Why PISA:

The PISA (« *Program for International Student Assessment* ») is a worldwide study by the OECD. It evaluates the performances of students through an exam. This exam is common for every country taking part in it. We used it as reference in our work, as it is the only test that can be used to compare the students of different countries. However we understand it is a flawed test, and that we our results may be attacked on that point. Indeed, how could good results prove the skills and knowledge of the students? Even if we could measure it, should skills and knowledge learned be the key to evaluate an educative system? Is the skills and the « savoir-faire » all that matters? All those questions won’t be tackled in this report, and we will use the PISA as it is our only common indicator for education in the whole OECD. It is the only way to compare the different countries and students.

However, before checking how important the other criteria are, it is important to check the validity of the PISA as our comparison main criteria.

To do so, we tried to check whether the results of the PISA and the part of the people with a diploma was in anyway linked. Indeed, it is interesting to check if a goof score at the PISA tests allow a country to have more graduates or not.

Teaching Hours:

For us, it felt natural that teaching hours and a good mark at the PISA were linked. Indeed, one can easily think that the more class hour you have, the easier it is to understand and to have a fine mastership of the subject. We thus not only wanted to check if there was or not a dependency which truly existed, but also to know how important the link between those data was.

Educational expenditure (as a part of the GDP) :

It felt important to us to check the importance of the financial means given to the educational system. Is having a higher budget really important for the performances of the students? Or is there some other, more important criteria? It thus felt natural to check the extent of the budget effect.

Results

Educational expenditure

There were only data for the year 2012. We thus had the same issue than for the Student/Teacher Ratio (see part 4.1). We found no correlations between the Educational expenditure as a part of the GDP and the result of a country at the PISA test (indeed, the results of a Fisher test shows a p-value of 9.57\*10^-1 for the Mathematics section of the PISA and 8.24\*10^-1 for the Reading section of the PISA).

Teachers’ salaries

There were only data for the year 2012 for the Teachers’ salaries in USD. We thus had the same issue than for the Student/Teacher Ratio (see part 4.1). We found a correlation between the Teachers’ salaries and the result in the Mathematics section of the PISA for a number of bin of 10 and for 5% and 3% uncertainty (with a p-value of 2.67\*10^-2). We also found a correlation with the results in the Reading and Science section of the PISA for a 5% and 3% uncertainty (with a p-value of 2.59\*10^-2)

Principal component analysis

We tried to do a Principal component analysis. However, the results we got were disappointing and, quite frankly, analyzable. It seems that a lot more data is needed to conduct such analysis.