COD-PS Thailand
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	Thailand
Source(s)	(Baseline) National Statistical Office of Thailand, (Projections) US Census Bureau
Source(s) Link(s)	(Baseline) http://popcensus.nso.go.th/report.php, (Projections) https://www.census.gov/data/tables/time-series/demo/international-programs/subnationalpopulation.html
Population Data Type (Census enumeration, Direct estimate, or Population projection)	Population projection
Year of the Baseline Population	2010
Reference year of this COD-PS	2023
Publication year of this COD-PS	2023
ADM-1 Name	Province (Changwat)
ADM-1 Number of Units	77
ADM-1 Sex and Age Disaggregation	Sex and age disaggregated by 5-year age groups

Item	Metadata
ADM-1 Open-ended Age Group	80+
ADM-2 Name	District (Amphoe)
ADM-2 Number of Units	928
ADM-2 Sex and Age Disaggregation	Sex and age disaggregated by 5-year age groups
ADM-2 Open-ended Age Group	80+
General Notes	This COD-PS is based on the projections prepared by the US Census Bureau (USCB) projections.
Data Limitations	The USCB projections, on which this COD-PS is based, does not take into account unique national or subnational population dynamics. It is because the USCB subnational projections are built on the predication that population growth rates follow an S-curve progression of initially being slow, accelerating, peaking, and finally tapering, a path that is consistent with Malthusian theory.
COD-PS Demographic Data Quality Assessment	The COD-PS was assessed against ADM-0 estimates and projections published in the World Population Prospects (2022 Revision) by the United Nations Department of Economic and Social Affairs (UN-DESA) and the Namibia NSO 2011-2041 projection report.

2. Methodological Documentation

Item	Methodological Documentation
Methodology Used	The estimates for the population totals of 77 ADM-1 units were calculated using the Logistic Growth Rate method, based on the historical trend between 2000 and 2010 censues. The estimates for sex-specific 5-year age groups for the 928 ADM-2 units were calculated using Iterative Proportional Fitting, based on the age group proportions from the 2010 census. Furthermore, in general the impacts of cataclysmic events such as earthquakes or tsunamis are factored into the calculations for the subnational age and sex group population estimates for the affected areas - contingent on obtaining the numbers of fatalities and displacements ascertained from authoritative sources, as well as numbers reflecting the trajectories of the recoveries of those areas.
Baseline Population	2010 census
Post-enumeration survey (PES)	A formal PES report or PES results could not be found for the 2010 census.
Assessment and Adjustment of the Baseline Population	There is no evidence of assessing and adjusting the baseline population prior to building the projections on which this COD-PS is based. The source file states that the U.S. Census Bureau cannot guarantee the accuracy of non-U.S. census and survey data.

Item	Methodological Documentation
Fertility (births)	No fertility assumptions. It is because the projections on which this COD-PS is based were built on the predication that population growth rates follow an S-curve progression of initially being slow, accelerating, peaking, and finally tapering, a path that is consistent with Malthusian theory - rather than following the national or subnational population dynamics unique to each country.
Mortality (deaths)	No mortality assumptions. It is because the projections on which this COD-PS is based were built on the predication that population growth rates follow an S-curve progression of initially being slow, accelerating, peaking, and finally tapering, a path that is consistent with Malthusian theory - rather than following the national or subnational population dynamics unique to each country.
International migration (net migration)	No international migration (net migration) assumptions. It is because the projections on which this COD-PS is based were built on the predication that population growth rates follow an S-curve progression of initially being slow, accelerating, peaking, and finally tapering, a path that is consistent with Malthusian theory - rather than following the national or subnational population dynamics unique to each country.
Internal migration (migration within country)	No internal migration (migration within country) assumptions. It is because the projections on which this COD-PS is based were built on the predication that population growth rates follow an S-curve progression of initially being slow, accelerating, peaking, and finally tapering, a path that is consistent with Malthusian theory - rather than following the national or subnational population dynamics unique to each country.

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

At ADM-0, the implied postcensal population growth rates of this COD-PS (0.30% per year: female 0.36%, male 0.25%) are generally consistent with the growth rates of the UN's population projections published in the World Population Prospects (WPP) 2022 Revision (2011: 0.65%, 2015: 0.44%, 2018: 0.28%, 2022: 0.16%).

At ADM-1, the USCB projects a wide range of postcensal growth rates among the 77 provinces of Thailand, from +5.88% per year (Phuket) to -4.12% per year (Si Sa Ket). The USCB predicts the highest postcensal growth rates mostly for the provinces in the central region, where the economic activities are concentrated around the national capital (Bangkok). In contrast, the USCB predicts the lowest population growth rates - below zero signifying population decline - mostly for the northeastern and northern provinces where the economic disparities exist especially in comparison to the central region.

ADM-1	Last Census, Female	Last Census, Male	CODPS, Female	CODPS, Male	PGR(%), Female	PGR(%), Male	PGR(%), Both
Amnat Charoen	145,739	142,821	91,583	88,146	-3.57	-3.71	-3.64
Ang Thong	133,963	123,904	106,897	94,295	-1.74	-2.10	-1.92
Bangkok	4,280,714	4,088,365	5,883,668	5,595,670	2.45	2.41	2.43

ADM-1	Last Census, Female	Last Census, Male	CODPS, Female	CODPS, Male	PGR(%), Female	PGR(%), Male	PGR(%), Both
Bueng Kan	185,383	182,504	143,647	140,084	-1.96	-2.03	-1.99
Buri Ram	663,185	631,802	459,143	429,215	-2.83	-2.97	-2.90
Chachoengsao	363,078	360,346	371,697	358,904	0.18	-0.03	0.07
Chai Nat	161,060	149,376	111,121	99,099	-2.86	-3.16	-3.01
Chaiyaphum	499,541	479,091	358,011	336,096	-2.56	-2.73	-2.64
Chanthaburi	248,262	243,617	213,217	206,569	-1.17	-1.27	-1.22
Chiang Mai	890,423	865,063	913,480	876,461	0.20	0.10	0.15
Chiang Rai	600,276	587,339	528,400	510,159	-0.98	-1.08	-1.03
Chon Buri	782,538	782,241	1,154,134	1,176,253	2.99	3.14	3.07
Chumphon	231,380	242,179	209,323	213,578	-0.77	-0.97	-0.87
Kalasin	425,848	411,041	311,288	294,646	-2.41	-2.56	-2.49
Kamphaeng Phet	407,806	397,812	427,417	408,995	0.36	0.21	0.28
Kanchanaburi	406,001	404,909	379,930	372,300	-0.51	-0.65	-0.58
Khon Kaen	903,353	860,815	809,391	760,148	-0.84	-0.96	-0.90
Krabi	182,366	184,156	167,064	167,901	-0.67	-0.71	-0.69
Lampang	379,810	373,753	298,107	288,724	-1.86	-1.99	-1.93
Lamphun	213,260	204,833	184,995	174,504	-1.09	-1.23	-1.16
Loei	276,973	277,149	205,598	204,374	-2.29	-2.34	-2.32
Lop Buri	387,156	392,413	347,206	340,369	-0.84	-1.09	-0.97
Mae Hong Son	104,133	107,784	86,233	90,072	-1.45	-1.38	-1.42
Maha Sarakham	433,562	406,775	309,747	285,671	-2.59	-2.72	-2.66
Mukdahan	181,304	179,908	181,280	177,781	0.00	-0.09	-0.04
Nakhon Nayok	126,205	123,800	111,509	104,925	-0.95	-1.27	-1.11
Nakhon Pathom	486,025	467,553	534,557	508,167	0.73	0.64	0.69
Nakhon Phanom	301,729	291,213	208,199	196,327	-2.85	-3.03	-2.94
Nakhon Ratchasima	1,292,260	1,266,177	1,167,970	1,119,787	-0.78	-0.95	-0.86
Nakhon Sawan	515,522	491,689	396,710	367,256	-2.02	-2.24	-2.13
Nakhon Si Thammarat	739,879	730,595	602,894	577,620	-1.57	-1.81	-1.69

ADM-1	Last Census, Female	Last Census, Male	CODPS, Female	CODPS, Male	PGR(%), Female	PGR(%), Male	PGR(%), Both
Nan	229,356	229,480	190,448	188,751	-1.43	-1.50	-1.46
Narathiwat	340,827	337,825	291,226	287,505	-1.21	-1.24	-1.23
Nong Bua Lam Phu	251,649	240,662	212,953	200,429	-1.28	-1.41	-1.34
Nong Khai	238,473	226,961	180,253	168,854	-2.15	-2.27	-2.21
Nonthaburi	692,777	647,841	1,116,409	1,012,800	3.67	3.44	3.55
Pathum Thani	680,818	648,573	1,414,248	1,338,347	5.62	5.57	5.60
Pattani	313,595	303,202	271,644	257,780	-1.10	-1.25	-1.18
Phangnga	126,983	134,533	120,735	125,536	-0.39	-0.53	-0.46
Phatthalung	249,167	238,384	203,520	189,028	-1.56	-1.78	-1.67
Phayao	215,216	208,936	142,654	137,499	-3.16	-3.22	-3.19
Phetchabun	482,521	470,327	392,721	375,790	-1.58	-1.73	-1.66
Phetchaburi	242,987	235,180	227,601	212,870	-0.50	-0.77	-0.64
Phichit	284,324	271,482	231,071	213,976	-1.60	-1.83	-1.72
Phitsanulok	470,680	451,992	475,865	446,390	0.08	-0.10	-0.01
Phra Nakhon Si Ayutthaya	449,875	429,084	532,512	496,914	1.30	1.13	1.21
Phrae	221,902	212,119	157,253	146,074	-2.65	-2.87	-2.76
Phuket	262,133	264,010	562,916	567,807	5.88	5.89	5.88
Prachin Buri	279,195	272,182	360,475	338,562	1.97	1.68	1.82
Prachuap Khiri Khan	233,574	239,569	221,259	222,016	-0.42	-0.59	-0.50
Ranong	122,384	128,098	179,678	186,428	2.95	2.89	2.92
Ratchaburi	414,907	392,192	357,556	324,899	-1.14	-1.45	-1.29
Rayong	403,317	422,041	644,043	663,520	3.60	3.48	3.54
Roi Et	561,597	540,271	395,855	371,058	-2.69	-2.89	-2.79
Sa Kaeo	281,917	280,115	280,816	273,524	-0.03	-0.18	-0.10
Sakon Nakhon	485,743	470,005	360,757	342,890	-2.29	-2.43	-2.36
Samut Prakan	930,628	904,003	1,730,233	1,656,093	4.77	4.66	4.72
Samut Sakhon	442,653	446,103	926,912	926,935	5.69	5.63	5.66
Samut Songkhram	95,853	92,435	73,529	67,229	-2.04	-2.45	-2.24
Saraburi	364,799	358,988	414,761	395,881	0.99	0.75	0.87
Satun	136,286	141,727	129,633	133,193	-0.38	-0.48	-0.43
Si Sa Ket	548,903	525,938	324,443	304,135	-4.04	-4.21	-4.12
Sing Buri	105,108	98,007	73,914	65,996	-2.71	-3.04	-2.88

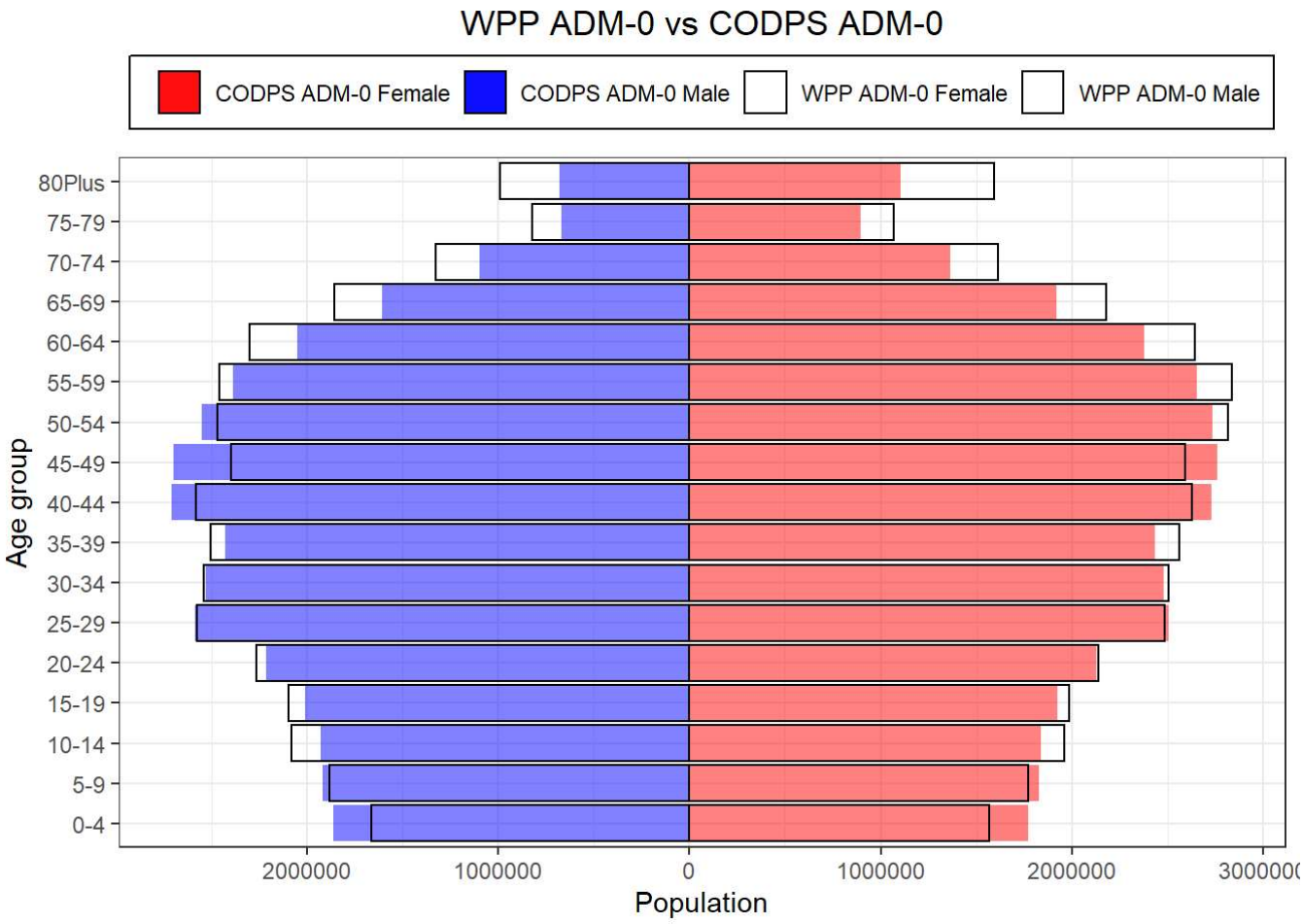
ADM-1	Last Census, Female	Last Census, Male	CODPS, Female	CODPS, Male	PGR(%), Female	PGR(%), Male	PGR(%), Both
Songkhla	762,539	733,715	805,850	761,000	0.42	0.28	0.35
Sukhothai	328,694	308,676	299,727	272,159	-0.71	-0.97	-0.84
Suphan Buri	442,287	414,568	368,657	333,646	-1.40	-1.67	-1.53
Surat Thani	513,645	506,408	529,213	511,235	0.23	0.07	0.15
Surin	585,129	555,631	401,411	371,893	-2.90	-3.09	-3.00
Tak	267,895	264,697	248,404	245,152	-0.58	-0.59	-0.58
Trang	308,188	298,490	262,165	249,072	-1.24	-1.39	-1.31
Trat	122,173	128,360	130,076	136,604	0.48	0.48	0.48
Ubon Ratchathani	894,269	874,552	782,529	754,152	-1.03	-1.14	-1.08
Udon Thani	665,554	642,526	474,205	451,261	-2.61	-2.72	-2.66
Uthai Thani	154,862	146,648	127,023	117,345	-1.52	-1.71	-1.61
Uttaradit	228,026	216,740	178,299	165,537	-1.89	-2.07	-1.98
Yala	220,384	218,127	197,758	195,861	-0.83	-0.83	-0.83
Yasothon	249,905	245,589	178,371	171,043	-2.59	-2.78	-2.68
Total	33,852,431	32,868,015	35,455,997	33,938,765	0.36	0.25	0.30

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

Below, we compare the population structure across sex and age groups between the USCB and WPP projections at the national level. At ADM-0, the age- and sex-specific population counts of this COD-PS are generally consistent with the WPP 2022 Revision projection across most age groups.

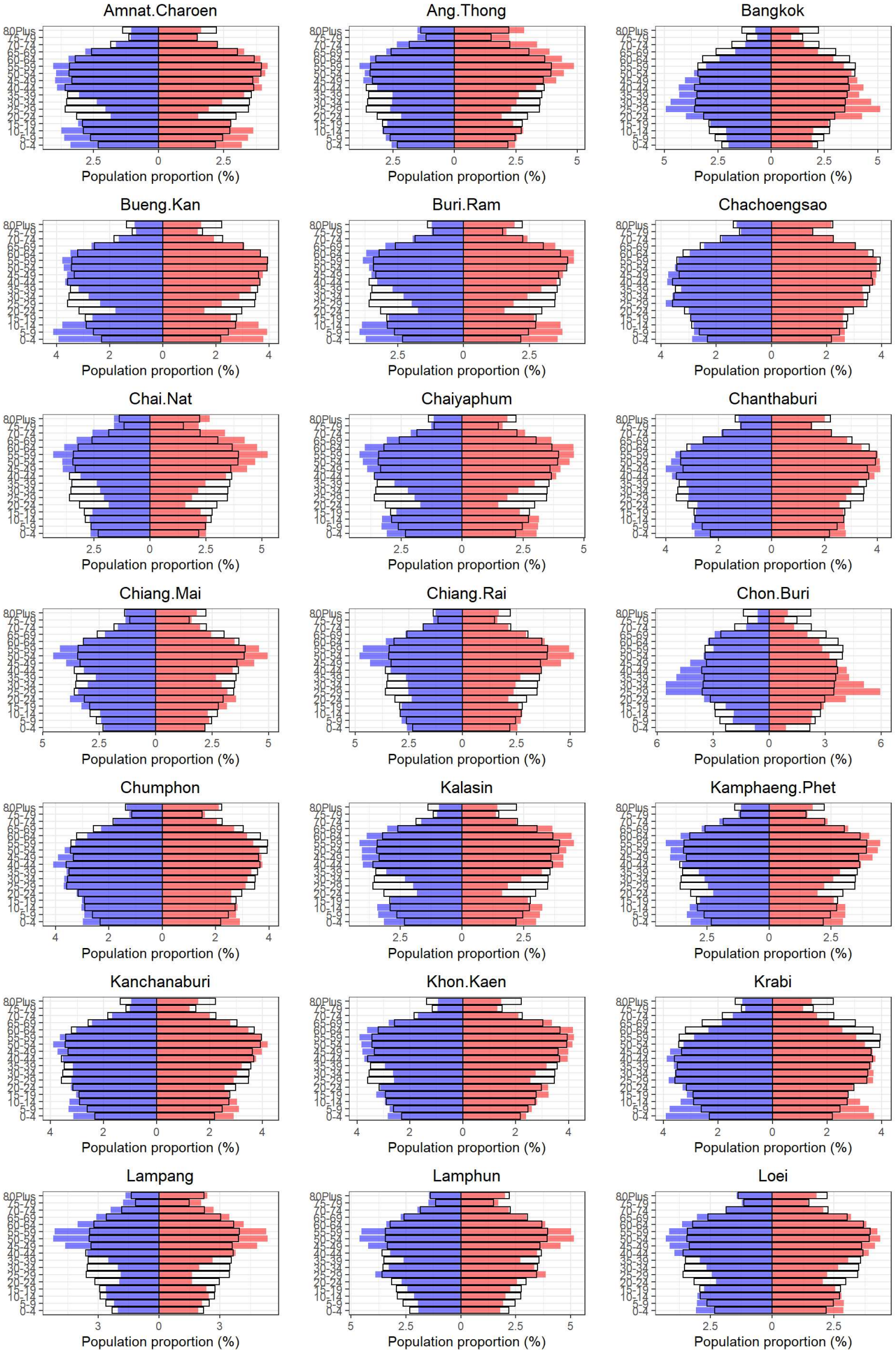
	CODPS-WPP, Female	Difference(%)	CODPS-WPP, Male	Difference(%)
0-4	205,151	13.08	198,969	11.95
5-9	54,396	3.07	38,314	2.04
10-14	-122,764	-6.26	-149,683	-7.20
15-19	-63,002	-3.17	-86,066	-4.10
20-24	-8,636	-0.40	-51,064	-2.25
25-29	20,016	0.80	8,718	0.34
30-34	-24,730	-0.99	-14,074	-0.55
35-39	-126,798	-4.95	-76,042	-3.03
40-44	100,614	3.82	126,770	4.91
45-49	166,817	6.43	300,680	12.54
50-54	-84,734	-3.01	81,684	3.31

	CODPS-WPP, Female	Difference(%)	CODPS-WPP, Male	Difference(%)
55-59	-184,746	-6.50	-73,938	-3.01
60-64	-268,560	-10.15	-248,340	-10.79
65-69	-260,910	-11.97	-249,760	-13.45
70-74	-250,660	-15.51	-229,532	-17.32
75-79	-178,054	-16.62	-153,070	-18.55
80Plus	-492,967	-30.90	-310,516	-31.41

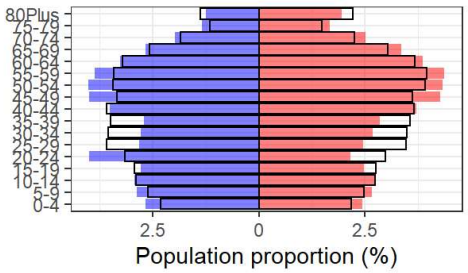


5. Relative population size by age and sex (ADM-1)

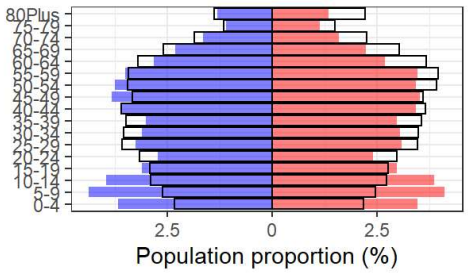
Below compares relative population proportions by sex and age between USCB ADM-1 and WPP ADM-0 projections. The USCB predicts high fertility but low shares of working-age adults for the northeastern and northern provinces in comparison to the WPP ADM-0 projection, signifying a heavy out-migration from those regions in search of economic opportunities in the central and southern regions. In contrast the USCB predicts population proportions that are similar to the WPP ADM-0 projection for the provinces in the central and southern regions, reflecting lower fertility and influx of internal migrants from the northeastern and northern regions (Thailand MICS 2019).


Amnat.Charoen
Ang.Thong
Bangkok
Bueng.Kan
Buri.Ram
Chachoengsao
Chai.Nat
Chaiyaphum
Chanthaburi
Chiang.Mai
Chiang.Rai
Chon.Buri
Chumphon
Kalasin
Kamphaeng.Phet
Kanchanaburi
Khon.Kaen
Krabi
Lampang
Lamphun
Loei
80Plus
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
Population proportion (%)

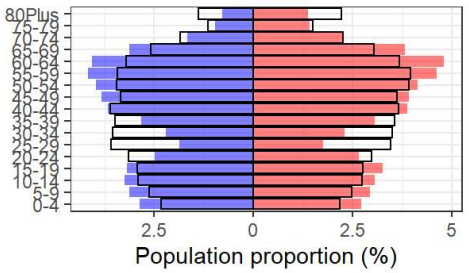
Lop.Buri



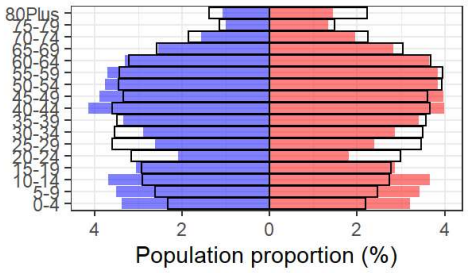
Mae.Hong.Son



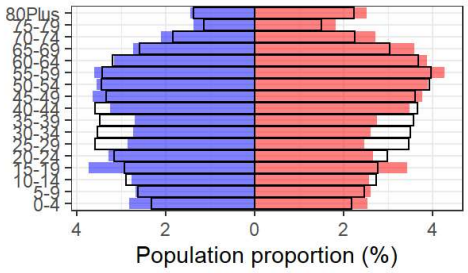
Maha.Sarakham



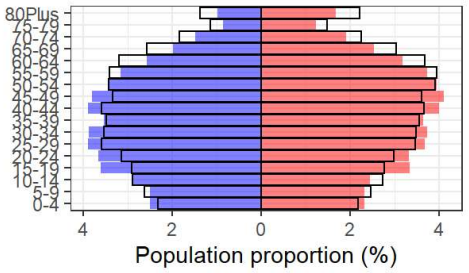
Mukdahan



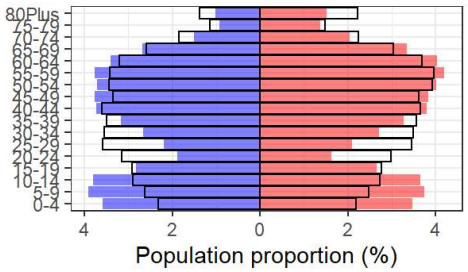
Nakhon.Nayok



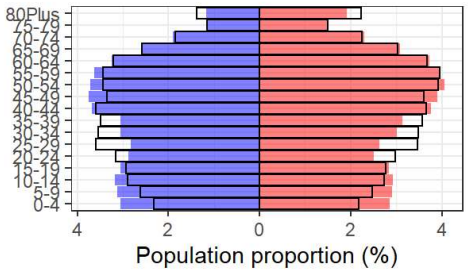
Nakhon.Pathom



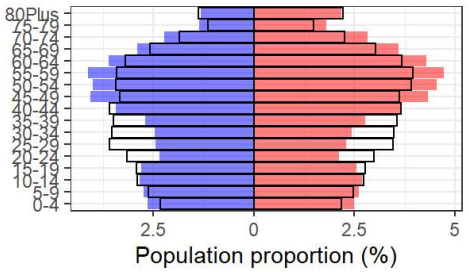
Nakhon.Phanom



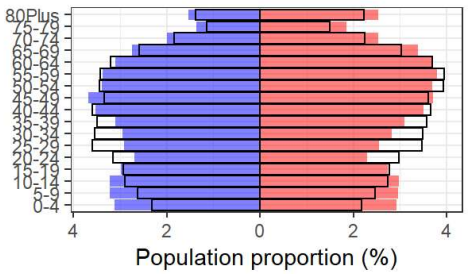
Nakhon.Ratchasima



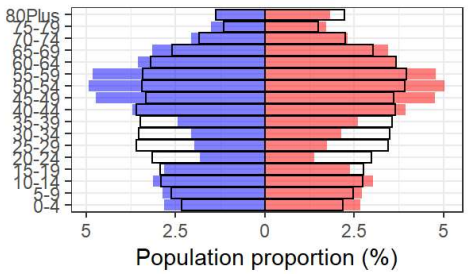
Nakhon.Sawan



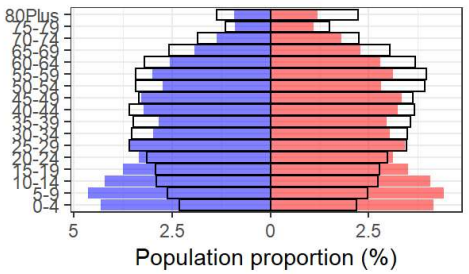
Nakhon.Si.Thammarat



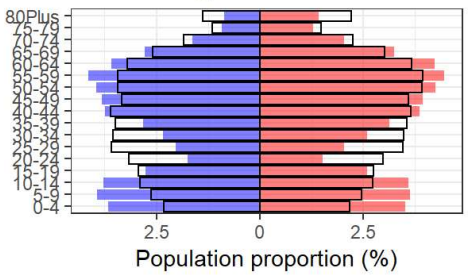
Nan



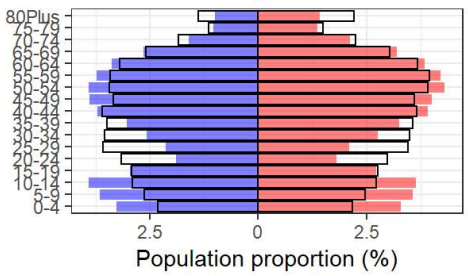
Narathiwat



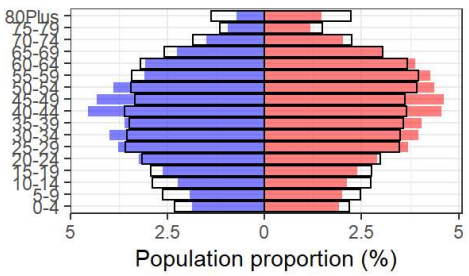
Nong.Bua.Lam.Phu



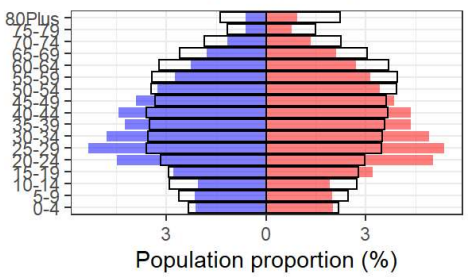
Nong.Khai



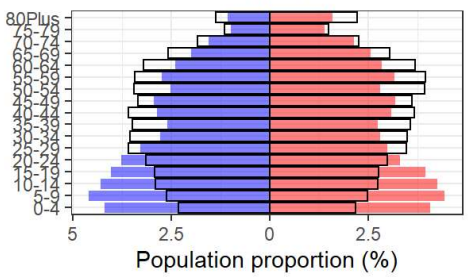
Nonthaburi



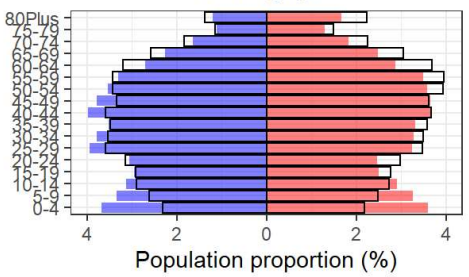
Pathum.Thani



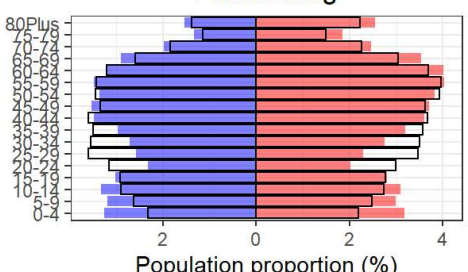
Pattani



Phangnga



Phatthalung



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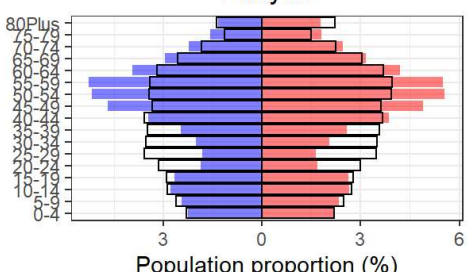

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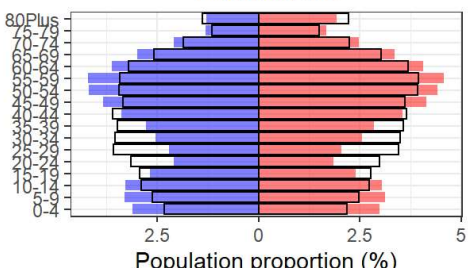

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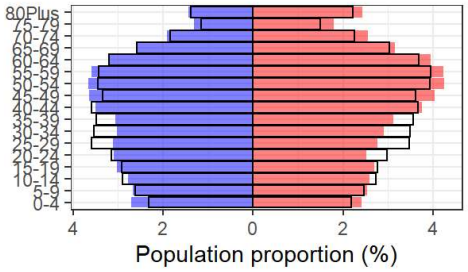

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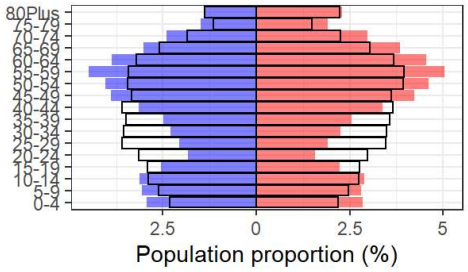

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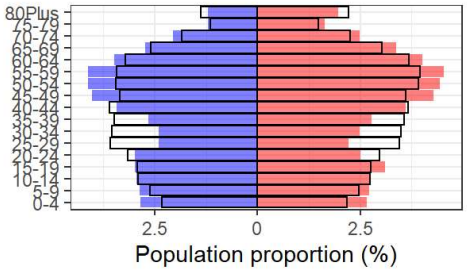

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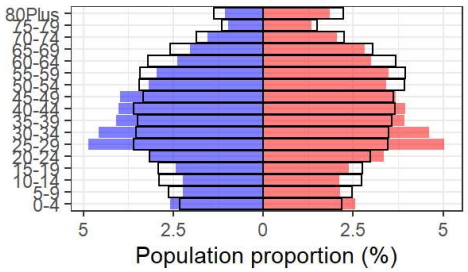

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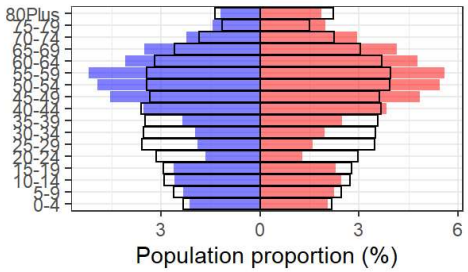

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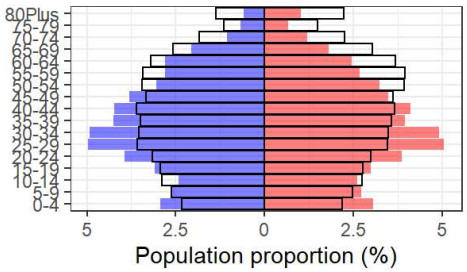

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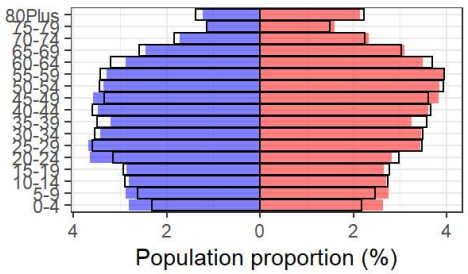

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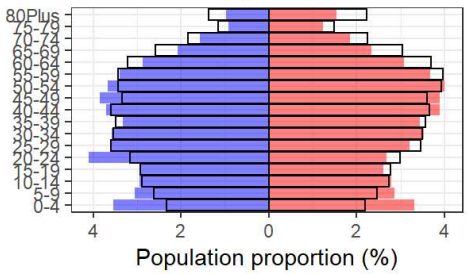

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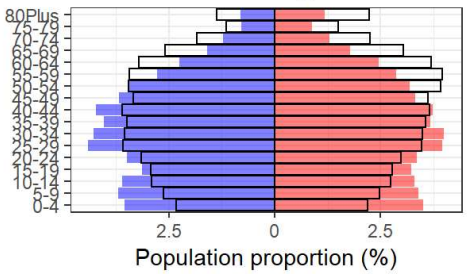

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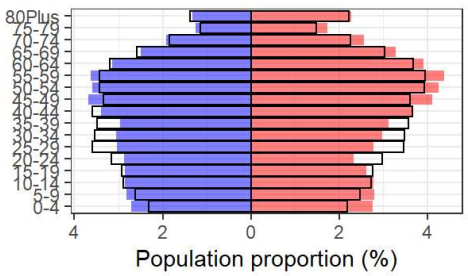

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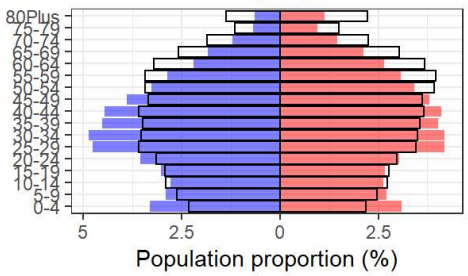

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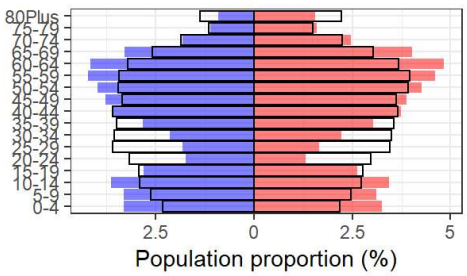

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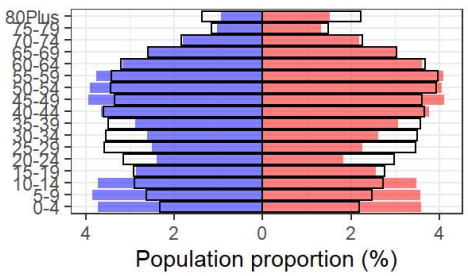

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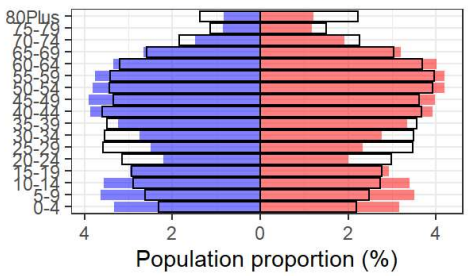

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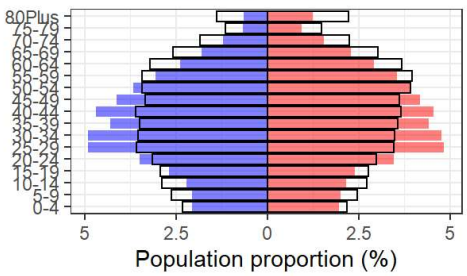

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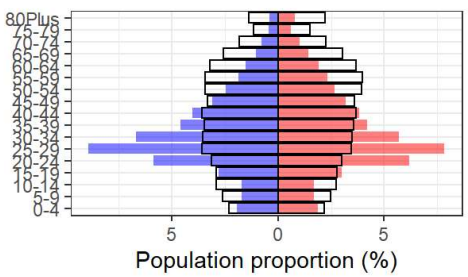

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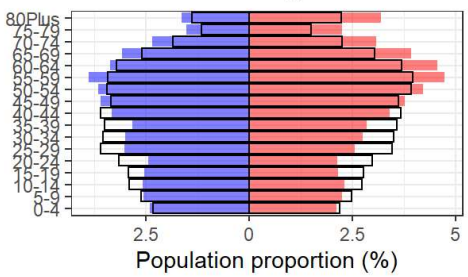

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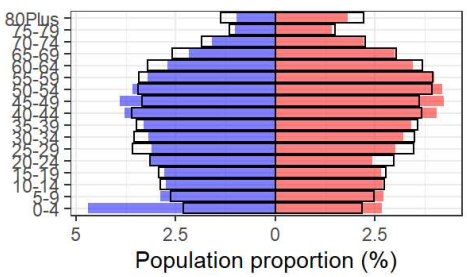

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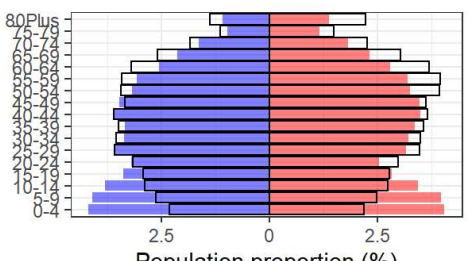

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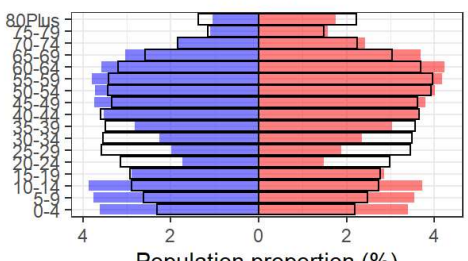

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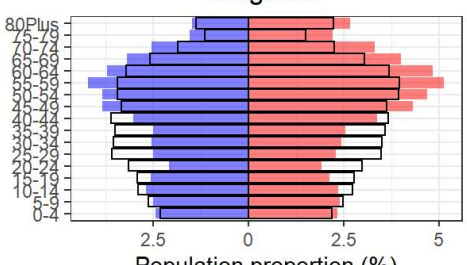

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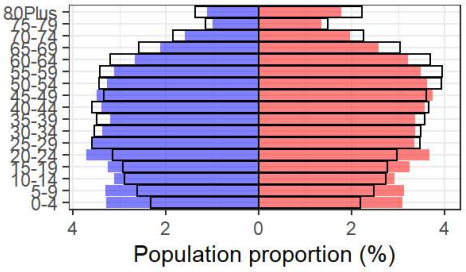

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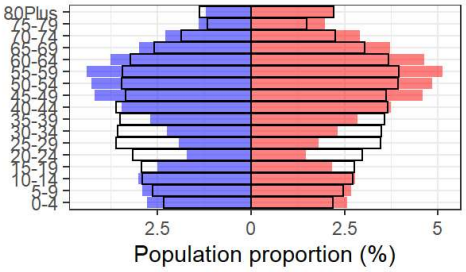

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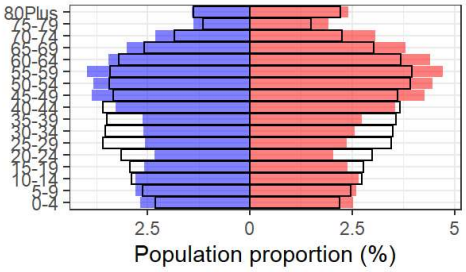

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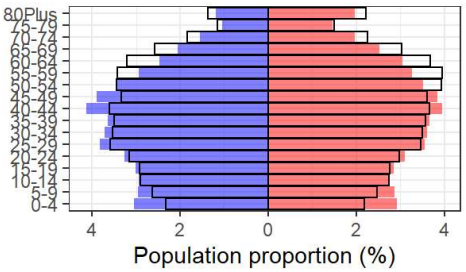

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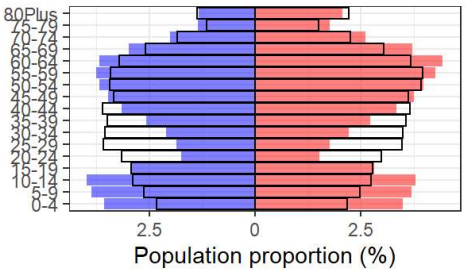

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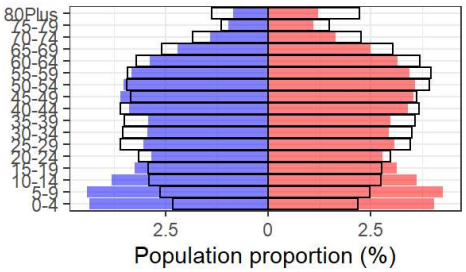

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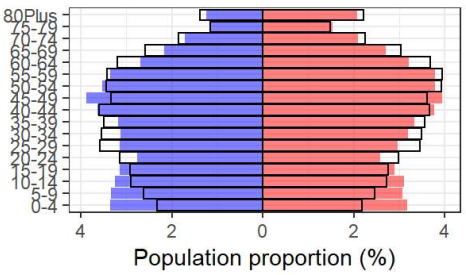

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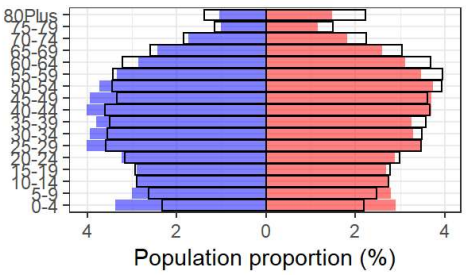

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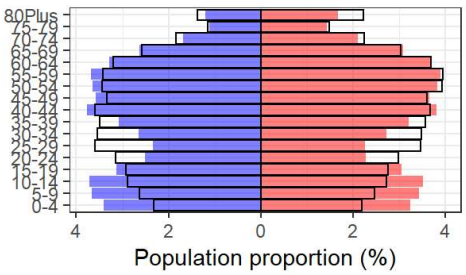

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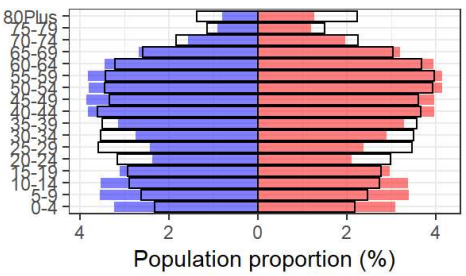

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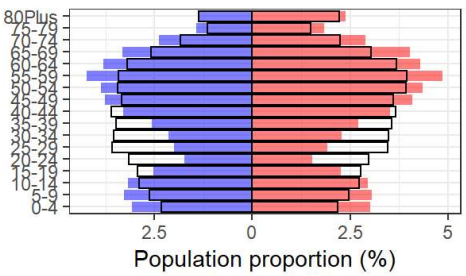

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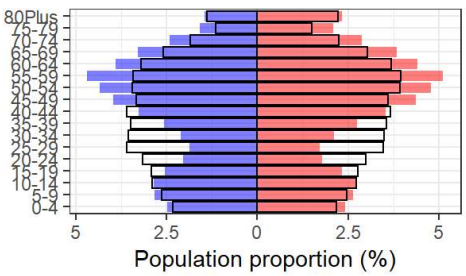

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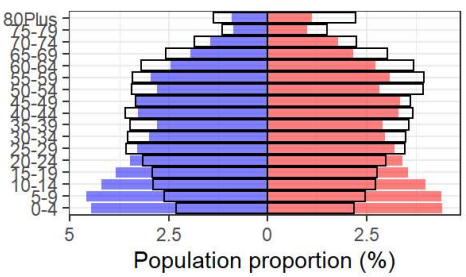

Yasothon