Methodological guide for the calculations in the dashboards

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Introduction

This document describes the methodological issues regarding the information presented in the report "*Disability Inclusion in Latin America and the Caribbean : A Path To Sustainable Development*"; and the online dashboards.

Most of the Census data presented in the dashboards and the report comes from IPUMS. Refer to their website for further information on the construction of the variables. For the databases that are not present in IPUMS, we use data from the REDATAM website of each National Statistical Office, we standardize the variables to make them as comparable as possible with the other databases. These countries are Argentina, Colombia, Guatemala, Honduras, Peru, and Venezuela.

Population calculations

The construction of the disability variable follows the discussion made on Chapter 2 of the report. The population totals are based mostly in census data from IPUMS [1], census data directly available from the country National Statistical Office and other sources. [2]

To obtain population numbers in recent years, we use the updated population counts from the WDI. The underlying assumption is that the relative shares of the different disability groups remain constant. The online dashboard use population as per census year. [3]

Regional visualizations

The regional visualizations (e.g. population at department or state level), come from the variables in either IPUMS or the census information. For some countries, some subnational entities may have split, and this change makes the visualization of the new regions not possible. This is the case of the *Panama Oeste* province, which was founded in 2014, after the 2010 census; and the *Lima City (Province),* which is put together with the Lima department for census purposes.

Access to services

Calculation for access to services is done at the individual level, using the information of the dwelling or household of the individual. This is done to allow the interaction with disability, which is a variable at the individual level. The dashboard includes information like **access to** several **services**, including electricity, water, sanitation; to several **durable goods and assets**, like computer, refrigerator, washer, TV; and **dwelling**

[1] World Bank and Bocconi Univeristy

[2] Population calculations may not exactly reflect those given by official statistical offices. This is mainly due to two reasons: (1) Databases from IPUMS are a sample, ranging from 5% to 10% of the total census observations, and (2) calculations from NSO websites may not include expansions.

[3] We have provided a whole gamut of individual and household characteristics based on the available census information. In doing so, we have information from censuses that ranges from 2007 to 2018, hence, direct comparison of countries is to be done with caution. For example, the last census of El Salvador, done in 2007, presents lower sanitation figures than the ones given in the most recent households surveys, which emphasizes the effect of public policies focused on improving access to services.

conditions, like slum, bad flooring. These variables are binary, in the sense that they indicate that the household has or not the service or conditions.

The access is calculated as is simply the by disability statis:

$$Access_e(\%) = \frac{\sum_{i=1}^{N_e} I_e}{N_e} * 100$$

Where e stands for disability condition and I takes the value of 1 if the person has access and 0 otherwise. Those observations that have been coded as Not in universe or Unknown, will not enter the calculation.

Standardization of the variables of access and household conditions

IPUMS data: For those census for which we have IPUMS data, the following variables are calculated using the harmonized IPUMS variable:

Service/Condition/Asset	IPUMS variable	What counts as access?
Electricity	electric	Has electricity
Water	watsup	Any type of piped water
Sanitation	sewage	Connected to sewage system or septic tank
Phone, Internet, computer, refrigerator, washing machine, Television Set	Phone, Internet, computer, refrigerator, washer, TV	Has the utility/appliance
Toilet	toilet	Any type of toilet
Kitchen	kitchen	Has any type of kitchen
Autos	autos	Declares having at least one car
Ownership	ownership	Declares ownership of dwelling
Bathroom	bathrooms	One or more bathrooms
Finished Floor	floor	Any kind of finished floor
Fabricated Wall	wall	Any kind of fabricated material
Durable roof	roof	A roof not made from non-durable plant materials, leaves, or materials mixed with clay/mud; cardboard or scrap.

For all other countries:

Service/Condition/Asset	Concept	Country specific variables in NSO website					
		ARG	COL	GTM	HND	PER	Venezuela
Electricity	Access	H12A		ALUMBRA	V08	LUZ	ACCELECTR
Water	Access	H1308		AGUAORIG	V06	AGUAROC	AGUALLEGA
Sanitation	Access	H1611		SANITIPO	H05	HIGIENICO	POCETA
Phone/Cellphone	Access	H2819C H2819D		CELULAR	P24 H08I	CELULAR TELEFIJO	CELULAR TLFFIJO
Internet	Access	-		INTERNET	H08M	INTERNET	INTERNET
Television Set	Ownership	-		TV	H08F	TVCOLOR	TV
Computer	Ownership	H2819B		PC	H08H	PC	COMPUTADOR
Refrigerator	Ownership	H2819A		REFRI	H08A	REFRIG	NEVERA
Washing machine	Ownership	-		LAVADORA	H08B	LAVADORA	LAVADORA
Autos	Ownership	-		CARRO	-	CARRO	NOVEHIC
Toilet	Access	H1510		SANITUSO	H06	-	NUMBANIIO
Kitchen	Access	H19A		CCOCINA	H02	-	COCINA

Ownership	Owns dwelling	PROP		REGTEN	H09	TENENCIA	TENENCIAVI
Finished Floor	No dirt floors	H0705		PISO	-	PISO	MATPISO
Fabricated Wall	Solid fabricated material	-		PARED	-	PARED	MATPARED
Durable roof	Fabricated material	-		TECHO	V05	TECHO	MATTECHO

Derived variables

The following variables are constructed using original variables and those in the tables above.

Condition	**Intermediate variables**	**What counts as condition?**
House made of good material	Finished Floor, Fabricated Wall, Durable roof	All three when the variable exists. When not all three exists, the number of existing variables is used as the benchmark.
Household not overcrowded	Adult equivalent (children 0-15 are multiplied by a 0.5 factor), and number of bedrooms.	Maximum 3 adult equivalents per bedroom.
Low Dependency ratio	**Dependents**: younger than or 15, or, older than or 60.	At least one adult between 16-59 per dependent.
Slum – this variable is only calculated for urban areas -	Finished floor, Water, sewage, electricity access.	Not having any of the four items. (Where the variables all exists)

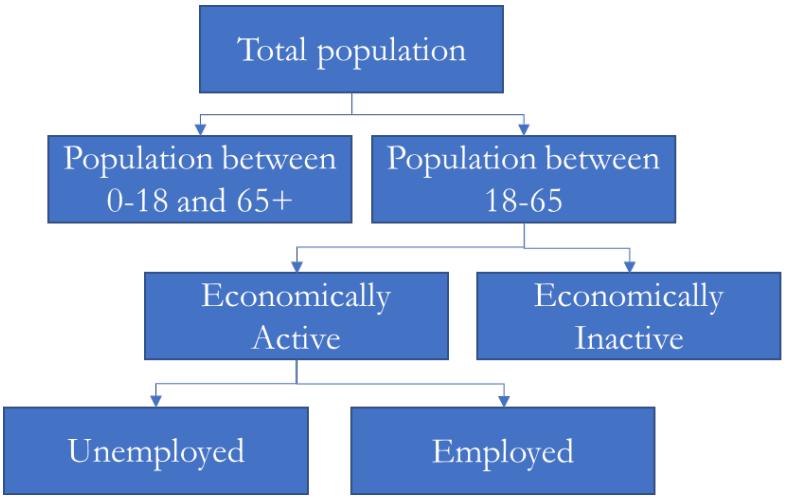
School access, school level completion rates and other education related results

The information presented in these topics are calculated at the individual level. Variables are restricted by age depending on the relevance of the question.

Variable	**IPUMS variable**	**ARG**	**COL**	**GTM**	**HND**	**PER**	**VEN**	**What counts as access?**
Primary up, secondary up and tertiary up	edattain	MNI	-	NIVEL	P11A	NIVEL	-	Equivalent to primary completed, secondary completed or tertiary completed
Attendance	school	P1808		ASISTE	P10	PASISTE	ALFABETO	Attends schools
Literate	lit	P1707		LEE	P09	SABELEER	ESTUDIAACT	Reading and Writing

Employment variables:

For employment status the condition of activity is used. These variables are created for ages 18-65, and users can select one or several of the ranges 18-25, 36-45, or 46-65. Some countries may do their employment calculations using different ages ranges, but for the sake of comparability, the range used throughout the book is 18 to 65, inclusive. The definitions are as follows:



$$Inactivity(\%) = \frac{Inactive}{Population\ between\ 18-65}$$

$$Unemployment(\%) = \frac{Unemployed}{Econ.\ Active}$$

Variable	IPUMS variable	ARG	COL	GTM	HND	PER	VEN	CONCEPTS
Employment status	empstat	CONDACT		PEA POCUPA	PEA		-	Employed, Unemployed, Inactive

Occupation

For the calculation of Sector and Skill we use the total people who answered any of the options. For example, when for the percentages in High-skilled vs Low-skilled employment, the total would be 100%, even though some employed may have not answered the skill question.

Concepts	IPUMS	ARG	COL	GTM	HND	PER	Venezuela
Skill of the occupation							
High Skilled: Includes Legislators, senior officials, and managers Professionals Technicians and associate professionals Skilled agricultural and fishery workers	occisco	-			OCUPA1E		-

Low Skilled: Includes Clerks, Service workers and shop and market sales, Crafts and related trades workers, Plant and machine operators and assemblers; Elementary occupations.							
Note: Other occupations, like military, are not counted towards the percentage.							
Sector of occupation							
Primary sector includes Agriculture and Mining.	indgen	ACTNUM			RAMA1E		-
Secondary sector includes Manufacturing, Electricty, Counstuction							
Third Sector includes Wholesale and retail trade, Hotels, Financial and other services.							

References

Steven Ruggles, Sarah Flood, Ronald Goeken, Josiah Grover, Erin Meyer, Jose Pacas, and Matthew Sobek. IPUMS USA: Version 8.0 Datasets for census of all available Latin American countries.Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D010.V8.0

INDEC for the 2010 Argentina Censo, INE for the 2013 XVII Population and VI dwelling census of Hondura and INE for the XIV Censo Nacional de Población y Vivienda 2011 of Venezuela. DANE for the 2018 Colombian Census and INEI for the 2017 Peru Censs.