



PROGRAMME FOR INTERNATIONAL STUDENT ASSESSMENT

# PISA FOR DEVELOPMENT

## Out-of-school-assessment Results in Focus





Over the past two decades, the OECD Programme for International Student Assessment, PISA, has become the world's premier reference for evaluating the quality, equity and efficiency of school systems. By identifying the characteristics of high-performing and improving education systems, PISA allows governments and educators to pinpoint effective policies that they can adapt to their local contexts. PISA is now used by the UN system as a main source of data for monitoring progress towards the Sustainable Development Goals (SDGs).

PISA for Development (PISA-D) focuses on making PISA more accessible and relevant to low- and middle-income countries. In support of the SDGs, through PISA-D we have enhanced our PISA instruments so that they target the range of student performance in these countries. We have also collected background information to capture how students learn, teachers teach and schools operate in these contexts. PISA-D has helped participating countries to build their capacity to manage large-scale assessments and to make use of the results in support of national policy dialogue and education policy-making.

In most OECD countries, and across many other PISA-participating countries and economies, enrolment in school at age 15 is nearly universal, and schooling is compulsory until approximately that age. However, in many low- and middle-income countries, including some of those that have participated in PISA, relatively large proportions of 15-year-olds are not enrolled in school or are not enrolled in PISA's target grades (grade 7 and above). Today, an increasing number of middle-income countries participate in PISA; moreover, there are 61 million children of lower secondary school age out of school around the world. Through PISA-D, the OECD set out to ensure that this population is no longer beyond the reach of programmes that focus on evaluating the readiness of young people for their full participation in society.

The results of the in-school assessment of PISA-D were published in December 2018 (see PISA in Focus #91). The results of the final component of the initiative, the assessment of out-of-school children and youth, are published in the present study. This has been one of the most challenging aspects of the PISA-D initiative. It is the first attempt in the history of international large-scale assessments to include out-of-school children and youth in a study of this kind. The countries that participated in this component of the project, namely Guatemala, Honduras, Panama, Paraguay and Senegal, have demonstrated great courage in comparing themselves internationally and in going the extra mile to shine a light on the skills and circumstances of the most disadvantaged children and youth in their populations.

While the PISA-D data was collected prior to the COVID-19 pandemic, the results provide important lessons for the education response to the crisis. Some 1.5 billion students and youth across the planet have been – and continue to be – affected by school and university closures due to the pandemic. The absence of schooling on a global scale has amplified the importance of education and has highlighted the gross disparities that exist between those who have access to learning opportunities and those who do not. The most disadvantaged children are those that were already out-of-school, or were in-school but not learning, before the onset of the COVID-19 crisis.

The PISA-D data provides relevant and important insights and lessons, particularly for low- and middle-income countries. As school systems emerge from COVID-19 lockdowns, these countries will need to regain the educational ground that has been lost during the crisis and then strive to overcome the challenges that existed before the global pandemic hit.

At the OECD, we have learned a great deal from the PISA-D exercise. Specifically, the project has helped us to increase the resolution and relevance of the PISA instruments for low performers. Moreover, this final component has enabled us to reach the most disadvantaged children and youth – those who are not in school. More generally, all PISA-participating countries have benefitted from the opportunity PISA-D has provided, namely: including more diversity in policies and practices; increasing the opportunities for peer learning; and enriching analyses by having a greater range of points of comparison, as well as more relevant information on the characteristics of the population surveyed.

We have already integrated the instruments, methods, approaches and the lessons of PISA-D into our main PISA assessment. This has helped the OECD to incorporate increasing numbers of participants in the assessment. It has also helped to offer existing participants a wider range of benefits, such as capacity building for data analysis and reporting, and including out-of-school youth – the main focus of this publication.

The education systems of the PISA-D countries – and low and middle-income countries more generally – have the potential to ensure that all of their children and young people achieve at least minimum levels of proficiency in basic skills, such as literacy and numeracy – the SDG benchmark. We have no time to lose in ensuring that these systems commit themselves to providing the best education possible.

The OECD stands ready to support the PISA-D countries, and other low and middle-income countries, in their efforts to achieve better education policies for better lives for all children and youth.



A handwritten signature in black ink, which appears to read 'Angel Gurría'.

**Angel Gurría**  
OECD Secretary General

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## What are PISA and PISA for Development?

“What is important for citizens to know and be able to do?” In response to that question and to the need for internationally comparable evidence on student performance, the Organisation for Economic Co-operation and Development (OECD) launched the triennial survey of students around the world known as the Programme for International Student Assessment, or PISA. PISA assesses the extent to which 15-year-old students, near the end of their compulsory education, have acquired key knowledge and skills that are essential for full participation in modern societies. The assessment focuses on the core school subjects of reading, mathematics and science. The assessment does not just ascertain whether students can reproduce knowledge; it also examines how well students can extrapolate from what they have learned and apply that knowledge in unfamiliar settings, both in and outside of school. This approach reflects the fact that modern economies reward individuals not for what they know, but for what they can do with what they know.

Building on the experience of working with middle-income countries in PISA since 2000, and in an effort to respond to the emerging demand for PISA to cater to a wider range of countries, the OECD launched the PISA for Development (PISA-D) initiative in 2014. This one-off pilot project, spanning six years, aims to make the assessment more accessible and relevant to low- and middle-income countries.

To accomplish its objectives, the project:

- provides a more granular definition of student performance at the lower end of the PISA scales
- captures a wider range of social and economic contexts
- incorporates an assessment of out-of-school 14-16 year-olds (the subject of this publication)
- builds capacity in the participating countries for managing and using the results of large-scale assessments
- supports the monitoring and achievement of the Sustainable Development Goal for education (SDG 4)

Seven countries participated in the school-based implementation of PISA-D: Cambodia, Ecuador, Guatemala, Honduras, Paraguay, Senegal and Zambia.<sup>1</sup> Four of them, namely Guatemala, Paraguay, Honduras and Senegal, also participated in the PISA-D out-of-school assessment. Panama took part in the main PISA assessment in 2018 and the PISA-D out-of-school assessment.

As noted above, PISA in Focus #91 reported the in-school assessment results for PISA-D. This brochure reports on the out-of-school assessment results for PISA-D. By combining the out-of-school assessment with the in-school assessment, PISA-D has been able to achieve a unique perspective on the current skills level and on the challenges that the entire population of 14-16 year-olds face in the five participating countries.



## Key features of the PISA-D out-of-school assessment

### Content

The PISA-D household-based survey assessed 14-16 year-olds not enrolled in PISA's target grades (grade 7 and above) in the domains of reading and mathematics; each domain was treated equally in the assessment.

The scientific literacy domain was not included in the household-based survey due to practical considerations of total assessment time and the burden on individuals in a household survey.

### Participating

The sample was expanded from 15-year-olds to 14-16 year-olds on the recommendation of OECD Education Working Paper no. 120, which was drafted by independent expert Roy Carr-Hill and can be found at this link. The working paper highlighted the challenge of locating a single year age group in a household survey in low- and middle-income countries.

Across the five participating countries, a representative sample of 89 000 households or dwelling units was drawn and within this a probability sample was identified, where all sample units have a non-zero probability of selection<sup>2</sup>. PISA-D randomly selected households, and trained interviewers went to each household to apply a screener questionnaire to confirm if there were any eligible youth. If so, the interviewer then contacted the youth to conduct the interview or, if the youth was unavailable, set up an appointment to conduct the interview later. This procedure was complemented by a non-probability sample with referrals from schools or interviewed youth, or members of households with no eligible youth<sup>3</sup>.

Through the application of the probability and non-probability approaches to sampling, more than 7 200 respondents completed the household-based assessment, representing 1 431 497 14-16 year-olds who were either not in school or were in school in grade six or below across five countries: Guatemala, Honduras, Panama, Paraguay and Senegal.

### The assessment

- The background interviews and cognitive assessments were tablet-based, took place mainly in households, and lasted a little more than 90 minutes for each respondent.
- An interviewer conducted the assessment beginning with a 30-minute interview during which the respondent answered a series of background questions covering topics such as the youth's school and learning experiences, well-being and home life. The interviewer recorded the responses on the tablet.

- The cognitive assessments began with a 10-minute core module composed of five reading and five mathematics items. Depending upon the responses to these, the youth was guided automatically to either the full 35-minute cognitive test (approximately 32 reading and mathematics literacy items) or a 15-minute assessment of reading components (sentence comprehension) designed to paint a more nuanced picture of low performance.
- The cognitive assessments were in the languages of instruction used in the participating countries' schools and relied on automatically scored items only.
- The tests used a subset of items from the in-school assessment of reading and mathematics, which allowed for reporting results on the PISA scale through scale-linking methods.
- The items were targeted at the lower levels of performance as measured on the PISA scale. In PISA assessments, proficiency Level 2 is the level at which individuals begin to demonstrate the competencies that will enable them to participate effectively and productively in life as students, workers and citizens. In terms of SDG4, Level 2 is considered the minimum level of proficiency in reading and mathematics that all children should attain by the end of lower secondary education. In the out-of-school assessment, item selection focused on the scale at or below Level 2 with an emphasis on the lower end of the scale. As in the in-school assessment, coverage of all processes was maintained and contexts of the items were reviewed to ensure appropriateness for what individuals would encounter in an out-of-school context.
- Parents (or the person most knowledgeable about the young person) also answered a paper-based questionnaire about the youth's background and childhood experiences.
- The interviewer completed a short household-observation module on the tablet, which included questions about the location of the household, aspects of the neighbourhood, and some characteristics of the dwelling.

### Building country capacity for education assessments

A key component of PISA-D was building capacity in the participating countries for managing international large-scale learning assessments (for students and out-of-school youth) and using the results to support national policy dialogue and evidence-based decision making. National centres received support in conducting the out-of-school assessment, analysing the results and disseminating the findings. Countries use the capacities strengthened through PISA-D to manage their own national assessments and any other large-scale international or regional assessments in which they might participate.



## Findings from the PISA-D out-of-school assessment

The PISA-D out-of-school assessment results were included for the first time in national publications produced by the participating countries in collaboration with the OECD. Panama was the first country to publish out-of-school assessment results in its [PISA 2018 national report](#). This brochure provides an overview of the main results of the out-of-school assessment for the five participating countries, comparing them, where relevant, with those for the in-school students discussed in PISA in Focus #91.

### Educational attainment and zones of exclusion

- On average, across the five participating countries, only 45% of all 15-year-olds were enrolled in at least grade 7 by age 15 and were eligible to sit the PISA or PISA-D school-based tests. The remaining 55% of 15-year-olds averaged across the five countries were either enrolled in grades below 7th grade or were not in school. By way of comparison, on average, across OECD countries in 2018, 88% of 15-year-olds were eligible to sit the PISA school-based tests.
- In Senegal, only 29% of 15-year-olds were eligible to sit the PISA-D school-based test; in Panama, the PISA 2018 sample covered only 53.5% of the 15-year-old population. In Paraguay, 56%<sup>4</sup> of 15-year-olds, in Guatemala, 47% of 15-year-olds, and in Honduras, 41% of 15-year-olds were eligible to participate in the PISA-D in-school assessment.
- The target populations of 14-16 year-olds are described in this report in accordance with the categorisation of zones of exclusion used in the work of the CREATE initiative (Lewin 2011) and UNESCO's and UNICEF's out-of-school-children initiative (UNICEF, 2014). The six zones of exclusion considered in PISA-D include 14-16 year-olds who have:
  - never enrolled in school (zone 1, "never enrolled")
  - dropped out of school in early primary grades (zone 2, "primary drop-outs")
  - remained at school but are currently in grade 6 or below (zone 3, "grade 6 or below")
  - dropped out after completing primary school (zone 4, "primary leavers")
  - dropped out in lower secondary school (zone 5, "secondary drop-outs")
  - remained at school in grade 7 or above but are not attending regularly (zone 6, "fading out")
- Table 1 shows the target population of 14-16 year-olds in each country broken down into the six zones of exclusion. On average, across the 5 participating countries, most of the target youth dropped out of school at the end of the primary cycle (24%) or in secondary education (20%) or were still in school but in Grade 6 or below (22%). However, there is substantial variability between countries. In Senegal, for example, almost one-third of the target population never enrolled with the majority of the excluded in school but in Grade 6 or below (42%). The share of never-enrolled in Senegal (30%) is more than double that found in Panama (14%) and Guatemala (13%) and ten times that found in Paraguay (3%). The largest share of secondary school dropouts are in Panama (47%), which is also the largest category in that country, while Senegal has the smallest share (4%). Dropping out during or after completing primary education (zones 2 and 4) appears to be more prevalent in Guatemala and Honduras.

**Table 1. Out-of-school youth, by zones of exclusion**

	Guatemala	Honduras	Panama	Paraguay	Senegal	Average
	%	%	%	%	%	%
Zone 1: Never enrolled	13	5	14	3	30	13
Zone 2: Primary dropouts	24	21	5	14	14	16
Zone 3: Grade 6 or below	18	17	14	20	42	22
Zone 4: Primary leavers	31	42	17	22	8	24
Zone 5: Secondary dropouts	8	11	47	29	4	20
Zone 6: Fading out	5	3	3	12	3	5
<b>Total</b>	100	100	100	100	100	100

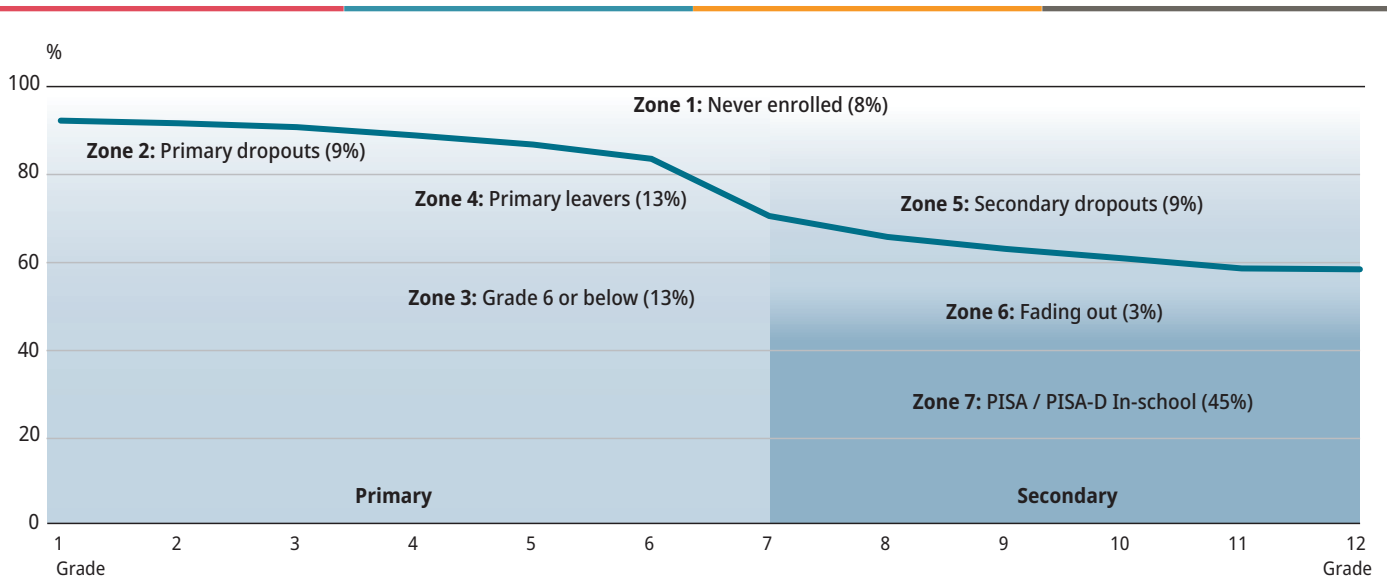
Source: PISA for Development Database.



- In Panama and Paraguay, about as many 14-16 year-old boys as girls were out of school. In Honduras and Senegal, the number of boys who were not in school exceeded the number of girls by more than 10 percentage points. In Guatemala, the number of girls who were not in school exceeded the number of boys by more than 10 percentage points. The percentage of boys is generally higher than that of girls among the group that is in school below Grade 6, except in Panama and Senegal. The percentage of girls is generally higher than that of boys among Primary leavers, except in Senegal.
- Figure 1 describes the distribution of mean averages for the entire population of 14-16 year-olds, across the five participating countries, for the six zones of exclusion plus zone 7, the zone of inclusion (15-year-old students eligible for the PISA-D or PISA 2018 in-school assessment).
- Amongst the in-school population, the percentage of students who reported having repeated a grade at least once ranged from 23% in Paraguay to 50% in Senegal – higher percentages than across OECD countries (12%), on average. In Guatemala, Honduras and Paraguay, boys were more likely than girls to have repeated a grade.

**Figure 1. CREATE/PISA-D zones of exclusion (averages for the five countries)**

**Population of 15-year-olds**



Source: PISA for Development Database.

- Amongst the in-school population, the percentage of students who reported having repeated a grade at least once ranged from 23% in Paraguay to 50% in Senegal – higher percentages than across OECD countries (12%), on average. In Guatemala, Honduras and Paraguay, boys were more likely than girls to have repeated a grade.
- Amongst the dropouts in the out-of-school population, the vast majority reported that they had repeated a grade at least once before dropping out of school, with percentages ranging from 86% in Panama and Honduras to almost 100% in Senegal (see Table 2). The picture emerging from the PISA-D out-of-school assessment results supports the theory that grade repetition, especially in early grades, is an important indicator of student vulnerability and the strongest predictor of dropout. Moreover, PISA results through the years have shown that grade repetition is an expensive policy that does not improve student achievement and fails to keep students in school, affecting their attainment levels.

**Performance in reading amongst out-of-school youth**

- An important indicator for monitoring countries' progress towards achieving SDG 4 is the proportion of 15-year-olds who have achieved at least minimum proficiency levels in reading and mathematics – defined as Level 2 in PISA. At Level 2 in reading, individuals can read simple and familiar texts, and understand them literally. They can also demonstrate, even in the absence of explicit directions, some ability to connect several pieces of information, draw inferences that go beyond the explicitly stated information, and connect a text to their personal experience and knowledge.

**Table 2. Grade repetition reported by in-school students and dropouts in participating countries**

	PISA-D in-school	PISA 2018 in-school	PISA-D dropouts	PISA-D dropouts - repeated early grades
	%	%	%	%
Guatemala	36	-	96	60
Honduras	24	-	86	31
Panama	-	26	86	45
Paraguay	23	-	89	62
Senegal	50	-	99	61
<b>OECD</b>	-	11	-	-
<b>Total</b>	100	100	100	100

Source: PISA for Development Database.

**Table 3. Performance in reading amongst in-school and out-of-school youth**

	Percentage of 15-year-olds covered by in-school assessment <sup>1</sup>	In-school students performing at Level 2 or above	Out-of-school youth			Percentage of 15-year-olds performing at or above Level 2 (weighted average)	Interquartile range of proficiency level <sup>2</sup>	
			Performing at or above Level 1b	Performing at or above Level 1a	Performing at or above Level 2		Out-of-school	In-school
			%	%	%		%	%
Guatemala	47.5	29.9	42.1	7.7	0.4	14.4	1C-1B	1B-2
Honduras	41.4	29.7	65.2	21.3	2.2	13.6	1C-1B	1B-2
Panama	53.5	35.7	60.2	25.3	4.1	21.0	1C-1A	1B-2
Paraguay	m	32.2	37.7	6.0	1.0	-	1C-1B	1B-2
Senegal	29.0	8.7	33.9	3	0.0	2.5	1C-1B	1C-1A
Out-of-school average	42.9	27.2	47.8	12.7	1.5	12.9	1C-1B	1B-2
<b>OECD average</b>	88	76.1	-	-	-	-	-	2-4

1. In Paraguay, the percentage of 15-year-olds covered by the PISA sample (Coverage index 3) may be significantly underestimated and subject to future revision (see the chapter on "Sampling outcomes" in the forthcoming PISA for Development Technical Report).

2. The interquartile range (IQR) is a measure of variability, based on dividing the data set into quartiles.

Source: PISA 2018 and PISA for Development Databases.

- In all five participating countries, the 15-year-old students enrolled in the PISA target grades outperformed the youth included in the PISA-D out-of-school assessment. On average across the five participating countries, less than 2% of out-of-school youth achieved Level 2 in reading, compared to more than 27% of in-school youth, on average across all the PISA-D countries. The share of out-of-school youth achieving above Level 2 in reading does not vary much between countries, ranging from none in Senegal to just over 4% in Panama.
- The weighted average difference in the percentages of youth attaining at least Level 2 in reading between the in-school and the out-of-school groups, using the country coverage (as described by Coverage Index 3) as weight, equalled 12.9% across four of the five participating countries. It varied from 2.5% in Senegal to 21% in Panama. The percentage of students at or above Level 2 amongst in-school 15-year-olds across OECD countries in 2018 was 76.1% (Coverage Index 3: 88%).



## Performance in mathematics amongst out-of-school youth

- Level 2 in mathematics in PISA corresponds to the level at which individuals can not only carry out arithmetic operations in situations where all the instructions are given to them, but can also interpret and recognise how a (simple) situation (e.g. comparing the total distance across two alternative routes, or converting prices into a different currency) can be represented mathematically.
- Across the five participating countries, a little over 1% of out-of-school youth achieved Level 2 in mathematics, compared to more than 12% of in-school youth, on average. The share of out-of-school youth who attained above Level 2 in mathematics does not vary much between countries, ranging from 0.3% in Guatemala and Senegal to a little over 3% in Honduras.
- In all five participating countries, the 15-year-old students enrolled in the PISA target grades outperformed out-of-school youth in mathematics. In Guatemala, Honduras, Paraguay and Senegal, the median mathematics proficiency level for in-school students was Level 1b, compared to Level 1c for the out-of-school youth in these countries.
- The weighted average difference in the percentages of youth attaining at least Level 2 in mathematics between the in-school and out-of-school groups, using the country coverage (as described by Coverage Index 3) as weight, equalled 12.2% across four of the five participating countries. It varied from 7.7% in Senegal to 19% in Panama. The percentage for the in-school population across OECD countries in 2018 was 71.2% (Coverage Index 3: 88%).

**Table 4. Performance in mathematics amongst in-school and out-of-school youth**

	Percentage of 15-year-olds covered by in-school assessment <sup>1</sup>	In-school students performing at Level 2 or above	Out-of-school youth			Percentage of 15-year-olds performing at or above Level 2 (weighted average)	Interquartile range of proficiency level <sup>2</sup>	
			Performing at or above Level 1b	Performing at or above Level 1a	Performing at or above Level 2		Out-of-school	In-school
			%	%	%		%	%
Guatemala	47.5	10.6	14.2	3.8	0.3	5.2	Below1C-1C	1C-1A
Honduras	41.4	15.4	48.7	17.2	3.1	8.2	1C-1B	1C-1A
Panama	53.5	19.0	28.4	8.9	1.7	11.0	Below1C-1B	Below1-1
Paraguay	m	8.3	8.8	2.1	0.2	-	Below1C	1C-1A
Senegal	29.0	7.7	23.5	3.3	0.3	2.4	Below1C-1C	1C-1A
Out-of-school average	42.9	12.2	24.7	7.1	1.1	6.7	Below1C-1C	1C-1A
<b>OECD average</b>	88	71.2	-	-	-	-	-	1-4

1. In Paraguay, the percentage of 15-year-olds covered by the PISA sample (Coverage index 3) may be significantly underestimated and subject to future revision (see the chapter on "Sampling outcomes" in the forthcoming PISA for Development Technical Report).

2. The interquartile range (IQR) is a measure of variability, based on dividing the data set into quartiles.

Source: PISA 2018 and PISA for Development Databases.

## Variation in performance amongst out-of-school youth

Equity in education requires that all children and adolescents have access to education opportunities that lead to quality learning outcomes, irrespective of their gender, their ethnicity, or their parents' wealth, education or occupation. Thanks to detailed information about the background of participating youth, PISA and PISA-D can compare learning outcomes and education opportunities across the target population.

The comparisons possible with PISA-D data offer for the first time a comprehensive rather than a partial description of the inequities and unequal opportunities that affect the education of young people. This fuller analysis is possible because PISA-D provides information about those young people who are not normally covered by PISA samples (equity in access to the system). The 14-16 year-olds who are not in PISA's target of grade 7 and above are the subject of the out-of-school component of PISA-D.

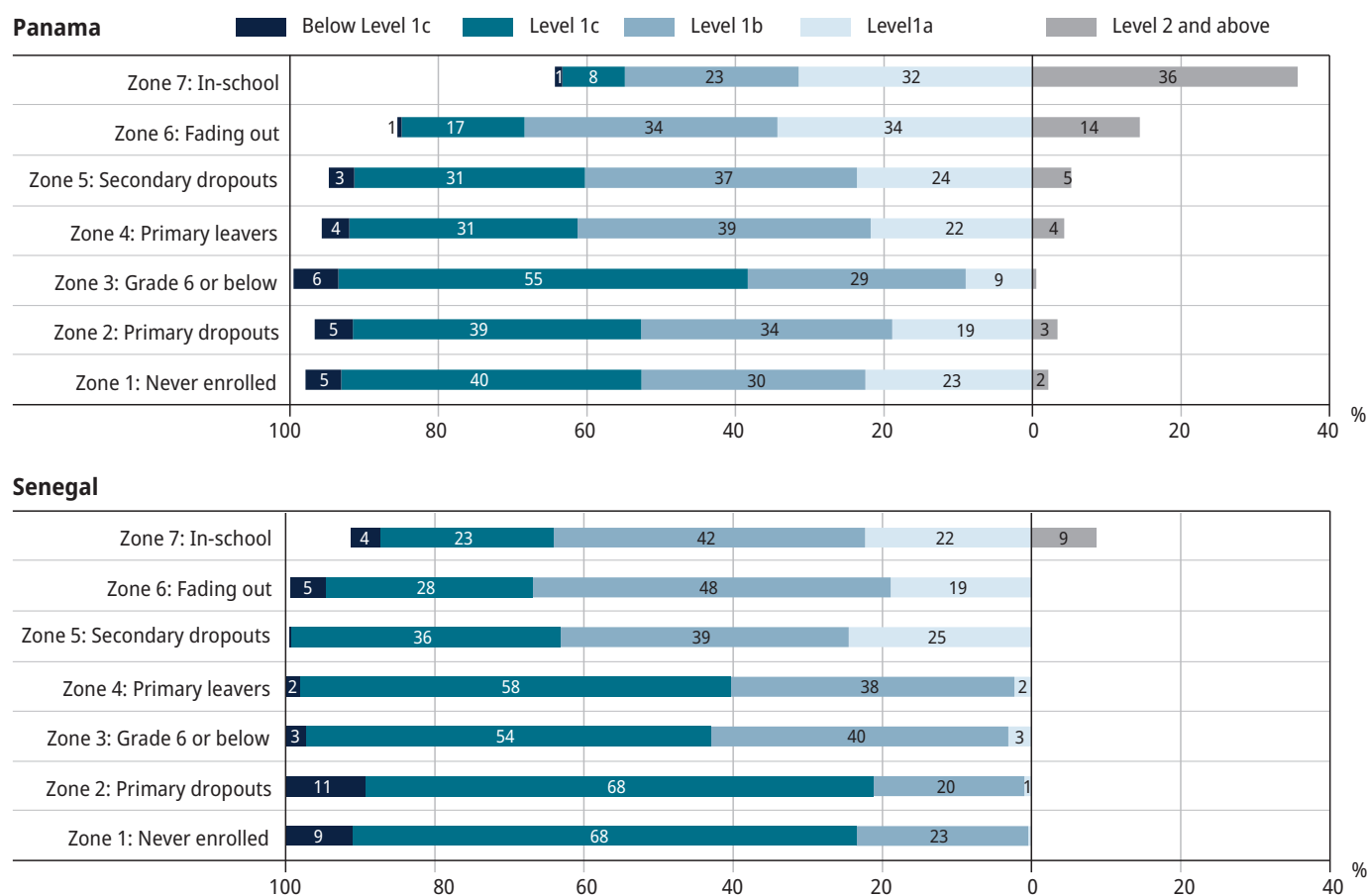
Some of the most important information resulting from the PISA-D out-of-school test and questionnaire data is summarised below.

- In the in-school PISA-D and PISA tests, more generally, gender gaps in performance were observed in both reading (in favour of girls) and mathematics (in favour of boys); but in the PISA-D out-of-school results, there were no significant gender differences in achievement in either of the two domains.
- Across the zones of exclusion generally, the highest performers in reading were, on average across the five countries, those who had attended school for a longer period (zones 3, 4, 5 and 6; see Figure 1). In reading, there was a significant difference between the performance of students enrolled in school and out-of-school youth. In mathematics, the difference in performance between in-school students and out-of-school youth was not wide and,

except for those youth in Grade 6 or below (zone 3), there was practically no difference between the zones of exclusion amongst those respondents who scored at or above Level 2.

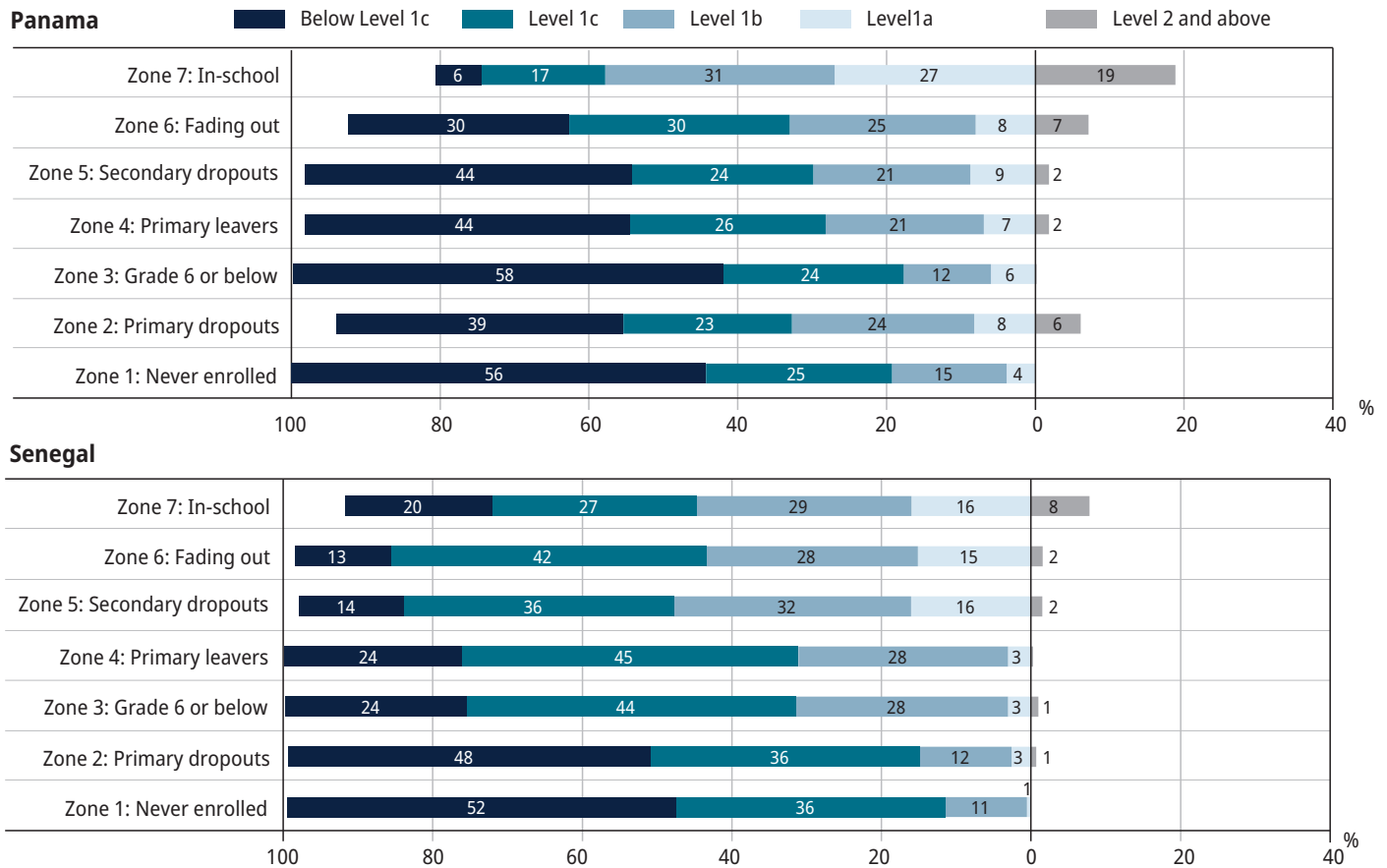
- The country that had the widest differences in performance between students enrolled in school and out-of-school youth was Panama, while Senegal had the narrowest gap in performance between the in-school and the out-of-school.
- The performance of respondents and students at different levels of socio-economic status (as measured by the PISA index of economic, social and cultural status) shows that out-of-school respondents tended to score lower than the in-school students in the PISA-D countries with similar socio-economic resources. In particular, the most advantaged out-of-school respondents performed systematically below similarly advantaged students in the in-school sample in both reading and mathematics.

**Figure 2. Variation in reading performance across zones**



Source: PISA 2018 and PISA for Development Databases.

**Figure 3. Variation in mathematics performance across zones**

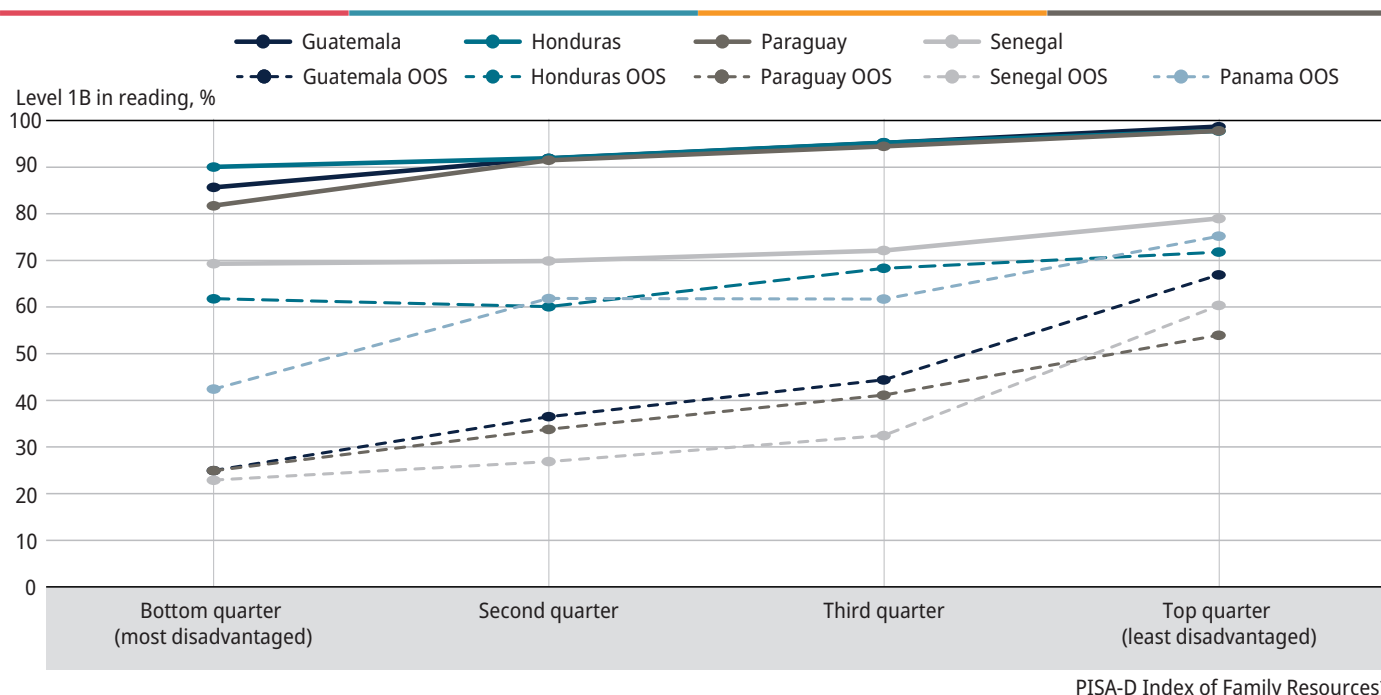


Source: PISA 2018 and PISA for Development Databases.

- As noted in PISA in Focus #91, while the range of student performance across the different levels of socio-economic status is smaller in PISA-D countries than across OECD countries, on average, socio-economic status still has a considerable impact on performance in PISA-D countries. Socio-economically advantaged students (the top 25% in the index) across PISA-D countries were five times more likely than disadvantaged students (the bottom 25% in the index), on average, to attain the minimum level of proficiency (Level 2) in mathematics. Very few disadvantaged students achieved even minimum levels of proficiency.
- PISA-D extended the PISA measure of socio-economic status through an index of family resources, which considered not only possessions that indicate high status, but also the extent to which students' basic needs, such as food security and quality shelter (e.g. access to a toilet in their home) are met. Variations in performance across quarters of the PISA index of family resources is shown in Figures 4 and 5. A key finding is that there was a much wider variation in performance in reading between the quarters of socio-economic status amongst the out-of-school population than amongst the in-school population. When it comes to performance on the mathematics test, the opposite was true: the variation in mathematics performance across socio-economic quarters was larger in the in-school population than in the out-of-school population.
- A significant minority of respondents in Guatemala (32%) reported that they do not speak the language of instruction (Spanish) at home. In Senegal and Paraguay, the vast majority of respondents reported that they do not speak the language of instruction (French and Spanish, respectively) at home: only 28% of respondents in Senegal reported speaking French at home, and only 17% of respondents in Paraguay reported speaking Spanish at home. In these countries, respondents who speak the language of instruction at home scored higher in reading than those who speak a different language at home.
- There are some large differences in reading performance between rural and urban respondents, especially when comparing the percentage of respondents performing at proficiency Level 1B and above. In Guatemala and Paraguay, for example, rural respondents outperformed urban respondents. This result contrasts with what emerged from tests conducted amongst in-school youth, where students attending urban schools outperformed students attending rural schools.

**Figure 4. Variation in performance across quarters of the PISA index of family resources**

**Reading**



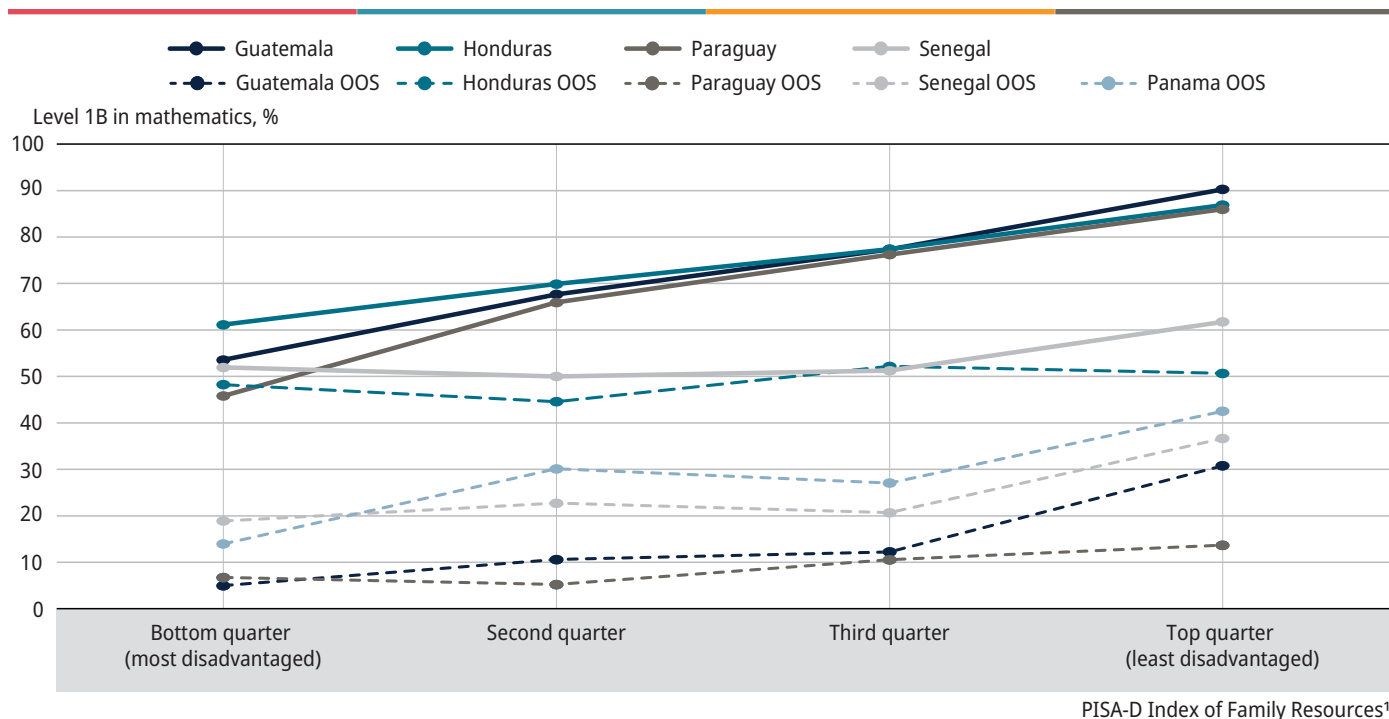
PISA-D Index of Family Resources<sup>1</sup>

1. The national quarters of the PISA index of family resources for the in-school population were computed based on the data on the in-school population only (PISA-D in-school assessment database); the national quarters of the PISA index of family resources for the out-of-school population were computed based on the data on the out-of-school population only (PISA-D out-of-school assessment database).

Source: PISA for Development Database.

**Figure 5. Variation in performance across quarters of the PISA index for family resources**

**Mathematics**



PISA-D Index of Family Resources<sup>1</sup>

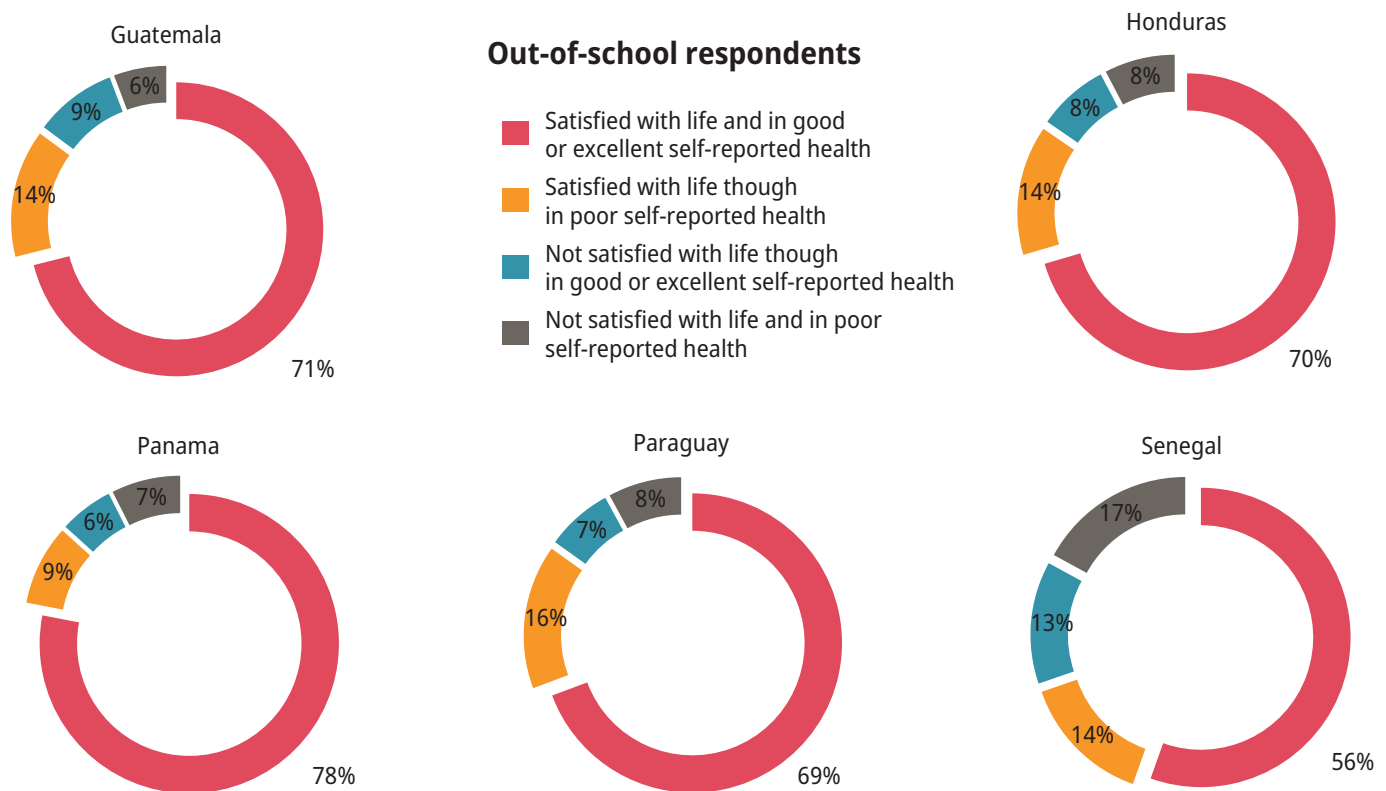
1. The national quarters of the PISA index of family resources for the in-school population were computed based on the data on the in-school population only (PISA-D in-school assessment database); the national quarters of the PISA index of family resources for the out-of-school population were computed based on the data on the out-of-school population only (PISA-D out-of-school assessment database).

Source: PISA for Development Database.

## Health, well-being and attitudes towards school and learning

- Across the PISA-D countries, around 77% of respondents, on average, reported that they are satisfied with their lives; 82% reported that they are in good health. These averages are lower than those amongst the in-school students across the PISA-D countries, which are around 89% for life satisfaction and 84% for reporting good health. On scales that range from 0 to 10, the out-of-school respondents reported 8.1 for life satisfaction (compared to the PISA-D in-school average of 7.9) and 8.4 for health (compared to the PISA-D in-school average of 6.9), on average.
- Across the PISA-D countries, 60% of respondents reported that they are satisfied with life and in good or excellent health; 22% reported that they are not satisfied with life but are in good or excellent health. Half of the 18% of respondents who reported they are in poor health said that they are satisfied with life while the other half said they are not
- In all PISA-D countries, disadvantaged respondents and students were more likely than advantaged respondents and students to report poor or fair health, as shown in Figure 7 (based on the results from Guatemala, Honduras, Paraguay and Senegal).
- Many respondents across PISA-D countries reported having felt hungry at least once in the month prior to the PISA test because there was not enough food. The largest shares of such respondents were observed in Guatemala (22%), Senegal (17%) and Panama (15%). Interestingly, in-school students across the PISA-D countries were more likely to report hunger than the out-of-school respondents. For example, in Senegal, 35% of in-school students (twice the percentage of out-of-school respondents) reported having felt hungry at least once in the month prior to the PISA test because there was not enough food. The important role nutrition plays in learning has been well established: consuming the required amount of food contributes positively to students' concentration and commitment to learning. Food insecurity is therefore a significant threat to young people's health, well-being and achievement.

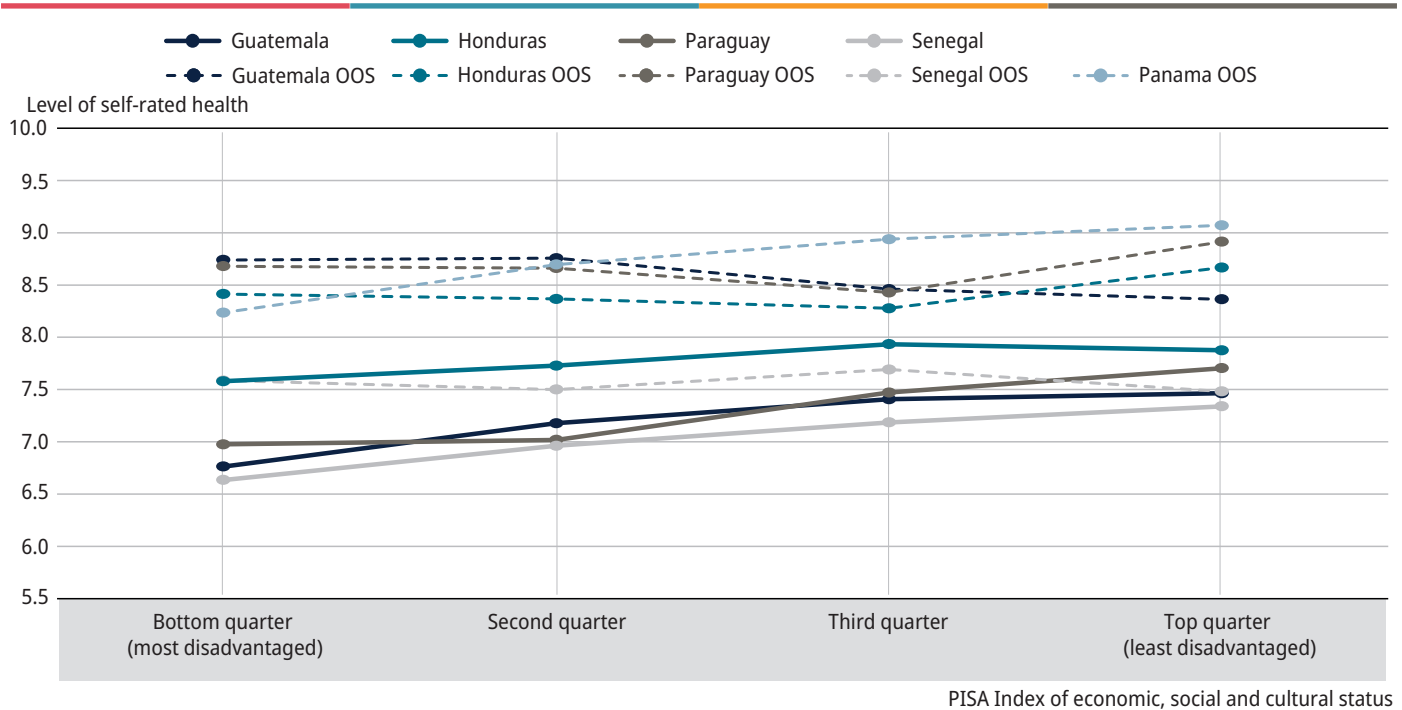
**Figure 6. Self-reported health and life satisfaction amongst out-of-school youth PISA-D countries**



Source: PISA for Development Database.

## Figure 7. Socio-economic differences in self-reported health

Based on reports from in-school and out-of-school youth; PISA-D countries



Source: PISA for Development Database.

- In all PISA-D countries, out-of-school girls were more likely than boys to report suffering from depression during the year prior to the interview; on average, 9.5% of girls reported so, compared to 7% of boys.
- Most of the respondents assessed in PISA-D countries hold positive views about school and, in the case of dropouts, what they learned while enrolled. On average, 91% of respondents reported that they believe that trying hard at school helps in getting a good job later on.





## Linking performance and outcomes to contextual factors

Respondents' performance on the PISA-D reading and mathematics tests is the result of an accumulation of various factors that affect children's development, beginning at conception and continuing through to the time of the assessment. For example, children's cognitive and language skills upon entering primary school are strong predictors of whether they become successful readers two or three years later; and pupils' reading skills at the end of primary school are a strong predictor of reading skills at age 15. Therefore, caution is advised when considering, for example, whether school or classroom practices, or other learning experiences gleaned from responses to questionnaires distributed with the PISA-D test, have strong associations with reading performance.

However, it is possible to identify a range of factors that are related to outcomes, especially for those respondents who had attended

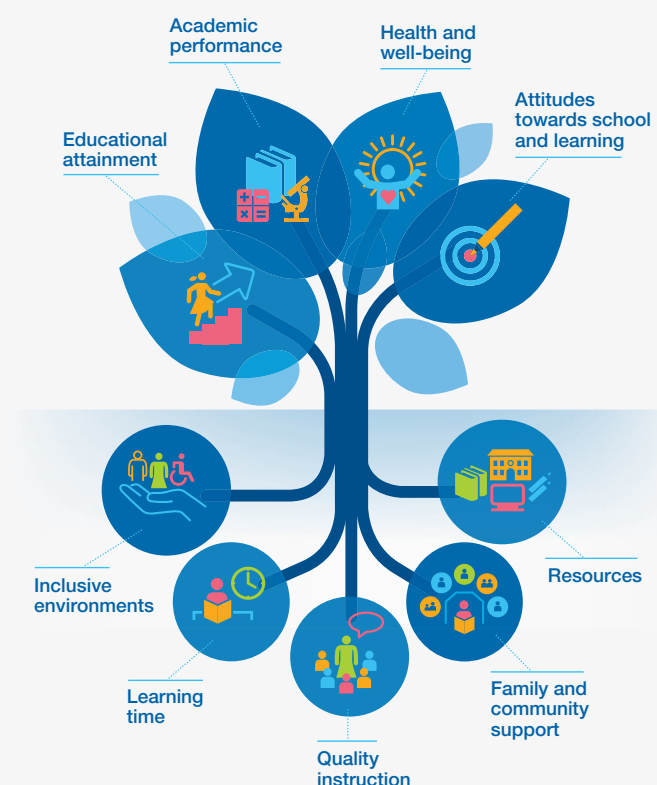
school for any length of time. The "educational prosperity" framework used by PISA-D identifies five such factors that it calls "foundations for success": resources, inclusive environments, learning time, quality instruction, and family and community support. PISA-D provides evidence of how these factors are related to 14-16 year-olds' performance.

The results of PISA-D allow participating countries to determine whether their policies differ from those of countries with similar social and economic contexts, but whose children and adolescents perform better and benefit from more equitable learning opportunities. These comparisons can often provide valuable insights, and can sometimes help strengthen a country's political will to invest resources in education and/or identify effective policies that they can adapt to their particular context.

### Educational prosperity

The "educational prosperity" approach inspired the contextual questionnaires for PISA-D. This approach considers the conditions needed for education systems to help students succeed in school and in life. It identifies a set of four key outcomes, called "prosperity outcomes", for each stage of schooling and child development: educational attainment; academic performance; health and well-being; and attitudes towards school and learning. The prosperity approach also identifies a set of family, institutional and community factors, called "foundations for success", that influence these outcomes: resources, inclusive environments, learning time, quality instruction, and family and community support.

**Source:** OECD (2018), *PISA for Development Assessment and Analytical Framework: Reading, Mathematics and Science*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264305274-en>



### What the data tell us about the circumstances of out-of-school youth in PISA-D countries

- In general, out-of-school youth in PISA-D countries tend to be poorer than those attending school; many of them are in the lowest quintile of the PISA socio-economic index. They are mainly from rural settings, and more likely to be girls. Youth with disabilities and those belonging to minority ethnic, linguistic or religious

groups are also more likely to be out of school. All of these factors are usually confounded with poverty (Carr-Hill, 2015).

- From a policy perspective, it is important to assess whether out-of-school youth have family and whether they live on their own or with their parent(s). Across PISA-D countries about 60% of the youth covered by the out-of-school assessment still live with both

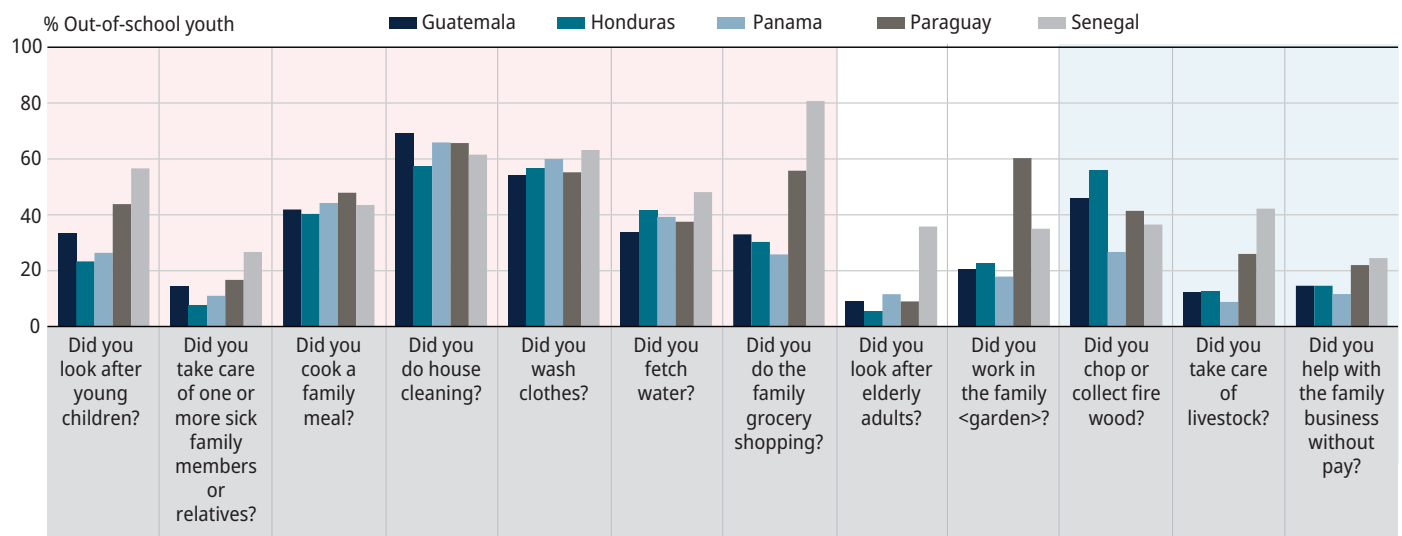
of their parents, while 27% of them live in a single-parent household. In these latter situations, the young person most often lives with his or her mother: 21% live with their mother and 6% with their father. Some 4% of the out-of-school youth surveyed reported that they have children of their own, while less than 1% are orphans living alone.

- As noted above, children’s attainment is determined by various events and family circumstances that begin at conception and continue through adolescence. The time spent in formal education and the skills acquired amongst out-of-school youth in PISA-D countries vary depending on their family circumstances. Accordingly, 14-16 year-olds who have children of their own or are orphans are generally over-represented in exclusion zone 1 (those who have never been enrolled in school).
- It has long been established that the reasons children do not attend school include the need to work and the lack of accessible,

affordable and good-quality schooling. PISA-D further investigates the experience of out-of-school youth by asking questions about whether these young people work, their profession, the hours worked per week, and their wage or salary.

- Out-of-school girls in PISA-D countries tended to report greater involvement in the labour activities listed in Figure 8 than did boys. Gender differences in involvement in these activities were particularly significant in Senegal.
- While all of the surveyed youth were engaged in labour activities, only 36% were paid for their work, on average across participating countries. The most common form of employment was regular employment (26%), followed closely by working on one’s own to earn money (25%), while 23% of the surveyed youth reported that they work in a family business or farm. On average across participating countries, boys were significantly more likely than girls to work for pay.

**Figure 8. Percentage of surveyed out-of-school youth involved in labour\***



\* The results highlighted in pink on the left of the Figure above illustrate that girls were more involved in these kinds of labour than boys, on average across the five countries. While those highlighted in blue on the right of the Figure illustrate that boys were more involved in these kinds of labour than girls, on average across the five countries. The unshaded results are those that have little or no gender difference.

Source: PISA for Development Database.

- It is well established that poverty often pushes children to work; yet when children leave school early to enter the labour force they are more likely to end up in occupations that limit their chances of breaking out of poverty. Attaining the Sustainable Development Goal for education requires that children are free to go to school rather than work to support their families. Ensuring decent work (SDG 8) and eliminating all child labour will be impossible without quality education being available to all children. Therefore, it is essential that participating countries build on the findings from the

PISA-D survey, and continue to examine and address the links between education and child labour.

- PISA-D measured the family resources, or the lack thereof, of out-of-school youth using a comprehensive array of questions about personal and home possessions. When described with the overall index of family resources, all out-of-school youth in the survey had low scores, and all of them fell into the categories of poor and very poor. To be able to further differentiate between the respondents, based on essential resources and basic living

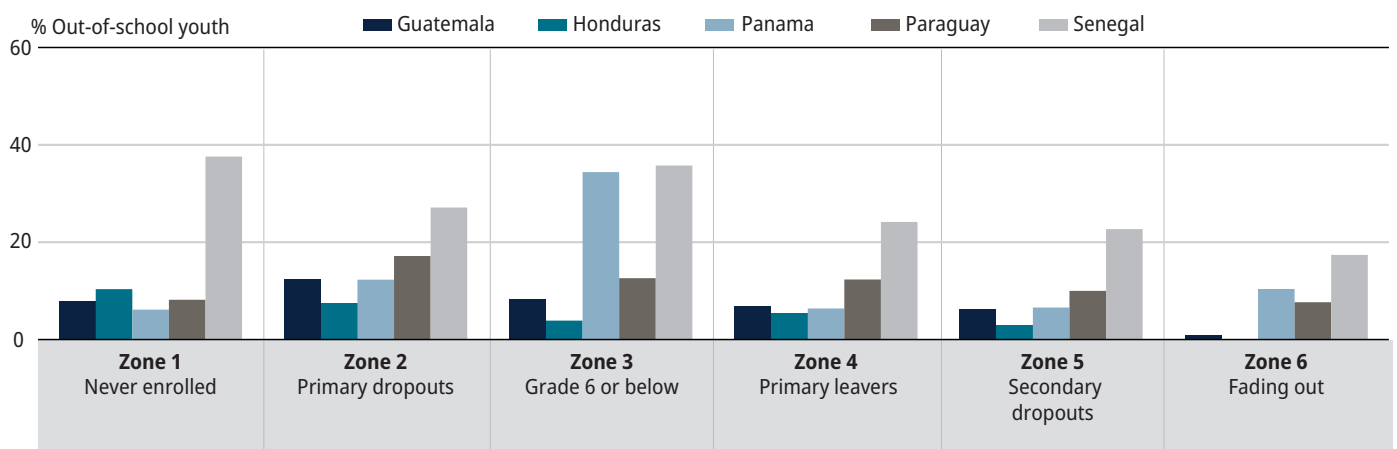
conditions, PISA-D selected four questions that constitute efficient measures of poverty (these questions were asked of both in-school students and out-of-school youth):

- » Does the young person have to share a toilet facility with others who are not members of his/her family?
- » Does the young person have access to a flush toilet?
- » Is the floor of the youth's house rudimentary?

- » In the previous 30 days, did the youth go hungry because there was no food in the home?

- On average across the PISA-D countries, 14% of the surveyed youth answered three or all four questions to indicate deprivation; and these youth were found in all of the six zones of exclusion. However, fewer of the respondents in zones 4 and 6 were deprived of basic resources. More than one in three young people from zones of exclusion 1, 2, 3 and 5 were deprived of basic resources.

**Figure 9. Youth who are deprived of basic resources, by zone of exclusion**



Source: PISA for Development Database.

### Resource-related barriers to schooling

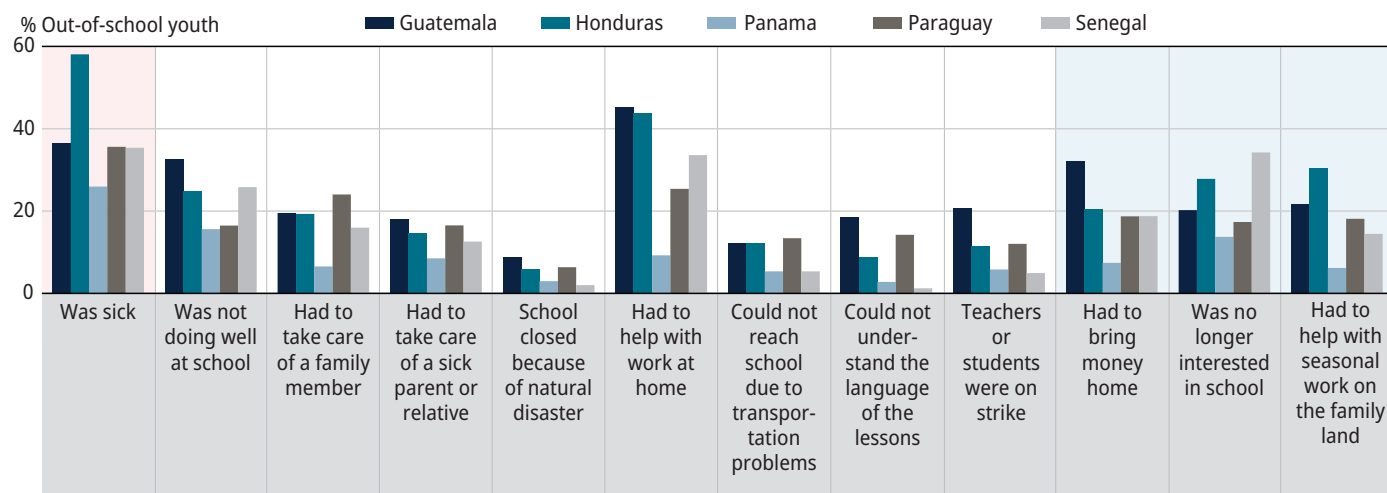
The resource-related obstacles that deter out-of-school 14-16 year-olds in PISA-D countries from going to school include social barriers, such as discrimination against girls, financial barriers, such as school fees, and practical barriers, such as the sheer distance to the nearest school. PISA-D asked out-of-school youth to report on why they did not go to school

- It is notable that sickness was the most common reason for missing school reported by both girls and boys – for boys, at a par with helping with work at home. There were also several demand-related factors, including lack of interest in schooling, and the need to work and help out at home and other poverty-related issues. However, other, more resource-related reasons for missing school included transportation problems and not having a teacher.
- PISA-D also captured the perspective on these issues from the person most knowledgeable about the youth: his or her parent or guardian.

- It is clear from these responses that the main reasons young people in PISA-D countries do not attend school are related to the demand side and are poverty-related. However, it is also apparent that one of the most significant obstacles that deter youth in these countries from going to school is the sheer distance to the nearest school.
- The lack of a nearby school is a problem for any young person, boy or girl. It makes it more difficult for children to be punctual (or arrive at all) and to learn – all precursors to and causes of school dropout. Girls face particular risks linked to distance, and the time it takes to go to and from school, including the danger of being assaulted. Fears of such assaults may explain why girls in rural areas are more likely than boys to attend school at a later age, when they are better able to make their own way to school. Distance to school is an issue that also affects boys and that cuts across nations.

**Figure 10. Parent/Guardian perspective on why adolescent had not attended school, by gender of adolescent\***

Youth had not attended school for more than three months

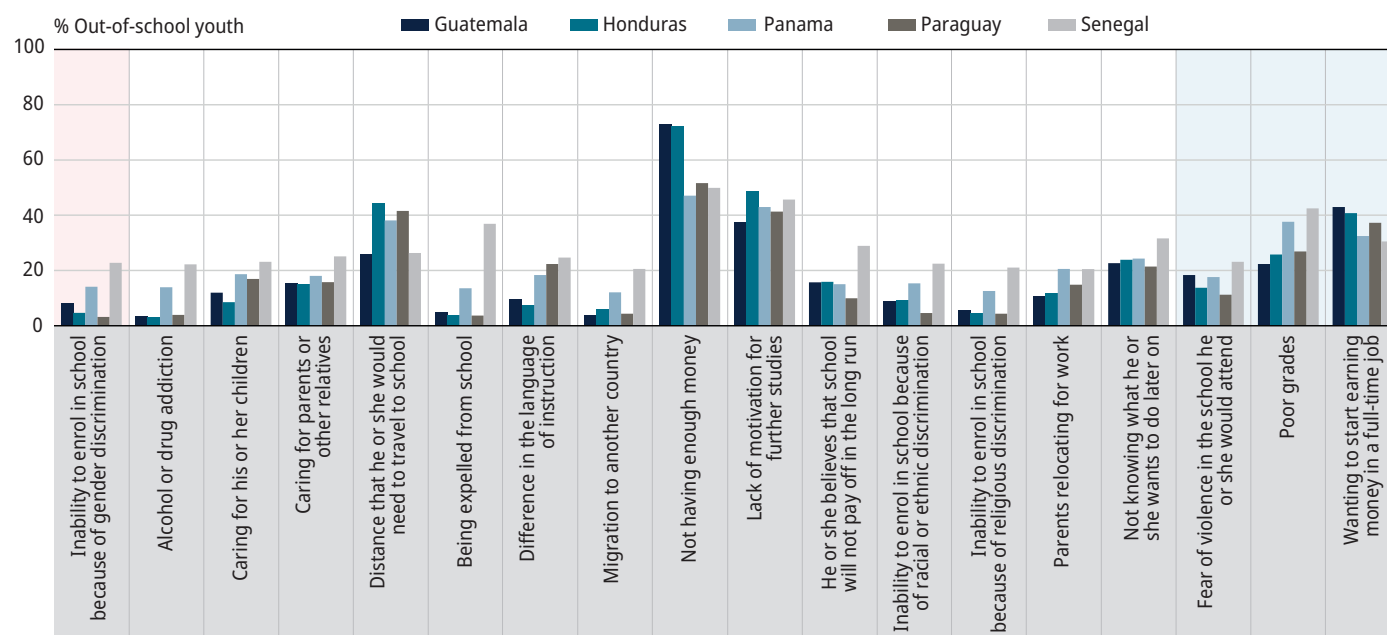


\* The results highlighted in pink on the left of the Figure above illustrate that more girls than boys reported this as a reason for not attending school, on average across the five countries. The results highlighted in blue on the right of the Figure illustrate that more boys than girls reported this as a reason for not attending school, on average across the five countries. Results that are not highlighted have little or no gender differences.

Source: PISA for Development Database.

**Figure 11. Parent/Guardian perspective on why adolescent had not attended school, by gender of adolescent\***

Youth had not attended school for more than three months



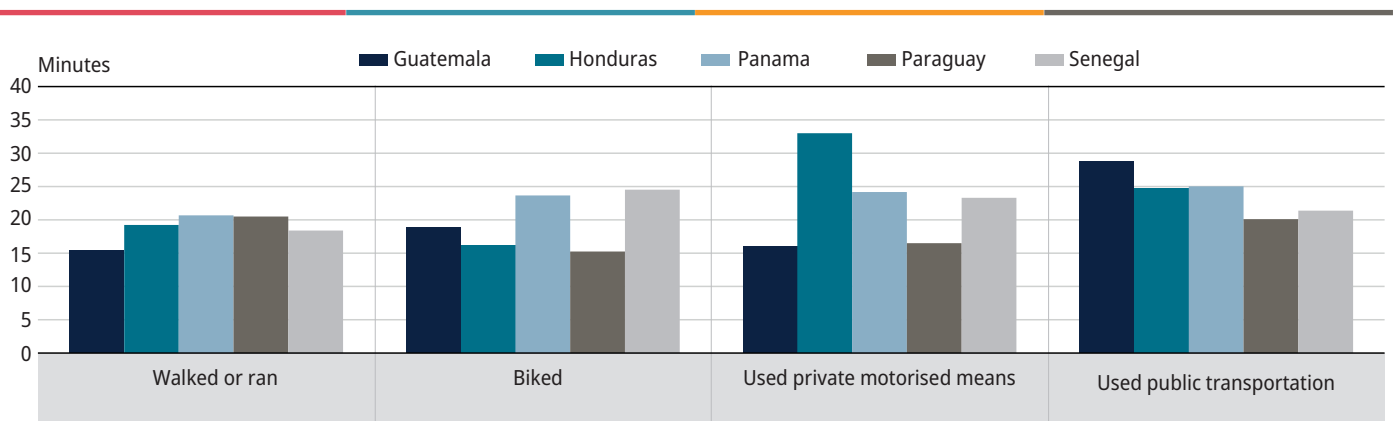
\* The results highlighted in pink on the left of the Figure above illustrate that more girls than boys reported this as a reason for not attending school, on average across the five countries. The results highlighted in blue on the right of the Figure illustrate that more boys than girls reported this as a reason for not attending school, on average across the five countries. Results that are not highlighted have little or no gender differences.

Source: PISA for Development Database.

- More socio-economically advantaged out-of-school youth had access to public transportation. But, as Figure 12 shows, those relying on public transportation would have taken the longest time to get to school when these youth attended, except in Honduras and Senegal.
- While most of the out-of-school youth in PISA-D countries are from the most disadvantaged groups in the country, the 80% of this population surveyed that either boarded at or walked to school, when they attended, were the most deprived.

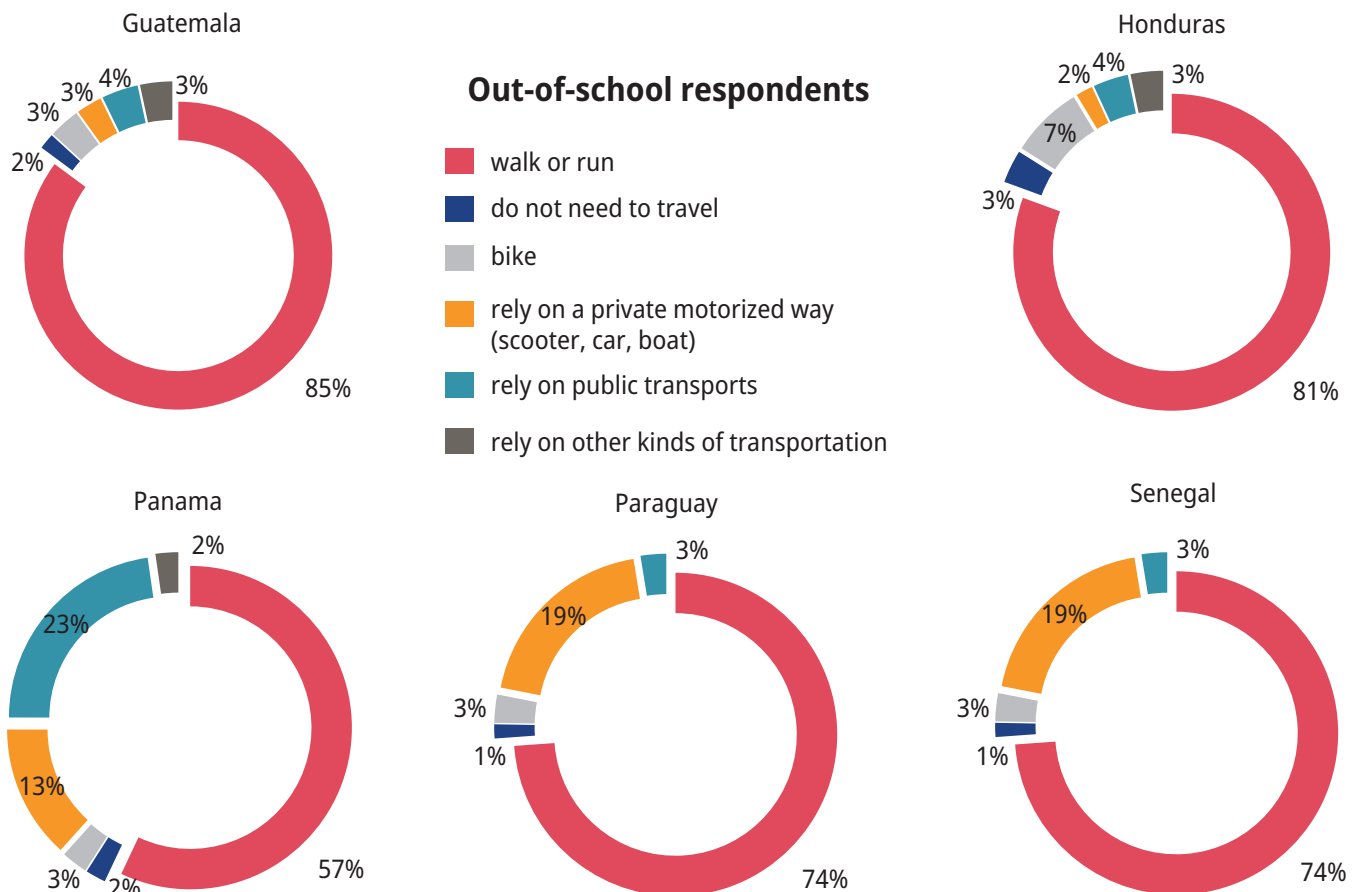
**Figure 12. Time to reach school, by four main means of transportation**

In minutes



Source: PISA for Development Database.

**Figure 13. Dropouts, by mode of transportation to school when they attended**



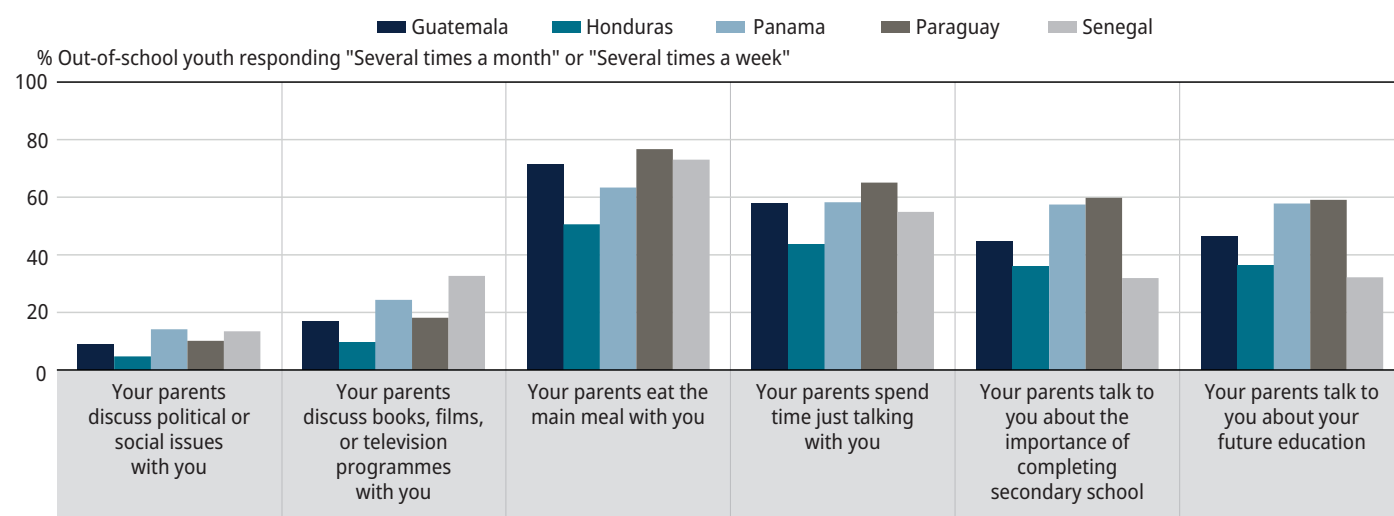
Source: PISA for Development Database.

### The wider learning environment: Families and communities

- PISA-D asked respondents about the frequency with which their parents or other family members engage in exchanges and activities with them, typically in their homes. This would indicate family support for the respondent's engagement at school and with learning. On average across countries, only about 11% of the youth surveyed reported that their parents discuss political and social issues with them more than once a month, and only

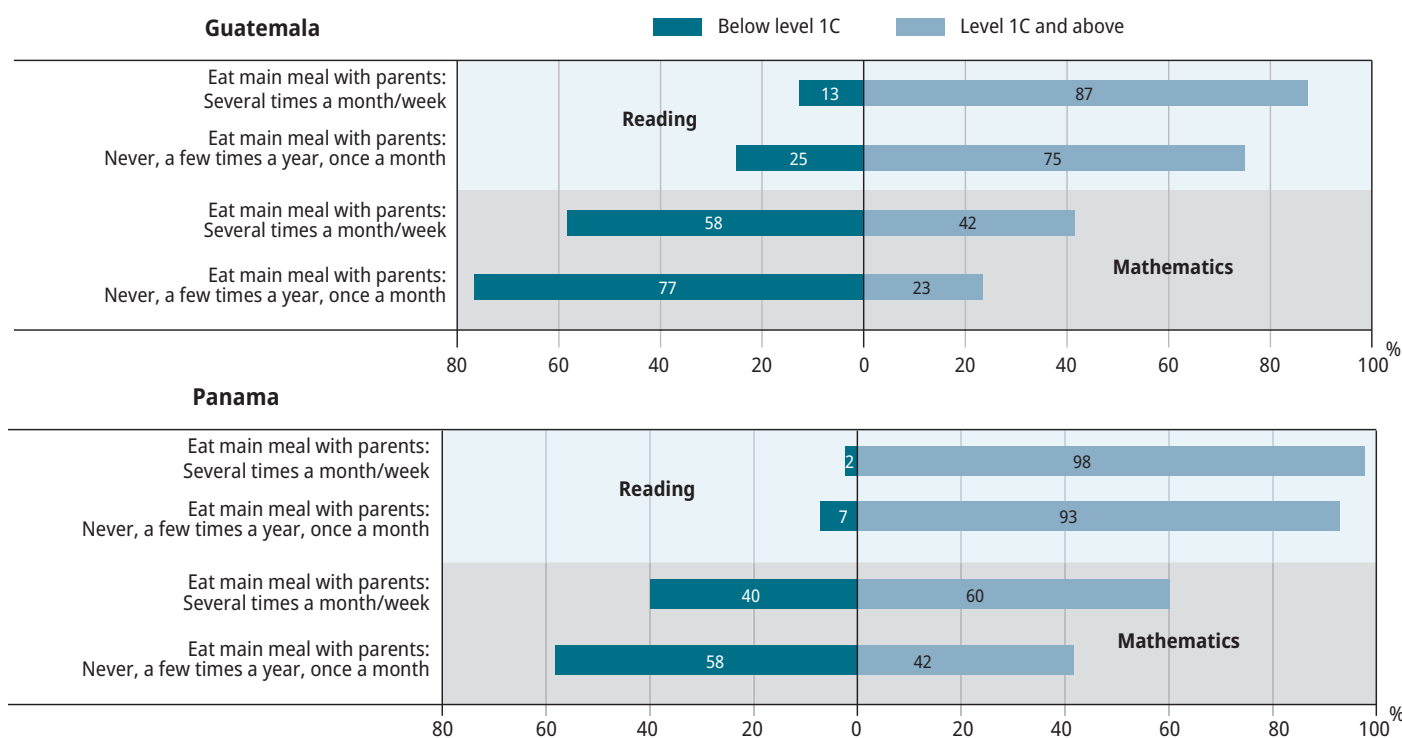
about 21% reported that they discuss books, films or television programmes more than once a month with their parents. Less than half of the youth surveyed reported that their parents talk to them about the importance of completing secondary education or the importance of their future education. However, some 67% reported that they regularly eat the main meal of the day with their parents.

Figure 14. Questions about parental support



Source: PISA for Development Database.

Figure 15. Eating the main meal with parents, and proficiency in reading and mathematics



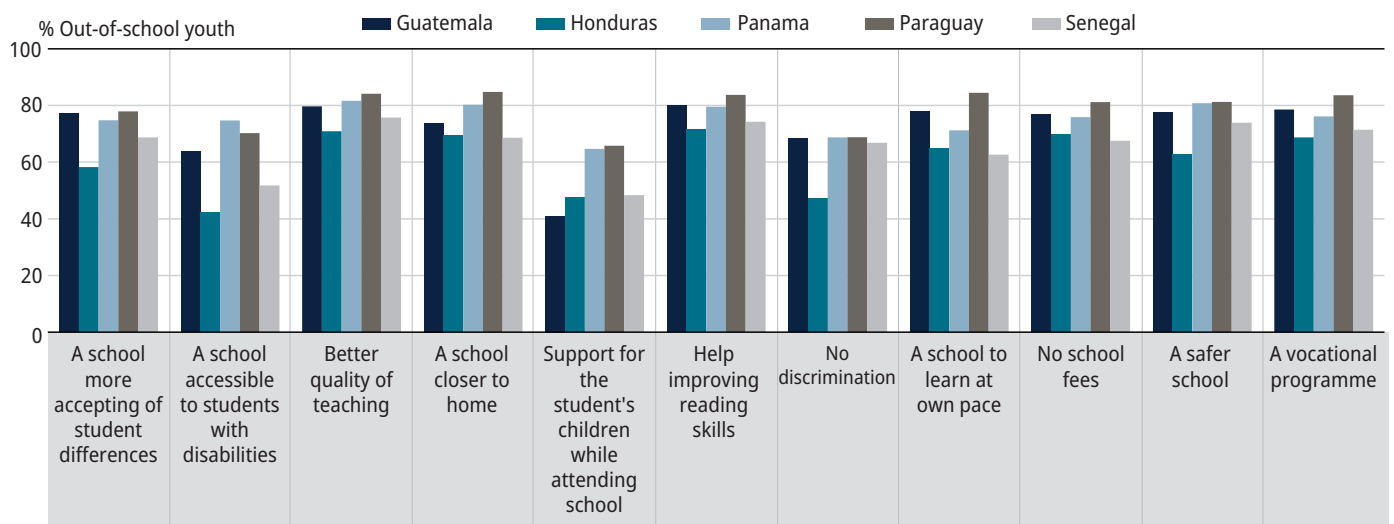
Source: PISA for Development Database.



- Analysis of the PISA-D out-of-school assessment data shows variations in the skills of youth according to the level of support they receive from their parents. Those respondents who receive more support from their families score significantly higher in both reading and mathematics. On average across PISA-D countries, eating the main meal of the day with their parents seemed to be strongly linked to better performance in both subjects. Figure 15 shows the results for Panama and Guatemala, where this association was the strongest.
- PISA-D asked the out-of-school youth surveyed to identify the resources and processes that they considered would most help them return to school.
- Taken altogether, this feedback can help PISA-D countries develop a coherent response to the challenge of ensuring that all of their 14-16 year-olds are enrolled in school and remain there until they complete their studies. In particular, most of the out-of-school youth in these countries who were surveyed cited better teaching, a focus on developing basic reading skills in the early grades, more diverse offerings amongst secondary programmes, provision of financial incentives, and investment in infrastructure and educational resources as key to making it possible for them to return to school.

**Figure 16. Resources and processes that would help youth return to school**

Based on respondents' reports



Source: PISA for Development Database.



## Summary of the key issues for the participating countries

The countries that participated in PISA-D have made significant progress in achieving universal access to primary education: few of the young people surveyed had never enrolled in school. But these countries still have a long way to go before they approach universal completion of primary school. At the secondary education level, the countries have even further to travel. The results from PISA-D show that the SDG target of all children and youth achieving at least minimum levels of proficiency in reading and mathematics by 2030 is unlikely to be achieved. To make further progress towards the target it will be necessary for the countries to address the following issues:

- A significant proportion of 14-16 year-olds in PISA-D countries are either enrolled in school in grades that are not appropriate for their ages or are not in school at all.
  - While only 8% of the 14-16 year-olds in PISA-D countries surveyed had never enrolled, the majority of dropouts surveyed stopped going to school during or at the end of the primary cycle.
  - Almost all dropouts surveyed in PISA-D countries reported that they had repeated a grade at least once before dropping out of school.
  - There is no hidden wealth of literacy and numeracy skills amongst the out-of-school youth. Across the PISA-D countries on the basis of weighted averages, barely 13% of the entire population of 15-year-olds achieved at least the minimum level of proficiency in reading and less than 7% achieved at least the minimum level of proficiency in mathematics.
  - Out-of-school youth engaged in paid employment have higher levels of skills than other out-of-school youth.
  - A significant number of out-of-school youth in Guatemala, Paraguay and Senegal do not speak the language of instruction at home.
- The main factors preventing youth in PISA-D countries from attending school are poverty-related. The majority of out-of-school youth in PISA-D countries are “severely poor” and many respondents reported having felt hungry at least once in the month prior to the PISA test because there was not enough food.
  - The resource-related obstacles that deter out-of-school 14-16 year-olds in PISA-D countries from going to school include social barriers, such as discrimination against girls, financial barriers, such as school fees, and practical barriers, such as the sheer distance to the nearest school.
  - The resources and processes that the surveyed youth think would help them return to school include better teaching, a focus on developing basic reading skills, more diverse offerings amongst secondary programmes, provision of financial incentives, and investment in infrastructure and educational resources.
  - There is strong demand from the out-of-school youth for second-chance education, but adequate responses to this must take into account the skills level of the out-of-school and their contexts, particularly their work experiences.

It is clear from both the in-school and out-of-school PISA-D results that there is an urgent need in the participating countries to strengthen and expand their education systems, while focusing on inclusion and the quality of the education provided. At the same time, these countries will need to introduce specially targeted interventions to dismantle the barriers that keep the hardest-to-reach youth out of school. Out-of-school youth will not be reached simply by business-as-usual approaches that just expand the existing education system. Instead, there needs to be a shift towards greater equity in education, moving away from a system that allocates resources uniformly towards a system that allocates resources according to the actual needs of marginalised children and youth.

## Implications of the PISA-D out-of-school results for PISA more generally

A key rationale for the PISA-D out-of-school assessment pilot is that measures of school achievement through administration of tests refer to currently enrolled students - not the whole age cohort population – and this poses a problem for assessing efficiency and human capital, especially in low-and-middle-income-countries. With regard to the efficiency of an educational system, it is important to see test scores in the context of participation rates and the extent to which the dropout rate in a country has been reduced between any two measurement points. With regard to evaluating human capital – the whole population – it is essential to know the human capital of school dropouts and those that never enrolled. In addition,

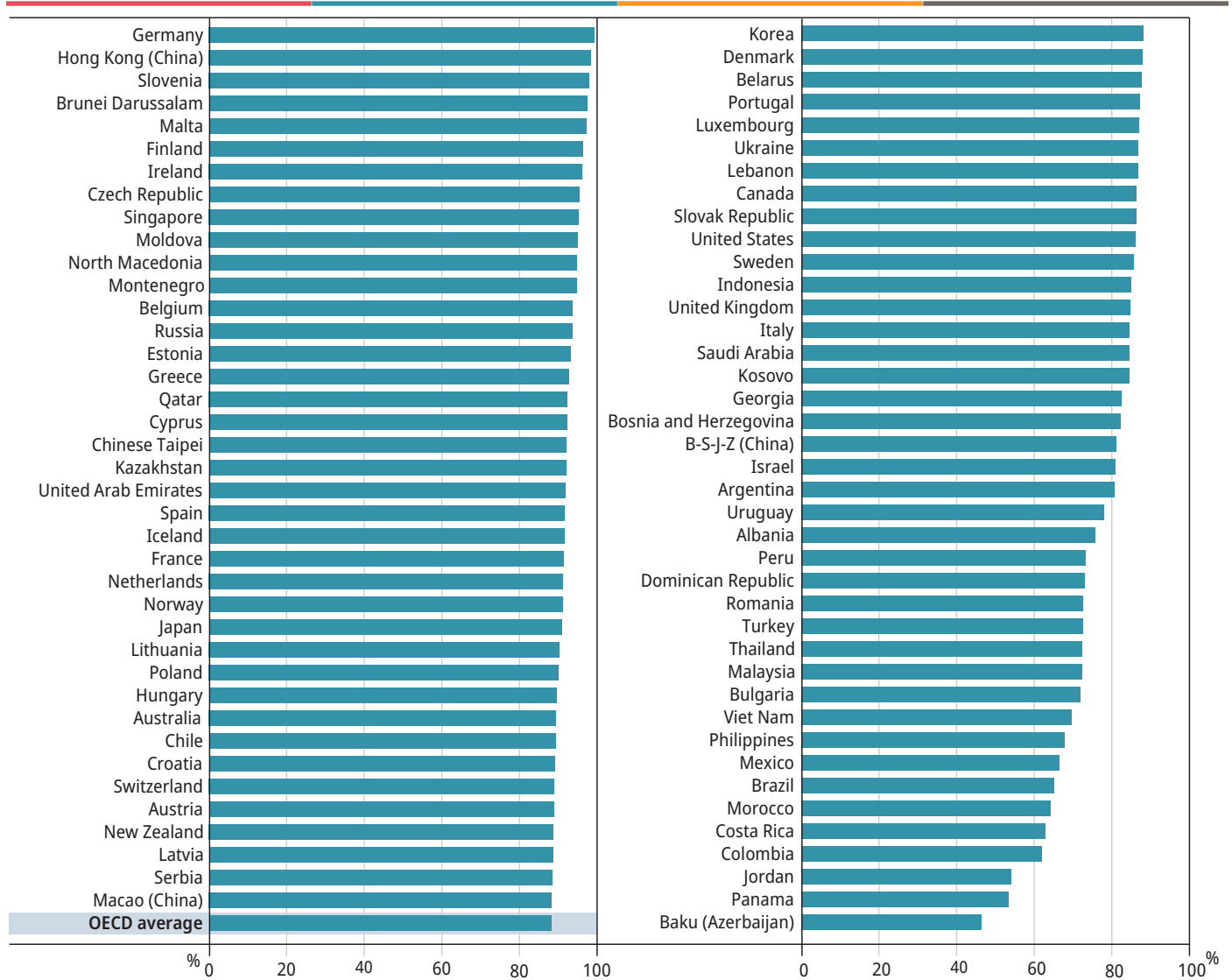
dropout and never enrolling is very negatively correlated with socio-economic status. An assessment in a country with low education system coverage that ignored the out-of-school is at risk of perversely encouraging policies of exclusion.

While it is possible to estimate test scores for the whole population (i.e., taking into account dropouts and those who never enrolled) by putting bounds on unobserved scores, this is effectively guess-work and is carried out under weak assumptions. There is no substitute for assessing the skills of the whole population as has been done in the PISA-D countries.

In taking the PISA-D out-of-school assessment forward, the OECD is interested in working with other countries, like the PISA-D participants, that have large proportions of youth that are outside PISA's target grades. While several countries have expanded access to education for their 15-year-olds in recent years, there are still several PISA 2018 participants where less than 80% of the population of 15-year-olds were covered by the PISA sample (meaning that they were enrolled in school, in grade 7 or above), see Figure 17 below.

While it is difficult and fraught with approximations, it is possible to extrapolate, theoretically at least, from the PISA-D out-of-school assessment results to the rest of the world, e.g. by matching the results of specific PISA-D participating countries to 'statistical neighbours' among the PISA 2018 participants where less than 80% of the population of 15-year-olds were covered by the PISA sample. The OECD encourages these low coverage countries to see themselves in the PISA-D out-of-school assessment results and to consider the relevance of this work for their contexts.

**Figure 17. Coverage of the national 15-year-old population in PISA 2018 (Coverage Index 3)**  
**Percentage of 15-year-olds covered by PISA**



## For more information

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**See:** The PISA-D school-based and household-based assessment results are published in national reports produced by Cambodia, Ecuador, Guatemala, Honduras, Paraguay, Senegal and Zambia in collaboration with the OECD. These national reports are being released by each country over the course of 11-14 December 2018, December 2019 and April/December 2020. The international PISA-D data set can be found at [www.oecd.org/pisa/pisa-for-development/](http://www.oecd.org/pisa/pisa-for-development/)

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## Notes

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1. Bhutan also participated in the school-based implementation of PISA-D, but the country joined the PISA-D project later than the other countries and only conducted the cognitive test. As Bhutan did not collect contextual data through the background questionnaires for students, teachers and school principals, the country does not have the complete dataset that the other countries have.
2. While the goal was that all units in the population should have a non-zero population, this objective was not met in the case of Honduras and Panama. The Strand C Technical Report presents these details more fully.
3. For further details regarding the referrals approach please see Krenzke T. and Mohadjer L. (2020) *Application of Probability-Based Link-Tracing and Nonprobability Approaches to Sampling Out-of-School Youth in Developing Countries* in the Journal of Survey Statistics and Methodology, <https://academic.oup.com/jssam/advance-article/doi/10.1093/jssam/smaa010/5867615>
4. In Paraguay, the percentage of 15-year-olds covered by the PISA sample (Coverage index 3) may be significantly underestimated and subject to future revision (see the *PISA for Development out-of-school assessment Technical Report*, forthcoming).



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