

PISA 2022 TECHNICAL STANDARDS



- Data Standards refer to aspects of study implementation that directly concern the data quality and its assurance.
- These standards have been reviewed by the Technical Advisory Group, and their comments and suggestions have been taken into careful consideration in finalising the standards.
- Management Standards are in place to ensure that all PISA operational objectives are met in a timely and coordinated manner.
- National Involvement Standards reflect the expectations set out in the PISA 2022 Terms of Reference that the content of the PISA tests is established in consultation with national representatives with international content expertise. In particular, these standards ensure that the internationally developed instruments are widely examined for cross-national, cross-cultural and cross-linguistic validity and that the interests and involvement of national stakeholders are considered throughout the study.

Format of the document

11. The standards are grouped into sections that relate to specific tasks in the PISA data collection process. For every section, a rationale is given explaining why standard setting is necessary. The standards in each section consist of three distinct elements. First, there are the Standards themselves that are numbered and are shown in shaded boxes. Second, there are Notes that provide additional information on the standards directly. The notes are listed after the standards in each section. Third, there are the quality control measures that will be used to assess if a standard has been met or not. These are listed at the end of each section. In addition, the standards contain words that have a defined meaning in the context of the standards. These words are shown in italics throughout the document and are clarified in the Definitions section at the end of the document, where the terms are listed alphabetically.

Scope

12. The standards in this document apply to data from adjudicated entities that include both PISA participants and additional adjudicated entities. The PISA Governing Board will approve the list of adjudicated entities to be included in a PISA cycle.

Data standards

1.1.1. Target population and sampling

13. **Rationale:** Meeting the standards specified in this section will ensure that in all countries, the students tested come from the same target population in every country, and are in a nearly equivalent age range. Therefore, the results obtained will not be confounded by potential age effects. Furthermore, to be able to draw conclusions that are valid for the entire population of fifteen-year-old students, a representative sample shall be selected for participation in the test. The size of this representative sample should not be too small, in order to achieve a certain precision of measurement in all countries. For this reason, minimum numbers of participating students and schools are specified. In PISA 2022, a teacher questionnaire will be offered as an international option. The response-rate standard for teachers specified in this section applies only to countries that

participate in this international option, and will ensure that the analysis and reporting goals for this option can be met.

14. The procedures for drawing the samples used in the study are crucial to data quality. The goal of the project is to collect data that are representative for the population at large, in such a way that the results are comparable, reliable and valid. To reach these goals the sampling procedures must follow established scientific principles for drawing samples from finite populations.

Standard 1.1 The PISA Desired Target Population is agreed upon through negotiation between the National Project Manager and the international contractors within the constraints imposed by the definition of the *PISA Target Population*. The *Target Population* for PISA starts with students attending all educational institutions located within the country, and in grade 7 or higher. The “standard” PISA target population is further refined to its age basis: students between 15 years and 3 (completed) months and 16 years and 2 (completed) months at the beginning of the testing period.

Standard 1.2 Unless *otherwise agreed upon* only *PISA-eligible students* participate in the test.

Standard 1.3 Unless *otherwise agreed upon*, the *testing period*:

- is no longer than eight consecutive weeks in duration for computer-based testing participants,
- is no longer than six consecutive weeks in duration for paper-based testing participants,
- does not coincide with the first six weeks of the academic year, and
- begins exactly three years from the beginning of the testing period in the previous PISA cycle

Standard 1.4 Schools are sampled using *agreed upon*, established and professionally recognised principles of scientific sampling.

Standard 1.5 Student lists should not be collected more than 8 weeks prior to the start of data collection, unless *otherwise agreed upon*.

Standard 1.6 Students are sampled using *agreed upon*, established and professionally recognised principles of scientific sampling and in a way that represents the full population of *PISA-Eligible students*.

Standard 1.7 The *PISA Defined Target Population* covers 95% or more of the *PISA Desired Target Population*. That is, *school-level exclusions* and *within-school exclusions* combined do not exceed 5%.

Standard 1.8 The student sample size for the **computer-based mode** is a minimum of 6300 assessed students, and 2100 for *additional adjudicated entities*, or the entire *PISA Defined Target Population* where the *PISA Defined Target Population* is below 6300 and 2100 respectively. The student sample size of assessed students for the **paper-based mode** is a minimum of 5250.

Standard 1.9 The school sample size needs to result in a minimum of 150 participating schools, and 50 participating schools for *additional adjudicated entities*, or all schools that have students in the *PISA Defined Target Population* where the number of schools

with students in the *PISA Defined Target Population* is below 150 and 50 respectively. Countries not having at least 150 schools, but which have more students than the required minimum student sample size, can be permitted, *if agreed upon*, to take a smaller sample of schools while still ensuring enough sampled PISA students overall.

Standard 1.10 The minimum acceptable sample size in each school is 25 students per school (all students in the case of school with fewer than 25 eligible students enrolled).

Standard 1.11 The final weighted school response rate is at least 85% of sampled eligible and non-excluded schools. If a response rate is below 85% then an acceptable response rate can still be achieved through *agreed upon* use of replacement schools.

Standard 1.12 The final weighted student response rate is at least 80% of all sampled students across responding schools.

Standard 1.13 The final weighted teacher response rate is at least 75% of all sampled teachers across responding schools.

Standard 1.14 The final weighted sampling unit response rate for any optional cognitive assessment is at least 80% of all sampled students across responding schools.

Standard 1.15 Analyses based on questionnaire data that do not link to a weighted 75% of the target population shall be flagged or replaced by a missing code in OECD reports.

Standard 1.16 Unless *otherwise agreed upon*, the international contractors will draw the school sample for the Main Survey.

Standard 1.17 Unless *otherwise agreed upon*, the National Centre will use the sampling contractor's software to draw the student sample, using the list of eligible students provided for each school.

Note 1.1 Standards 1.1 through 1.17 apply to the Main Survey but not the Field Trial.

Note 1.2 Data from schools where the (unweighted) student response rate is greater than 33% will be included in the PISA dataset and the school counted as a respondent. Otherwise, the school will be a non-respondent, and no student, school or teacher data will be retained.

Note 1.3 A PISA-eligible student recorded in the database as not doing the minimum required number of questions of the main cognitive part of the PISA assessment will be counted as a nonparticipant.

Note 1.4 Acceptable response rates obtained through the use of replacement schools are described in detail in the School Sampling Preparation Manual.

Note 1.5 Guidelines for acceptable exclusions that do not affect standard adherence, are as follows:

- School level exclusions that are exclusions due to geographical inaccessibility, extremely small school size, administration of PISA would be not feasible within the school, and other agreed upon reasons and whose students total to less than 0.5 % of the PISA Desired Target Population,
- School level exclusions that are due to a school containing only students that would be within-school exclusions and that total to less than 2.0 % of the PISA Desired Target Population, and
- Within-school exclusions that total to less than 2.5 % of the PISA Desired Target Population – these exclusions could include, for example, students not able to do the test because of a functional disability.

Note 1.6 Principles of scientific sampling include, but are not limited to:

- The identification of appropriate stratification variables to reduce sampling variance and facilitate the computation of non-response adjustments.
- The incorporation of an agreed target cluster size of PISA-eligible students from each sampled school: The recommended target cluster size is 42 and 25 is the minimum. In determining the target cluster size for a given country, or stratum within a country, it is necessary to ensure that the minimum sample size requirements for both schools and students will be met.

Note 1.7 Any exceptional costs associated with verifying a school sample taken by the National Centre, or a student sample selected other than by using the sampling contractor's software will be borne by the National Centre.

Note 1.8 Agreement with the international contractor on alternative methods of drawing samples will be subject to the principle that the sampling methods used are scientifically valid and consistent with PISA's documented sampling methods. Where a PISA participating country chooses to draw the school sample, the National Centre provides the international contractor with the data and documentation required for it to verify the correctness of the sampling procedures applied. Where a PISA participating country chooses not to use the sampling contractor's software to draw the student sample, the National Centre provides the international contractor with the data and documentation required for it to verify the correctness of the sampling procedures applied.

Note 1.9 Teachers recorded in the database as completing at least one valid response will be counted as respondents.

15. Quality assurance

- Sampling procedures as specified in the PISA operations manuals
- School sample drawn by the international contractors (or if drawn by the National Centre, then verified by the international contractors)
- Student sample drawn through the sampling contractor's software (or if drawn by other means, then verified by the international contractors)
- Sampling forms submitted to the international contractors
- Main Survey Review Form

1.1.2. *Language of testing*

16. Rationale: Using the language of instruction will ensure analogous testing conditions for all students within a country, thereby strengthening the consistency of the data. It is assumed that the students tested have reached a level of understanding in the language of instruction that is sufficient to be able to work on the PISA test without encountering linguistic problems (see also the criteria for excluding students from the potential assessment due to insufficient experience in the language of assessment: within-school exclusions). Thus, the level of literacy in reading, mathematics and science can be assessed without interference due to a critical variation in language proficiency.

Standard 2.1 The PISA test is administered to a student in a language of instruction provided by the sampled school to that sampled student in the major domain (Mathematics) of the test.

If the language of instruction in the major domain is not well defined across the set of sampled students then, if *agreed upon*, a choice of language can be provided, with the decision being made at the student, school, or National Centre level. Agreement with the international contractor will be subject to the principle that the language options provided should be languages that are common in the community and are common languages of instruction in schools in that *adjudicated entity*.

If the language of instruction differs across domains then, if *agreed upon*, students may be tested using assessment instruments in more than one language on the condition that the test language of each domain matches the language of instruction for that domain. Information obtained from the Field Trial will be used to gauge the suitability of using assessment instruments with more than one language in the Main Survey.

In all cases the choice of test language(s) in the assessment instruments is made prior to the administration of the test.