.g. by sex, age). Disaggregation b is able to identify potential deprivations among persons with some difficulty and compare them to those experienced by persons with at least a lot of difficulty.

What results are available from the micro-data analysis?

Comprehensive [Results Tables](#) are available on the DDI website for each country. Results Tables have results for the three disaggregation methods above for each indicator. For prevalence rates, results tables report shares of adults with any difficulty, some difficulty and at least a lot of difficulty, and for any difficulty by domain.

We produce results at national and subnational levels. Administration Level 1 is the generic term for the largest subnational administrative unit of a country. It has different names across countries: for example, "island" and "departments" are the terms used in Tonga and Haiti respectively. Administration Level 2 is the generic term for the second largest subnational administrative unit of a country, for instance, 'district' in Tonga and 'commune' in Haiti. Similarly, administration Level 3 is the generic

term for the third subnational administrative unit, for instance, 'village' in Tonga and 'section communale' in Haiti. To facilitate the presentation, this report uses the term 'region' for administrative level 1, 'district' for administrative level 2 and 'village' for administrative level 3. However, it is important to consider that this terminology changes between countries. We develop results on human development and rights indicators disaggregated by functional difficulty status for a total of 119 regions across 12 countries with DHS data and 60 regions across three countries with census data. We also produce results at the district level for Guatemala, Kenya and Tonga using census data and also include a map at the village level for Guatemala. The analysis was conducted in Stata 16: the codes to produce national and regional estimates are available in Method Brief 4.

Table 4.1: Indicators under study

Indicator	CRPD Article	SDG indicator	Indicator reference in results tables
Prevalence			
Adults with functional difficulties			P1
Adults with functional difficulties by type of functional difficulty			P2
Households with functional difficulties			P3
Education			
Adults who have ever attended school	24		E1
Adults who have less than primary school completion	24		E2
Adults who have completed primary school	24		E3
Adults who have completed secondary school or higher	24		E4
Adults who can read and write in any language	24	4.6.1	E5
Personal activities			
Employment population ratio	27		W1
Youth idle rate (NEET)	27	8.6.1	W2
Working individuals in manufacturing	27	9.2.2	W3
Women in managerial positions	27	5.5.2	W4
Working individuals in informal work	27	8.3.1	W5
Adults who used a computer recently	9		PA2
Adults who used the internet recently	9		PA3

Adults who own a mobile phone	9	5.b.1	PA4
Health			
Adults in households using safely managed drinking water	25	6.1.1	H1
Adults in households using safely managed sanitation services	25	6.2.1	H2
Standard of living			
Adults in households with electricity	28	7.1.1	S1
Adults in households with clean cooking fuel	28	7.1.2	S2
Adults in households with adequate housing	28		S3
Assets owned by individual's household (%)	28		S4
Adults in households with a mobile phone	28	5.b.1	S5
Multidimensional analysis			
Adults who experience multidimensional poverty, i.e. deprivations in more than one dimension of wellbeing (education, health, work, standard of living)	24, 25, 27, 28		M1

Notes: Relevant SDG indicators are listed. The SDG indicators may be different from the indicators measured in this report. For instance, indicator 8.3.1 measures Proportion of informal employment in total employment while this report measures the proportion of workers doing informal work. All indicators are proportions except the one on assets. Indicator reference numbers follow those in the 2021 and the 2022 Disability Data Reports (PA1 was skipped due to a lack of data on exposure to mass media).

5. THE GEOGRAPHIC DISTRIBUTION OF THE SHARE OF ADULTS WITH FUNCTIONAL DIFFICULTIES

This section describes and discusses the main results on the share of adults 15 and older with functional difficulties (or prevalence rates). The full set of results (Indicators P1, P2, P3) is available in each country's [Results Tables](#) file.

What does the data show us about national prevalence rates?

At the national level, functional difficulties affect a sizeable share of the population (Figure 5.1 and Table 5.1). Figure 5.1 gives the share of adults with any difficulty from the lowest to the highest with a breakdown for some difficulty and at least a lot of difficulty. In all countries, the share of adults with some difficulty is higher than that of adults with at least a lot of difficulty. The median share of adults with any difficulty across the 15 countries stands at 21% ranging from a low of 11.4% in Nigeria to a high of 32.8% in Uganda.⁷

What does the data show us about prevalence rates within countries?

At the regional level, Table 5.1 presents the minimum and maximum values for the share of adults with any difficulty within each country. These results are further illustrated in Figure 5.2 and Figure 5.3 for South Africa and Kenya respectively for any difficulty, some difficulty and at least a lot of difficulty. In South Africa, all regions have prevalence rates above 10%. In Kenya, 45 out of 47 regions have prevalence rates above 5%. More broadly, in the 15 countries, out of 179 regions, only five regions have a prevalence rate below 5%. Results

⁷ Prevalence rates in Figure 5.1 are not adjusted for age and sex. Prevalence rates adjusted for age and sex for any difficulty are as follows: Tonga 9.9%, Cambodia 10%, Nigeria 10.4%, Guatemala 11.6%, Senegal 12.5%, Kenya 12.7%,

suggest that persons with functional difficulties are geographically spread out within countries.

This pattern continues when zooming in further to a more local level with census data for Guatemala, Kenya and Tonga. For instance, in Guatemala, the share of adults with any difficulty is consistently above 8% at the district level, including in remote and sparsely populated districts in the north.

At the same time, results suggest that prevalence rates do vary within countries from region to region. Within each country, the range of prevalence rates across regions, i.e. the difference between the maximum and the minimum, is above 5 percentage points (p.p.) in all countries except for Senegal at 3.4 p.p. For instance, in South Africa, prevalence rates at the regional level go from a low of 18% in Western Cape to a high of 31% in Northern Cape. At the regional level, we also estimated prevalence rates for different degrees of functional difficulties (some difficulty and at least a lot), different age groups, by rural/urban residence and by gender. The variation across regions in prevalence rates is also found for some difficulty and at least a lot of difficulty separately and within subgroups of the population (women, men, rural, urban, and for different age groups) ([Results Tables](#)).

What does the data show us about prevalence rates by age, sex and rural/urban residence and functional domain?

Timor-Leste 16.7%, Mali 17.8%, South Africa 19%, Haiti 21.5%, Mauritania 22.4%, Pakistan 23.8%, Rwanda 24.7%, Maldives 24.8%, Uganda 33.3%.

We also considered whether country-level results on prevalence rates from other studies are confirmed within countries at the regional level, in particular, results around higher prevalence rates among older age groups, women and rural residents (e.g. WHO-World Bank 2011). This report finds that at the regional level, prevalence rates are consistently higher for older age groups compared to younger age groups. We find prevalence rates to be higher at the national level among women compared to men in all countries except Mali, Nigeria, and Timor-Leste. Interestingly, at the regional level, most countries show a consistent pattern with a higher prevalence rate for women in all or close to all regions. Exceptions are Mali, Mauritania, Nigeria, Senegal and Timor-Leste where in many regions, prevalence rates are higher for men compared to women.

We find that functional difficulties at the national level are more common in rural compared to urban areas in all countries except Senegal, Nigeria and Mauritania. Additionally, there is some variation in this rural-urban pattern within countries. In fact, in all countries, we find that in some regions, prevalence rates are in fact lower in rural areas compared to urban ones. For instance, in Mali, prevalence rates are lower in rural areas in four out of nine regions.

At both national and regional levels, we find that functional difficulties in the seeing and mobility domains are consistently the most common, followed by cognition.

Implications for policy

Functional difficulty prevalence rates among adults are significant in all regions within the 15 countries under study. This suggests that persons with disabilities are geographically

spread out within countries, i.e. they are not absent in certain sub-national areas and highly concentrated in others. This result points out how important it is for disability rights as per the CRPD to be upheld at the local level. Local policy making in general, and in various sectors from education to disaster risk management, needs to be inclusive of persons with disabilities, no matter the region, district or village.

Persons with disabilities and their representative organizations should play a role in local policy making so that their access to local programs and services is made a reality within countries, including in areas that are hard to reach. The COVID-19 pandemic has emphasized the importance of having resources, such as health care services and assistive technology, close to where people live (Mont et al 2023). Our results show the importance of making sure resources and services are accessible to persons with disabilities within countries, including in remote areas.

Implications for data collection and research

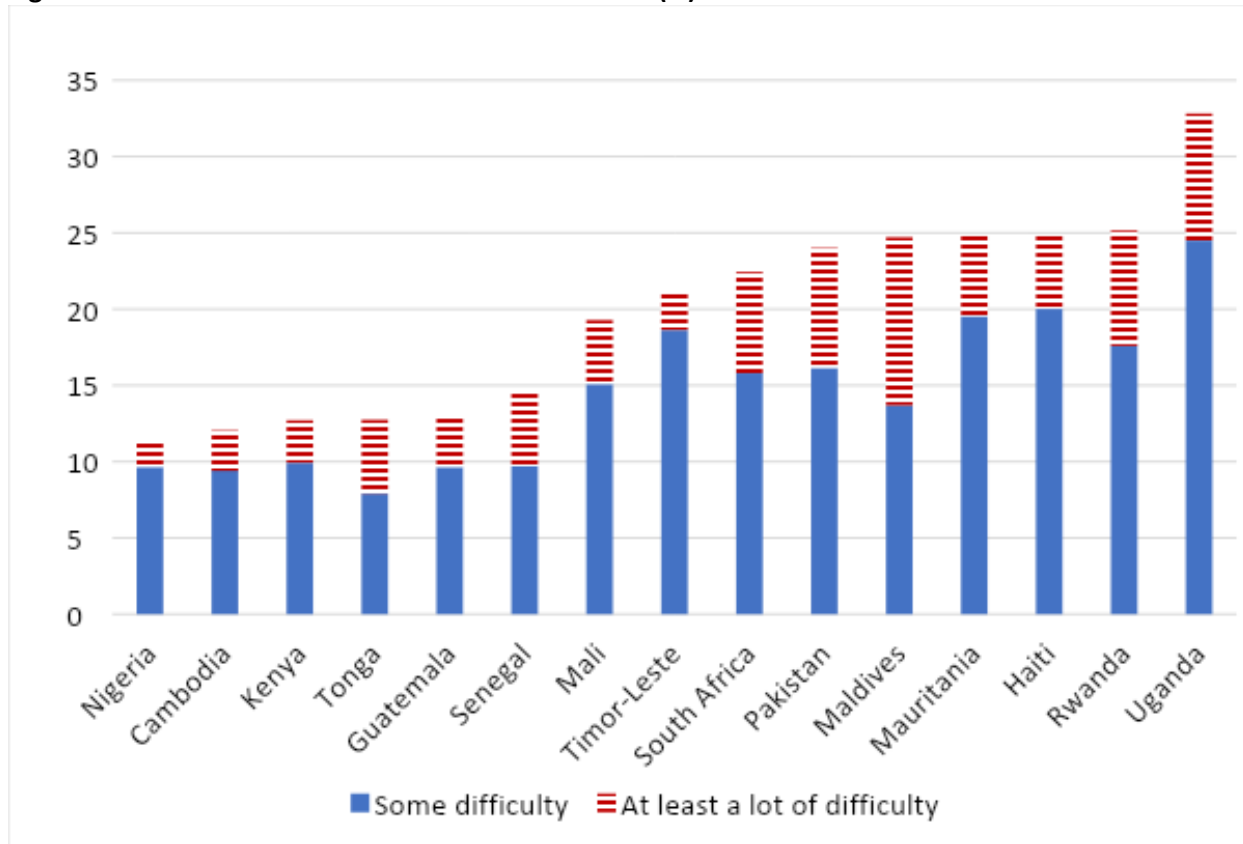
Data on functional difficulties needs to be collected in surveys such as the DHS program, national standalone surveys, and in censuses that can be used to map where people with disabilities live. They can inform myriad policies from humanitarian crises responses and climate change preparedness to the supply of assistive technology.

At the same time, we found some subnational variation in the levels of prevalence rates of functional difficulties at regional as well as at district levels. This subnational variation in the prevalence of functional difficulties begs questions for further research. There is a need to find out if this geographic variation in

prevalence rates translates into persons with disabilities being differentially exposed to risks that vary spatially such as natural disasters. It may come from a variety of factors such as demographic characteristics (e.g. age, fertility, migration patterns), resources (e.g. access health care services and assistive technology) and environmental factors related to conflict, infrastructure, transportation, or subnational policies and programs. Further research is needed to find out what drives such variation.

For instance, it is possible that areas with higher prevalence rates have a higher portion of older people who either migrate into these areas or who reside in these areas while younger people migrate elsewhere. More research is also needed on gender as well as urban versus rural differences, as higher prevalence rates among women and rural residents were not consistently found within all countries.

Figure 5.1: Share of adults with functional difficulties (%)



Source: Own calculations based on DHS data except for Guatemala, Kenya and Tonga where population census data was used for each country.

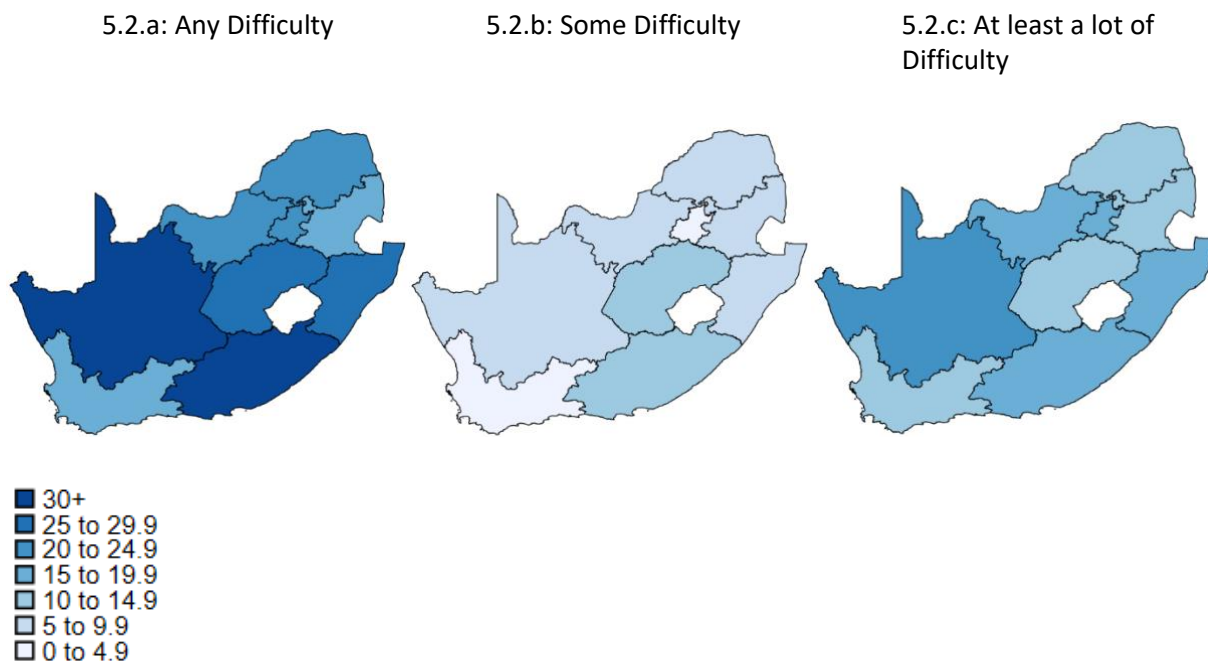
Table 5.1: Share of adults with functional difficulties at the national and regional levels and number of regions per country

Dataset/country	Share at the national level	Min. share at the regional level	Max. share at the regional level	Number of regions
DHS data				
Cambodia	12.1	2.6	26.1	19
Haiti	24.9	22.5	28.5	11
Mali	19.3	12.2	25.7	9
Maldives	24.7	19.1	33.0	6
Mauritania	24.8	17.4	40.3	14
Nigeria	11.4	7.6	17.1	6
Pakistan	24.0	14.9	28.7	8

Rwanda	25.2	18.7	29.0	5
Senegal	14.5	12.4	16.0	4
South Africa	22.4	17.6	30.6	9
Timor-Leste	21.0	14.8	28.3	13
Uganda	32.8	17.5	45.6	15
Census data				
Guatemala	12.9	8.7	16.0	8
Kenya	12.7	3.9	23.8	47
Tonga	12.7	11.1	16.8	5

Source: Own calculations based on DHS data except for Guatemala, Kenya and Tonga where population census data was used for each country.

Figure 5.2: Share of adults with functional difficulties at the regional level in South Africa



Source: Own calculations based on DHS data

Figure 5.3: Share of adults with functional difficulties at the regional level in Kenya

Figure 5.3.a: Any Difficulty

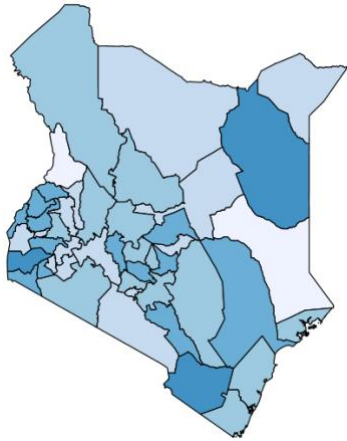


Figure 5.3.b: Some Difficulty.

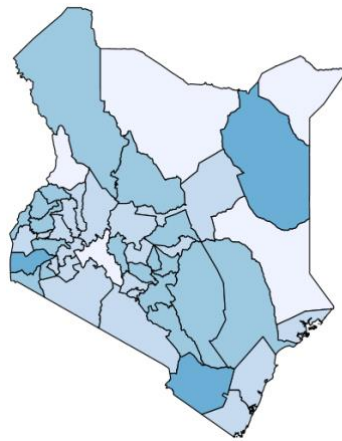
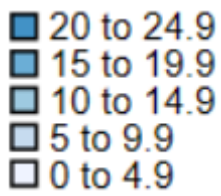


Figure 5.3.c: At least a lot of Difficulty



Source: Own calculations based on Kenya population census (2018)

6. INDICATORS DISAGGREGATED BY FUNCTIONAL DIFFICULTY STATUS

Disaggregated indicators by functional difficulty status results are presented in [Results Tables](#) for each country and its regions with a table for each of the three disaggregation methods described in section 4.). In the Results Tables, the difference between two functional difficulty status groups and its statistical significance is noted in a separate column. Statistical significance is based on a t-test (*, **, and *** at the 10%, 5% and 1% levels, respectively). There may be patterns of disadvantage that affect subgroups of persons with disabilities and their households, such as women and rural residents. Results Tables also give a disaggregation by functional difficulty status for subgroups of the population (by sex, rural/urban, age group).

6.1 Is disaggregation by functional difficulty status feasible at the subnational level?

The 15 countries under study were selected given the availability of a dataset that is representative at both national and regional levels and has the WG-SS. For two countries (Guatemala and Tonga), each census dataset under analysis includes the entire population. For Kenya, the dataset is a random 10% sample of the population. For 12 countries, each DHS follows a complex survey design and has a sample of the country's household-based population.

For Tonga and Guatemala census data, data is available for the entire household-based population: we set at 20 the smallest cell size that is required to present results for population subgroups. For Kenya's census and DHS data for 12 countries, where data is from

nationally representative samples, we set at 50 the minimum number of observations required to produce estimates. Given this constraint, for a given country, disaggregation may be possible for some groups, but not others. For instance, in a primarily agrarian country, there may be more than 50 observations for adults with functional difficulties for the subgroup of rural residents, but not for the subgroup of urban residents.

Despite this sample size constraint, our results suggest that it is possible to produce indicators disaggregated by functional status at the regional level to document within country inequalities based on functional difficulty status.

Leveraging data collected by the DHS program, we are able to produce all indicators at the regional level within countries except employment indicators. We can also further disaggregate among women, men, residents of rural areas and residents of urban areas. However, sample sizes were too small within each region to disaggregate across four age groups (15 to 29, 30 to 44, 45 to 64, 65 and older). Instead, we cover two wide age groups (15 to 44; 45 and older). For employment⁸, sample sizes at the regional level were often below 50, in particular for persons with at least a lot of difficulty: employment indicators were thus not produced with DHS data. In the DHS, only a subsample of household adults answer the questions on employment.

With census data in three countries, we could produce the indicators in Table 4.1 disaggregated by functional status and for

⁸ A similar result was reached for family planning and interpersonal violence. In the DHS, a subsample of

women answers questions on family planning and domestic violence.

subgroups based on gender, rural/urban residence and age. Results could also be produced for most indicators and subgroups at the district level. For Guatemala, one map was produced at the village level and is included below (Figure 6.3).

The ability to disaggregate a wide range of indicators at the regional and district levels with census data highlights the importance of census data to document and investigate within country disability inequalities. Compared to survey data, while census data tend to be collected less often, they go a longer way when it comes to making possible subnational disability disaggregated indicators.

Some of the key results on disability disaggregation are highlighted below for education, personal activities, health, standard of living and multidimensional poverty. Detailed results are available in each country's [Results Tables](#).

6.2 Disability gaps in education

This section describes and discusses the main results on education. This report uses five indicators on educational outcomes for adults. The first one is the share of the adult population who has ever attended school. In addition, the highest level of educational attainment achieved is captured through three indicators: share of adults with less than primary school completion, the share of adults with primary school completion and the share of adults with secondary school completion or higher. The report also includes results for the literacy rate defined as the share of individuals who can read and write in any language (SDG indicator 4.6.1).

⁹ In four out of 119 regions, the gap between some and no difficulty is negative, reflecting that adults with some difficulty on average have a higher rate of primary school completion compared to adults with no difficulty.

For the share of adults who ever attended school, educational attainment indicators, and literacy rates, results consistently point at adults with functional difficulties being worse off at both national and subnational levels. The educational gap between those with and without functional difficulty is greater for those with at least a lot of difficulty than for those with some difficulty.

The gradient in the disability gap for educational indicators, that is the fact that persons with some difficulties are worse off than persons with no difficulty, but better off than persons with at least a lot of difficulty, is consistently found across countries at both national and subnational levels.

This finding is illustrated in Figure 6.1 for the 119 regions of the 12 countries with DHS data. Figure 6.1 is a scatter diagram of the gap in the share of adults with less than primary schooling between adults with some difficulty and no difficulty on the horizontal axis and between adults with at least a lot of difficulty and no difficulty on the vertical axis. Almost all dots are above the diagonal line, which shows that the gap in the rate of adults with less than primary schooling is consistently higher when comparing adults with at least a lot of difficulty and no difficulty than when comparing adults with some difficulty and no difficulty⁹.

The results above confirm what has been found at the national level for many other countries (United Nations 2019; Mitra and Yap 2021, 2022). What is new is how such results are also regularly found at the subnational level. The disability gaps in education indicators found in

this report result at least in part from lower school attendance rates among children with disabilities (UNICEF 2021). They may also be due to education being a social determinant of functional difficulties. Having less education may put persons at higher risk of getting a health condition or injury and a resulting functional difficulty perhaps through jobs with risky working conditions or lack of access to health care.

6.3 PERSONAL ACTIVITIES

A wide range of personal activities are relevant to wellbeing, in particular paid work, unpaid work, commuting, and leisure time (Stiglitz et al. (2009). Personal activity indicators are reported for Guatemala, Kenya, Tonga only as the other 12 countries did not have large enough sample sizes for these indicators to be used to do subnational disability disaggregation. Indicators are described in Box 2.

For the employment population ratio, we find a disability gap at both national and regional levels in Guatemala and Tonga, while a reverse gap is found for Kenya. In Kenya, persons with functional difficulties (both some difficulty and at least a lot of difficulty) are on average more likely to work than persons with no difficulty.

At the same time, workers with functional difficulties are significantly more likely to do informal work than workers with no difficulty in Kenya, Tonga and Guatemala.

For the youth idle rate or NEET, results are mixed. Compared to youth with no difficulty, the youth idle rate of youth with any difficulty is significantly higher in Kenya but lower in Guatemala at both the national and regional levels. In Kenya, there is a gradient with the youth idle rate at both national and regional

levels. At the national level, Kenya's youth idle rate respectively stands at 10%, 25% and 32% for youth with no difficulty, some difficulty and at least a lot of difficulty. In Tonga, there is a disability gap in the youth idle rate at the national level, with youth with functional difficulties having on average larger idle rates. For Tonga, youth idle rates could not be produced at the subnational level due as the sizes of subnational groups below 20.

Box 2: Personal activity indicators

The term “work” is broad and includes both paid and unpaid work. Unpaid work can be for instance, working in a family enterprise while paid work means being employed by another person or organization whether in the formal or informal economy, or through self-employment. This report uses five work indicators for adults. The first one is the employment population ratio, also called the employment rate. It captures the share of the adult population who is employed, i.e. working for pay or those who are self-employed, even if unpaid.

The youth idle rate or NEET (youth Not in Education, Employment or Training) measures the share of youth aged 15-24 years who are not enrolled in school and are not employed (SDG indicator 8.6.1). We measure the share of the employed in the manufacturing sector (SDG 9.2.2) and the share of women who hold managerial positions (SDG 5.5.2). Finally, the informal work indicator captures the share of working individuals who do informal work, i.e., who are self-employed, those who work for a microenterprise of five or few employees or in a firm that is unregistered and those who have no written contract with their employers. It also includes persons who work unpaid, including for a family business (SDG indicator 8.3.1).

We also use indicators on access to ICT. These are the shares of adults who recently used the internet; recently used a computer; and own a mobile phone (SDG indicator 5.b.1.). There was no consistent pattern across the three countries for the share of workers in the

¹⁰ There was no information on computer use in Tonga’s 2016 census.

manufacturing sector. In Tonga, workers with functional difficulties are more likely to work in the manufacturing sector at the country level (difference of five p.p.) but this result held in only two of five regions. In Kenya, workers with functional difficulties were less likely to work in manufacturing but the difference was small at one p.p. and was not significant in most regions. Finally, in Guatemala, workers with functional difficulties in most regions and districts were less likely to work in manufacturing and in most cases the difference was larger than 2 p.p.

Persons with functional difficulties were less likely to have used a computer recently in Kenya and Guatemala at the national level. This result held in most regions of Kenya and in all regions in Guatemala¹⁰.

Finally, at the national level, there are disability gaps in internet use of five p.p. in Kenya and Tonga and of 10 p.p. in Guatemala. Disability gaps in internet use were found in most regions in Kenya and Tonga and in all regions in Guatemala.

6.4 Are there disability gaps in proxies for health indicators?

This section presents results for two indicators that are proxies for health: the share of adults living in households with safely managed drinking water (CRPD Article 25, SDG indicator 6.1.1) and the share of adults living in households with safely managed sanitation (CRPD Article 25, SDG indicator 6.2.1).

At the national level, for the share of adults with safely managed drinking water and the

share with safely managed sanitation, results are mixed. For water, six countries have a disability gap and five countries have similar shares of adults with safely managed water across functional difficulty status. Four countries have a reverse gap, i.e. the share of adults with any functional difficulty with safely managed drinking water is significantly higher than that of adults with no functional difficulty. A similar mix of gaps, reverse gaps and no difference is found for the share of adults with safely managed sanitation across functional difficulty status.

Within countries, there is a lot of heterogeneity across regions in the situation of persons with functional difficulties. For instance, in Mauritania, the share of adults with any difficulty with access to safely managed drinking water is at 77% in Nouakchott Ouest but at 36% in the Hodh Echargui region. Within the five countries without a significant disability gap at the national level for the share of adults with safely managed drinking water (Cambodia, Mali, Maldives, Senegal, South Africa), there is a disability gap in some regions. In reverse, in the seven countries with a disability gap at the national level (Haiti, Kenya, Rwanda, Timor-Leste, Tonga, Uganda, South Africa), there are regions with no disability gap. For instance, in Kenya, out of 47 regions, 28 have a disability gap, nine regions have a reverse gap and 10 show no difference.

Overall, results on disability gaps in terms of access to safe water or sanitation do vary across and within countries. Within countries, national estimates can hide heterogeneity at the regional level. The indicators used in this study have important limitations. They capture safely managed water and sanitation at the household level and do not guarantee that

water and sanitation services are accessible to persons with disabilities within the household.

6.5 Are there disability gaps in standard of living indicators?

Indicators related to the standard of living of adults' households inform CRPD Article 28 on "Adequate standard of living and social protection" and include the share of adults in households with electricity (SDG 7.1.1); using clean fuel for cooking (SDG 7.1.2); with adequate housing; who own assets; and who own a cell phone (SDG 5.b.1).

Overall, results are mixed and similar to those on water and sanitation above. At the national level, disability gaps in standard of living indicators are found for some countries. When gaps are found, they tend to be small (under five percentage points) and larger for adults with at least lot of difficulty than for adults with some difficulty. Within countries, there is a lot of heterogeneity across regions with respect to the situation of persons with functional difficulties and the disability gap. Among the standard of living indicators, disability gaps tend to be the most consistent across countries and regions for the share of adults in households who own a cell phone.

6.6 Is there a disability gap in multidimensional poverty?

Poverty can be measured by counting the number of deprivations experienced by an individual or households and by identifying those with multiple deprivations. At both national and regional levels, we estimate a multidimensional poverty headcount of adults based on functional difficulty status (Alkire and Foster 2011, Method Brief 3). The results are available in each country's [Results Tables](#). We identify adults as being multidimensionally

poor when they are deprived in more than one dimension of wellbeing. Dimensions include education, health, personal activities (employment) and standard of living.¹¹ The employment dimension is used only for the three countries with census data as with DHS data, cell sizes at the regional level were sometimes below 50 for persons with functional difficulties.

In the 15 countries under study, the multidimensional poverty headcount among persons with functional difficulties is consistently high (above 50%) at the national and regional levels. We find a gradient in the association between multidimensional poverty and functional difficulties at the national level in all countries. In other words, persons with some difficulty have higher poverty headcounts than persons with no difficulty, but lower ones than persons with at least a lot of difficulty.

Across countries, adults with all types of functional difficulties have significantly higher headcounts than adults with no difficulty. In most countries, adults with self-care and communication difficulty have higher multidimensional poverty headcounts while adults with seeing difficulties have lower headcounts compared to adults with other types of difficulties. Across and within all countries, adults with functional difficulties in rural areas and in older age groups have higher headcounts on average than their counterparts in urban and younger age groups respectively. In most countries, women with functional difficulties are worse off than men with functional difficulties in terms of multidimensional poverty.

The gradient in multidimensional poverty was also found within countries at regional and district levels. For example, Figure 6.2 shows maps for Haiti representing the multidimensional poverty headcount by functional difficulty status. In most regions, the shares of adults who are multidimensionally poor are in the 60-69, 80-89 and 90-100% ranges respectively for persons with no difficulty, some difficulty and at least a lot of difficulty.

While persons with functional difficulties are disproportionately poor, how poorer they are on average compared to persons with no difficulties may vary across regions. For example, in Mali, in some regions with very high multidimensional poverty headcounts, there is little to no difference between persons with and without functional difficulties. More broadly, we find that the higher the multidimensional poverty headcount at the regional or national level, the less the gap between persons with and without functional difficulties.

The subnational variation in the disability gap in multidimensional poverty is illustrated for Guatemala at the village level in Figure 6.3. The maps to the left and the right respectively present at the village level the gap in the multidimensional poverty headcount between persons with no difficulty and some difficulty, and between persons with no difficulty and at least a lot of difficulty. The disability gap in multidimensional poverty tends to be larger in villages in the South compared to those in the North. Some villages have reverse gaps, meaning that persons with difficulties have lower headcounts than persons with no

¹¹ Details on the indicators and thresholds are described in Method brief 3.

difficulty in some villages. These villages have very high multidimensional poverty rates (above 80%).

Overall, at national and subnational levels, persons with functional difficulties, on average, often experience multidimensional poverty. This result adds to a large and growing literature on the association between disability and multidimensional poverty (United Nations 2019), this time documenting it at the regional level.

Implications for policy

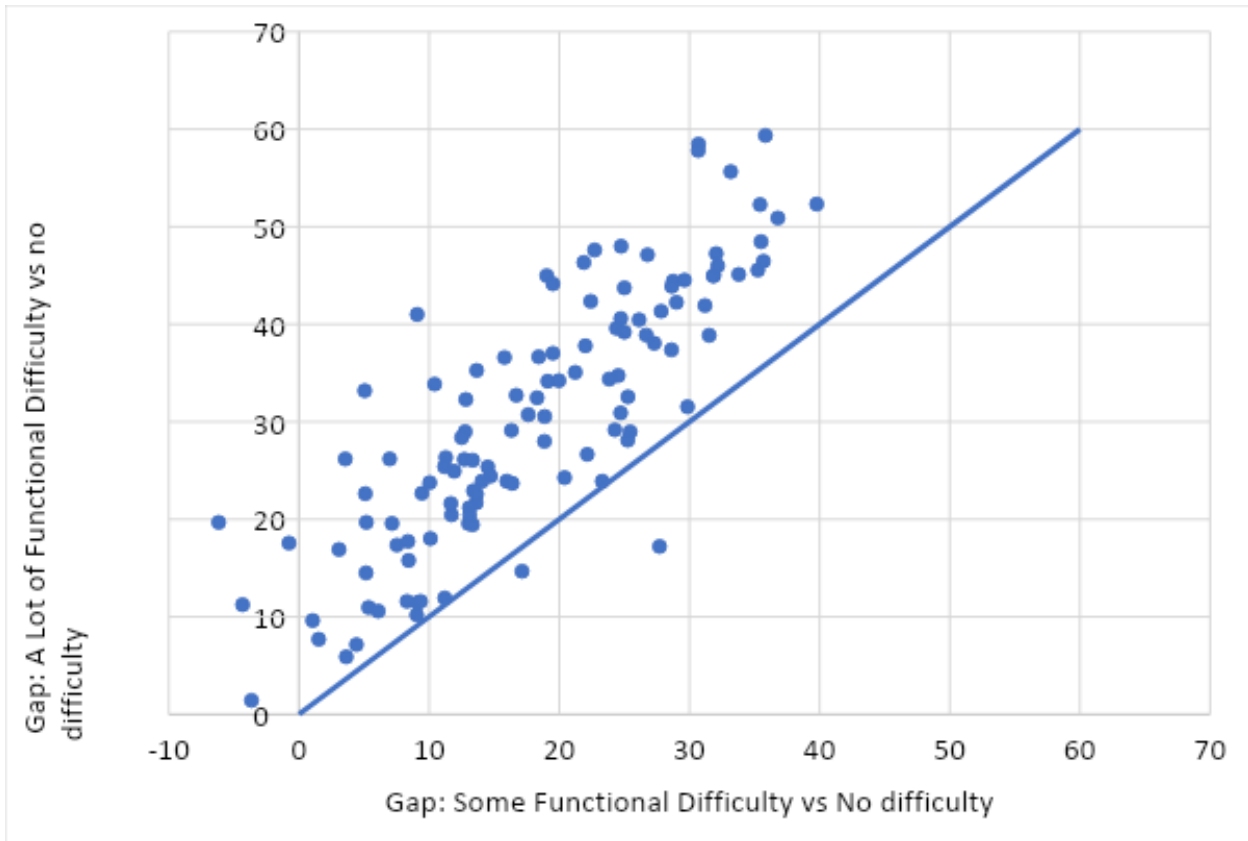
Multidimensional poverty headcounts are significantly higher for persons with functional difficulties compared to persons with no difficulty at national and subnational levels. This result highlights the importance for development projects, no matter where they are within a country, to be inclusive of persons with disabilities. Persons with disabilities should be explicitly incorporated in policymaking and

research agendas related to education, health, work and the standard of living at both national and subnational levels.

Implications for further research

We found some within-country variations in the multidimensional poverty status of persons with disabilities. This result begs for more research on the drivers of this heterogeneity within countries. The barriers persons with disabilities face and the resources they have vary across geographies and may contribute to diverse inequality outcomes within countries.

Figure 6.1: The gradient in the gap in less than primary school completion at the regional level (in percentage points)



Source: Own calculations using DHS data for 12 countries

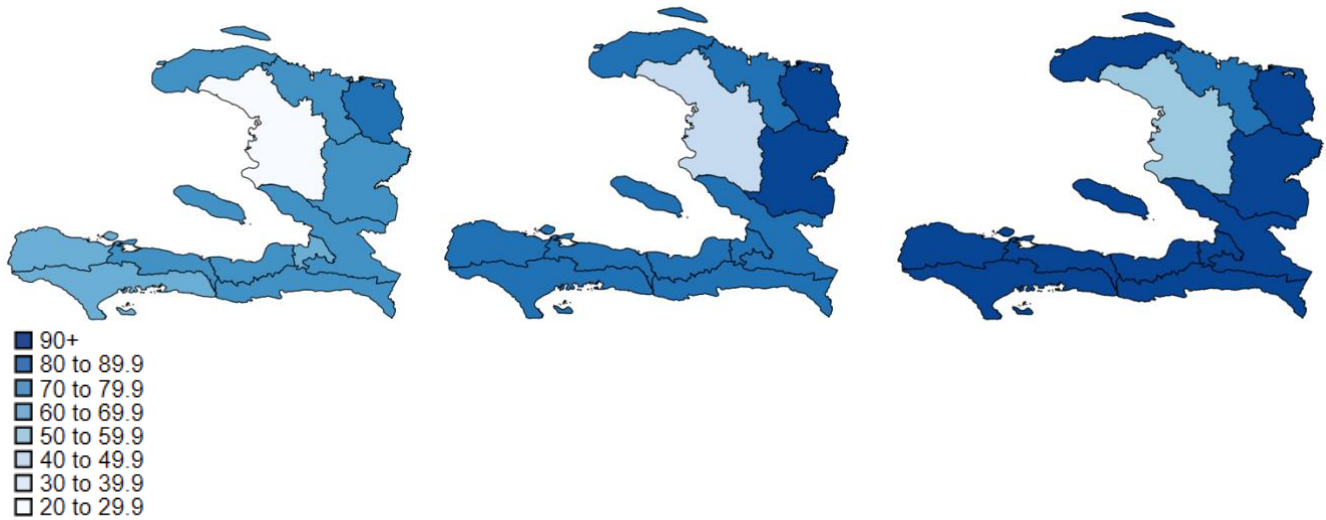
Note: This figure plots the gap in the share of adults with less than primary schooling for each region in 12 countries between persons with some difficulty and persons with no difficulty on the horizontal axis and the gap between persons with at least a lot of difficulty and persons with no difficulty and on the vertical axis

Figure 6.2: Multidimensional poverty headcount among persons with no, some and at least a lot of difficulty in Haiti (%)

Figure 6.2.a: No Difficulty

Figure 6.2.b: Some Difficulty

Figure 6.2.c: At least a lot of Difficulty

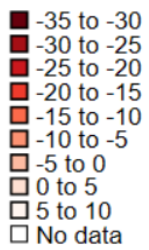
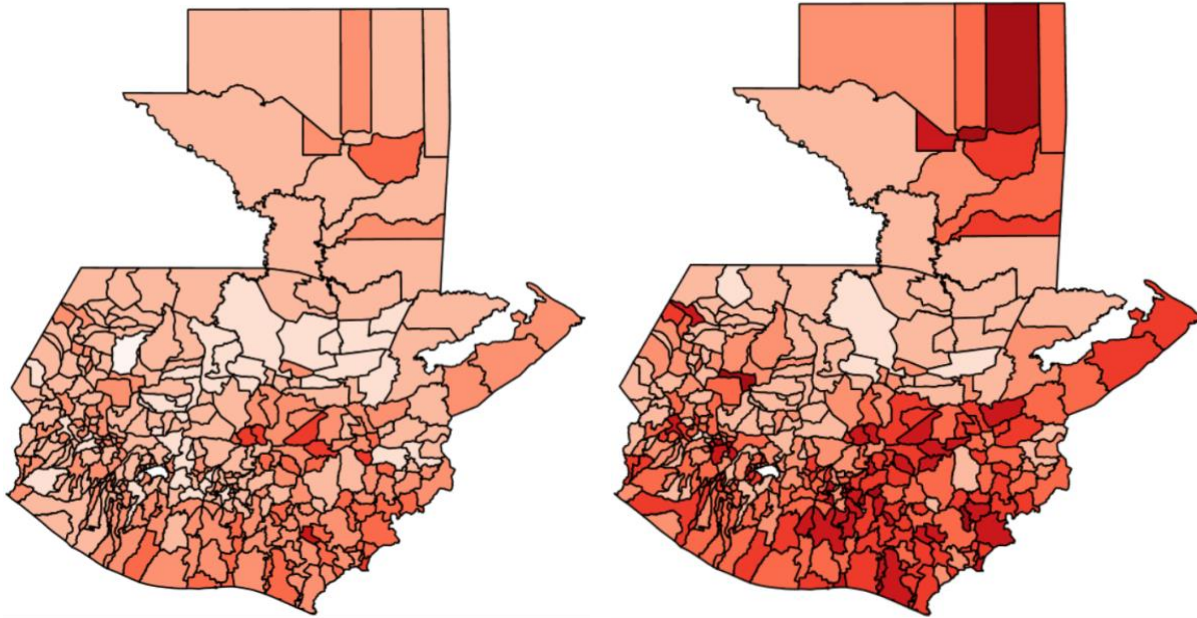


Source: Own calculations based on DHS data

Figure 6.3: Gap in the multidimensional poverty headcount by functional difficulty status in Guatemala at the village level

Figure 6.3.a Gap in poverty headcount between adults with no difficulty and adults with some difficulty

Figure 6.3.b Gap in poverty headcount between adults with no difficulty and adults with at least a lot of difficulty



Source: Own calculations based on Guatemala population census (2018)

7. CONCLUSIONS

Main findings from the dataset review

This Report examines the questionnaires of 1,288 datasets and 2,616 dataset-waves from 188 countries to identify those with functional difficulty questions. Such questions follow the UN guidelines for disability measurement in censuses and those with the WG-SS are internationally comparable and tested.

Based on this review, 22% of the datasets have functional difficulty questions, including only 11% of datasets with the WG-SS. We identified 125 countries that have at least one dataset with functional difficulty questions, including 70 countries with the WG-SS. Many of these datasets are designed to be representative of their populations at both the national and regional level.

Results show considerable heterogeneity in the collection of functional difficulty questions over time and across regions. Global trends suggest an increase in the usage of the WG-SS in national censuses and surveys during the mid-2010s. However, the High Frequently Phone Surveys that were widely adopted during the COVID-19 pandemic did not include the WG-SS, which has driven down the share of datasets with the WG-SS during the 2020-2022 period.

Main findings from the data analysis for 15 countries

This Report analyzes data from 15 countries and produces disability statistics at national and subnational levels. The share of adults with functional difficulties is significant (above 5%) in all regions within the 15 countries under study. This suggests that

persons with disabilities are geographically spread out within countries.

This Report provide a proof of concept that it is possible to produce indicators disaggregated by functional difficulty status at the regional level to document within country inequalities based on functional difficulty status using DHS for indicators using questions in the household questionnaire. For indicators based on questions administered to subsamples (employment, family planning, domestic violence), sample sizes were small at the regional level and disaggregation was not done. With census data in three countries, disaggregation was feasible for all indicators at the regional and district levels disaggregated by functional status and for subgroups based on gender, residence and age. For Guatemala, a map was also produced at the village level.

In the 15 countries under study, the multidimensional poverty headcount among persons with functional difficulties is consistently high (above 50%) at national and regional levels. Among persons with disabilities, women, older adults and people in rural areas have on average higher multidimensional poverty headcounts than men, younger adults and people in urban areas respectively.

We find a gradient in the association between multidimensional poverty and functional difficulties at national and regional levels in all countries. In other words, persons with some difficulty have higher poverty headcounts than persons with no difficulty, but lower ones than persons with at least a lot of difficulty.

For some indicators, results suggest that disability gaps are consistently experienced across and within countries. This is the case for educational attainment and multidimensional poverty.

For other indicators (e.g. water, sanitation), results on disability gaps do vary across and within countries. Within countries, national estimates can hide heterogeneity at the regional level.

Recommendations for data collection

High Frequency Phone Surveys, critical to document the situation of households during the COVID-19 pandemic, only rarely included functional difficulty questions and contributed to persons with disabilities being largely invisible. As countries come out of the pandemic while experiencing economic crises and climate emergencies, it is critical for questions on functional difficulties such as the WG-SS to be included in national surveys and population censuses to be able to monitor and understand the situation of persons with disabilities at national and local levels. Population censuses offer unique opportunities when it comes to documenting and understanding the geospatial distribution of the inequalities persons with disabilities experience within countries. It should become standard practice for questions on functional difficulties such as the WG-SS to be included in population censuses. For some countries, there may still be time to include the WG-SS in their 2020 round census.

In some countries, more resources may be needed towards strengthening the national capacity to collect disability data through censuses.

Recommendations for data and policy analysis

We identified 125 countries that have at least one dataset with functional difficulty questions, including 70 countries with the WG-SS. Many of these datasets are designed to be representative of their populations at both the national and regional levels. Disaggregating indicators by functional difficulty status can be done at both the national and regional levels for many countries. Disaggregation at the regional level is important as national estimates may hide within country variation.

In particular, DHS and population census datasets should be used to regularly produce disability disaggregated indicators at national and regional levels perhaps in supplemental survey/census reports. DHS and census reports so far tend to focus on prevalence rates¹². Other data programs such as the Living Standard Measurement Study (LSMS) could also be used to produce such reports.

National governments and international organizations need to allocate more resources towards disability data analysis for national statistics offices and other relevant stakeholders to do the analysis of a growing body of data that make it possible to estimate disability disaggregated

¹² To our knowledge, DHS reports have focused on prevalence rates while for population censuses, some countries have produced supplementary reports on

disability inequalities but such reports do not produce subnational statistics (e.g. Tonga Statistics Department 2019).

indicators at both national and subnational levels (CBM Global 2022). There is a need for initiatives to support the production of quality disability disaggregated data. The Inclusive Data Charter, which aims to mobilize political support to improve the production of quality disaggregated data to support the 2030 Agenda's ambition of leaving no one behind is a step in this direction.

Disaggregation at the regional level makes it possible to rigorously evaluate the effects of regional policies whether these policies are mainstream or targeted at persons with disabilities.

With disability disaggregation being made possible at the subnational level for countries in the global south, there are research opportunities for a geographic approach to disability research. Such research can help find out the drivers of the heterogeneity of estimates within countries for some indicators for persons with disabilities and of disability gaps. The barriers persons with disabilities face and the resources (e.g. access to assistive technology and information) they have vary across geographies and may contribute to diverse inequality and human rights outcomes within countries.

More research can also help understand the variation of the share of persons with functional difficulties within countries to find out the extent to which demographic factors (e.g. age), resources and environmental factors contribute.

Recommendations for policy

Persons with disabilities are geographically spread out within countries. Disability rights as per the CRPD need to be upheld at the local level. Local policy making in general, and in various sectors from education to disaster risk management, needs to be inclusive of persons with disabilities in all regions, districts and villages.

Across and within countries, multidimensional poverty headcounts are significantly higher for persons with functional difficulties compared to those of persons with no difficulty. This result highlights the importance for development projects, no matter where they are within a country, to be inclusive of persons with disabilities. At both national and subnational levels, persons with disabilities and their representative organizations should be included in policymaking.

8. REFERENCES

Alkire, S., and Foster, J. (2011). Counting and Multidimensional Poverty Measurement. *Journal of Public Economics*, Vol. 95, no. 7-8, 476–487.

Barsky, L. (2018). How American Cities and States Comply with International Disability Law. *Global Affairs Review*, 26-27. University of Pennsylvania.

CBM Global (2022). Disability Data Advocacy Toolkit. Accessed on May 10th 2023 at: <https://cbm-global.org/resource/disability-data-advocacy-toolkit>

CRPD Committee (2023). 28th Session of the Committee on the Rights of Persons with Disabilities. IDA's Compilation of CRPD (Committee on the Rights of Persons with Disabilities) Committee's Concluding Observations.

Hoogeveen, J. (2005). Measuring Welfare for Small but Vulnerable Groups: Poverty and Disability in Uganda. *Journal of African Economies*, Vol. 14(4), 603-631.

ILO (2022). COVID-19 and the Sustainable Development Goals: Reversing Progress towards Decent Work for All. Geneva: International Labour Organisation.

IWGHS (2018). Report to the 49th Session of the UN Statistical Commission (doc CN.3/2018/7). Inter-secretariat Working Group on Household Surveys.

Loeb, M., Mont, D., Cappa, C., De Palma, E., Madans, J., and Crialesi, R. (2018). The Development and Testing of a Module on Child Functioning for Identifying Children with Disabilities on Surveys. I: Background. *Disability and health journal*, Vol. 11(4), 495-501.

Mitra, S. and Yap, J. (2021). The Disability Data Report. Disability Data Initiative. Fordham Research Consortium on Disability: New York. Accessed March 28, 2022 at: <https://disabilitydata.ace.fordham.edu/2021-report/>

Mitra, S. and Yap, J. (2022). The Disability Data Report. Disability Data Initiative. Fordham Research Consortium on Disability: New York. Accessed March 28, 2022 at: <https://disabilitydata.ace.fordham.edu/2022-report/>

Mont, D. (2023). COVID-19, access and assistive technology: The need for preparedness, *Global Social Policy*, Vol. 23(1), pp. 167-170.

Mont, D., Nguyen, C. (2018). Spatial Variation in the Poverty Gap Between People With and Without Disabilities: Evidence from Vietnam. *Social Indicators Research*, Vol.137, 745–763.

OHCHR (2021) SDG-CRPD Resource package. Office of the High Commissioner for Human Rights. Accessed on March 3rd 2023 at: <https://www.ohchr.org/EN/Issues/Disability/Pages/SDG-CRPD-Resource.aspx>

OHCHR (2023). Status of Ratification Interactive Dashboard. Office of the High Commissioner for Human Rights. Accessed Apr. 5th 2023: <https://indicators.ohchr.org/>.

Parcha, V., Malla, G., Suri, S.S., Kalra, R., Heindl, B., Berra, L., Fouad, M.N., Arora, G., Arora, P.. (2020). Geographic Variation in Racial Disparities in Health and Coronavirus Disease-2019 (COVID-19) Mortality. *Mayo Clinic Proceedings: Innovation, Quality & Outcomes*, Vol. 4(6):703-716.

Sevak, P., O'Neill, J., Houtenville, A., and Brucker, D. (2018). State and Local Determinants of Employment Outcomes among Individuals with Disabilities. *Journal of Disability Policy Studies*, Vol. 29(2), 119–128. <https://doi.org/10.1177/1044207318782676>

Stein, P. J. S. and Stein, M.A. (2022). Climate Change and the Right to Health of People with Disabilities. *Global Health Lancet*, Vol. 10(1), E24-E25.

Stiglitz, J., Sen, A., and Fitoussi, J-P. (2009). Report by the Commission on the Measurement of Economic Performance and Social Progress. Accessed on April 1st 2023 at: http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf

Tonga Statistics Department (2019). Disability in Tonga: Analysis of the Situation of People with Disabilities based on the 2016 Population and Housing Census. SDT 47-44.

United Nations (2017). Principles and Recommendations for Population and Housing Censuses. United Nations Department of Social and Economic Affairs. ST/ESA/STAT/SER.M/67/Rev.3. Accessed on March 1st 2023: https://unstats.un.org/unsd/demographic-social/Standards-and-Methods/files/Principles_and_Recommendations/Population-and-Housing-Censuses/Series_M67rev3-E.pdf

United Nations (2019). *Disability and Development Report 2019*. United Nations.

UNDP (2022). Human Development Report 2022. United Nations Development Programme. Accessed on April 5th 2023: <https://hdr.undp.org/content/human-development-report-2021-22>.

UNICEF (2021). Seen, Counted, Included: Using Data to Shed Light on the Well-Being of Children with Disabilities. UNICEF Data, January 2022. Accessed on April 1st 2023 at: <https://data.unicef.org/resources/children-with-disabilities-report-2021/>.

UNPRPD (2022). Situational Analysis of the Rights of Persons with Disabilities: Lessons and Conclusions from Twenty-Six Countries. United Nations Partnership on the Rights of Persons with Disabilities. Accessed April 2nd, 2023 at:

<https://www.unprpd.org/sites/default/files/library/2023-01/Global%20Situational%20Analysis%20Report.pdf>

U.S. Social Security Administration (2019). Social Security Programs Throughout the World. United States Social Security Administration. Accessed April 5th 2023:
<https://www.ssa.gov/policy/docs/progdsc/ssptw/>.

U.S. Social Security Administration (2018). Social Security Programs Throughout the World. United States Social Security Administration. Accessed April 5th 2023:
<https://www.ssa.gov/policy/docs/progdsc/ssptw/>.

Weber, J., Grech, S., Rule, S., Morris, F., Muego, P.E., Miller, N., Vergunst, R. and Monne, R. (2022). The Lost Link: Localization of the UN Convention on the Rights of Persons with Disabilities. Germany: CBM. Accessed on May 10th 2023 at:
https://www.cbm.org/fileadmin/resourcespace/Localization_of_the_UN_CRPD_AT.pdf

WHO-World Bank (2011). *World Report on Disability*. Geneva: World Health Organisation.

World Bank (2023). World Bank Country and Lending Groups. Accessed Apr. 5th 2023:
<https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>.

World Policy Analysis Center (2023). Disability. Accessed Apr. 5th 2023:
<https://www.worldpolicycenter.org/topics/disability/policies>.

Appendix 1: Tables supporting graphs

- (i) Table supporting Figure 3.1: Countries with WG-SS or Other functional difficulty questions and without functional difficulty questions in national censuses and surveys 2009-2022

Country	Category
Afghanistan	1
Albania	2
Algeria	1
Andorra	4
Angola	3
Antigua and Barbuda	2
Argentina	2
Armenia	3
Australia	2
Austria	4
Azerbaijan	3
Bahamas	3
Bahrain	3
Bangladesh	1
Barbados	3
Belarus	1
Belgium	2
Belize	2
Benin	1
Bhutan	1
Bolivia	2
Bosnia and Herzegovina	2
Botswana	1
Brazil	2
Brunei Darussalem	3
Bulgaria	1
Burkina Faso	3
Burundi	3
Cabo Verde	4
Cambodia	1

Cameroon	3
Canada	2
Central African Rep.	1
Chad	1
Chile	1
China	2
Cook Islands	1
Colombia	2
Comoros	4
Congo, Dem. Rep.	1
Congo, Rep.	4
Costa Rica	1
Côte d'Ivoire	2
Croatia	3
Cuba	1
Cyprus	2
Czech Rep.	2
Denmark	3
Djibouti	2
Dominica	3
Dominican Rep.	2
Ecuador	1
Egypt, Arab Rep.	1
El Salvador	3
Equatorial Guinea	3
Eritrea	4
Estonia	2
Eswatini	2
Ethiopia	1
Fiji	1
Finland	2
France	2
Gabon	3
Gambia, The	1
Georgia	1
Germany	3
Ghana	1
Greece	1
Grenada	3

Guatemala	1
Guinea	2
Guinea-Bissau	1
Guyana	1
Haiti	1
Honduras	1
Hungary	3
Iceland	4
India	2
Indonesia	2
Iran	3
Iraq	1
Ireland	2
Israel	2
Italy	2
Jamaica	1
Japan	3
Jordan	1
Kazakhstan	3
Kenya	1
Kiribati	1
Korea, Dem. Rep.	4
Korea, Rep.	3
Kosovo	1
Kuwait	3
Kyrgyz Rep.	1
Laos	2
Latvia	2
Lebanon	1
Lesotho	1
Liberia	1
Libya	3
Liechtenstein	4
Lithuania	3
Luxembourg	2
Madagascar	1
Malawi	1
Malaysia	3
Maldives	1

Mali	1
Malta	1
Marshall Islands	1
Mauritania	1
Mauritius	1
Mexico	1
Micronesia, Fed. Sts.	2
Moldova	1
Mongolia	1
Monaco	4
Montenegro	1
Morocco	2
Mozambique	3
Myanmar	1
Namibia	1
Nauru	1
Nepal	1
Netherlands	3
New Zealand	1
Nicaragua	3
Niger	1
Nigeria	1
Niue	3
North Macedonia	1
Norway	3
Oman	3
Pakistan	1
Palau	1
Palestine	1
Panama	2
Papua New Guinea	2
Paraguay	3
Peru	2
Philippines	1
Poland	3
Portugal	4
Qatar	1
Romania	3
Russian Federation	3

Rwanda	1
Samoa	1
San Marino	4
São Tomé and Príncipe	1
Saudi Arabia	1
Senegal	1
Serbia	1
Seychelles	1
Sierra Leone	1
Singapore	2
Slovak Rep.	3
Slovenia	2
Solomon Islands	2
Somalia	1
South Africa	1
South Sudan	3
Spain	2
Sri Lanka	1
St. Kitts and Nevis	3
St. Lucia	3
St. Vincent and the Grenadines	3
Sudan	3
Suriname	1
Sweden	3
Switzerland	3
Syria	3
Taiwan	4
Tajikistan	1
Tanzania	1
Thailand	2
Timor-Leste	1
Togo	1
Tonga	1
Trinidad and Tobago	3
Tunisia	1
Turkey	2
Turkmenistan	1
Tuvalu	1
Uganda	1

Ukraine	3
United Arab Emirates	3
United Kingdom	2
United States	1
Uruguay	2
Uzbekistan	3
Vanuatu	1
Vatican City	4
Venezuela	3
Vietnam	2
Yemen	1
Zambia	1
Zimbabwe	1

Source: Own calculations based on dataset questionnaire review, as described in the text.

Notes: 1 indicates a country has the WGSS; 2 indicates a country has Other functional difficulty questions; 3 indicates a country has no functional difficulty questions; 4 indicates no questionnaires/surveys were reviewed for a country.

(ii) Table supporting Figure 3.2: Share of datasets with WG-SS and Other functional difficulty questions over time

Type of questions found	2010 2014	2015 2019	2020 2022
WGSS	19	117	32
Other functional difficulty questions	75	60	29
No functional difficulty questions	633	397	173

Source: Own calculations based on dataset questionnaire review, as described in the text.

Notes: The number of datasets reviewed for each period is as follows: 727 for 2010-2014, 574 for 2015-2019 and 234 for 2020-2022.

(iii) Table supporting Figure 3.3: Share of datasets with functional difficulty questions over time, globally and by region (%)

World region	2010 2014	2015 2019	2020 2022
Europe & Central Asia	12	18	5
East Asia & the Pacific	19	48	30
Latin America & Caribbean	15	22	4
North America	36	52	63
Middle East & North Africa	12	37	42
Sub-Saharan Africa	10	31	43
South Asia	9	28	7
All regions	13	31	26

Source: Own calculations based on dataset questionnaire review, as described in the text.

Notes: The number of datasets reviewed for each region is as follows: 213 in Europe & Central Asia, 150 in East Asia & the Pacific, 198 in Latin America & the Caribbean, 72 in North America, 107 in Middle East & North Africa, 450 in Sub-Saharan Africa and 98 in South Asia.

(iv) Table supporting Figure 3.4: Share of datasets with functional difficulty questions over time, globally and by region excluding all HFPS (%)

World region	2010	2014	2015	2019	2020	2022
Europe & Central Asia	12		18		7	
East Asia & the Pacific	19		48		42	
Latin America & Caribbean	15		22		7	
North America	36		52		67	
Middle East & North Africa	12		37		67	
Sub-Saharan Africa	10		31		72	
South Asia	9		28		8	
All regions	13		31		35	

Source: Own calculations based on dataset questionnaire review, as described in the text.

Notes: The numbers of datasets reviewed for each region without High Frequency Phone Surveys are as follows: 200 in Europe & Central Asia, 142 in East Asia & the Pacific, 175 in Latin America & the Caribbean, 69 in North America, 100 in Middle East & North Africa, 415 in Sub-Saharan Africa and 96 in South Asia.

(v) Table supporting Figure 5.1: Share of adults with functional difficulties (%)

Country	Any difficulty	Some difficulty	At least a lot of difficulty
Nigeria	11	10	2
Cambodia	12	9	3
Kenya	13	10	3
Tonga	13	8	5
Guatemala	13	10	3
Senegal	14	10	5
Mali	19	15	4
Timor-Leste	21	19	2
South Africa	22	16	7
Pakistan	24	16	8
Maldives	25	14	11
Mauritania	25	20	5
Haiti	25	20	5
Rwanda	25	18	8
Uganda	33	24	8

Source: Own calculations based on DHS data except for Guatemala, Kenya and Tonga where population census data was used for each country.

(vi) Table supporting Figure 5.2: the share of adults with any, some and at least a lot of difficulty at the regional level in South Africa

Region	Any difficulty	Some difficulty	At least a lot of difficulty
Eastern Cape	31	20	11
Free State	25	15	10
Gauteng	20	15	5
Kwazulu-Natal	25	17	8
Limpopo	21	14	7
Mpumalanga	18	12	6
North West	21	16	5
Northern Cape	30	23	7
Western Cape	18	14	4
National	22	16	7

Source: Own calculations based on DHS data

(vii) Table supporting Figure 5.3: the share of adults with any, some and at least a lot of difficulty at the regional level in Kenya

Region	Any difficulty	Some difficulty	At least a lot of difficulty
Baringo	10	8	2
Bomet	8	7	1
Bungoma	15	13	3
Busia	17	14	3
Elgeyo-Marakwet	9	7	2
Embu	18	13	5
Garissa	4	3	1
Homa Bay	23	17	6
Isiolo	7	5	2
Kajiado	7	6	1
Kakamega	18	15	4
Kericho	8	7	1
Kiambu	11	8	2
Kilifi	11	9	2
Kirinyaga	14	11	4
Kisii	18	14	4

Kisumu	20	15	5
Kitui	14	11	4
Kwale	12	9	2
Laikipia	11	8	2
Lamu	12	10	2
Machakos	14	11	3
Makueni	18	13	5
Mandera	6	5	1
Marsabit	5	4	1
Meru	17	13	5
Migori	17	13	4
Mombasa	10	8	2
Murang'a	17	13	5
Nairobi	8	7	1
Nakuru	11	8	2
Nandi	11	9	2
Narok	7	6	1
Nyamira	19	15	4
Nyandarua	13	10	4
Nyeri	15	11	4
Samburu	8	6	2
Siaya	24	19	5
Taita Taveta	16	13	3
Tana River	10	8	2
Tharaka-Nithi	19	14	5
Trans Nzoia	13	11	3
Turkana	7	5	1
Uasin Gishu	10	8	2
Vihiga	23	18	5
Wajir	4	3	1
West Pokot	6	5	1

Source: Own calculations based on Kenya population census (2018)

(viii) Table supporting Figure 6.2: the multidimensional poverty headcount for adults with no, some and at least a lot of difficulty at the regional level in Haiti

Region	No difficulty	Some difficulty	At least a lot of difficulty
Aire Metropolitaine	27	44	59
Artibonite	72	85	92

Centre	77	89	89
Grand'Anse	87	94	92
Nippes	73	90	92
Nord	63	81	93
Nord-Est	67	84	94
Nord-Ouest	77	87	95
Rest-Ouest	68	80	91
Sud	73	86	93
Sud-Est	73	88	96
National	61	76	86

Source: Own calculations based on DHS data

- (ix) Table supporting Figure 6.3: the gap in the multidimensional poverty headcount between adults with no difficulty and adults with some difficulty, and between adults with no difficulty and adults with at least a lot of difficulty in Guatemala at the village level

Region	no vs some difficulty	no vs at least a lot of difficulty
Acatenango	2	-14
Agua Blanca	-12	-16
Aguacatán	-1	-7
Almolonga	-4	-6
Alotenango	-8	-15
Amatitlán	-4	-20
Antigua Guatemala	2	-9
Asunción Mita	-11	-21
Atescatempa	-11	-18
Ayutla	-8	-18
Barberena	-8	-17
Barillas	-2	-4
Cabanas	-6	-14
Cabrican	-6	-9
Cahabon	1	-1

Cajola	-3	-5
Camotán	-2	-5
Canillá	-1	-4
Cantel	-10	-23
Casillas	-10	-14
Catarina	-4	-9
Chahal	0	-1
Chajul	-1	-2
Champerico	-3	-7
Chiantla	6	-7
Chicacao	0	-5
Chicamán	3	-2
Chiché	0	-2
Chichicastenango	2	-3
Chimaltenango	0	-13
Chinautla	-9	-20
Chinique	4	-7
Chiquimula	1	-10
Chiquimulilla	-12	-21
Chisec	0	-1
Chuarrancho	-4	-7
Ciudad Vieja	-2	-24
Coatepeque	1	-11
Cobán	3	0
Colomba	-6	-14
Colotenango	-2	-2
Comalapa	-6	-15
Comapa	-6	-9
Comitancillo	-4	-5
Concepción	-1	-3
Concepción Chiquirichapa	-2	-12
Concepción Huista	-3	-4
Concepción Las Minas	-11	-17
Concepción Tutuapa	0	-4
Conguaco	-5	-7
Cubulco	-4	-9
Cuilapa	-7	-15
Cuilco	-2	-5
Cunén	1	-4

Cuyotenango	-3	-11
Dolores	-4	-11
El Adelanto	-11	-17
El Asintal	-2	-4
El Chol	-16	-24
El Estor	-4	-7
El J caro	-7	-21
El Palmar	-7	-14
El Progreso	-11	-25
El Quetzal	-5	-4
El Rodeo	-1	-4
El Tejar	-4	-16
El Tumbador	-2	-6
Escuintla	-7	-20
Esquipulas	-7	-14
Esquipulas Palo Gordo	-8	-12
Estanzuela	-3	-18
Flores	0	-25
Flores Costa Cuca	-3	-9
Fraijanes	-2	-23
Fray Bartolomé de las Casas	-1	-3
Génova	0	-2
Granados	-16	-20
Gualán	-2	-14
Guanagazapa	-12	-12
Guastatoya	-16	-22
Guatemala	-2	-16
Guazacapán	-10	-21
Huehuetenango	-6	-25
Huitan	-3	-6
Huité	-10	-7
Ipala	-10	-16
Ixcán	-2	-3
Ixchiguan	-1	-4
Iztapa	-14	-23
Jacaltenango	-9	-22
Jalapa	-1	-11
Jalpatagua	-12	-18
Jerez	-17	-24

Jocotan	1	-2
Jocotenango	2	-5
Joyabaj	-2	-4
Jutiapa	-7	-14
La Democracia	-9	-14
La Democracia	-4	-9
La Esperanza	-6	-19
La Gomera	-7	-15
La Libertad	-1	-5
La Libertad	-2	-4
La Reforma	-3	-9
La Unión	-1	-1
Lago de Atitlán	N/A	N/A
Lanquin	2	-4
Livingston	-4	-5
Los Amates	-7	-12
Magdalena Milpas Altas	-9	-26
Malacatán	0	-3
Malacatancito	-7	-13
Masagua	-9	-14
Mataquescuintla	-8	-14
Mazatenango	0	-14
Melchor de Mencos	-2	-13
Mixco	-4	-17
Momostenango	-1	-4
Monjas	-11	-20
Morales	-6	-17
Morazán	-16	-23
Moyuta	-7	-15
Nahuala	-3	-5
Nebaj	-1	-6
Nentón	-2	-4
Nueva Concepción	-11	-15
Nueva Santa Rosa	-9	-16
Nuevo Progreso	-2	-8
Nuevo San Carlos	-3	-10
Ocós	-5	-9
Olintepeque	-6	-26
Olopa	-5	-5

Oratorio	-9	-17
Pachalum	-12	-19
Pajapita	-10	-17
Palencia	-9	-16
Palestina de los Altos	4	1
Palin	-7	-22
Panajachel	-6	-22
Panzós	1	-2
Parramos	-1	-11
Pasaco	-8	-20
Pastores	-10	-23
Patulul	-7	-10
Patzicía	-4	-12
Patzité	0	-1
Patzún	1	-7
Petapa	-4	-23
Pochuta	-4	-12
Poptún	-8	-17
Pueblo Nuevo	-8	-16
Pueblo Nuevo Viñas	-10	-15
Puerto Barrios	-8	-18
Purulha	-1	-3
Quesada	-13	-21
Quetzaltenango	-5	-22
Quetzaltepeque	-8	-15
Rabinal	-7	-14
Raxruja	-2	-3
Retalhuleu	-4	-18
Río Blanco	-6	-19
Rio Bravo	-8	-14
Rio Hondo	-10	-22
Sacapulas	0	-3
Salama	-9	-19
Salcajá	-10	-28
Samayac	-5	-14
San Agustín Acasaguastlán	-8	-14
San Andrés	-4	-7
San Andrés Itzapa	5	-10
San Andrés Sajcabajá	2	-2

San Andrés Semetabaj	-8	-8
San Andrés Villa Seca	-3	-9
San Andrés Xecul	-3	-8
San Antonio Aguas Calientes	-8	-24
San Antonio Huista	-4	-14
San Antonio Ilotenango	-1	-4
San Antonio La Paz	-10	-20
San Antonio Palopó	-5	-7
San Antonio Sacatepéquez	-6	-12
San Antonio Suchitepéquez	-7	-10
San Bartolo Aguas Calientes	-1	-9
San Bartolomé Jocotenango	0	-1
San Bartolomé Milpas Altas	-8	-22
San Benito	-7	-23
San Bernardino	-4	-11
San Carlos Alzatate	-3	-4
San Carlos Sija	-6	-11
San Cristóbal Acasaguastlán	-2	-15
San Cristóbal Cucho	-2	-6
San Cristóbal Totonicapán	-6	-10
San Cristobal Verapaz	0	5
San Diego	-16	-18
San Felipe Retalhuleu	-3	-19
San Francisco	-3	-8
San Francisco El Alto	-5	-7
San Francisco la Unión	-5	-9
San Francisco Zapotitlán	-9	-16
San Gabriel	-18	-29
San Gaspar Ixchil	-1	-2
San Ildefonso Ixtahuacán	-2	-6
San Jacinto	-4	-10
San Jerónimo	-9	-17
San José	-10	-19
San José	-7	-12
San José Acatempa	-23	-24
San José Chacayá	-11	-21
San José del Golfo	-9	-17
San José El Idolo	-8	-14
San Jose La Arada	-11	-16

San José Ojetenam	-2	-3
San José Pinula	-1	-15
San José Poaquil	-4	-9
San Juan Atitan	-2	-1
San Juan Bautista	-12	-14
San Juan Chamelco	-8	-7
San Juan Cotzal	-5	-5
San Juan Ixcoy	-2	-4
San Juan la Ermita	-3	-6
San Juan La Laguna	0	-15
San Juan Ostuncalco	3	-7
San Juan Sacatepéquez	-1	-8
San Juan Tecuaco	-13	-15
San Lorenzo	-6	-13
San Lorenzo	-5	-5
San Lucas Sacatepéquez	-9	-20
San Lucas Tolimán	-2	-12
San Luis	0	-4
San Luis Jilotepeque	-6	-10
San Manuel Chaparrón	-8	-19
San Marcos	3	-20
San Marcos La Laguna	0	-7
San Martín Jilotepeque	-5	-8
San Martín Sacatepéquez	-3	-8
San Martín Zapotitlán	-9	-21
San Mateo	-12	-32
San Mateo Ixtatán	0	0
San Miguel Acatán	-1	-2
San Miguel Chicaj	-5	-9
San Miguel Dueñas	0	-17
San Miguel Ixtahuacán	-2	-6
San Miguel Panán	-2	-6
San Miguel Sigüilá	-5	-5
San Pablo	-6	-10
San Pablo Jocopila	-8	-15
San Pablo La Laguna	-9	-14
San Pedro Ayampuc	-11	-20
San Pedro Carchá	1	-2
San Pedro Jocopilas	1	0

San Pedro La Laguna	-7	-16
San Pedro Necta	-5	-6
San Pedro Pinula	-2	-3
San Pedro Sacatepéquez	-9	-14
San Pedro Sacatepéquez	-1	-19
San Rafael La Independencia	-3	-3
San Rafael Las Flores	-8	-15
San Rafael Petzal	-6	-11
San Rafael Pie de la Cuesta	-4	-17
San Raymundo	-1	-15
San Sebastián	-6	-14
San Sebastián Coatlán	-3	-3
San Sebastián Huehuetenango	-1	-5
San Vicente Pacaya	-12	-24
Sanarate	-8	-18
Sansare	-12	-22
Santa Ana	-11	-17
Santa Ana Huista	-10	-18
Santa Apolonia	2	-1
Santa Bárbara	-5	-11
Santa Bárbara	-1	-1
Santa Catarina Barahona	-12	-29
Santa Catarina Ixtahuacan	0	-5
Santa Catarina La Tinta	-1	-6
Santa Catarina Mita	-11	-21
Santa Catarina Palopó	-9	-4
Santa Catarina Pinula	-7	-25
Santa Clara La Laguna	-6	-8
Santa Cruz Balanyá	-6	-14
Santa Cruz del Quiché	0	-8
Santa Cruz La Laguna	-3	-5
Santa Cruz Muluá	-7	-17
Santa Cruz Naranjo	-12	-23
Santa Cruz Verapaz	0	-7
Santa Eulalia	0	-2
Santa Lucía Cotzumalguapa	-5	-16
Santa Lucía La Reforma	0	0
Santa Lucía Milpas Altas	-4	-17
Santa Lucía Utatlán	-3	-13

Santa María Chiquimula	-1	-1
Santa María Ixhuatán	-10	-14
Santa María Visitación	-9	-22
Santa Rosa de Lima	-10	-19
Santa Santa María de Jesús	-3	-10
Santiago Atitlán	-2	-5
Santiago Chimaltenango	-7	-9
Santiago Sacatepéquez	-2	-11
Santo Domingo Suchitepéquez	-7	-10
Santo Domingo Xenacoj	-7	-7
Santo Tomás La Unión	-8	-15
Sayaxché	-3	-4
Senahú	1	1
Sibilia	-7	-15
Sibinal	-4	-4
Sipacapa	-2	-3
Siquinala	-8	-20
Sololá	-4	-7
Soloma	-3	-3
Sumpango	-2	-9
Tacaná	-3	-4
Tactic	0	-8
Tajumulco	-3	-4
Tamahú	0	-2
Taxisco	-10	-19
Tecpán Guatemala	3	-5
Tectitan	1	-4
Teculután	-9	-19
Tejutla	-9	-11
Tiquisate	-5	-14
Todos Santos Cuchumatan	-2	-3
Totonicapán	-4	-13
Tucurú	3	-4
Unión Cantinil	-4	-5
Uspantan	1	-3
Usumatlan	-9	-19
Villa Canales	-7	-20
Villa Nueva	-4	-20
Yepocapa	-6	-13

Yupiltepeque	-13	-18
Zacapa	-3	-16
Zacualpa	0	-4
Zapotitlán	-8	-13
Zaragoza	-9	-16
Zunil	-8	-8
Zunilito	-12	-16

Source: Own calculations based on Guatemala population census (2018)

Appendix 2: Methodology of the review of datasets

Survey and census questionnaires were retrieved and reviewed by a team of researchers. Questionnaires from 2009 to 2022 were retrieved from the online International Household Survey Network Microdata catalog, the World Bank Microdata Library catalog, the International Labor Organization survey catalog, the repository of census questionnaires maintained by the United Nations Statistics Division, and the websites of individual National Statistical Offices and other national or regional entities collecting national representative surveys.

To identify if a survey asked any question at all on disability, each questionnaire was searched looking for several disability-related words: disability, difficulty in seeing, hearing, walking, concentrating, self-care, communicating, impairment (blind, deaf, dumb, mental, physical), limited in usual activit(y/ies), limited in the amount of work or type of work or activities related to work, Activities of Daily Living (ADLs) (e.g. dressing, bathing) and questions related to limitations in Instrumental ADLs (IADLs) (e.g. housework, cooking). Each researcher filled a log regarding what questions were found on the different types of surveys or censuses above for each dataset-year. Each log was reviewed by a second researcher.

This review of datasets has noteworthy limitations. The list of search terms related to disability is not exhaustive, nor is the list of datasets that was reviewed. For some datasets, we could not find questionnaires, or they were not in a language that the contributors could read (English, French, Hindi, Portuguese, Spanish). National data sets were prioritized, thus missing some subnational data collection efforts. Surveys focusing on children were not covered. For trends, we present results for three periods: 2010-2014, 2015-2019, 2020-2022. Fewer datasets were reviewed in the most recent period (2020-2022): this is a shorter period and because data may still be in the collection phase, questionnaires may not be available yet, also during the Covid-19 pandemic, especially in 2020, most countries around the globe stopped their data collection process or changed modality of data collection, aspect that reduces the number of available surveys between 2020-2022. This limitation may contribute to noise in the analysis of the most recent trends, especially if the datasets that are not yet available tend to use more or different disability questions compared to those that were reviewed.

Importantly, although we highlight in Dataset Results Tables D2 and D3 datasets that are considered to have internationally comparable questions on disability, the WG-SS and Other functional difficulty questions respectively, we have no information on how the data was collected in the field. We have no information on interviewers' training, how they asked disability-related questions and if they provided disability accommodation to include persons with disabilities as respondents. Given potential stigma associated with disability, the narrative that interviewers use to introduce or explain questions on functional difficulties is important and might vary across countries even when using identical questions. Further research could examine survey's guidelines to interviewers on the WG-SS and the effect of changes on those guidelines in data collection and cross-country comparisons.

Appendix 3: Countries in the microdata analysis

Country	Life expectancy at birth (years)	GNI per capita	HDI rank	CRPD ratification year	Constitutional guarantees	Explicit prohibition of disability discrimination in the workplace	Income support policies	World income classification
Cambodia	69.6	4,079	146	2012	No	Yes	NC	Lower-middle
Guatemala	69.2	8,723	135	2009	No	Yes	C	Upper-middle
Haiti	63.2	2,848	163	2009	No	Yes	C	Lower-middle
Kenya	61.4	4,474	152	2008	Yes	Yes	C	Lower-middle
Maldives	79.9	15,448	90	2010	Yes	Yes	NC	Upper-middle
Mali	58.9	2,133	186	2008	No	Yes	C	Low
Mauritania	64.4	5,075	158	2012	No	Yes	C	Lower-middle
Nigeria	52.7	4,790	163	2010	No	Yes	C	Lower-middle
Pakistan	66.1	4,624	161	2011	No	Yes	C	Lower-middle
Rwanda	66.1	2,210	165	2008	Yes	Yes	C	Low
Senegal	67.1	3,344	170	2010	No	Yes	C	Lower-middle
South Africa	62.3	12,948	109	2007	Yes	Yes	NC	Upper-middle
Timor-Leste	67.7	4,461	140	2023	Yes	Yes	NC	Lower-middle
Tonga	71.0	6,822	91	Signed only (2007)	No	No	None	Upper-middle
Uganda	62.7	2,181	166	2008	Yes	Yes	C	Low

Notes: N/A stands for not available. GNI is the Gross National Income per capita in constant 2017 purchasing power parity (PPP) terms. If the CRPD is not ratified by the country, the table indicates if it has been signed or if no action has been taken. The key for constitutional guarantees is as follows: No = no specific provisions for the equality of persons with disabilities;

Yes = the equality of persons with disabilities is guaranteed. The key for explicit prohibition of disability discrimination in the workplace is as follows: No = no explicit prohibition of workplace discrimination based on disability; Yes= disability-specific prohibition of workplace discrimination in at least one category (hiring, promotion and/or demotion, training, pay, termination). The key for income support policies is as follows: C = contributory program(s); NC = non-contributory program(s); left blank if no program anchored in legislation.

Sources: OHCHR (2023), UNDP (2022), U.S. Social Security Administration (2019;2018), World Bank (2023), World Policy Analysis Center (2023)