

# Excellence, equity and resilience: What do we learn from PISA 2022 results?

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# Global coverage of PISA

Around **690,000** 15-year-old students in **81 countries and economies** took PISA 2022

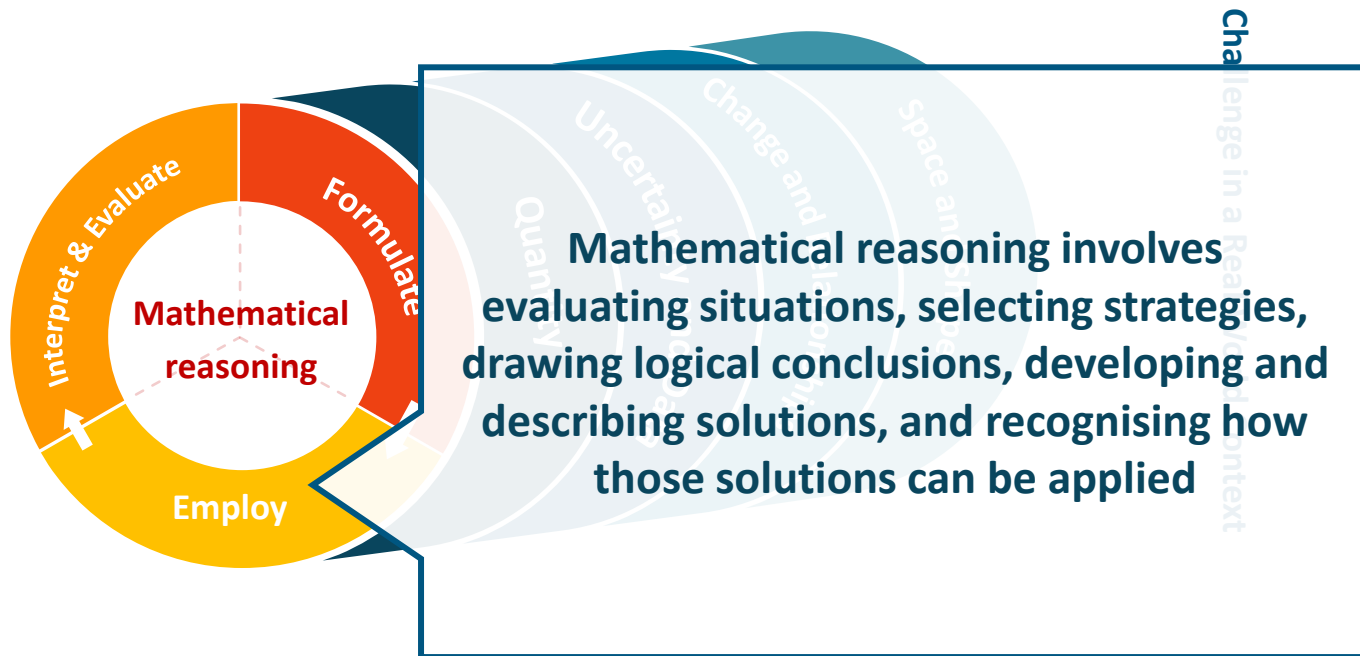
PISA Newcomers:

El Salvador, Jamaica, **Mongolia**, the Palestinian Authority and Uzbekistan





# 21<sup>st</sup> century mathematics: PISA 2022 maths framework



# Try the PISA test!

<https://www.oecd.org/pisa/test/pisa-2022-mathematics-test-questions.htm>

Available in different languages including Japanese



PISA 2022

**Triangular Pattern**  
Question 3 / 3

Refer to "Triangular Pattern" on the right. Click on a choice and then type an explanation to answer the question.

Alex is going to add more rows to his pattern.

He claims that the percentage of blue triangles in the pattern will always be less than 50%.

Is Alex correct?

Yes  
 No

Explain your answer:

\_\_\_\_\_

**TRIANGULAR PATTERN**

Alex drew the following pattern of red and blue triangles. The first four rows of the pattern are shown below.

1<sup>st</sup> row  
2<sup>nd</sup> row  
3<sup>rd</sup> row  
4<sup>th</sup> row

**Solar System**  
Question 1 / 2

Refer to "Solar System" on the right. Use drag and drop to answer the question.

The following model shows the average distances between three planets. (Planets and model not drawn to scale.)

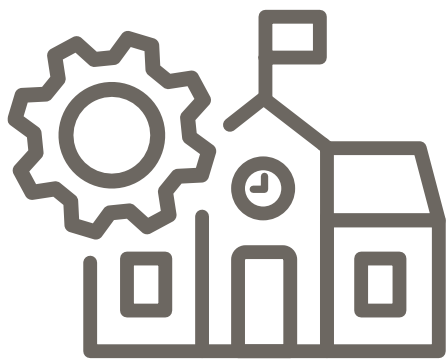
Jupiter 4.38 au Saturn 9.62 au Uranus

Based on the distances given, which planets belong in the model? Drag the correct three planets in the correct order. To change an answer, first drag the previous planet out.

Mercury Venus Earth  
Mars Neptune



# Resilient education systems



**Performance:** mathematics scores

**Equity:** link between students' performance and socio-economic profile

**Well-being:** students' sense of belonging at school

# PISA 2022

## The state of education in Asia



# Mathematics performance declined significantly across the OECD

Student performance

OECD average

Average mean performance dropped by almost  
**15 score points** in mathematics across the OECD

Previous changes in OECD average never exceeded four score points in mathematics

2003

2006

2009

2012

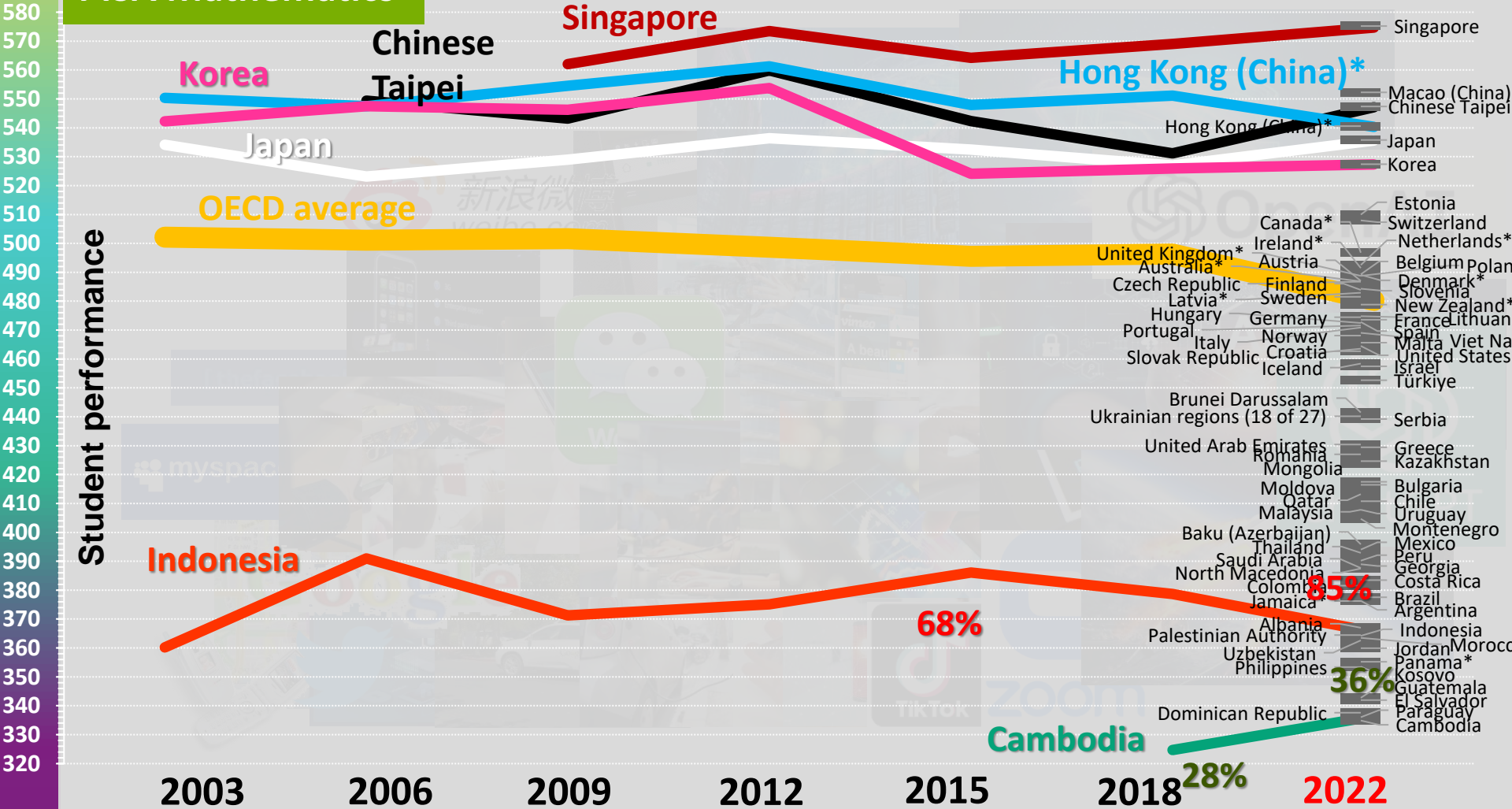
2015

2018

2022

580  
570  
560  
550  
540  
530  
520  
510  
500  
490  
480  
470  
460  
450  
440  
430  
420  
410  
400  
390  
380  
370  
360  
350  
340  
330

# PISA Mathematics

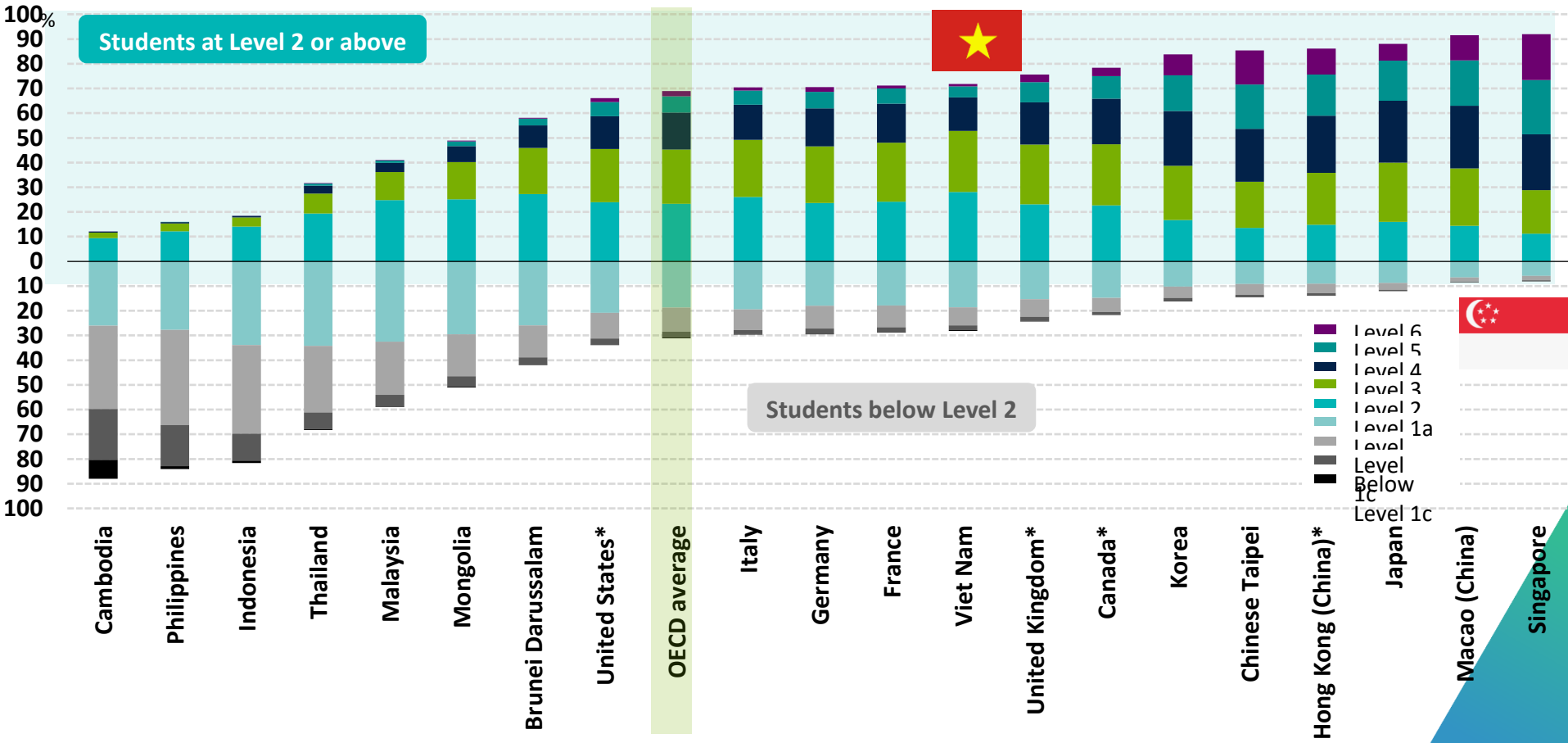






# Students' proficiency in mathematics

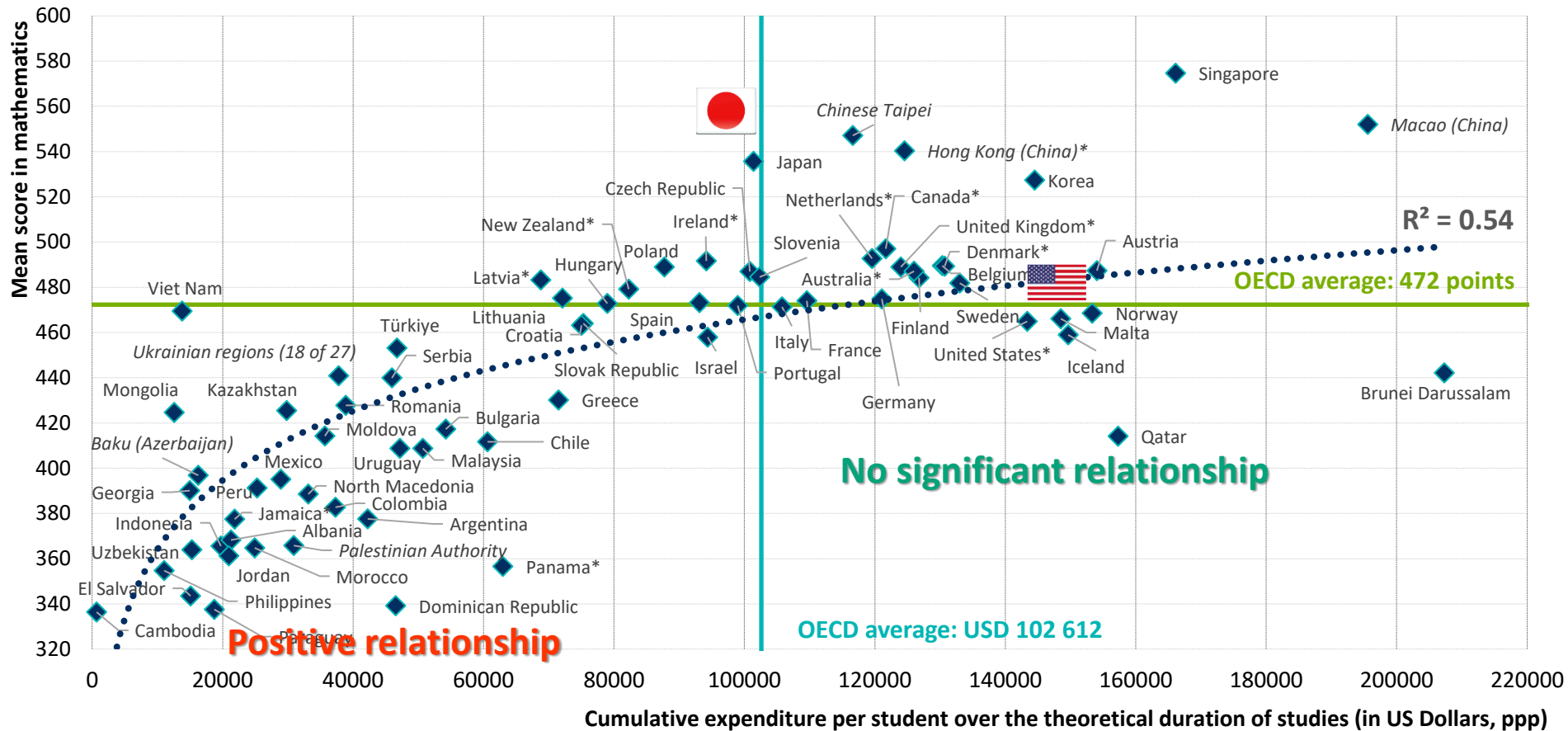
Figure I.3.1





# Money is necessary but not sufficient

Figure I.4.15





# Few systems align resources with needs

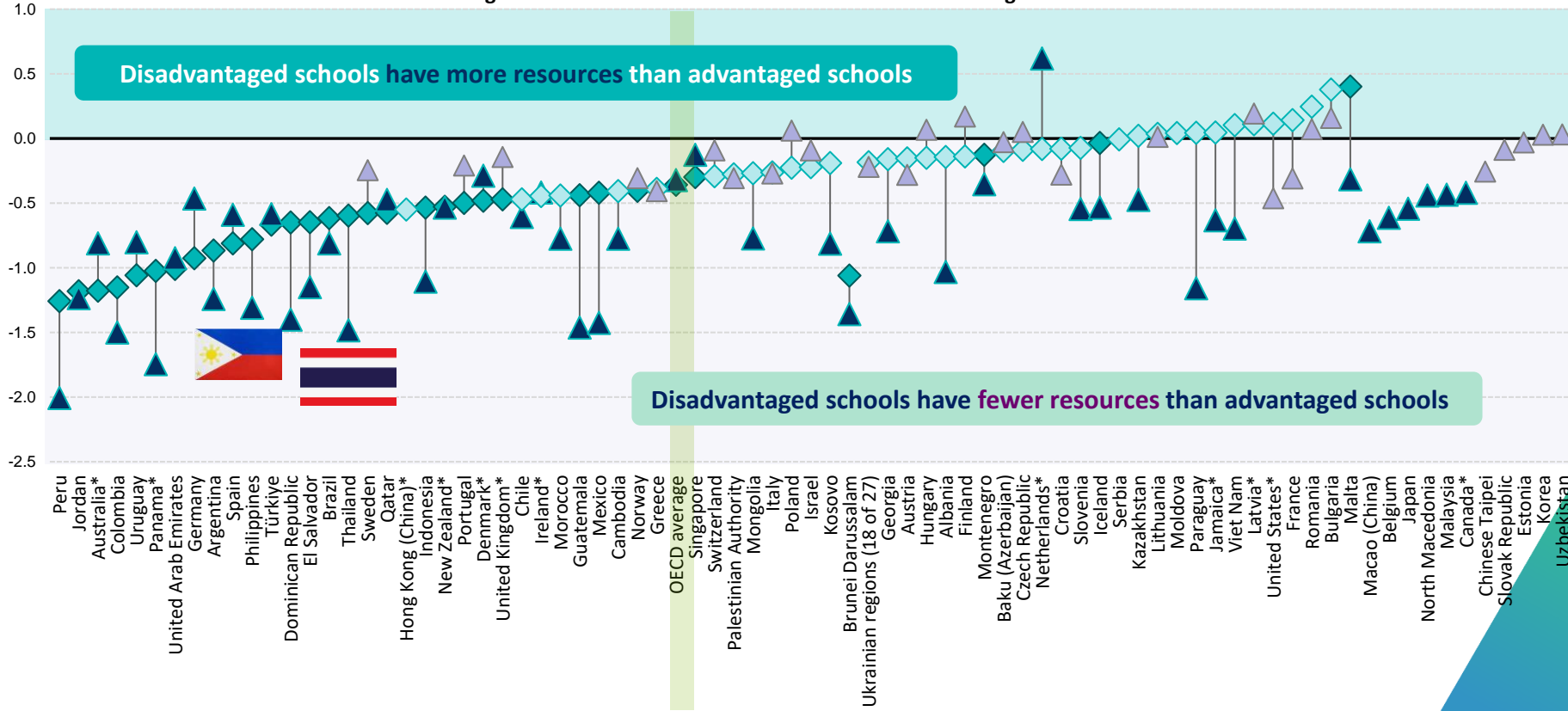
Table II.B1.5.2 &  
Table II.B1.5.18

Based on principals' reports

Mean index difference between advantaged and disadvantaged schools

◆ Index of shortage of education staff

▲ Index of shortage of educational material





# Learning time ≠ learning outcomes

Figure II.5.11

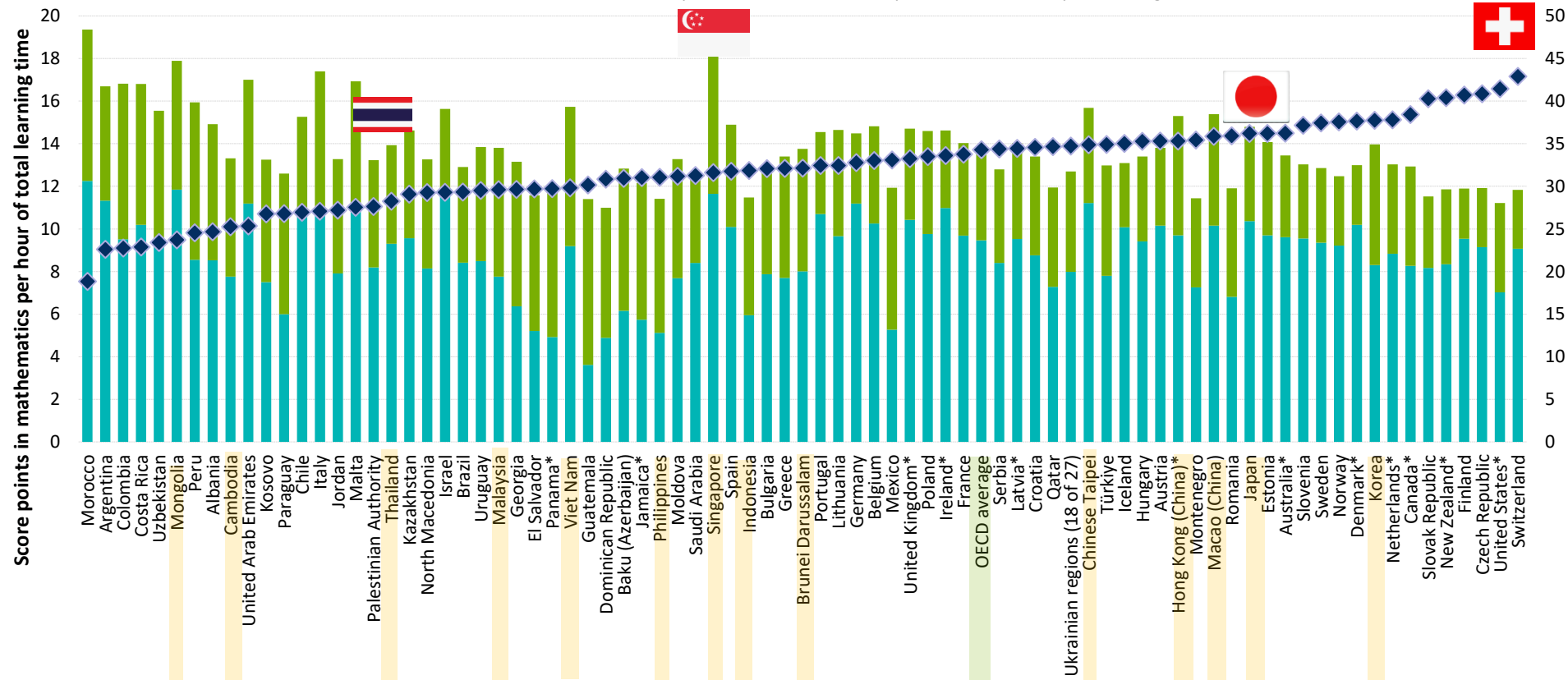
Based on students' reports

Lessons

Homework time

Score points in mathematics per hour of time spent in regular lessons and homework

Hours

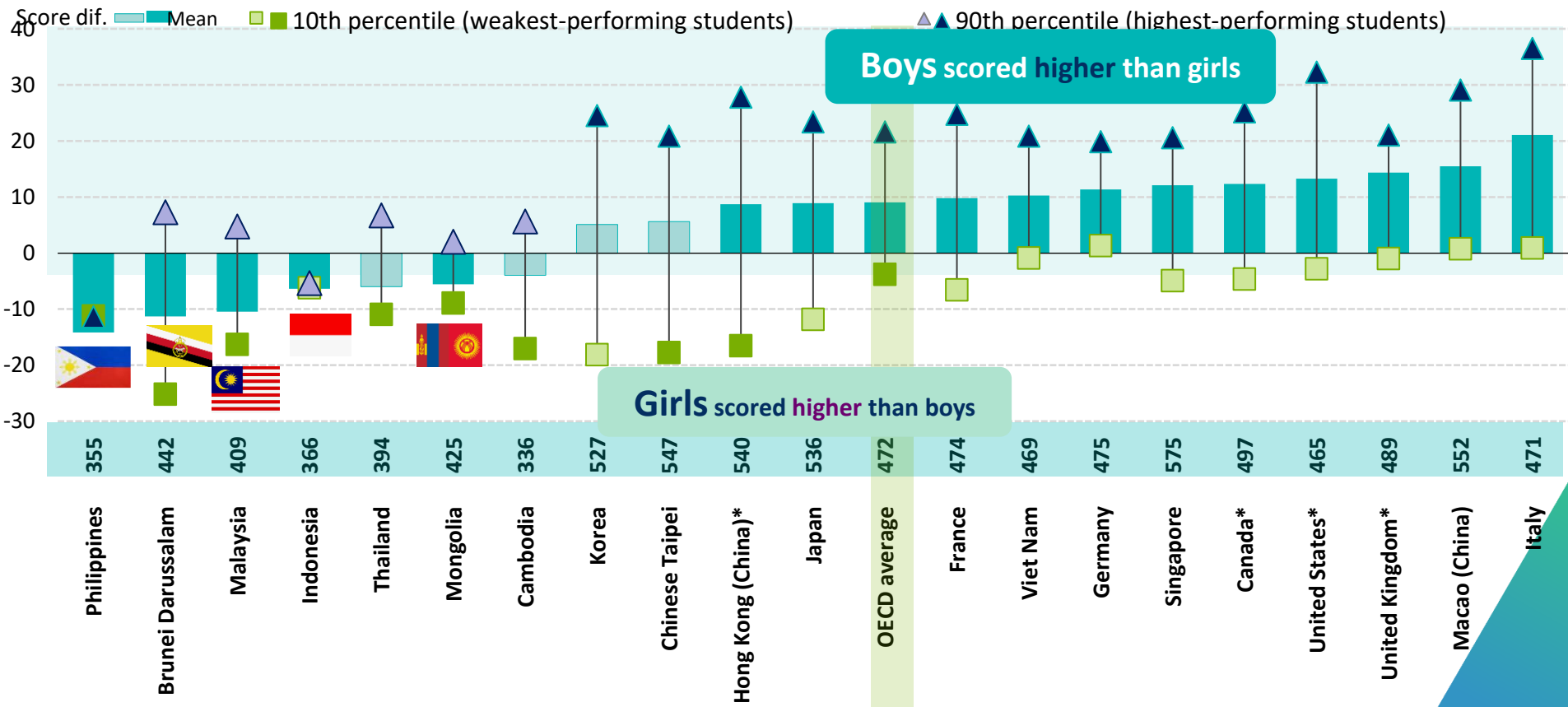




# Mixed picture of gender gap in maths

Figure I.4.7

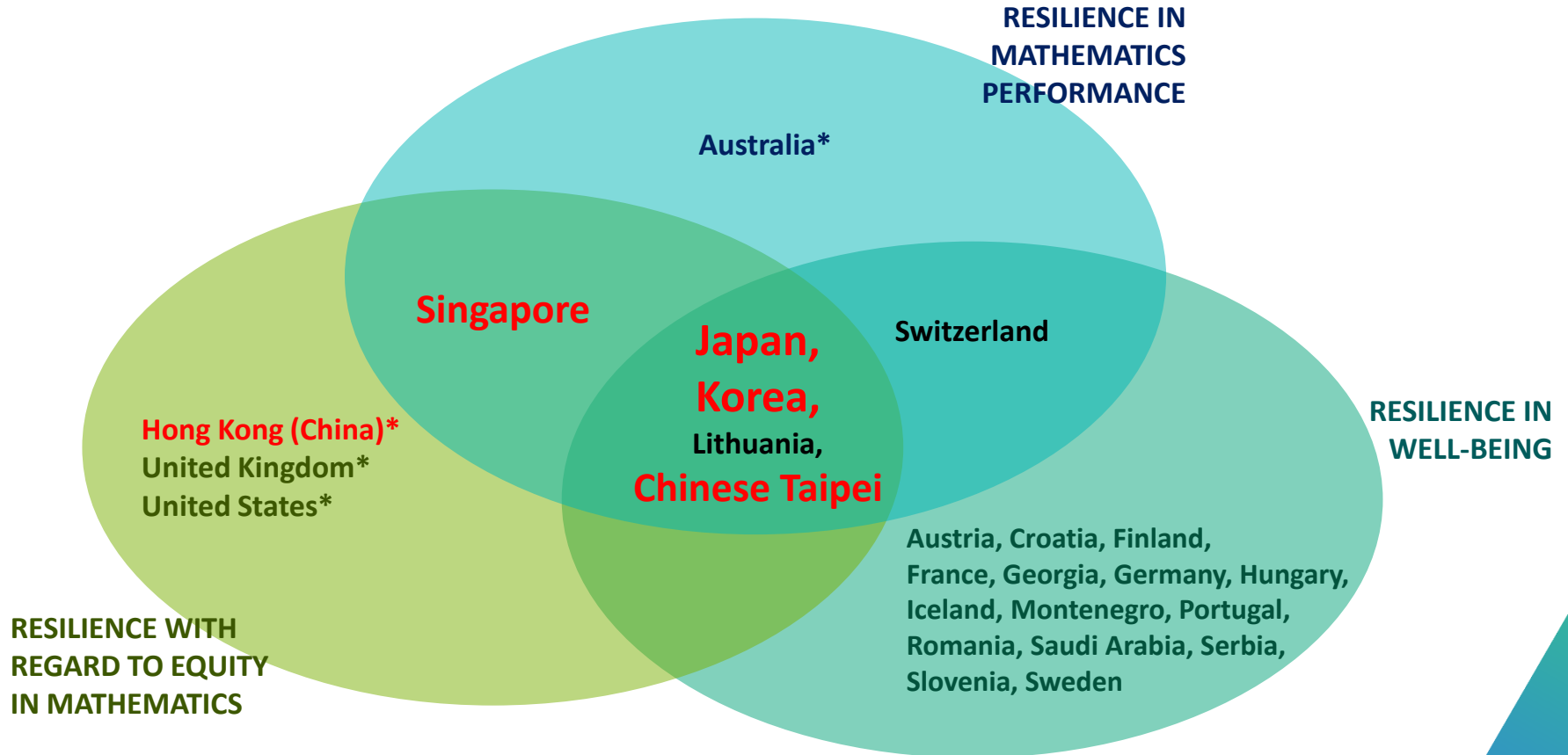
Score-point difference in mathematics between boys and girls





# Which education systems are resilient systems?

Figure II.1.1



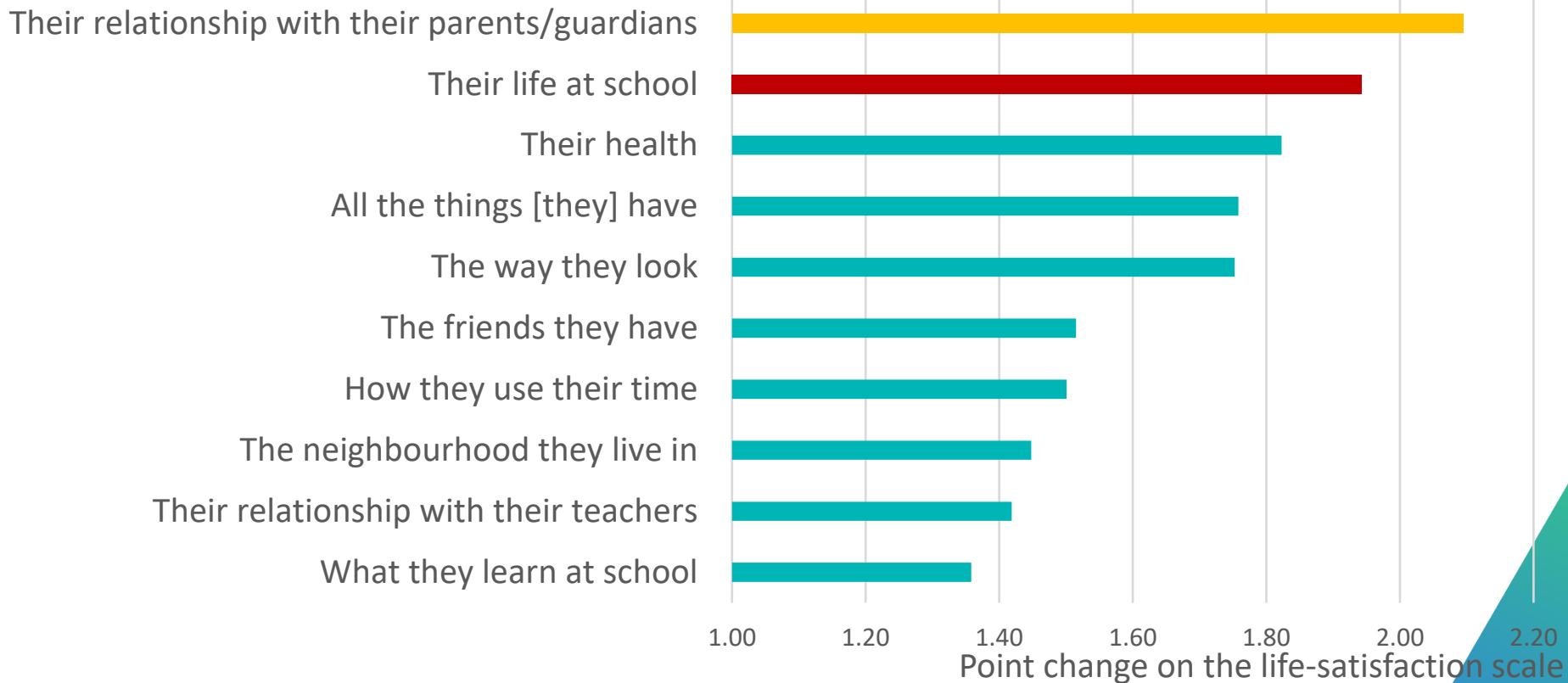


## Parents and schools matter for students' life satisfaction

Figure II.1.7

Average of countries/economies with available data

*Change in life satisfaction when students reported that they are satisfied or totally satisfied with the following:*

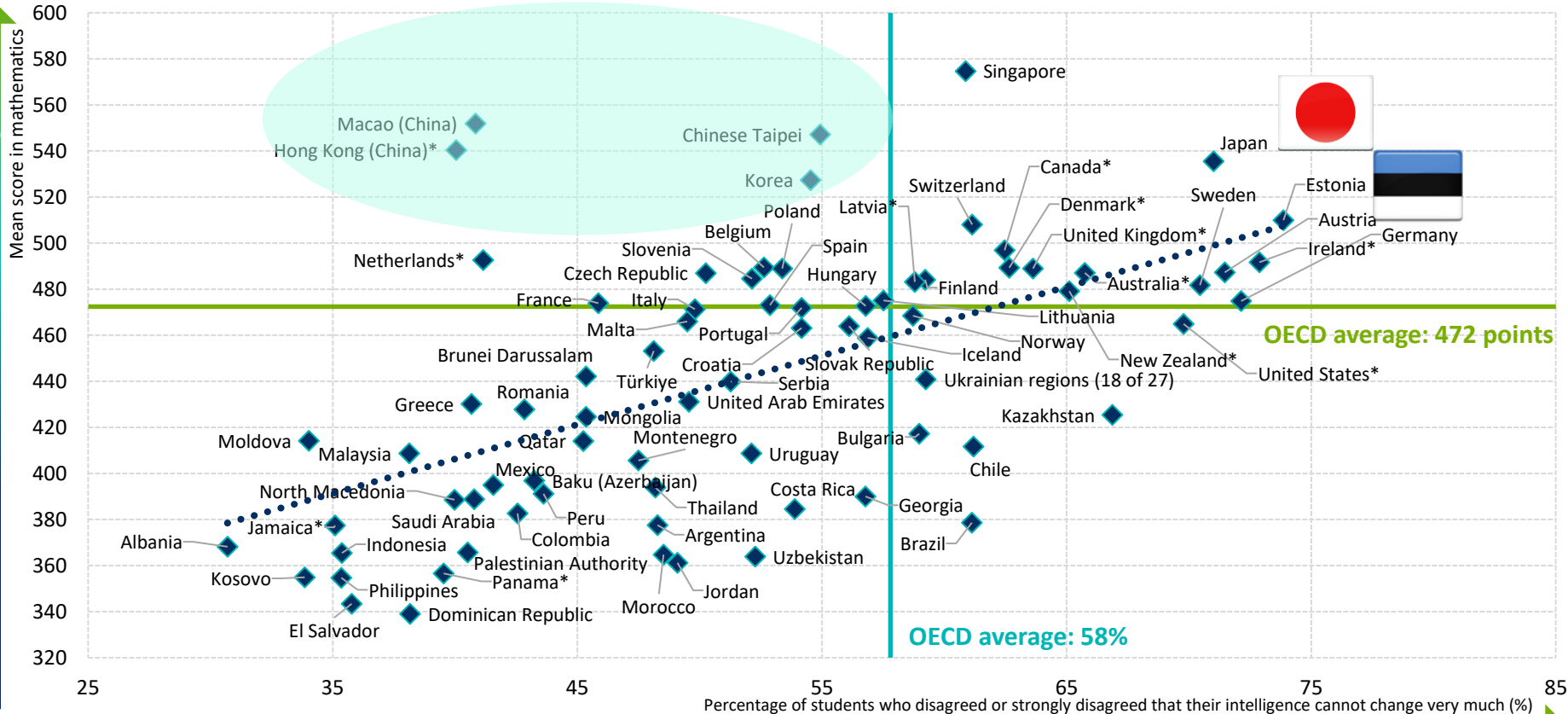




# Growth mindset : A driver for better learning?

Table I.B1.2.1 &  
Table I.B1.2.16

Higher score

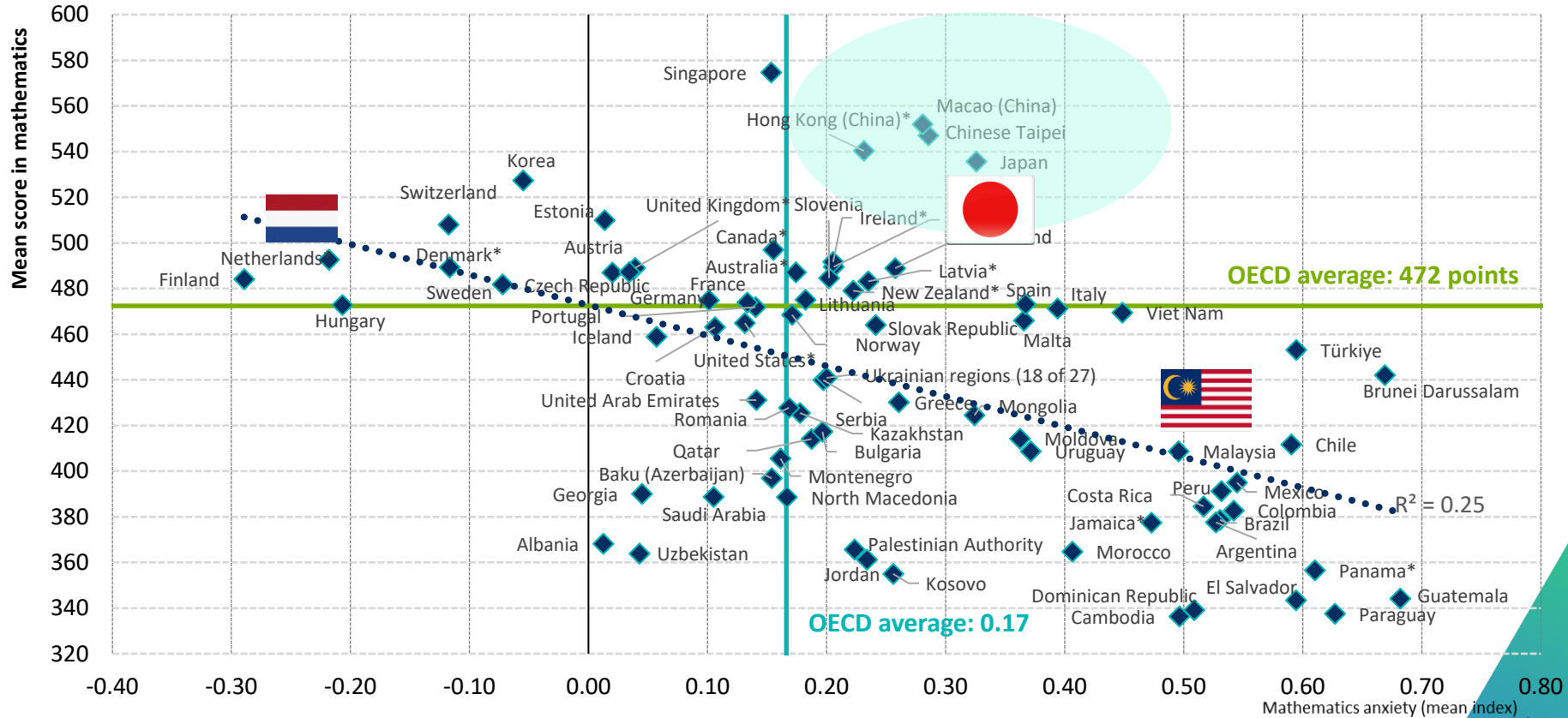






# Does mathematics make students worry?

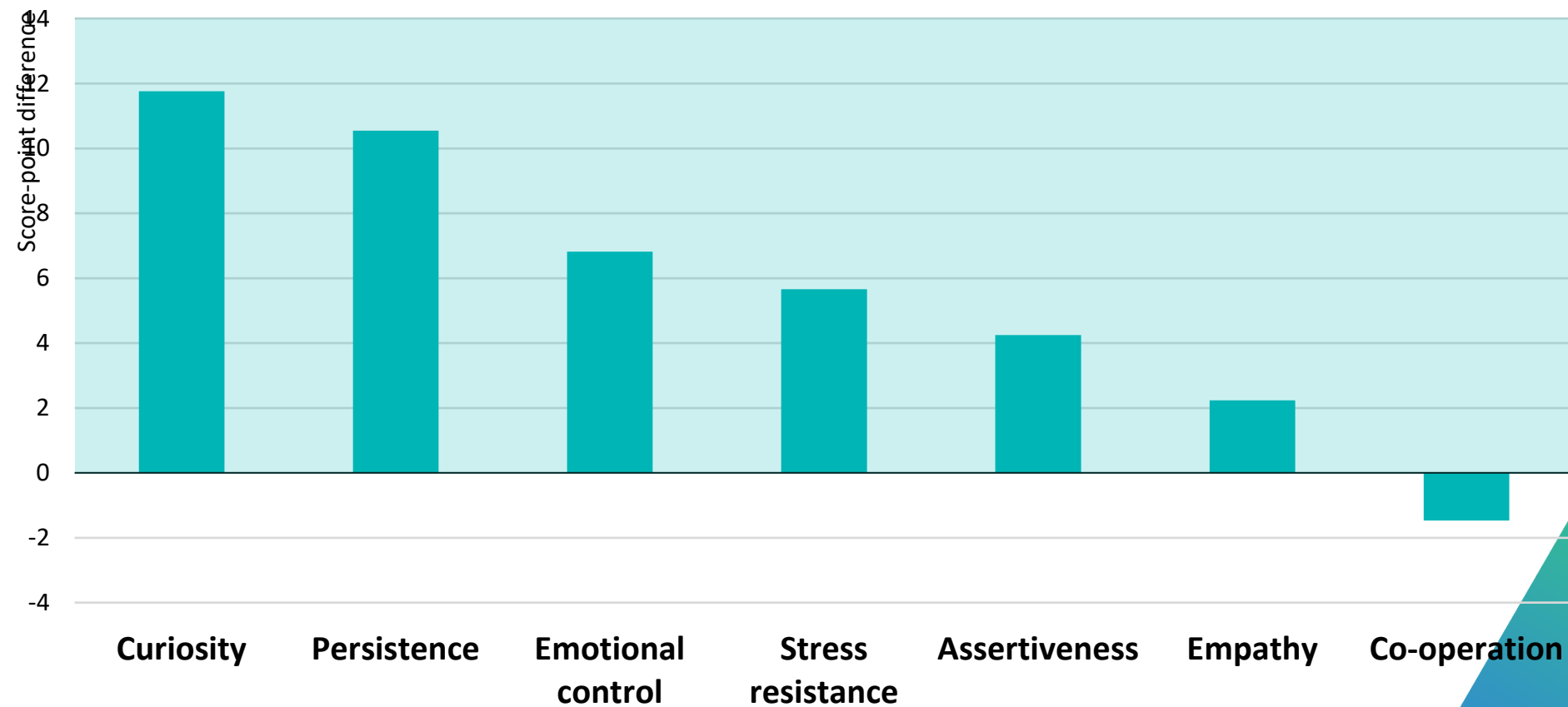
Figure I.2.1



# Social and emotional skills, and mathematics performance

Figure II.2.6

Change in mathematics performance associated with a one-unit increase in the following indices; OECD average

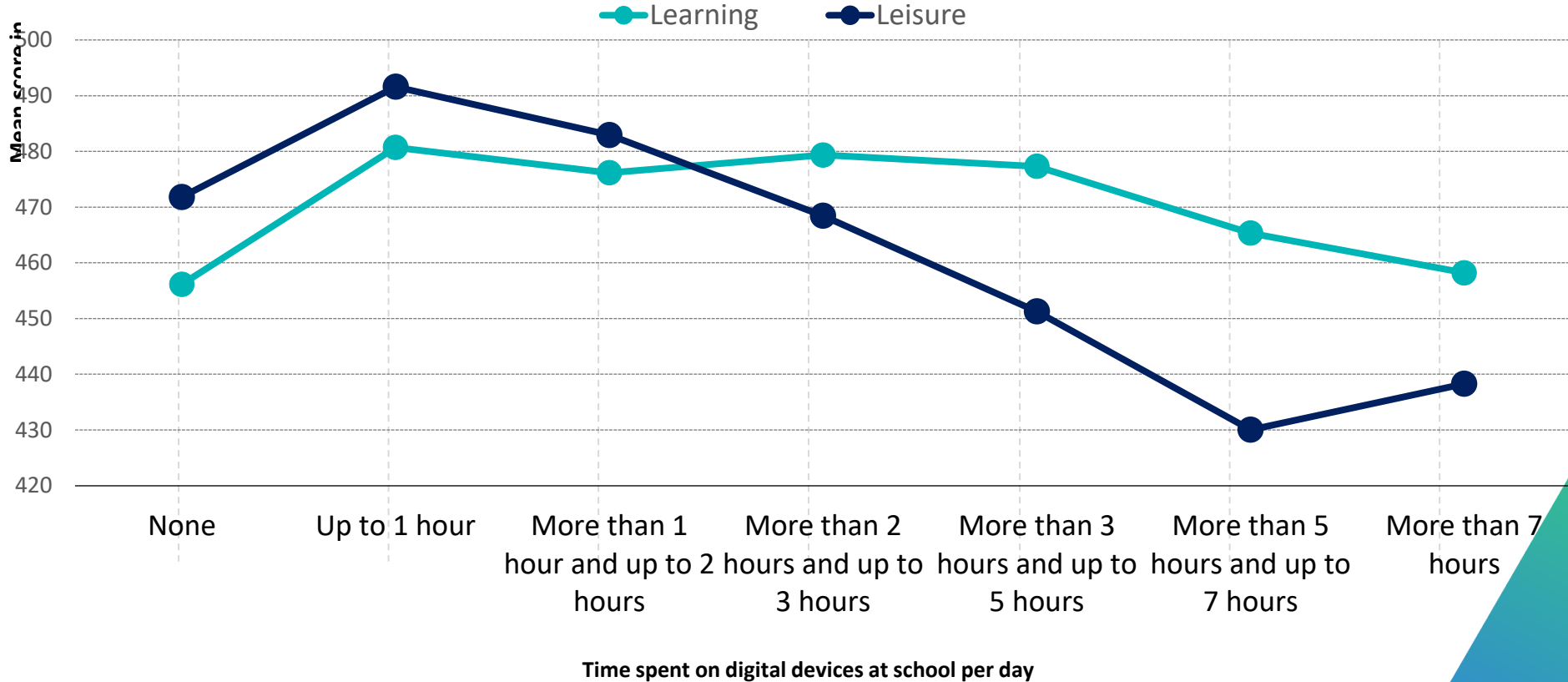




# Time spent on digital devices at school and mathematics performance

Figure II.5.14

Based on students' reports; OECD average

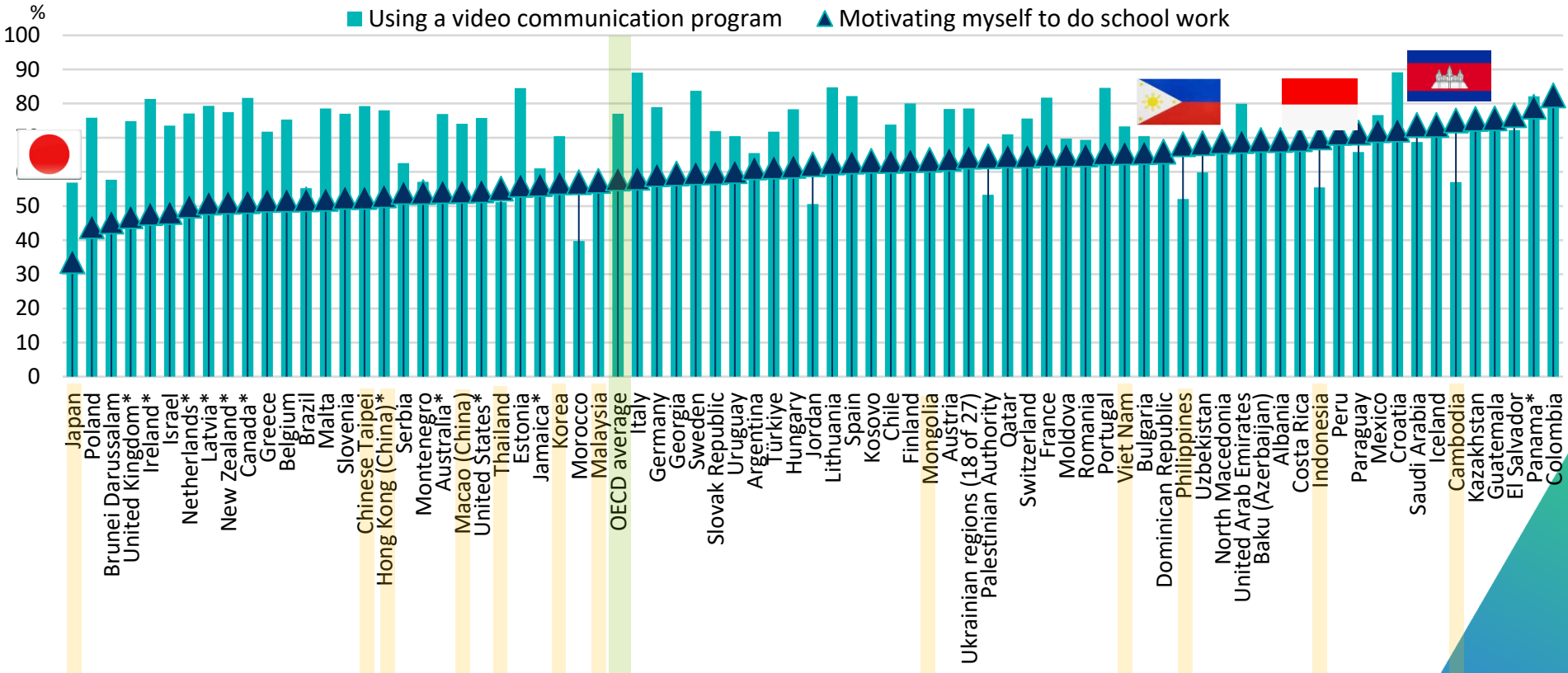




# Students' confidence in self-directed learning

Figure II.2.5

Percentage of students who reported feeling confident/very confident in taking the following actions if their school building closes again in the future

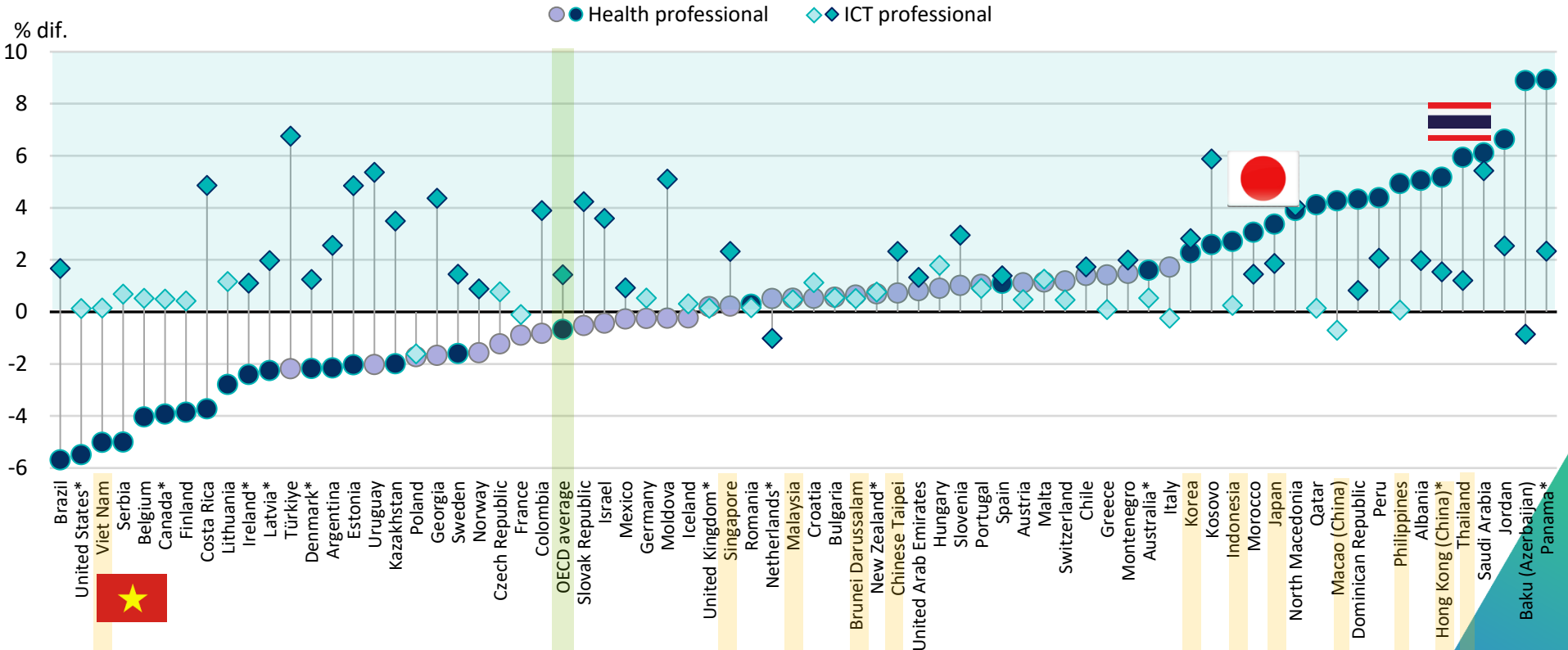




# Change between 2018 and 2022 in expectation of a career in health and ICT

Figure II.2.4

Percentage-point change of students who expect to work as the following when they are about 30 years old





## Learning from different strengths

### **Academic performance in mathematics**

Singapore, Macao (China), Chinese Taipei, Hong Kong (China)\*, Japan, Korea

**Improvement 2018-2022:** Brunei Darussalam, Cambodia, Chinese Taipei

**Equity:** Macao (China), Hong Kong (China)\*, Japan

**Resilience:** Japan, Korea, Chinese Taipei

**Low distraction by digital devices in class:** Japan, Korea

**Safety in school:** Korea, Singapore, Chinese Taipei

**Teacher support during school closure:**

Vietnam, Brunei Darussalam, the Philippines, Indonesia

# Thank you

Find out more about our work at [www.oecd.org/pisa](http://www.oecd.org/pisa)



**PISA main reports**



**PISA Country notes**

Take the test: [bit.ly/PISA-Test](https://bit.ly/PISA-Test)

PISA FAQs: [www.oecd.org/pisa/pisafaq](http://www.oecd.org/pisa/pisafaq)

PISA Data Explorer: [www.oecd.org/pisa/data](http://www.oecd.org/pisa/data)

