unesco
Institute for Statistics

25 YEARS

Education Data and Statistics Commission

EDSC/11/3.1

IMPROVEMENTS TO THE IMPLEMENTATION OF UIS HYBRID APPROACH TO THE USE OF POPULATION DATA FOR EDUCATION INDICATORS

EDSC 11 meeting

Paris 27-28 February 2025

Global Alliance to Monitor Learning

1. Background: development and implementation of the UIS hybrid population policy in collaboration with EDSC

In 2023, the UIS introduced a significant change to its population data policy, adopting a hybrid approach to the use of population data for education indicators. The development and implementation of this policy have been carried out in close collaboration with the Education Data and Statistics Commission (EDSC).

Key milestones in this process include:

- 8th EDSC meeting (formerly TCG 8, 2 November 2021):
  UIS presented the proposal *"A Hybrid Approach to the Use of Population Data for Education Indicators" (WG/EMIS/3)*, which was subsequently endorsed by EDSC. The Commission agreed with UIS to:

  - Introduce an option for all countries to report their own population data and the source of the data for UIS indicator calculations by:

    - Adding a dedicated module for reporting national population estimates, and/or
    - Expanding UIS data collection tools.

  - Default to UN Population Division (UNPD) data when national population data is not submitted.
  - Require national population data to be sourced from publicly available national or regional statistics, in line with countries' preferences.
  - Prioritize population estimates from national statistics offices or population census bureaus in cases where multiple sources exist within a country[1].

- 9th EDSC meeting (22 November 2022):
  UIS presented the *"National Population Data: Criteria for Use in UIS Indicator Calculation"* proposal, along with its implementation process and the associated DEM questionnaire for national population data collection. In the post-meeting consultation (March 2023)[2],, EDSC formally approved the criteria and operational implementation plan.

[1] https://tcg.uis.unesco.org/wp-content/uploads/sites/4/2022/03/TCG-Consultation-Report-Dec-2021.pdf (see pp. 5-6).
[2] https://tcg.uis.unesco.org/wp-content/uploads/sites/4/2023/03/TCG9_Consultation-Results_Report_2023.03_FINAL.pdf (see p. 4).

- 10th EDSC meeting (11 December 2023):
  The meeting focused on preparations for the first UNESCO Conference on Education Data and Statistics (Paris, 7–9 February 2024)[3]. Discussions included key position papers, such as *"Administrative education data: What are the challenges going forward?"*, and a UIS presentation on the *Use of population in calculating indicators*. The conference's decisions report (February 2024) recommended *"scaling up the hybrid approach to population data"* (see p.3 of the report).

The UIS began implementing the new population policy in April 2023, inviting all Member States to participate. An official letter outlined the new policy, detailed standard data and metadata requirements, and provided the criteria for UIS acceptance of national population data (see Annex 2). Countries were encouraged to submit their population data and metadata via the UIS DEM questionnaire, specifically developed for this purpose.

Initially, the policy was applied to countries that had previously requested the use of their national population data or where UNPD World Population Prospects (WPP) data coverage differed significantly from national education data. In 2024, the policy was expanded to all countries participating in the UIS annual education survey. As a result, national population data from 76 countries were used in the UIS September 2024 release.

The experience gained through this global implementation has informed further refinements to the policy. This document presents the improvements proposed, including amendment to the validation criteria, standardized data submission protocol, and streamlined workflow.

2. Proposal of improvements to the UIS hybrid approach to the use of population data for education indicators

At the EDSC special meeting 5 in-between sessions on 4 July 2024, the UIS presented a summary report on the implementation of the population policy highlighting variations in quality observed in population data reported by countries (see Annex 1). Based on the findings from this report and additional insights gained subsequently during the implementation of the policy, the following improvements are proposed:

2.1 Amendment to one validation criteria

The EDSC has approved four criteria for validating national population data and metadata for use by UIS in education indicators calculation (see **Table 1**). These criteria are primarily based on metadata and respondents' declarations rather than quantitative analysis to assess the quality of population estimates reported. As highlighted in the summary report

[3] https://tcg.uis.unesco.org/10th-meeting-of-the-tcg/.

on the implementation of the population policy (see **Annex 1**), refining criterion 3 could enhance the credibility and quality of the reported data.

Table 1. Criteria for the use of national population data, 2023

Criteria	Assessment	
	Data	Metadata
1. A complete time series from 2000-2023.	x	x
2. Complete sex and age disaggregated data for the 0-99 age population.	x	x
3. Data is compiled and disseminated by recognised international organisations or is publicly available.		x
4. Adequate population coverage.		x

Suggestion:

Amend criterion 3:
Current version: *"Data is compiled and disseminated by recognised international organisations, or is publicly available"*

Proposed version: *"Data are compiled, used, and disseminated by the national statistical office and international organizations, and are publicly available for cross-national comparability."*

This amendment is expected to support the fact that national population data that are compiled, used, and disseminated by the National Statistical Office (NSO), international or regional organizations are considered official, endorsed by the country, and quality proof.

2.2 Proposal for standardized data submission protocol and streamlined workflow

2.2.1. Data submission guidelines and requirements

Countries choosing to provide national population data for use in education indicators calculation by UIS must:

- Signal their interest by sending an email to uis.survey@unesco.org.
- Submit national population data and metadata through the optional UIS/DEM questionnaire. Submission must be by email to uis.survey@unesco.org.
- Provide a complete metadata and time series population data by age and sex (see Annex 2, validation criterion 2) from 2000 to the current UIS education survey year +1 year ahead (i.e. projections), unless a national crisis affects projections reliability.
- Submit data once every two years.

- Follow a biennial submission cycle[4] to align with the population data update for countries whose education indicators are calculated using UNPD WPP data, which is released every two years.
- Ensure that UIS has a complete and consistent time series for indicators calculation, as it does not mix UNPD and national data sources. If national population data for a given year are missing while enrolment data are available, UIS will be unable to calculate the corresponding education indicators. In such cases, UIS will default to UNPD WPP data to maintain a continuous time series for indicators calculation.
- For countries that didn't provide their population data to the UIS, UIS will use the latest available UNPD WPP estimates.

2.2.2. Submission of national population data submission: streamlined workflow

Table 2 presents the proposed standard workflow for national population data reporting and validation.

Table 2: National population data submission: streamlined workflow

Step	UIS annual education survey launch	Country to register for DEM submission by sending an email to uis.survey@unesco.org	DEM submission deadline	UIS feedback on DEM data validation	UIS database update with validated DEM data	UIS database update with UNPD WPP Revision
Key dates	October	End of February	31 March	30 April	31 May	31 July (WPP release year)

The guidelines on the *Implementation of the UIS hybrid approach to population data for education indicators* have been revised to reflect the proposed changes (see Annex 2).

[4] Countries submitting data through DEM questionnaire for a given UIS survey year (t) will skip the following year (t+1) and resubmit only for year t+2, reducing data reporting burden.

3. Proposed decision points for consideration by EDSC

- Amendment to criterion 3

	Option 1	Option 2
Description	Amend criterion 3: Current version: "Data is compiled and disseminated by recognised international organisations, or is publicly available" Proposed version: "Data are compiled, used, and disseminated by the national statistical office and international organizations, and are publicly available for cross-national comparability."	Keep criterion 3 unchanged
Pros	Support public availability, credibility, and quality data reporting. Prevent from multiple and different datasets submission during the same UIS data collection round.	Status quo.
Cons	Stricter criteria which may exclude some national data sources that are publicly available but not widely used by international organizations.	• The terms *"compiled and disseminated"* does not explicitly state that the data is *used* by international organizations, which may weaken the credibility requirement. • The term *"or"* suggests that public availability alone is sufficient, potentially allowing data that are not vetted by the NSO and international organizations. • Lacks emphasis on cross-national comparability, which is crucial for UIS education indicators.
Proposed decision		
Document	• Refining UIS' hybrid approach to the use of population data for education indicators (see **Annex 1).** • Implementation of the UIS hybrid approach to population data for education indicators: revised guidelines (see **Annex 2**).	

- Proposal for standardized data submission protocol and streamlined workflow

	Option 1	Option 2
Description	Proposal for an improved standardized data submission protocol and streamlined workflow (see **Annex 2**).	Do not change the current data submission protocol.
Pros	• Reduced data reporting burden on countries and streamlined workflow, data review and validation efforts for UIS. • Enhanced consistency and reliability of time series population data used for calculating education indicators. • More effective administration of national population data collection and validation.	Status quo.
Cons	Projecting population data one year forward requires the availability of a suitable projection model and relevant demographic parameters at the national level, which may not be readily available in some countries.	• Unclear data submission and validation workflows as well as the associated deadlines. • Potential data reporting burdens on countries.
Proposed decision Document	• Implementation of the UIS hybrid approach to population data for education indicators: revised guidelines (see **Annex 2**).	

Annex 1:

Refining UIS' hybrid approach to the use of population data for education indicators

UNESCO Institute for Statistics

TCG/EDSC Working Group on EMIS

June 2024

1. Background

Historically, the UNESCO Institute for Statistics (UIS) has used population estimates from World Population Prospects as inputs to the production of its international education indicators. This is inherited from an earlier decision by the UN Inter-Agency Expert Group whereby all United Nations agencies agreed to use population estimates from the UN Statistics Division[5]. The State-led SDG agenda represents a departure from this initial situation as some UN Member States demanded that only official data from national sources be used for SDG monitoring. Earlier analyses also highlighted that in several cases, using national population estimates was warranted. These cases included increased accuracy of national estimates in countries with high statistical capacity, territorial exclusions from national administrative systems not accounted for in WPP population estimates, variations in the definition of the population concept and issues associated with previous WPP interpolation procedures[6].

To respond to Member States demands, the UIS has offered to explore the possibility of using national population estimates. Following the 8th TCG meeting in December 2021 Member States voted in favor of the proposal made by the UIS to adopt a hybrid approach to the use of population data for education indicators[7]. The ensuing decision A2.1 included the following:

- Agreed with the introduction of the possibility for all countries to report population data required by the UIS to calculate relevant indicators as well as the source of data by:

[5] https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/files/documents/2020/Oct/undesa_pd_tp_2020_tp_population_estimates.pdf

[6] Ibid.

[7] https://tcg.uis.unesco.org/wp-content/uploads/sites/4/2022/03/TCG-Consultation-Report-Dec-2021.pdf, https://tcg.uis.unesco.org/wp-content/uploads/sites/4/2021/10/TCG-WG-EMIS-3-Population.pdf

    - Adding a dedicated module where countries can report their national population estimates; and/or
    - Expand some of the UIS tools for data collection. In cases where there is no response from countries, UNDP data will be used.
- Endorsed the requirement that national population statistics be sourced from national or regional publicly available data, according to countries' preferences.
- Agreed to prioritize population estimates from national statistics offices or bureau of population census in cases where there are multiple sources of population data in a given country.

At the 9th TCG meeting, a set of four criteria and associated workflow were also endorsed and subsequently implemented[8].

Three years later, the UIS has gone through one initial data collection and one complete survey round is about to be completed. This enabled the UIS to gain further insights on the feasibility and impact on data quality of opening to all countries for their national population data estimates to be used. Based on these insights the UIS is proposing additional revision to its population data policy and in particular to revise the set of validation criteria to address variations in quality observed in the data submitted to date.

2. Data Collection

2.1 Initial data collection, 2023 Survey of Formal Education

The UIS implemented an initial data collection module and quality criteria for reporting. While the possibility was opened and on a voluntary basis, the implementation gave priority to countries which already made a request to the UIS or countries for which the coverage of UNPD data is different from that of education data. These countries were encouraged to submit their data which were used in UIS September 2023 and February 2024 data releases.

- *Data collection module*

The module sought to implement the four quality criteria endorsed by the TCG. These are derived from existing resources and practices, and notably the work of the UN Statistical Division informing the UNSD Demographic Yearbook. Table 1 below reproduces the four criteria and associated means of verification. Of note, these criteria are mostly based on metadata and respondents' declaration and do not include any quantitative analysis to assess the quality of estimates provided.

[8] https://tcg.uis.unesco.org/wp-content/uploads/sites/4/2022/11/2_WG_EMIS_3_UIS_Population_Data_Note.pdf

Table 1. Criteria for the use of national population data, 2023

Criteria	Assessment	
	Data	Metadata
1. A complete time series from 2000-2023.	x	x
2. Complete sex and age disaggregated data for the 0-99 age population.	x	x
3. Data is compiled and disseminated by recognised international organisations, or is publicly available.		x
4. Adequate population coverage.		x

- *Survey return*

In this first round, 62 countries submitted their national population data. These countries include countries which initially made a request to the UIS for using their national population data and those for which the coverage of UNPD data is different from that of education data provided their data. Table 2 presents the distribution of data submitted and their compliance to the predefined quality criteria.

Table 2: National population data submitted in 2023 and their compliance to the quality criteria

Quality criteria	A complete time series from 2000-2023	Complete sex and age disaggregated data for the 0-99 age population	Data is compiled and disseminated by recognised international organisations, or is publicly available	Adequate population coverage
Number of countries meeting the criteria	13	13	55	50*

Notes:

- *: Ten countries did not report information of data coverage. Two countries reported that more than 5% of the national population were excluded from the enumeration.
- Of the data submitted, 13 have time series data from 2000 to 2022, 42 from 2000 to 2021, 2 from 2000 to 2020, and one country for each of the following time series span: 2012 to 2022, 2012 to 2021, 2010 to 2021, 2011 to 2021. In addition, there is one country with national population data only for 2000, 2008, and 2016.
- Population data for 47 countries were submitted through the UNESCO OECD Eurostat data collection and 15 through the new data collection module prepared by the UIS.

2.2. Global data collection, 2024 Survey of Formal Education optional module

- *Data collection tool and survey return*

In 2024, the UIS proceeded to open the submission of national population data to all countries, as per the first agreement in decision A2.1. The 2024 Survey of Formal Education included the DEM questionnaire, prefilled for each country with population data from UNSD, as an optional module for countries who wanted to submit national population data. As of June 2024, 26 countries have submitted their national population data[9].

- *Data validation*

For the global data collection, data validation has been carried out through a two stages approach:

Stage 1. Pre-requisites completeness and public availability

Completeness:

1. Data submitted must cover the entire times series 2000-2023
2. All single ages and age groups are provided for all years by gender
3. All metadata are provided, including:
    a. The reference date of the figures provided
    b. The type of population count used
    c. Exclusions are documented

Public availability:

4. Data is compiled and disseminated by recognized international organizations, or is publicly available together with associated metadata and methodological information.

Stage 2. Data consistency check

1. Basic additivity checks are verified
2. Less than 5% of the total national population is excluded or unenumerated

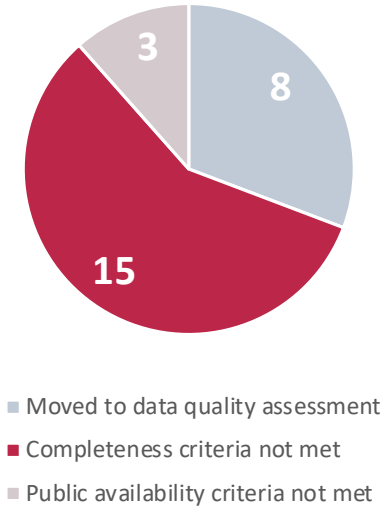
Additionally, the UIS used UNPD data as a counterfactual to identify where there might be significant departures from UNPD data and whether these can be explained by differences in assumptions or methodologies (e.g., case of Moldova below).

For the 26 countries who submitted national population data by the end of May 2024, only 8 countries met the pre-requisites of completeness and public availability (Figure 2).And

[9] In addition to the data for the 47 UNESCO OECD Eurostat countries that are collected through Eurostat and the OECD.

while the UIS is still assessing the quality of the data there are indications that providing quality population data for the calculation of education indicators may be adding too much a reporting burden for country respondents and not necessarily yield the expected improvements.

Figure 1. Status of national population data submitted as of May 2024



3. Post-hoc assessment

3.1. Alignment of coverage between national population data and education data

The use of national population data increases national ownership over education

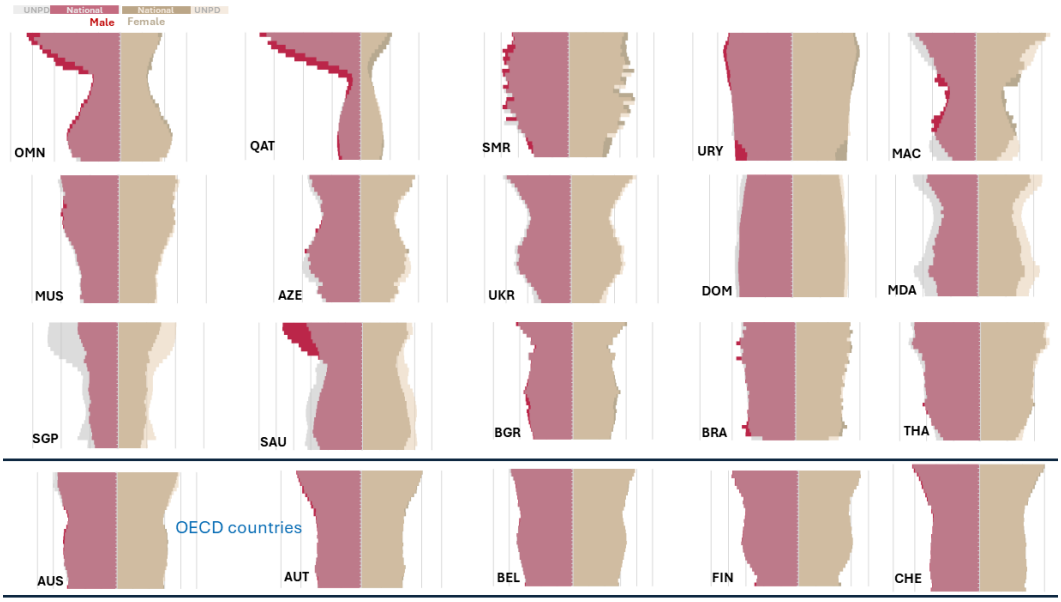
statistics disseminated by the UIS. National population estimates may be based on improved model specifications and incorporate relevant and up-to-date information that is not available to UNPD, or which cannot be incorporated in global population estimates model. Furthermore, UNPD WPP estimates are not meant to match administrative education data collected by the UIS. For instance, in the case of territorial exclusions, these need to be reflected in both the numerator (education data) and denominator (population data). An example is the Republic of Moldova whose education data submitted to the UIS exclude Transnistria. In this case using national population data covering the same territory improves the accuracy of population-based education indicators. Such cases highlight the importance of matching the theoretical population between the numerator and the denominator. Eventually, the fourth quality criteria ("*Adequate population coverage*") has to be assessed against the education data provided by the country as there can be warranted statistical exclusions if the same population group is excluded from education data.

3.2 Difference between national population and UNPD estimates

Post-hoc assessment of the population data submitted also indicated that, in some cases, there was a substantial difference between UNPD and national population data which could not be explained and yet had an impact on education indicators. Examples of countries where this happens are small countries and countries with large migration flows. In these cases, for instance, accounting for migrant populations in education enrolment but excluding them from population data artificially increases participation rates. And countries with lower statistical capacity may not be able to produce or update their population data regularly or to use less appropriate model assumptions. Typically, population data for OECD countries, published by Eurostat, differ very little from those of UNPD (Figure 2).

Moreover, the third criteria may need to be modified to refer to data compilation, use, and dissemination by recognized international organizations, and public availability for cross-national comparability purpose. In effect, data stored in the UNSD demographic yearbook, as previously referred to in the description of the initial set of criteria, do not meet requirements for cross-national comparability as the population enumerated definition varies from one country to another and so do estimation methods. The Demographic yearbook only acts as data repository, no standardization is performed on the data. Consideration must be given to the cross-national nature of indicators produced in international monitoring exercises otherwise risking to sacrificing some degree of comparability.

Figure 2. Population by source, age 0-34, by gender, selected countries, 2022



Even when countries meet the pre-requisites of completeness of their data submission and public data availability, further analysis of the data highlight substantial differences between national population estimates submitted and those made by UNPD in the World Population Prospects. On average, for each single age there's a 5% difference between the two sources for the data estimated at the time of the last census (when national and international estimates should be the closest in theory), with some variations by age and country. In the most extreme cases the percentage difference[10] can exceed 20% (Figure 3). Such differences have an impact on the value of any population-based indicator, especially if the denominator is only one single age (e.g., Gross intake ratio or adjusted net enrolment rate one year before entrance).

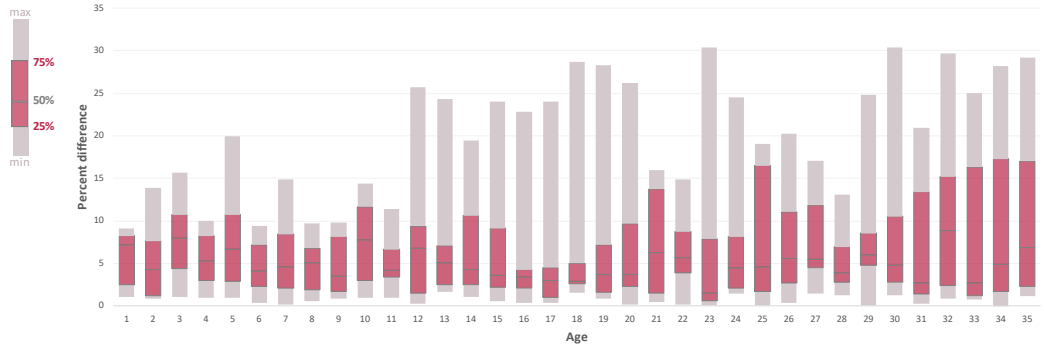
Of note, there is no systematic direction in the difference between the two sources. In most cases, values for WPP estimates are higher than values for national estimates (as the de facto concept is the broader one) but there is a number of cases where it is the opposite. This is true both across countries but also across ages within countries.

This analysis does not mean that one source is better than another but rather points to the need for exploring whether some of these differences can be explained. One of the main reasons behind opening to national population estimates is the fact that these can be more accurate than WPP when statistical systems are well established and regularly update their population estimates based on changes in parameters observed. Large differences do not mean that national population estimates are incorrect, but rather point to the need to validate whether the observed difference point towards an improvement of education indicators' accuracy or not.

Lastly, national population estimates may have been considered as a potential solution to longstanding issues of inconsistencies between numerator (e.g., enrollment) and denominator (i.e., population data) where the number of enrolled children of school age exceeded the theoretical maximum represented by the school age population. This situation is a historical issue for a number of indicators produced by the UIS as the numerator and denominator are taken from different sources. As an example, the total net enrollment rate (TNER) cannot theoretically exceed 100. However, post hoc analysis of indicator values highlights that the issue is still prevalent. For half of all countries who submitted population data to date (63), at least one year between 2015 and 2023 has a theoretically incorrect primary TNER value exceeding 100. The proportion goes down to 40% when the same indicator is calculated with WPP data. For countries with WPP only (145) this proportion goes down to one third.

[10] The percentage difference at each single age *i* is calculated as follows: $\frac{|Npop_i - WPP_i|}{\left[\frac{(Npop_i + WPP_i)}{2}\right]} \times 100$ where $Npop_i$ is the national population estimate for age *i* and WPP_i the World Population Prospects estimate for the same age. It gives an order of magnitude of the difference but does not indicate whether estimates for one source are larger than estimates from the other one.

Figure 3. Distribution of percentage difference between national population data and UNPD World Population Prospects 2022, by age, at census date, C2 countries



Note: C2 countries are the 8 countries that met the pre-requisites of completeness and public availability

4. Lessons learned and recommendations

As of May 2024, post-hoc analysis of the initial data collection and preliminary analysis of population data submitted for the 2024 Survey of Formal Education points toward the potential need for a revision of the decision adopted in March 2022. Several points are to be taken into consideration.

4.1 Challenges at the country level

DEM questionnaire is administered as an optional module. The completion of the questionnaire requires some technicalities with which focal points may not be familiar with. In particular, producing single age, single year population estimates is a methodologically complex field and education focal points may not be aware of all the metadata and methodological underpinnings surrounding the estimates. Additionally, the ability of countries to provide a complete time series depends on the frequency at which they update their population estimates. For nearly 8 out of 10 countries, it was not possible to provide complete metadata and/or a complete time series.

This issue is important to keep in mind as it has a bearing on the quality of both national and international education indicators. Eventually, opening the submission of national population estimates may help shed light on the need for improved collaboration between EMIS departments in Ministries of Education and National Statistical Offices (NSOs) which are typically the ones producing population estimates. In some cases, the UIS can also help bridging between UNPD and NSOs. During the 2024 round of the Survey of Formal Education there were instances of Member States asking for guidance on the production of population estimates. In these instances, the UIS referred the country to the relevant UNPD contacts.

4.2 Challenges for the UIS

A similar challenge is faced by the UIS. The Institute implemented its new population data policy by developing new tools and infrastructures as well as new data pipelines. Moreover, this also required the development of sound and transparent data quality assessment procedures that can account for the heterogeneity in the quality of the data received. As the initial criteria appeared to be insufficient to guarantee the quality of the data new procedures must be established to enable systematic assessment of national population data, with clear and transparent decision criteria for accepting or rejecting the data submitted, and that can easily be communicated to countries. And while there exist a number of procedures to assess the quality of population census data[11], it is more complex to assess the quality of population estimates, especially with the large panel of methods and parameters that can affect the quality of population estimates[12]. While implementing its new population data policy the UIS exchanged with the UN Statistics Division and notably the teams in charge of the World Population Prospects and the Demographic Yearbook. Eventually, providing a robust assessment of the quality of population estimates would require to go a few step further than the set of criteria adopted and the UIS would need continue reinforcing its capacity to handle population data or to explore possibilities of collaborations to engage with quality control of population data.

4.3 The need for clearer definitions and additional criteria

One area that was left unattended and created discrepancies between the numerator and the denominator of population-based education indicators is that of defining the reference population for education indicators. Education indicators produced by UNESCO are typically approached from a human rights perspective whereby the State is the duty bearer for the right to education of all children on its territory[13]. Accordingly, school-age populations are defined as the "[n]umber of persons at the age defined in a country's regulations or laws to attend a given grade or level of education in that country. This number is determined based on the official entrance age and duration of the specific grade or level of education."[14] This is in line with other UN institutions, including the UN Population Division, which define the population of a country as the *de facto* population, or all persons present in a country at the time of the census. It also aligns with the "Leaving no one behind" principle at the heart of the Sustainable Development Goal agenda. This for instance implies to account for migrant and refugees population that are at times excluded from population estimates.

---

[11] See for instance Johnson et al., 2022, Method protocol for the evaluation of census population data by age and sex, UN DESA/POP/2022/TP/No.5.
[12] See Spoorenberg, 2020, Data and methods for the production of national population estimates: An overview and analysis of available metadata, UN DESA Population Division, Technical Paper No. 2020/01.
[13] https://www.unesco.org/en/right-education/convention-against-discrimination?hub=70224
[14] UIS glossary.

And while metadata are collected on the type of population count employed, they are not used yet to verify that that the population data provided corresponds to the *de facto* population. Nevertheless, the definition cannot be too strict as there are instances where population data must match education data when these exclude specific groups or territories. Consequently, criteria should accommodate warranted statistical exclusions in instances where education data already exclude specific groups.

5. Additional criteria proposed by the UIS for consideration

Based on the above, two additional criteria and one criterion modification are proposed.

The two additional criteria to consider are:

1. To formally adopt the *de facto* definition of population as the default definition of the population concept and,

2. In case of departure from the *de facto* definition and/or know differences in coverage, to allow for warranted statistical exclusions when the same exclusions are applied to the education data collected in UIS surveys. Validation procedures to confirm that the same population concept is used in both education and single age population must be subsequently established.

Additionally, it is proposed to amend the third criterion in the initial set approved by the TCG to reflect the need for population estimates that are compiled, used, and disseminated by recognized international organizations, and are publicly available for cross-national comparability purpose.

Table 3: summary of updated criteria for the use of national population data

Criteria	Current	Proposed
A complete time series from 2000-2023.	x	
Complete sex and age disaggregated data for the 0-99 age population.	x	
Adequate population coverage.	x	
Adopt the *de facto* definition of population as the default definition of the population concept.		x
If departure from the *de facto* definition and/or known differences in coverage, allow for warranted statistical exclusions when the same exclusions are applied to the education data collected in UIS surveys.		x
Data are compiled, used, and disseminated by the national statistical office and international organizations, and are publicly available for cross-national comparability.		x (amendment of the previous 3rd criteria).

Annex 2: Implementation of the UIS hybrid approach to population data for education indicators: revised guidelines

1. Background

Following the 8th meeting of the Education Data and Statistics Commission (EDSC, formerly the Technical Cooperation Group) in November 2021, members endorsed a proposal to adopt a hybrid approach to the use of population data in UIS statistics (see Box 1). Under this approach, countries can request the use of their national population data for the calculation of population-based education indicators instead of the default World Population Prospects (WPP) estimates from the UNDESA Population Division (UNPD). This represents a shift from previous UIS policy, which only allowed exceptions to UNPD estimates upon special request and for a limited number of countries.

The integration of national population data enhances national ownership of UIS education statistics. In some cases, national data provide more accurate estimates than international population models, as they may incorporate updated demographic information and improved model specifications not available to the UNPD. However, countries with limited statistical capacity may not regularly update their data or may apply less appropriate modeling assumptions[15].

BOX 1. 8TH EDSC decisions on the use of population data in indicators calculation

1. Introduce the possibility for all countries to report population data as required by the UIS through:

   a) adding a dedicated module where countries can report their national population estimates; and/or

   b) expanding UIS tools for data collection.

2. Source national population statistics from national or regional publicly available data, according to countries' preferences. Where countries do not request the use of national data, UNPD data will be used by default.

3. In cases where authorities request the use of national population data and there are multiple sources of data, prioritize population estimates from national statistics offices or bureau of population census.

[15]Just as population estimates are subject to uncertainty, so is any assessment as to the accuracy of two different population estimates.

The purpose of this document is two folds:

- Specify the minimum criteria for UIS acceptance of national population data for education indicators calculation.
- Outline the process and timeline for submitting national population data to UIS.

2. Data requirements

Two main dimensions determine whether UIS can use national population data: availability and quality. Data availability requires a complete time series with appropriate disaggregation by age and sex. Data quality must be transparent and verifiable by UIS. If data is not vetted by a third party and is provided directly to the UIS, this necessitates the provision of sufficient metadata and documentation by national authorities.

Table 1 outlines the essential criteria and assessment methods for determining the suitability of national population data for UIS use. Items 1-4 are necessary conditions. The UIS will assess submitted data based on accompanying metadata, which must be provided through the optional UIS/DEM questionnaire (see Annex for metadata questions).

Table 1: Criteria for UIS use of national population data

Criteria	Assessment	
	Data	Metadata
1. A complete time series from 2000 to the current UIS education survey year +1 year ahead[16] (i.e. projections).	x	x
2. Complete sex- and age- disaggregated data for the 0-99 age population.	x	x
3. Data are compiled, used, and disseminated by the national statistical office and international organizations, and are publicly available for cross-national comparability.		x
4. Adequate population coverage.		x

2.1. A complete time series from 2000 onwards

To ensure data consistency over time, authorities must provide a full series covering 2000 up to the current UIS education survey year +1 year ahead. This time series coverage aims to minimize data reporting burden and streamline UIS validation efforts. Countries that wish for UIS to use their national population data for education indicators calculation are

[16] For example, for UIS 2025 education survey, a complete time series data from 2000 to 2026 is required.

required to submit DEM data **once every two years**, aligning with the biennial update frequency of UNPD World Population Prospects (WPP) data.

The emphasis on data time series consistency allows users to attribute changes in education indicators to actual demographic shifts rather than changes in (or mix of) population data sources.

2.2. Complete sex- and age-disaggregated data for the 0-99 age population

UIS education indicators require age- and sex-disaggregated data across the full population range. Complete sex disaggregated should be available for the 0-99 years old population. Data must include:

- Single-year age disaggregation for the 0-34 age group.
- Five-year age groups for the 35-79 population.
- A single category for the 80+ population.

2.3. Data compiled, used, and disseminated by the national statistical office and international organizations, and publicly available

National population data compiled, used, and disseminated by the national statistical office, international or regional organizations (e.g., UNSD demographic yearbook database) are assumed to be official, endorsed by the country, and vetted for quality.

The UNSD demographic yearbook disseminates national population data of all UN member states, providing a means for member states to have national population data used within SDG monitoring in place of UNPD estimates.[17] To ensure data reliability, estimates identified by UNSD as unreliable will not be used by UIS for indicator calculations.

Additionally, national population data must be publicly accessible (e.g., via the website of the national statistical office), ensuring transparency and accessibility. Countries submitting national population data must provide links to relevant publications or websites as part of their metadata submission.

2.4. Adequate population coverage

Submitted data should represent the total population, avoiding significant exclusions of population subgroups or internationally recognised geographic regions. This criterion is evaluated based on reporting on the population coverage question in the metadata, where respondents estimate the percentage of total population that is excluded. Estimates where more than 5% of the total population is excluded will not be eligible for use in education indicators calculation.

[17] The demographic yearbook compiles census, survey, and national estimates of the population and should be distinguished from estimates of UNPD world population prospects, a population model that provides estimates of the population from 1950-2100.

3. Operational implementation

The Education Data and Statistics Commission, in its post-9th meeting consultation, formally adopted the new UIS population data policy and related data collection tools[18].

3.1. Data submission guidelines and requirements

Countries choosing to provide national population data for use in education indicators calculation by UIS must:

- Signal their interest by sending an email to uis.survey@unesco.org.
- Submit national population data and metadata through the optional UIS/DEM questionnaire. Submission must be by email to uis.survey@unesco.org.
- Provide a complete metadata and time series population data by age and sex (see validation criterion 2) from 2000 to the current UIS education survey year +1 year ahead (i.e. projections), unless a national crisis affects projections reliability.
- Submit data **once every two years**.
- Follow a biennial submission cycle[19] to align with the population data update of countries whose education indicators are calculated using UNPD WPP data, which is released every two years.
- Ensure that UIS has a complete and consistent time series for indicators calculation, as it does not mix UNPD and national data sources. If national population data for a given year are missing while enrolment data are available, UIS will be unable to calculate the corresponding education indicators. In such cases, UIS will default to UNPD WPP data to maintain a continuous time series for indicators calculation.

For countries that didn't provide their population data to the UIS, UIS will use the latest available UNPD WPP estimates.

3.2. Submission of national population data submission: streamlined workflow

Table 2 presents the proposed standard workflow for national population data reporting and validation.

[18] https://tcg.uis.unesco.org/wp-content/uploads/sites/4/2023/03/TCG9_Consultation-Results_Report_2023.03_FINAL.pdf, https://tcg.uis.unesco.org/9th-meeting-of-the-tcg/.

[19] Countries submitting data through DEM questionnaire for a given UIS survey year (t) will skip the following year (t+1) and resubmit only for year t+2, reducing data reporting burden.

Table 2: National population data submission: streamlined workflow

Step	UIS annual education survey launch	Country to register for DEM submission by sending an email to uis.survey@unesco.org	DEM submission deadline	UIS feedback on DEM data validation	UIS database update with validated DEM data	UIS database update with UNPD WPP Revision
Key dates	October	End of February	31 March	30 April	31 May	31 July (WPP release year)

Annex: Questionnaire

The population data should be reported by countries to the UIS using the optional UIS/DEM questionnaire. Along with the data reported, countries are requested to provide the following metadata. The data reported should be publicly available and links to the associated publication or website should be provided in the questionnaire and metadata.

1. Population coverage

The following information and metadata are required to assess the completeness and quality of the reported data.

Data meets criteria on population coverage (less than 5% of the total population are excluded)?

- ☐ Meets population coverage criteria
- ☐ Does not meet population coverage criteria

Data is publicly available:

- ☐ Publicly available, provide website of data repository:
- ☐ Not publicly available

2. Time series coverage

Does population data have sufficient time series coverage (a complete time series from 2000 up to the current UIS education survey year +1 year ahead (i.e. projections))?

- ☐ Sufficient time series coverage
- ☐ Insufficient time series coverage

3. Bibliography of demographic statistics

Please list publications (or websites) that contain i) results of your latest population census or survey ii) current statistics on population estimates, iii) documentation detailing the methodologies i and ii:

4. Other metadata

Where population are submitted directly to the UIS through filling DEM questionnaire, please complete the following fields, ensuring that metadata are associated with each year of submitted data.

3.1 Reference date of the population estimates (dd/mm/yyyy)

Please provide the reference date for ages reported in national population estimates by single year of age

dd	mm	yyyy

To align with the United Nations Population Division methodology, the UIS uses 1st January as the standard reference date for single age population data. Please note that if the reference date of your reported population data is between 1st July and 31st December, all population data used to calculate education indicators will be shifted one year forward, i.e., the UIS will be using the population of year t for the calculation of population-based education indicators corresponding to the school year ending in year t+1.

3.2 Data source (select one)

- ☐ Population census or register
- ☐ Sample survey
- ☐ Estimate (e.g. inter-censal, post-censal)
- ☐ Other (please specify)

3.3 Coverage

a. Type of population count employed for the reported data (select one):

- ☐ present population (de-facto)
- ☐ usually resident population
- ☐ registered population
- ☐ other, please specify:

b. Does the data exclude certain populations who live on the country's territory?

- ☐ No
- ☐ Yes, please specify:

c. Approximately what proportion of the total national population is excluded or unenumerated?

- ☐ Less than 1%
- ☐ Between 1% and 5%
- ☐ More than 5%
- ☐ Not available

Please note that the UIS will use national population data only if the excluded or unenumerated population is lower than 5%.

3.4 Data availability

Are the reported data publicly available?

- ☐ Publicly available, provide access link:
- ☐ Not publicly available

IMPROVEMENTS TO THE IMPLEMENTATION OF UIS HYBRID APPROACH TO THE USE OF POPULATION DATA FOR EDUCATION INDICATORS

Email:
uis.information@unesco.org
uis.director@unesco.org

uis.unesco.org
@UNESCOstat