

COD-PS Guatemala

Update Year 2023 / Reference Year 2023

Objective of This Explanatory Technical Note

This explanatory technical note provides supplementary notes on the strengths and limitations of each Common Operational Dataset on Population Statistics (COD-PS) against the projections by the WPP 2022 Revision of the UN to enable informed humanitarian decision-making.

Structure of Supplementary Note

This supplementary note is organized into the following sections:

1. Metadata
2. Methodological Documentation
3. Intrinsic Population Growth Rates (ADM-0 & 1)
4. Population counts by age and sex (ADM-0)
5. Relative population size by age and sex (ADM-1)

1. Metadata

Item	Metadata
Country	Guatemala
Source(s)	INE Guatemala
Source(s) Link(s)	https://www.ine.gob.gt/ine/proyecciones/
Population Data Type (Census enumeration, Direct estimate, or Population projection)	Population projection
Baseline Population Year	2018
COD-PS Reference Year	2023
COD-PS Publication Year	2023
ADM-1 Name	Departamento
ADM-1 Number of Units	22
ADM-1 Sex and Age Disaggregation	Sex and age disaggregated by 5-year age groups
ADM-1 Open-ended Age Group	70+
ADM-2 Name	Municipio

Item	Metadata
ADM-2 Number of Units	340
ADM-2 Sex and Age Disaggregation	Sex and age disaggregated by 5-year age groups
ADM-2 Open-ended Age Group	70+
ADM-3 Name	N/A
ADM-3 Number of Units	N/A
ADM-3 Sex and Age Disaggregation	N/A
ADM-3 Open-ended Age Group	N/A
General Notes	This COD-PS was evaluated against the reconciled population estimates for 2018 instead of the original results of the notably undercounted 2018 census to more accurately calculate the intrinsic population growth rates since the last census.
Data Limitations	While the baseline population - 2018 census - was assessed and adjusted prior to projection, it should be noted that the original 2018 census was deemed to have resulted in a massive undercount, and no records of PES could be located.
COD-PS Demographic Data Quality Assessment	The COD-PS was assessed against ADM-0 estimates and projections published by the World Population Prospects (2022 Revision), and found to be generally consistent at the ADM-0 and ADM-1 level.

2. Methodological Documentation

Item	Methodological Documentation
Methodology Used	Cohort component method was used for each department (ADM-1 unit) to produce regional postcensal projections based on the 2018 census results, available administrative data on births, deaths, and migration, and previous census results from 2002, then combined to produce projections at the national (ADM-0) level. Logistic growth method and iterative proportional fitting methods were applied to produce municipal level (ADM-2) projections from the departmental (ADM-1) projections.
Baseline Population	2018 census
Post-enumeration survey (PES)	No records of PES can be found online.
Assessment and Adjustment of the	Given the large discrepancy between what was expected (17.6M) and original enumeration (14.9M), the baseline 2018 census data was subject to

Item	Methodological Documentation
Baseline Population	demographic reconciliation prior to projection. In short, the 2018 census data was reconciled at the department (ADM-1) level against all available vital statistics from 2000-2018, international and internal migration data from national and international sources, as well as the 2002 census and postcensal projections from the 2002 census.
Fertility (births)	While the specific fertility assumptions were not described in the projection report, the report clarifies that historical age-specific fertility trends for each department (ADM-1) were built from the administrative records of live births during 2000-2018 by the age of mothers and of the number of resident females of ages 10-55 estimated from the 2002 and 2018 censuses. It is generally assumed that the overall fertility rates of Guatemala have slowed down, and this trend will continue into the future.
Mortality (deaths)	While the specific mortality assumptions were not described in the projection report, the report clarifies that sex age and specific life tables were constructed for each department (ADM-1) from the 2002 and 2018 censuses and deaths registered under the vital statistics during 2000-2018. It is generally assumed that the life expectancy at birth across Guatemala will continue to prolong into the future.
International migration (net migration)	In the absence of reliable administrative records on international migration, the responses to the questions on international emigration from the 2002 and 2018 censuses were used despite their inadequacy. The sex and age distribution of net international migration at the national level was assumed to be the same across all departments (ADM-1).
Internal migration (migration within country)	In the absence of reliable administrative records on internal migration, the responses to the questions on internal migration from the 2002 and 2018 censuses were used - namely, asking about the habitual place of residence 5 years prior to each census.

3. Intrinsic Population Growth Rates (ADM-0 & 1)

At ADM-0, the implied postcensal (2018-2023) population growth rates of this COD-PS (1.48% per year: female: 1.50%, male 1.46%) are generally consistent with the UN's population projections published in the World Population Prospects (WPP) 2022 Revision (2019: 1.47%, 2021: 1.30%, 2023: 1.40%).

Since the last census, the growth rates of many ADM-1 regions remained between 1-2% per year. The NSO projects the highest population growth rates for the regions of Alta Verapaz and Huehuetenango (1.98% and 2.00%, respectively). In contrast, the NSO projects the lowest population growth rates for the regions of El Progreso and Zacapa experienced the lowest rates of growth (0.68% and 1.02%, respectively).

ADM-1	Last Census, Female	Last Census, Male	CODPS, Female	CODPS, Male	PGR(%), Female	PGR(%), Male	PGR(%), Both
Alta Verapaz	636,339	638,552	702,848	704,177	1.99	1.96	1.98
Baja Verapaz	159,788	156,602	174,066	170,589	1.71	1.71	1.71
Chimaltenango	348,429	358,373	381,113	390,774	1.79	1.73	1.76
Chiquimula	221,533	208,011	237,005	222,289	1.35	1.33	1.34
El Progreso	95,695	94,662	99,546	97,371	0.79	0.56	0.68
Escuintla	376,673	392,887	402,399	421,285	1.32	1.40	1.36
Guatemala	1,772,703	1,656,587	1,884,252	1,755,473	1.22	1.16	1.19
Huehuetenango	667,069	648,629	736,230	717,789	1.97	2.03	2.00
Izabal	214,726	213,609	229,337	228,770	1.32	1.37	1.35
Jalapa	192,483	188,129	209,527	204,391	1.70	1.66	1.68
Jutiapa	267,725	265,726	283,292	280,666	1.13	1.09	1.11
Petén	289,046	306,502	310,802	329,349	1.45	1.44	1.44
Quetzaltenango	454,278	414,793	495,411	440,974	1.73	1.22	1.48
Quiché	522,984	501,224	569,453	549,972	1.70	1.86	1.78
Retalhuleu	180,801	179,371	194,317	192,466	1.44	1.41	1.42
Sacatepéquez	191,017	186,202	207,127	201,349	1.62	1.56	1.59
San Marcos	576,488	561,238	621,547	601,404	1.51	1.38	1.44
Santa Rosa	217,853	212,085	231,520	225,408	1.22	1.22	1.22
Sololá	232,675	220,422	250,608	237,298	1.48	1.48	1.48
Suchitepéquez	298,310	292,518	316,027	310,392	1.15	1.19	1.17
Totonicapán	246,335	225,740	265,407	242,498	1.49	1.43	1.46
Zacapa	133,453	128,685	140,863	135,050	1.08	0.97	1.02
Total	8,296,403	8,050,547	8,942,697	8,659,734	1.50	1.46	1.48

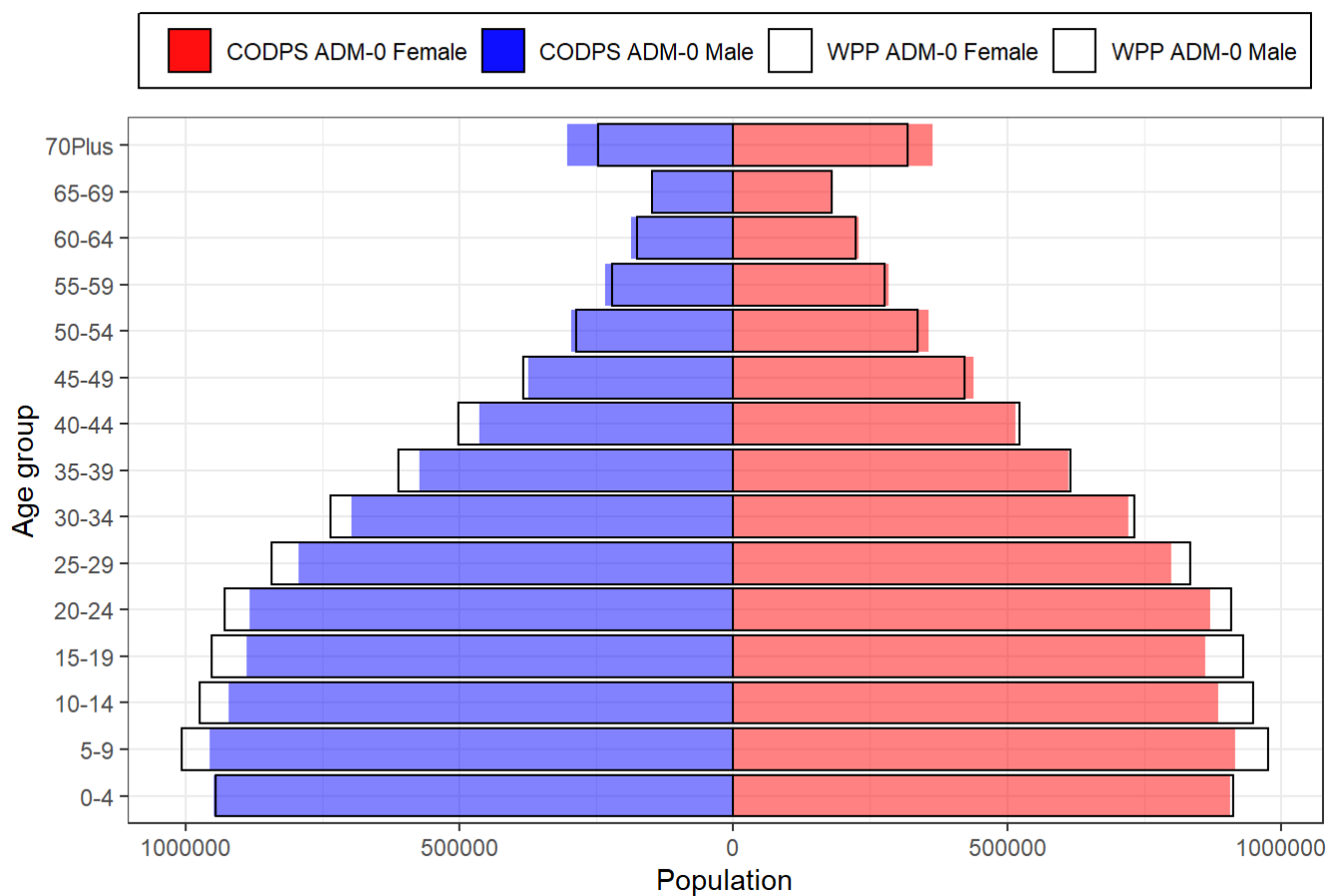
4. Population Counts by age and sex (ADM-0)

Below, we compare the population structure across sex and age groups between the COD-PS and WPP projections at the national level.

The greatest ADM-0 level differences between this COD-PS and WPP 2022 Revision are found among the young, namely ages 5 to 29 for both sexes. Specifically, the NSO projects smaller counts than WPP for 5-9 years (female: -6.32%, male: -5.16%), 10-14 years (female: -6.68%, male: -5.48%), 15-19 years (female: -7.43%, male: -6.63%), 20-24 years (female: -4.40%, male: -4.89%), and 25-29 years (female: -4.06%, male: -5.88%).

	CODPS-WPP, Female	Difference(%)	CODPS-WPP, Male	Difference(%)
0-4	-6,344	-0.69	3,585	0.38
5-9	-61,789	-6.32	-51,889	-5.16
10-14	-63,355	-6.68	-53,330	-5.48
15-19	-69,118	-7.43	-63,116	-6.63
20-24	-40,064	-4.40	-45,376	-4.89
25-29	-33,869	-4.06	-49,497	-5.88
30-34	-11,612	-1.58	-37,814	-5.15
35-39	-3,043	-0.49	-38,180	-6.24
40-44	-6,358	-1.22	-37,890	-7.56
45-49	16,226	3.85	-9,076	-2.37
50-54	20,694	6.16	10,693	3.74
55-59	7,682	2.78	11,581	5.23
60-64	5,702	2.54	11,382	6.50
65-69	2,265	1.26	870	0.59
70Plus	45,914	14.41	55,531	22.51

WPP ADM-0 vs CODPS ADM-0



5. Relative population size by age and sex (ADM-1)

Below, we compare the relative population proportions for 5-year age groups by sex between the COD-PS ADM-1 projections and the WPP ADM-0 projection.

At ADM-1, compared to the WPP projections at ADM-0, while the NSO projects relatively higher proportions of 0-19 year olds in the departments of Alta Verapaz, Quiche, and San Marcos, the NSO projects relatively lower proportions of 0-19 year olds in the departments of Escuintla, Guatemala, Sacatepequez, and Santa Rosa.

