Organisation for Economic Co-operation and Development

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A review of the PISA 2018 Technical Standards in regards to exclusion due to insufficient language experience

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Summary

1. Although Sweden's exclusion rate (11.09%) was exceeding the exclusion rate limit of 5%, Sweden's data were deemed to be acceptable by the PISA Data Adjudication Group, for the reason of a large ad temporary increase in immigrant and refugee flows, to allow for the reliable comparison of PISA results across countries and economies and across time. Sweden met all other PISA Technical Standards, except for one that did not compromise the overall integrity of the data.
2. The OECD's calculation based on the available data as of mid-2020 shows a similarity between the estimated weighted number of students excluded due to language in PISA 2018 and the estimated number of students who could be potentially excluded due to language. This suggests that the language factor explains the high exclusion rate which could be related to the increase of immigrant and refugee students who do not speak the language of instruction.
3. However, it is important to note that the exact figures for the following two indicators are not available for Sweden: the weighted numbers of students excluded due to language in PISA 2018; and the number of students who could be potentially excluded due to language. For the former, in PISA 2018, Sweden could not disclose the reasons for exclusion due to Sweden's data protection law. For the latter, no official data are available to estimate the exact number of immigrant/refugee students who received less than one year of instruction in Swedish. Consequently, these two figures were estimated based on several assumptions using available data. These assumptions are clarified in Box 6.1.

Introduction

4. At the request of Sweden's Ministry of Education, the OECD Secretariat conducted a review of the definition of and Sweden's adherence to the PISA technical standards in regards to exclusion due to insufficient language experience. The scope of the review was defined in consultation with the Swedish National Agency of Education who was assigned by Ministry to be the contact point for the OECD.
5. This request follows allegations by a Swedish newspaper that too many immigrant students had been excluded from sitting the PISA test. The main purpose of the review is to provide an overview of the sampling and quality assurance standards that are implemented in PISA.
6. This note will focus on the following aspects, with the review of Sweden's adherence to the PISA technical standards included in Section 6:
    - Section 1. An overview of the target population and sample design in PISA
    - Section 2. The definition of exclusion due to insufficient language experience
    - Section 3. Drawing up a school sampling frame and arriving at a national defined target population
    - Section 4. Standards for response rates
    - Section 5. The quality monitoring/assurance process by the international contractor and the OECD
    - Section 6. The data adjudication results

1. An overview of the PISA target population and sample design

7. In 2018, most PISA samples were designed as two-stage stratified samples (OECD, forthcoming[1]).[1] The PISA target population in each country/economy included 15-year-old students attending educational institutions in grades 7 and higher, more specifically 15-year-old students who were enrolled in:
    - educational institutions full-time
    - educational institutions on a part-time basis
    - vocational training programmes, or any other related type of educational programmes
    - foreign schools within the country/economy (as well as students from other countries/economies attending any of the programmes in the first three categories).
8. Conversely, 15-year-old students schooled in the home, workplace or out of the country/economy could not sit the test and were not included in the international target population.
9. The operational definition of an age population depended on the testing window, which took into account starting and end dates of countries/economies school year, and holidays. Testing was not permitted during the first six weeks of the school year because students' performance levels may have been lower at the beginning of the academic year than at the end of the previous academic year, even after controlling for age. The international target population included students aged from 15 years and 3 completed months to 16 years and 2 completed months at the beginning of the assessment period. A variation of up to one month in this age definition was permitted.

2. Overview of reasons for exclusion outlined in the PISA 2018 Technical Standards

10. This section outlines the PISA 2018 Technical Standards in regards to exclusion (OECD, 2015[2]). The overall exclusion rate within a country/economy (i.e. school-level and within-school exclusions combined) could not exceed 5% of the PISA desired target population.

2.1. School level exclusions

11. Within that 5% threshold, exclusions of schools for intellectually or functionally disabled students, or for linguistic reasons (i.e. of schools whose students meet criteria for within-school exclusions), were to cover fewer than 2% of the PISA desired target population of students (OECD, forthcoming[1]).

2.2. Student level exclusions

12. Students can be excluded if they are functionally or intellectually disabled (defined in more detail in 3.2), or have insufficient assessment language experience to take the PISA test. In this later case, these students *must meet all of the following three criteria*:
    - They are not native speakers of the assessment language.
    - They have limited proficiency in the assessment language.
    - They have received less than one year of instruction in the assessment language.

13. An article published on 2 June 2020 by the Swedish news outlet, the Expressen, suggested that immigrant and refugee students had to sit the PISA test if they had been in the country for at least one year (Hellberg, 2020[3]). This was a misunderstanding of the PISA Technical Standards, which states that students *need to be taught in the assessment language for at least one year* in order to sit the test (OECD, forthcoming[1]). This technically excludes immigrant and refugee students in Sweden who might have been in school for at least one year and were taking preparatory classes, such as Swedish as a second language, for up to two years before entering classes taught in Swedish. Therefore, newly arrived students who had been attending school for up to three years could potentially be excluded (see Box 6.1).
14. In addition, students could also be excluded if they were taught in a language of instruction for the PISA main domain for which no PISA test materials were available. Standard 2.1 in the *PISA 2018 Technical Standards* notes that the PISA test is administered to a student in a language of instruction provided by the sampled school in the major domain of the test (OECD, 2015[2]). Thus, if no test materials were available in the language in which the sampled student is taught, the student was excluded.
15. Within-school exclusions could not exceed 2.5 % of the PISA desired target population (defined in section 3.2).

3. The phases, roles and responsibilities in drawing the school sampling frame and defining the PISA target population

16. PISA National Project Managers (NPMs) were responsible for carrying out the procedures within their own country/economy specified and overseen by the international contractor responsible for the implementation of PISA. This included drawing up the sampling frame summarised in this section.

3.1. PISA-eligible population taken from total national 15-year-old population

17. Every NPM was first required to provide information on the total national 15-year-old population regardless if they were enrolled in an educational institution (i.e. initial target population). From there, the NPM defined the total national population of 15-year-olds enrolled in some kind of educational institution. Then they separated those 15-year-olds who were enrolled in grades 7 and above from those students in grades 6 and below who were not eligible to sit the PISA test. This is defined as the PISA-eligible population.

3.2. National desired target population vs. national defined target population

18. The NPMs' sample frame should remain as close as possible to the PISA-eligible population. However, when necessary, NPMs could remove distinct geographical regions of the country or a particular language group, due to political, organisational or operational reasons. NPMs needed to document these non-covered areas and explain why they were removed, and how and why this national desired target population might deviate from the international desired target population. Any hardships in accomplishing complete coverage were specified, discussed and approved or not by the contractor responsible for sampling, in advance as it could mean that the survey results would not representative of the entire national school system.
19. From the national desired target population, NPMs could further remove schools for the following reasons:

- the school is geographically inaccessible (but not part of a region that is excluded from the full national PISA Target Population, as indicated above)
- administration of the PISA assessment within the school would not be feasible (e.g., schools for criminals; non-assessed language, school for the blind, etc.).

20. Students from the list of all PISA-eligible students provided by the school co-ordinator (see section 3.3 for more information) within sampled schools could be removed for the following reasons:

    - "Functionally disabled students" that cannot take the PISA test. Such students are those with a moderate to severe permanent physical disability. Students with functional disabilities who can respond should be included in the testing.
    - "Intellectually disabled students" who have a cognitive, behavioural or emotional disability confirmed by qualified staff, meaning they cannot take the PISA test because they are unable to follow even the general instructions of the assessment. Students should not be excluded under this category solely because of poor academic performance or normal discipline problems.
    - "Students with insufficient language experience in test language" to take the PISA test. These are students who meet all of the following criteria: a) are not native speakers of the assessment language; b) have limited proficiency in the assessment language; c) have received less than one year of instruction in the assessment language. **Only students meeting all three of these criteria can be excluded for this reason.**

21. The NPM could also use an "other" within-school exclusion category if the other three categories did not cover all types of exclusions. The definition that the NPM used for this "other" category first had to be approved by the contractor in charge of sampling. For example, the "other" category has been used for students with dyslexia in the past.

22. An estimate of within-school student exclusions formed part of the exclusions from the national desired population since students lists are not collected until close to the assessment. Where this final national defined target population deviated from full coverage of all PISA-eligible students, the deviations were described and enrolment data provided to measure how much coverage was reduced. The population, after all exclusions, corresponded to the population of students recorded on each country/economy's school sampling frame.

23. Schools with students that would all be excluded through the within-school exclusion categories could be excluded up to a maximum of 2% of the target population as previously noted. Otherwise, countries/economies were instructed to include the schools but to administer the PISA UH form (one-hour test booklet), consisting of a subset of the PISA assessment items, deemed more suitable for students with special needs. Fourteen countries/economies used the UH booklet for PISA 2018. (Sweden did not use the UH booklet option.)

24. For all but one participating country, the sampling frame was submitted to the international contractor, who selected the school sample.[2] Having the international contractor select the school sample minimised the potential for errors in the sampling process, and ensured uniformity in the data file outputs for more efficient data processing later (student sampling, data analysis, etc.). It also relieved the burden of this task from National Centres. NPMs worked closely with the international contractor throughout the process of preparing the sampling documentation, ensuring that all nationally-specific considerations related to sampling were thoroughly documented and incorporated into the school sampling plan.

3.3. Ensuring that the student tracking list included all eligible students in the sampled school and sampled students sat the test

25. Following the selection of the school sample by the international contractor, the list of sampled schools was returned to the national centres. The NPMs then contacted the school co-ordinators who were responsible for organising school-related activities, which included preparing and providing the list of all eligible students in the sampled school to the NPM. The student list had to be provided within eight weeks prior the assessment and not before so that all students enrolled at the time would be included the day of testing.

26. According to the school coordinator manual – and enforced by the NPMs – the list should include all students eligible for participation in PISA (and any additional sampling options). This included students with special educational needs or limited experience in the test language(s), those who were frequently absent, those pending disciplinary measures, and those who may be on work placement programmes at the time of testing. Incomplete student lists could seriously compromise the quality of the sample and cause the data integrity to be questioned. The NPM had to contact the contractor in charge of sampling if there was any ambiguity about a student's eligibility to sit the test. The NPM could also rely on a central database if it had up-to-date and sufficiently detailed student-level information (including name, grade, gender, month and year of birth) in order to compare with the student list that the school coordinator provided.

27. NPMs were required to select the student sample using KeyQuest, the PISA student sampling software prepared by the international contractor. KeyQuest generated the list of sampled students for each school, known as the Student Tracking Form, and the Session Attendance Form that served as the central administration documents for the study and linked students, test booklets, and student questionnaires.

28. The school coordinator then received this list of sampled students from the NPM on the Student Tracking Form and updated it if necessary (e.g. identifying students with disabilities or limited assessment language proficiency who could not take the assessment according to criteria established by the international contractors and the PISA Technical Standards).

29. On the assessment day, the school co-ordinator also ensured that the sampled students attended the assessment session(s). If necessary, the school co-ordinator also arranged for a follow-up session and ensured that absent students attended the follow-up session.

4. Participation rates

30. PISA requires a minimum weighted participation rate of 85% of originally sampled schools. However, non-participating sampled schools may be substituted with "replacement schools" to meet sample size and response rate requirements. The use of replacement schools does not guarantee that potential biases have been reduced. Therefore, NPMs are encouraged to persuade as many original sampled schools as possible to participate; only a high participation rate among originally sampled schools will minimise the potential for nonresponse bias.

31. PISA also requires a minimum weighted participation rate of 80 % of students within participating schools (sampled and replacement). Follow-up sessions may be required in schools where too few students participated in the originally scheduled test sessions so as to ensure a high overall student response rate.

32. Student participation rates are calculated over all participating schools, whether sampled schools or replacement schools, and from the participation of students at the originally scheduled sessions and any follow-up sessions that may be required. The student participation rate requirement needs to be met at the national level, not necessarily for each participating school.

5. Brief overview of quality assurance and monitoring protocols in PISA 2018

33. For PISA 2018, a group of four international contractors lead all aspects of PISA implementation under the close guidance of the OECD Secretariat, including:
    - Instrument development, scaling, and analysis
    - Translation plans and workflows, translation verification follow-up
    - Data management
    - Questionnaire development
    - Development of the electronic platform for the Computer Based Assessment
    - Survey operations and procedures — Oversight and management
    - Framework development
    - Sampling
    - Linguistic quality assurance and control
34. National Project Managers of participating jurisdictions are responsible for implementing the standards based on the international contractors' advice as contained in the various operational manuals and guidelines. Throughout the cycle of activities for each PISA survey, the international contractors carried out quality-assurance activities in two steps.
35. The first step was to set up quality- assurance procedures using the operational manuals, as well as the agreement processes for national submissions on various aspects of the project. These processes gave the international contractor staff the opportunity to ensure that PISA implementation was planned in accordance with the PISA 2018 Technical Standards and to provide advice on taking rectifying action when required and before critical errors occurred.
36. The second step was quality monitoring, which involved the systematic collection of data that monitored the implementation of the assessment in relation to the standards. For the data adjudication, information collected during both the quality-assurance and quality-monitoring activities was used to determine the level of compliance with the standards.

5.1. Quality monitoring reports

37. There were two types of PISA quality monitoring reports: The Session Report Form containing data for each session in each school, and the Data Collection Form detailing the observations across all schools visited by the international PISA Quality Monitors (PQMs). These data were collected independently of the National Project Manager. The international PQMs were nominated by then selected an employed by the PISA international contractor for survey operations to monitor test administration quality in an adjudicated entity (about 15 site visits, on average in each country), as detailed in Standard 12 of the PISA 2018 Technical Standards (OECD, 2015[2]).

38. The Session Report Form was completed by the Test Administrator after each test session and also contained data related to test administration. The data from this report were recorded by the National Centre and submitted as part of the national dataset to ETS (International Contractor).

5.2. Communication protocols between NPMs, international contractor and the OECD Secretariat

39. The international contractors seek to provide National Centres with the appropriate information and support to implement the project to the required standards within agreed-upon timelines (e.g. meetings, trainings, manuals).

40. NPMs negotiate variations and options selected for their countries with either the OECD or the international contractors depending on the topic, and details are explained in a different document. The international contractors maintains a record of all agreed-upon variations as well as national and international options. This allows National Centres to check that international contractors' records relating to these matters are correct, thereby avoiding confusion.

6. Data adjudication results in regards to sampling (exclusion), participation rates and data collection

6.1. Data adjudication process

41. Data adjudication is the process through which each national dataset is reviewed and a judgement about the appropriateness of the data for the main reporting goals is formed. The PISA Technical Standards (OECD, 2015[2]) specify the way in which PISA must be implemented in each participating jurisdiction and adjudicated region.

42. International contractors monitor the implementation in each of these and adjudicate on their adherence to the standards. All quality-assurance data collected throughout the PISA 2018 assessment were entered and collated in a central data-adjudication database on the quality of field operations, printing, translation, school and student sampling, and coding. Comprehensive reports were then generated for the PISA Adjudication Group. This group was formed by the Technical Advisory Group and the Sampling Referee. Its role is to review the adjudication database and reports in order to recommend adequate treatment to preserve the quality of PISA data.

43. This section describes the process used to adjudicate the PISA 2018 data for each of the adjudicated entities (i.e. the participating countries and economies – hereafter, "jurisdictions" – and the adjudicated regions) and gives the outcomes of data adjudication including:

    - the extent to which each adjudicated entity met PISA sampling standards
    - the outcomes of the PISA Quality Monitoring visits
    - the quality and completeness of the submitted data, including concerns about the quality of the data that were identified during scaling and in preparation for reporting.

6.2. Adjudication on exclusion rates

44. As mentioned above, the sampling standards used in PISA only permitted countries and economies to exclude up to a total of 5% of the relevant population (i.e. 15-year-old students enrolled in school at grade 7 or higher) either by excluding schools or excluding students within schools. Among 79 countries and economies that participated in PISA 2018, all but 16 countries and economies – Sweden (11.09%), Israel (10.21%), Luxembourg (7.92%), Norway (7.88%), Canada (6.87%), New Zealand (6.78%), Switzerland (6.68%), the Netherlands (6.24%), Cyprus (5.99%), Iceland (5.99%), Kazakhstan (5.87%), Australia (5.72%), Denmark (5.70%), Turkey (5.66%), the United Kingdom (5.45%) and Estonia (5.03%) – achieved this standard. In 28 countries and economies, the overall exclusion rate was less than 2%. When language exclusions were accounted for (i.e. removed from the overall exclusion rate), Estonia and Iceland no longer had exclusion rates greater than 5%.

45. Although exceeding the exclusion rate limit of 5%, data from the 16 countries and economies listed above were all deemed to be acceptable for the reasons listed below. In particular, all of these reasons were accepted by a data-adjudication panel to allow for the reliable comparison of PISA results across countries and economies and across time; thus the data from these countries were reported together with data from other countries/economies.[3]

46. Sweden had the highest exclusion rate: 11.09%.[4] The PISA Adjudication Group concluded that this increase in the exclusion rate (the exclusion rate was 5.71% in PISA 2015) could be due to a large and temporary increase in immigrant and refugee inflows, although because of Swedish data-collection laws, the reason of exclusion could not be explicitly stated in student-tracking forms. Instead, students confronted with language barriers were classified as being excluded "for other reasons", as were students with intellectual and functional disabilities. The Group also expected that the exclusion rate will decrease to previous levels in future cycles of PISA, as such inflows stabilise or shrink.

47. The OECD's calculation based on the available data as of summer 2020 shows a similarity between the estimated weighted number of students excluded due to language in PISA 2018 and the estimated number of students who could be potentially excluded due to language (Box 6.1). This suggests that the language factor explains the high exclusion rate which could be related to the increase of immigrant and refugee students who do not speak the language of instruction.

48. According to the records of the communications between the Swedish PISA National Centre and the PISA international contractor in charge of sampling, the Swedish PISA National Centre correctly understood the standards for exclusion and three criteria that need to be met to exclude students due to language (see Section 2.2) and assured the contractor that they had been applied correctly to the best of their knowledge.

6.3. Adjudication on participation rates

49. In PISA 2018, five countries and economies – Hong Kong (China) (69%), Latvia (82%), New Zealand (83%), the United Kingdom (73%) and the United States (65%) – did not meet the 85% threshold, but met the 65% threshold, amongst schools initially selected to take part in the PISA assessment. Upon replacement, Hong Kong (China) (79%), the United Kingdom (87%) and the United States (76%) still failed to reach an acceptable participation rate.[5]

50. Amongst the schools initially selected before replacement, the Netherlands (61%) did not meet the 65% school response-rate threshold, but it reached a response rate of 87% upon replacement. However, these were not considered to be major issues as, for each of these countries/economies, additional non-response analyses showed that there were limited differences between schools that did participate and the full set of schools originally drawn in the sample.[6] Data from these jurisdictions were hence considered to be largely comparable with, and were therefore reported together with, data from other countries/economies.

51. PISA 2018 also required that at least 80% of the students chosen within participating schools participated themselves. This threshold was calculated at the national level and did not have to be met in each participating school. Follow-up sessions were required in schools where too few students had participated in the original assessment sessions. Student-participation rates were calculated over all original schools; and also over all schools, whether original or replacement schools. Students who participated in either the original or in any follow-up assessment sessions were counted in these participation rates; those who attended only the questionnaire session were included in the international database and contributed to the statistics presented in this publication if they provided at least a description of their father's or mother's occupation.

52. This 80% threshold was met in every country/economy except Portugal, where only 76% of students who were sampled actually participated. The high level of non-responding students could lead to biased results, e.g. if students who did not respond were more likely to be low-performing students. This was indeed the case in Portugal, but a non-response analysis based on data from a national mathematics assessment in the country showed that the upward bias of Portugal's overall results was likely small enough to preserve comparability over time and with other countries. Data from Portugal was therefore reported along with data from the countries/economies that met this 80% student-participation threshold.

53. While Sweden had a high exclusion rate, Sweden met the school participation rate threshold with 98.7% of schools participating in the initial sample before school replacement, and a final sample of 99.2% of schools participating after school replacement. Within all participating schools, Sweden met the student response rate standard (i.e. 80%) with 86.5%.

Box 6.1. Verifying Sweden's high exclusion rate in PISA 2018

In order to verify the percentage of students excluded due to language, the following two calculations should be similar:

(a) The weighted number of students excluded due to language in PISA 2018

(b) The number of students who could be potentially excluded due to language

However, for both (a) and (b), the exact numbers are not available for Sweden in PISA 2018:

(a) **The weighted number of students excluded due to language in PISA 2018.** In PISA 2018, Sweden could not disclose the reasons for exclusion due to Sweden's data protection law. Sweden instead merged the number of students excluded due to language with other reasons, such as functional and intellectual disabilities. Consequently, only the overall number of exclusion is available for Sweden in PISA 2018.[7]

(b) **The number of students who could be potentially excluded due to language**. No official data are available to estimate the exact number of immigrant/refugee students who received less than one year of instruction in Swedish (see three criteria listed in Section 2.2). This means that the number of such students can be only estimated based on available data and certain assumptions.

While noting these challenges, the following section estimates the number of students for (a) and (b), and clarifies the assumptions made for these estimates (see Assumptions 1, 2 3 and 4 below).

Estimating (a) the weighted number of students excluded due to language in PISA 2018

According to PISA's sampling outcomes:

- In PISA 2015, the weighted number of excluded students was 4 324. Among these, the number of excluded students due to functional disability was 2 380, and the number of excluded students due to language was 1 944 (OECD, 2017[4]; OECD, 2016[5]).
- In PISA 2018, the weighted number of excluded students was 10 163. Due to the reason described above, see (a) above, it is not possible to distinguish between exclusion due to functional disability and exclusion due to language.

If it is assumed that functional disability in 2018 was at the same level as 2015 (=Assumption 1), the exclusion due to language in PISA 2018 would be around 7 500 students.[8]

Estimating (b) the number of students who could be potentially excluded due to language

Various supports are provided to newly arrived students in the Swedish education system, including a preparatory class and a class of teaching Swedish as a second language. These are not compulsory and the provisions and durations vary across schools. While there is no stipulation for the duration of a Swedish-as-a-second-language class, a preparatory class can be provided for a maximum of two years. Students are moved to a regular class once they are judged to have a sufficient Swedish language ability (Swedish National Agency of Education, 2020[6]). [9]

PISA 2018 main data collection started in early March 2018. If it is assumed that immigrant/refugee students had developed sufficient Swedish language experience to participate in regular classes within two years (=Assumption 2)[10], those immigrants and refugees students, born in 2002, who had entered the Swedish school around March 2015 or after are theoretically eligible for being excluded from the PISA sample because they had not been in regular classes taught in Swedish without additional support for a year or more.

According to the Swedish National Agency for Education, the population of students born in 2002 who are registered in the school system changes over time as shown in Table 6.1. For example, as of October 2014, the total number of students registered in the school system born in 2002 was 103 089. Among these students, 10 137 were foreign born with an immigration background (row 3). Between October 2014 and October 2015, 1 774 immigrant/refugee students arrived in the Swedish education system bringing the number to 11 911 foreign born immigrant students. In total, between October 2014 and October 2017, 5 838 immigrant/refugee students registered in the Swedish education system.

Registration data are available by year, but no detailed monthly break down is available. If an inflow into the Swedish education system is constant per month (=Assumption 3), it can be estimated that 1 035 immigrant/refugee students arrived in the Swedish education system between March 2015 and October 2015.[11] This means that, in total, between March 2015 and October 2017, it is estimated that 5 099 immigrant/refugee students newly registered in the Swedish education system.

The PISA 2018 main data collection was conducted in early March 2018. The student list had to be provided within eight weeks prior the assessment, which was around January 2018 for Sweden. This means that new immigrant/refugee students who arrived in November and December 2017 are not included in the total of 5 099. If it is assumed that the rate of new immigrant/refugee students arrival is stable from October 2016 until the end of 2017 (=Assumption 4), around 189 new students (1 133 as of October 2017 divided by 12 months and multiplied by two) may have entered the Swedish education system in November and December 2017. In sum, around 5 300 students (=5 099 + 189) can be potentially excluded due to language.

Table 6.1. The number of registered students in compulsory school who were born in 2002

	As of October 2014	As of October 2015	As of October 2016	As of October 2017	
Students with at least one parent born in Sweden (1)	82 668	82 758	82 701	82 483	
Born in Sweden with immigration background (2)	10 284	10 349	10 331	10 529	
Foreign born with immigration background (3)	10 137	11 911	14 842	15 975	
Total	103 089	105 018	107 874	108 987	
Foreign born with immigration background (3) who entered the Swedish education system between Oct. 2014 and Oct. 2015		1 774			

Foreign born with immigration background (3) who entered the Swedish education system between Oct. 2015 and Oct. 2016			2 931		
Foreign born with immigration background (3) who entered the Swedish education system between Oct. 2016 and Oct. 2017				1 133	
Total					5 838
Total – Estimated number of foreign born with immigration background (3) who entered the Swedish education system between October 2014 to February 2015					5 099

Source: In response to the OECD's request, the Swedish National Agency of Education provided the figures in this table on 26 June 2020. These figures are based on the SPSS data files of "Register of students in compulsory school born 2002" for school years 2014/2015, 2015/2016, 2016/2017 and 2017/18 (Swedish National Agency for Education, 2015[7]; 2016[8]; 2017[9]; 2018[10]).

In summary,

(a) The estimated weighted number of students excluded due to language in PISA 2018 is approximately 7 500.

(b) The estimated number of students who could be potentially excluded due to language is approximately5 300.

While (a) and (b) are not identical, the difference of 2 200 students amounts to 2.4% of the weighted number of participating students in Sweden (i.e. 93 129).[12] Some part of the discrepancy could be explained by the potential overestimation of the exclusion rate (at most 0.5 percentage point) described in endnote 4. It is also possible that exclusions due to disability increased somewhat between 2015 and 2018– such an increase was observed for example in Finland and Norway. Some newly arrived student are taught the subject Swedish as a second language and there are no stipulations on how long the student should be in such a class (Swedish National Agency of Education, 2020[6]). Finally, it is worth noting that some students do not have official records of their education history (e.g. the number of years in preparatory classes), which the school co-ordinators can rely on to identify students who should be excluded due to language, especially since some of these students moved around and changed schools in recent years.

6.4. Adjudication on data collection

54. Overall, the review suggested good adherence of national implementations of PISA to the technical standards. Despite the overall high quality of data, a few countries' data, including Viet Nam, the Netherlands and Portugal, failed to meet critical standards or presented inexplicable anomalies, such that the Adjudication Group recommends a special treatment of these data in databases and/or reporting students (OECD, forthcoming[1]).

55. In Sweden, all standards for data submission were met, except for one that did not compromise the overall integrity of the data. Sweden used a different programme for occupational coding that led to issues with compatibility with the contractor's data management system. Instead, Sweden had to provide separate ISCO (International Standard Classification of Occupations). In addition, Sweden did not complete the required 100% double-coding.

References

Hellberg, L. (2020), "Sveriges PISA-framgång bygger på falska siffror (Sweden's PISA success is based on false figures)", *Expressen*, https://www.expressen.se/nyheter/qs/sveriges-pisa-framgang-bygger-pa-falska-siffror/ (accessed on 12 June 2020). [3]

OECD (2017), *PISA 2015 Technical Report*, OECD Publishing, https://www.oecd.org/pisa/data/2015-technical-report/PISA2015_TechRep_Final.pdf. [4]

OECD (2016), *PISA 2015 Results (Volume I): Excellence and Equity in Education*, OECD Publishing, http://dx.doi.org/10.1787/9789264266490-en. [5]

OECD (2015), *PISA 2018 Technical Standards*, https://www.oecd.org/pisa/pisaproducts/PISA-2018-Technical-Standards.pdf (accessed on 3 July 2020). [2]

OECD (forthcoming), *PISA 2018 Technical Report*, OECD Publishing, https://www.oecd.org/pisa/data/pisa2018technicalreport/. [1]

Swedish National Agency for Education (2018), *Elevregistret_grsk_födda_2002_lasår_2017/18.sav*, (SPSS data file of register of students in compulsory school born 2002 school year 2017/18), accessed in June 2020. [10]

Swedish National Agency for Education (2017), *Elevregistret_grsk_födda_2002_lasår_2016/17.sav*, (SPSS data file of register of students in compulsory school born 2002 school year 2016/17), accessed in June 2020.. [9]

Swedish National Agency for Education (2016), *Elevregistret_grsk_födda_2002_lasår_2015/16.sav*, (SPSS data file of register of students in compulsory school born 2002 school year 2015/16), accessed in June 2020. [8]

Swedish National Agency for Education (2015), *Elevregistret_grsk_födda_2002_lasår_2014/15.sav*, (SPSS data file of register of students in compulsory school born 2002 school year 2014/15), accessed in June 2020. [7]

Swedish National Agency of Education (2020), "Newly arrived students in the Swedish school system", *Working Paper 2020-06-07*. [6]

Notes

[1] In Russia, a three-stage design was used. In this case, geographical areas were sampled first (first-stage units) using probability proportional to size, and then schools (second-stage units) were selected within these sampled geographical areas. Students were the third-stage sampling units in this three-stage design.

[2] The only country that used a three-stage design was the Russian Federation, where a national list of schools was not available. The use of the three-stage design allowed for school lists to be obtained only for those areas selected in stage one rather than for the entire country. The NPM for the Russian Federation received additional support with their area-level sampling frame.

[3] In Australia, Canada, Denmark, Luxembourg, New Zealand and Norway, exclusion rates remained close to those observed in previous cycles. In the United Kingdom, exclusion rates were also above 5% but have decreased markedly across cycles.
In Cyprus, Iceland, Kazakhstan, the Netherlands and Switzerland, exclusions increased but remained close to the 5% limit. The increase could be largely attributed to a marked increase in students who were excluded within schools due to intellectual or functional disabilities.
The higher exclusion rate in Turkey was likely the result of a higher school-level exclusion rate due to a particular type of non-formal educational institution that was not listed (and hence not excluded) in 2015 but was listed and excluded in 2018.
The higher exclusion rate in Israel was the result of a higher school-level exclusion rate due to the lack of participation by a particular type of boys' school. These schools were considered non-responding schools in cycles up to 2015 but were treated as school-level exclusions in 2018.

[4] The preliminary attribution of school codes in the process of selecting, and then excluding, students and schools may have resulted in the double exclusion (at both the school and student levels) of some of the students with special education needs in Sweden. As a result, the overall exclusion rate in Sweden may have been overestimated by (at most) 0.5 of a percentage point. In this scenario, the overall exclusion rate would still be over 10% and the highest amongst PISA-participating countries/economies.

[5] The threshold for an acceptable participation rate after replacement varies between 85% and 100%, depending on the participation rate before replacement.

[6] In particular, in the case of the Netherlands and the United Kingdom, non-response bias analyses relied on direct measures of school performance external to PISA, typically from national assessments. More indirect correlates of school performance were analysed in Hong Kong (China) and the United States, due to the absence of national assessments. The non-response problem in Hong Kong (China) can be attributed to two causes: lack of initiative amongst schools and teachers to participate in PISA, and a large number of schools that were considered to be non-responding schools, as less than 50% of sampled students in these schools sat the assessment.

[7] In PISA 2018, Swedish legal experts advised the PISA Centre in Sweden to implement a stricter interpretation of Sweden's Data Protection Law, PUL. Until PISA 2015, as in other countries/economies patriated in PISA, Sweden collected reasons for exclusions using the following five standard categories: Code 1 Students excluded due to functional disability; Code 2 Students excluded due to intellectual disability; Code 3 Student excluded due to language; Code 4 Students excluded due to other reasons; and Code 5 Students excluded because of no materials available in the language of instruction. The PGB member in Sweden informed the OECD of merging the Codes 1, 2 and 3 into Code 4. After discussing with

Sweden and the PISA International Contractor which is responsible for sampling, the OECD noted the potential issue of merging these codes and especially if Sweden's 2018 overall exclusion would exceed 5%. The OECD informed Sweden that depending on Sweden's overall exclusion rate, the adjudication group would ask Sweden to submit some evidence regarding the proportion of students with limited language ability.

[8] This is computed as: 10163 - (2380/97210) x 107824 = 7521, while Sweden's desired target population was 97210 in PISA 2015 and it was 107824 in PISA 2018.

[9] Students' time spent in preparatory classes are not counted into "one year of instruction in the assessment language". Even if students are taught in Swedish in preparatory classes, they are judged to have insufficient knowledge of Swedish to be able to follow regular classes in Swedish and they are therefore receiving special support.

[10] This assumption is derived based on the fact that a preparatory class is provided for a maximum of two years. This is used as a proxy for a duration of developing sufficient Swedish language experience.

[11] This is computed as: 1774 x 7/12= 1035.

[12] In PISA 2018, Sweden's average performance in reading was 506 score points. If those 2 200 students had taken the PISA test and they had performed at the lowest proficiency level, Level 1c (i.e. the lowest end of this proficiency level is around 189 score points), the country average would have been 499 points. This was computed as: ((93129 x 506) + (2200 x 189)) / (93129 + 2200) = 499. Readers at Level 1c can understand and affirm the meaning of short, syntactically simple sentences on a literal level, and read for a clear and simple purpose within a limited amount of time. Tasks at this level involve simple vocabulary and syntactic structures. If those 2 200 students had taken the PISA test and they had performed at Level 1a (i.e. the lowest end of this proficiency level is around 335 score points), which is just below the baseline proficiency level, the country average would have been 502 points. This was computed as: ((93129 x 506) + (2200 x 335)) / (93129 + 2200) = 502. Readers at Level 1a can understand the literal meaning of sentences or short passages. Readers at this level can also recognise the main theme or the author's purpose in a piece of text about a familiar topic, and make a simple connection between several adjacent pieces of information, or between the given information and their own prior knowledge. They can select a relevant page from a small set based on simple prompts, and locate one or more independent pieces of information within short texts. Level 1a readers can reflect on the overall purpose and on the relative importance of information (e.g. the main idea vs. non-essential detail) in simple texts containing explicit cues. Most tasks at this level contain explicit cues regarding what needs to be done, how to do it, and where in the text(s) readers should focus their attention.