

## What the figures show

These figures show relationships between scores on the PISA reading assessment and other factors. The data are from the 34 countries that constitute the core participants in the OECD's many activities.

The figures use results from the 2009 cycle of PISA testing. In that year, reading was designated as the area that would receive particularly detailed analysis. (In other years it's math or science.)

Each figure shows the simple correlation between reading score and 1 factor.

General rule of thumb for reading the figures: the closer the "regression" line is to flat (horizontal), the smaller the effect of the factor. The greater the slant, the bigger the effect.

**Reading performance and per capita GDP** (gross domestic product, a standard measure of a country's economy): small positive correlation (.24). Means that wealthier countries tend to score higher, but the effect is small. It accounts for about 6% of the variability in scores, which is not much. The US has the second highest GDP per capita, but the US reading score was almost exactly equal to the average of all the countries.

**Reading performance and spending on education:** Again a small positive correlation, accounting for about 9% of the variability in scores. Spending more only produces small gains. The US spends the most, but only gets average performance in return.

**Reading performance and parents' education:** The line is slanting upward, indicating a strong positive correlation, .67. This factor accounts for about 45% of the variability in scores across countries. The measure of parents' education was the percentage of the adults in the 35-44 year old age range with tertiary (college or above) education. They chose this range because the children who take the tests are 15, and most of the parents are in this age range.

The US has one of the highest levels of parental education, using this measure. The US data point is below the regression line, indicating that the US score is somewhat lower than this factor predicts it to be. More complex analyses are needed to understand this further. How does parental education relate to GDP, for example?

**Reading performance and share of socio-economically disadvantaged students:** The question here is: are scores related to the percentage of children from low-income backgrounds? Each country has a different economic profile. The students who take the test are representative of that country's demographics. Poorer countries have higher percentages of children from low socio-economic status (SES) backgrounds taking the test.

The figure shows a strong effect of this factor, as one would expect. Higher percentages of children from low SES background → lower scores. [This correlation is negative: *higher* on one measure (% of low SES children) is related to *lower* on the other measure (reading score).]

It is sometimes said that the US scores poorly on such assessments because we have a high proportion of children from lower SES levels. However, that is not borne out by these data. The US clusters with several other countries on this SES measure. Some of the countries score lower than the US, some

higher. The US score falls pretty squarely on the regression line, meaning that the US data are consistent with the overall impact of this factor.

Of course, these analyses only scratch the surface; other questions have to be asked. What if a different measure of SES is used? What happens if the same analysis is done looking at the percentage of children from higher SES backgrounds? How does the percentage of low income children relate to the country's GDP, to parental education, and so on? Instead of looking at the total amount spent on education, what about how the money is spent? Those are the kinds of questions researchers study.