

Data Visualization Final Project - Education

Hyeji Yun 2033879
Mourad Lagsir 2155508
Amber van Kampen1916238
Renk Rosmalen 2185903

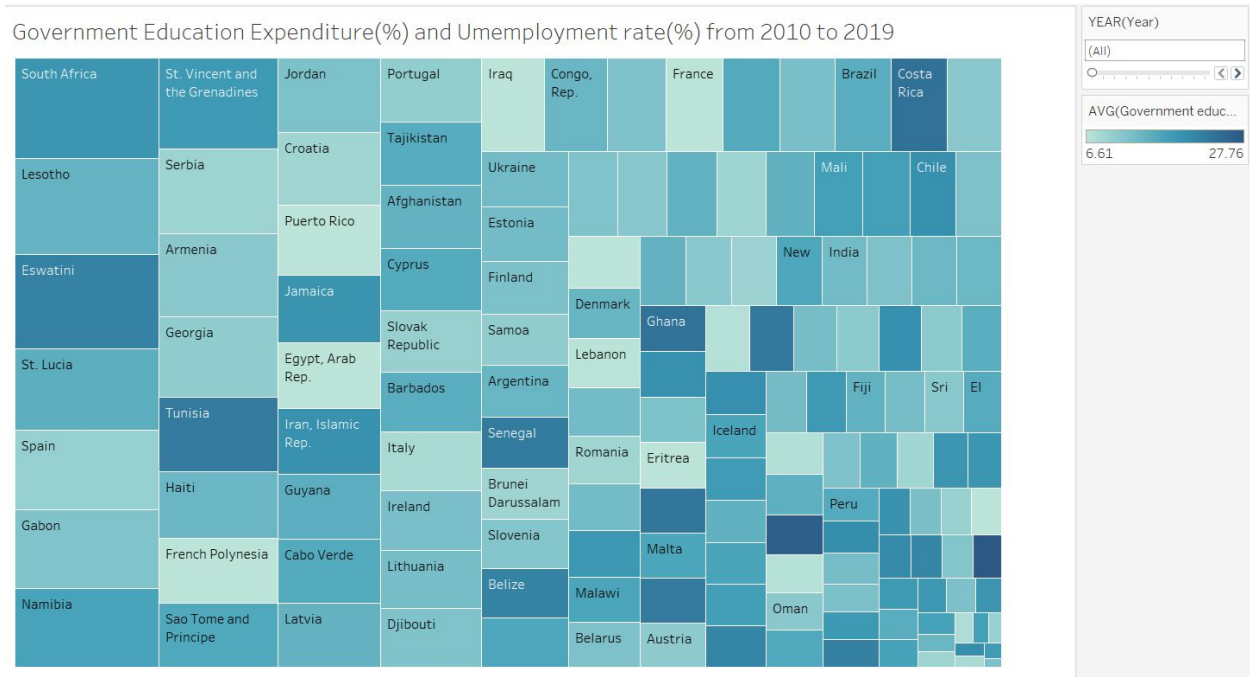
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Education and labor force - Hyeji Yun

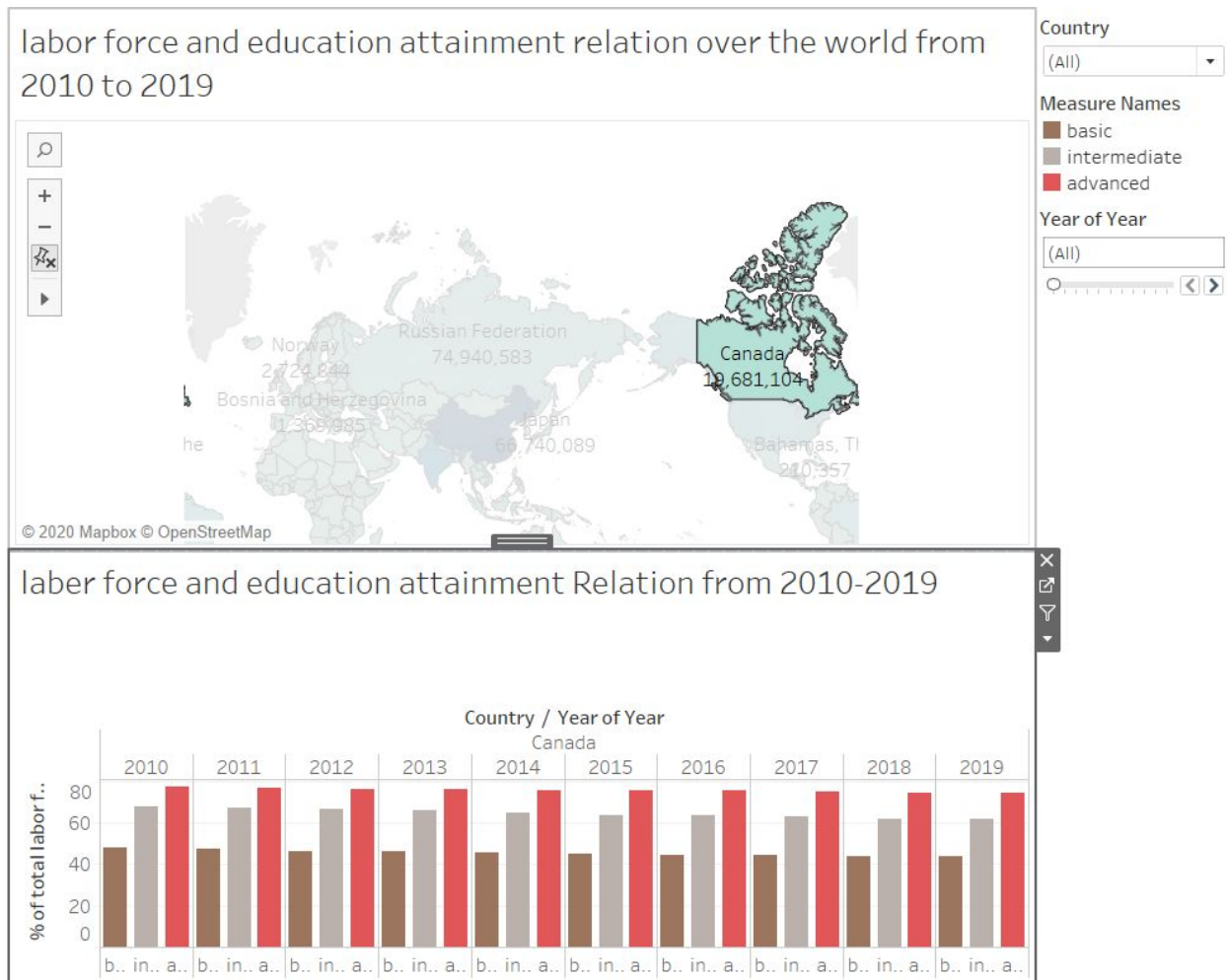
#1: Government Education Expenditure(%) and Unemployment rate(%) from 2010 to 2019

This visualization shows the comparison between government education expenditure in percentage and unemployment rate in percentage from 2010 to 2019. Years can be changed by a slider. The color represents the average government education expenditure percentage per country while the average unemployment rate is represented by size. There is null value for government education expenditure, but still we can find South Africa as the highest unemployment rate by size. The lowest unemployment rate is Qatar. The country which spent the highest percentage of government expenditure is Ethiopia which spent 27.76% of the government expenditure for education, and the lowest expenditure is Lebanon which is 6.74%.



#2: Labor force and education attainment relation over the world from 2010 to 2019

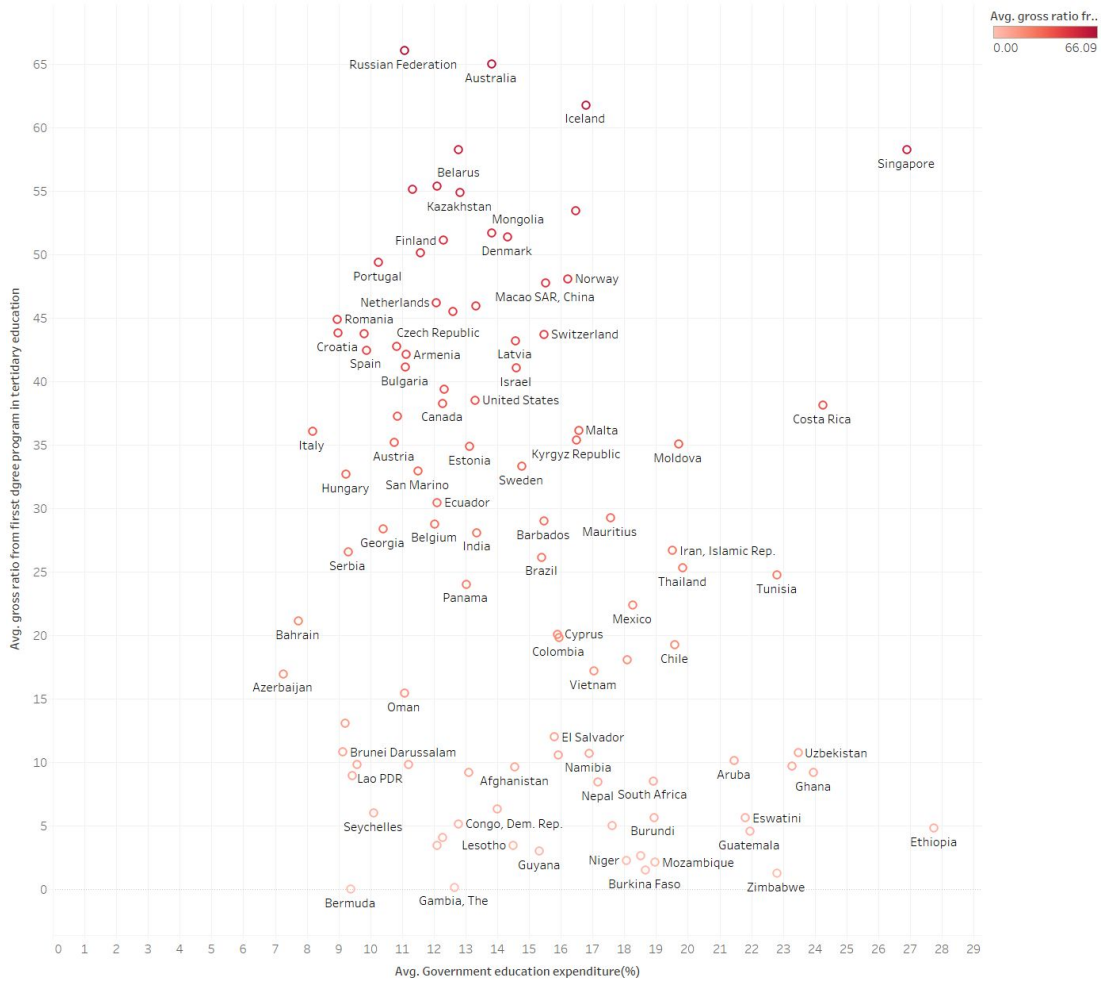
This visualisation shows overview of the labor force and education attainment relation over the world from 2010 to 2019. If you click the country, you can see the education attainment distribution. For example, for Canada, the number of labor force is 19,681,104 and around 80% took advanced education in general over the years.



#3: Government education expenditure(%) and tertiary graduation rate relation from 2010 to 2018

This visualization shows the relation between government education expenditure and tertiary graduation rate relation from 2010 to 2018. X-axis represents average government education expenditure in percentage while y-axis and the color of circle represents average gross ratio from first degree programs in tertiary education. Over the years, Russian federation shows the highest tertiary education graduation rate which is 66.09%. Singapore is interesting country since it spent 26.91% as government education expenditure and the tertiary education graduation rate is 58.27%.

Government education expenditure(%) and tertiary graduation rate relation from 2010 to 2018



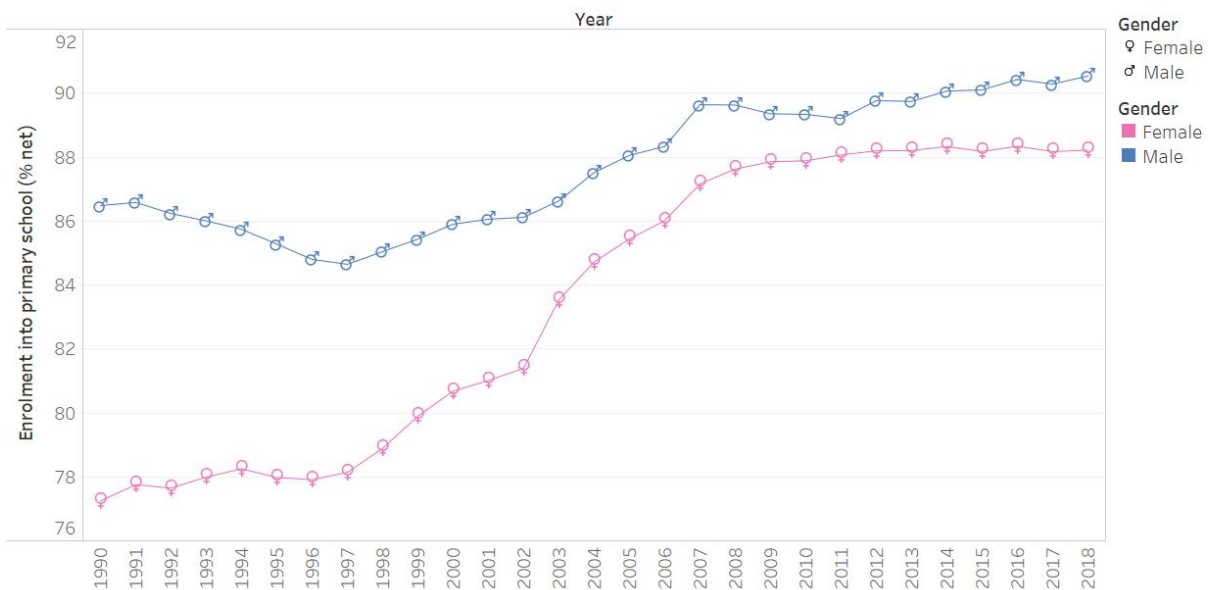
Average of Government education expenditure(%) (Data (Government expenditure education %)) vs. average of gross ratio from first degree program in tertiary education . Color shows average of gross ratio from first degree program in tertiary education . The marks are labeled by Country (Data (Government expenditure education %)). The data is filtered on Year Year and Country. The Year Year filter keeps 10 of 10 members. The Country filter excludes Belize. The view is filtered on average of gross ratio from first degree program in tertiary education , average of Government education expenditure(%) (Data (Government expenditure education %)) and Country (Data (Government expenditure education %)). The average of gross ratio from first degree program in tertiary education filter keeps non-Null values only. The average of Government education expenditure(%) (Data (Government expenditure education %)) filter keeps non-Null values only. The Country (Data (Government expenditure education %)) filter excludes Belize.

Education and gender - Amber van Kampen

#4: Gender difference for enrolment into primary school (% net) all over the world between 1990 and 2018

For the first visualisation I looked at the gender differences of the enrolment of children into primary school all over the world. The world averages out of the dataset were used. To get both the line graph and the separated points visible a dual axis was created. One to make the line graph with the different colours and the other one to make the points with the gender sign visible. One of the axes is afterwards hidden, because the axes were synchronised. For every year (from 1990 to 2018) the enrolment for males is bigger than the enrolment for females. Although the gap between female and male is decreasing over the years.

Gender difference for enrolment into primary school (% net) all over the world between 1990 and 2018

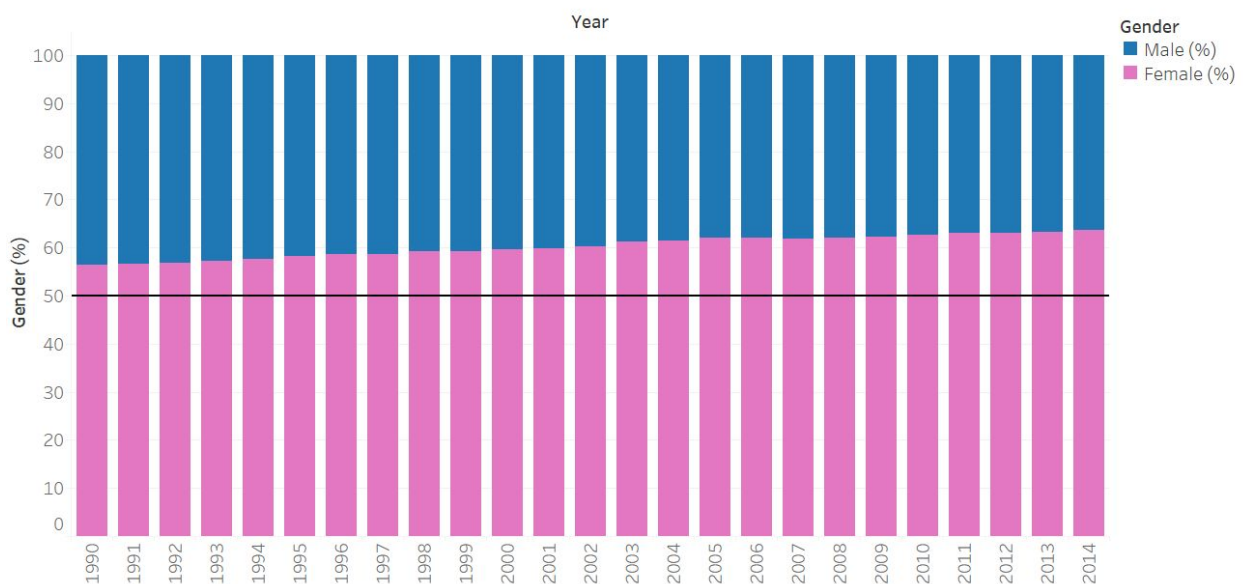


The trends of sum of Pivot Field Values and sum of Pivot Field Values for Year Year. Color shows details about Indicator Name. Details are shown for Indicator Name. For pane Sum of Pivot Field Values: Shape shows details about Indicator Name. For pane Sum of Pivot Field Values (2): Details are shown for Indicator Name. The view is filtered on sum of Pivot Field Values, which keeps non-Null values only.

#5: Gender difference of teachers in primary school all over the world between 1990 and 2014

For the second visualisation I looked at the gender difference of the teachers in primary school all over the world. First I edited the dataset in OpenRefine, in order to get all data from 1990 to 2014. In the dataset only the percentages of female teachers in primary school were given, so I calculated the percentages for male teachers in primary school as well (100-percentage of female teachers in primary school). In the dataset the world averages were already given, so I used that as a filter in Tableau. I visualised female (%) in pink and male (%) in blue, because that are the most commonly used colours to indicate gender. I also included a line at 50%, so you can easily see what gender group is represented more in primary school among teachers. You see that every year from 1990 to 2014, there are more female teachers than male teachers. Another outstanding thing is the trend you see over the years. More and more female teachers are teaching in primary school.

Gender difference of teachers in primary school all over the world between 1990 and 2014

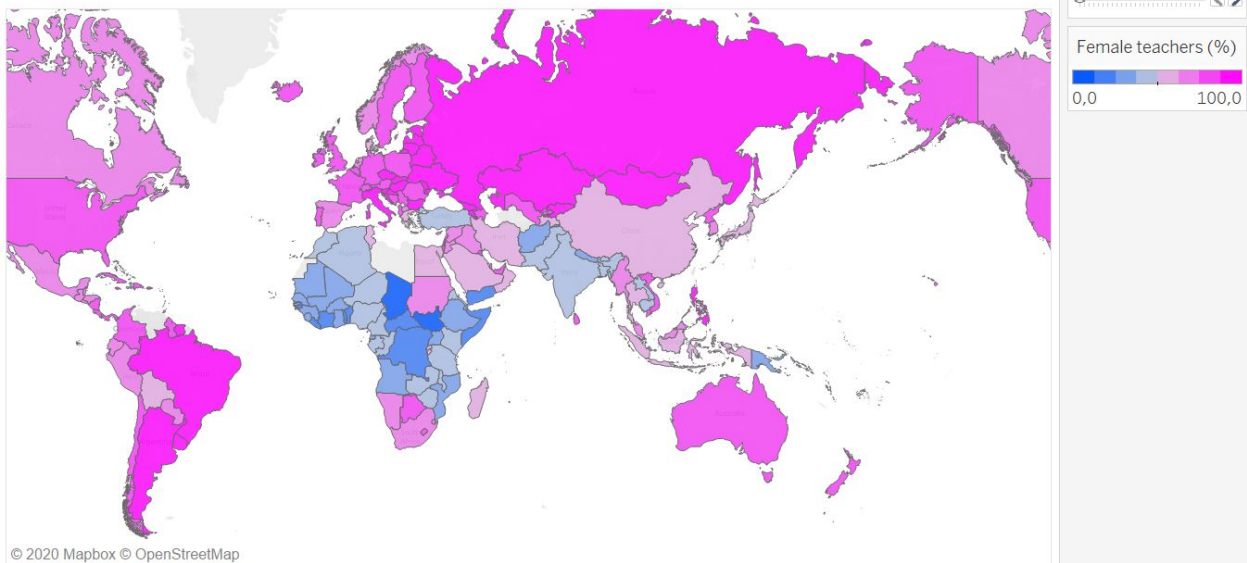


Male (%) and Female (%) for each Year. Color shows details about Male (%) and Female (%). The data is filtered on Entity, which keeps World.

#6: World map showing the % of female teachers in primary schools in different countries

For the third visualisation I used the same dataset as for the second visualisation. But instead of using the world average I used the data of the separate countries to create a world map. The world map is based on the percentage of female teachers that are teaching in primary school. When there are more than 50% female teachers in that country it will be pink and when below the 50% there are more male teachers, so in that case the country is coloured blue. There are different colour gradations in pink and blue, the stronger the colour, the more of one teacher gender is represented. Also a slider is added, so you can see the data for different years. Remarkable is that there are more male teachers in africa and south asia, but for most other countries in the world there are more female teachers.

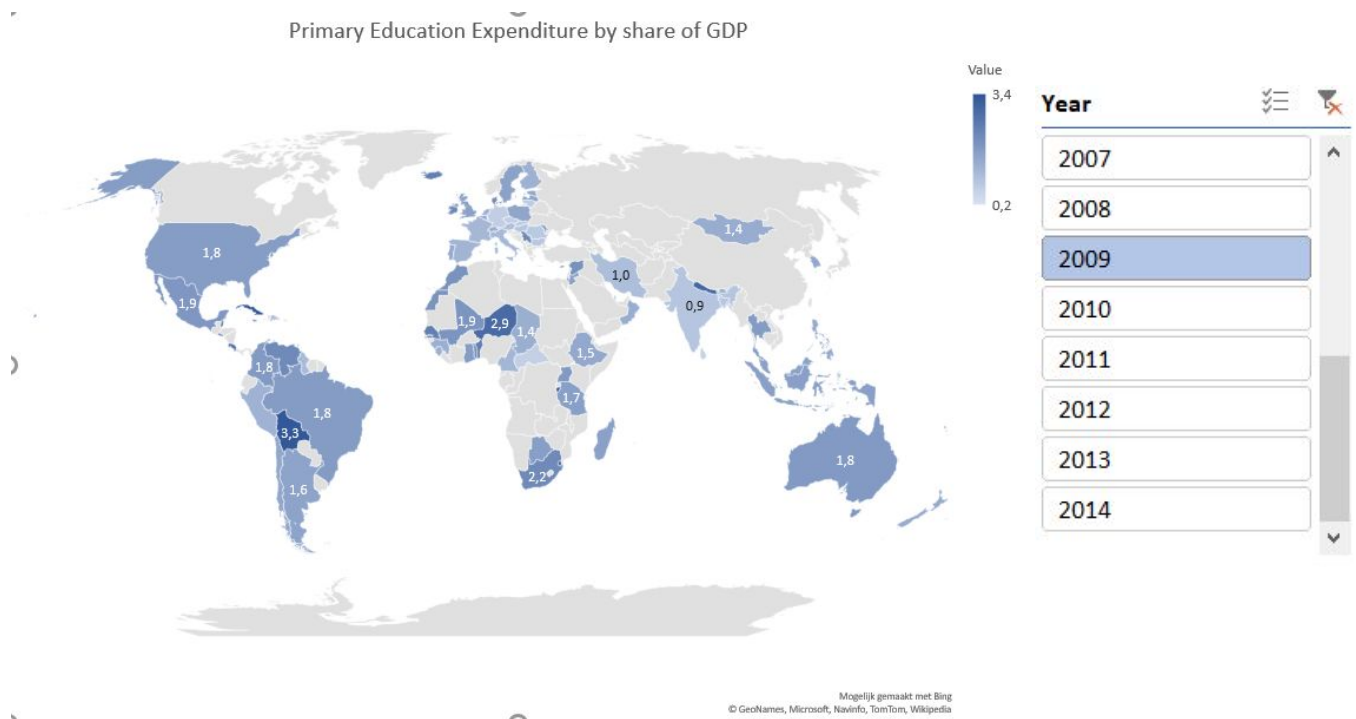
World map showing the % of female teachers in primary schools in different countries



Education and Finance - Mourad Lagsir

#7 Primary Education Expenditure by share of GDP

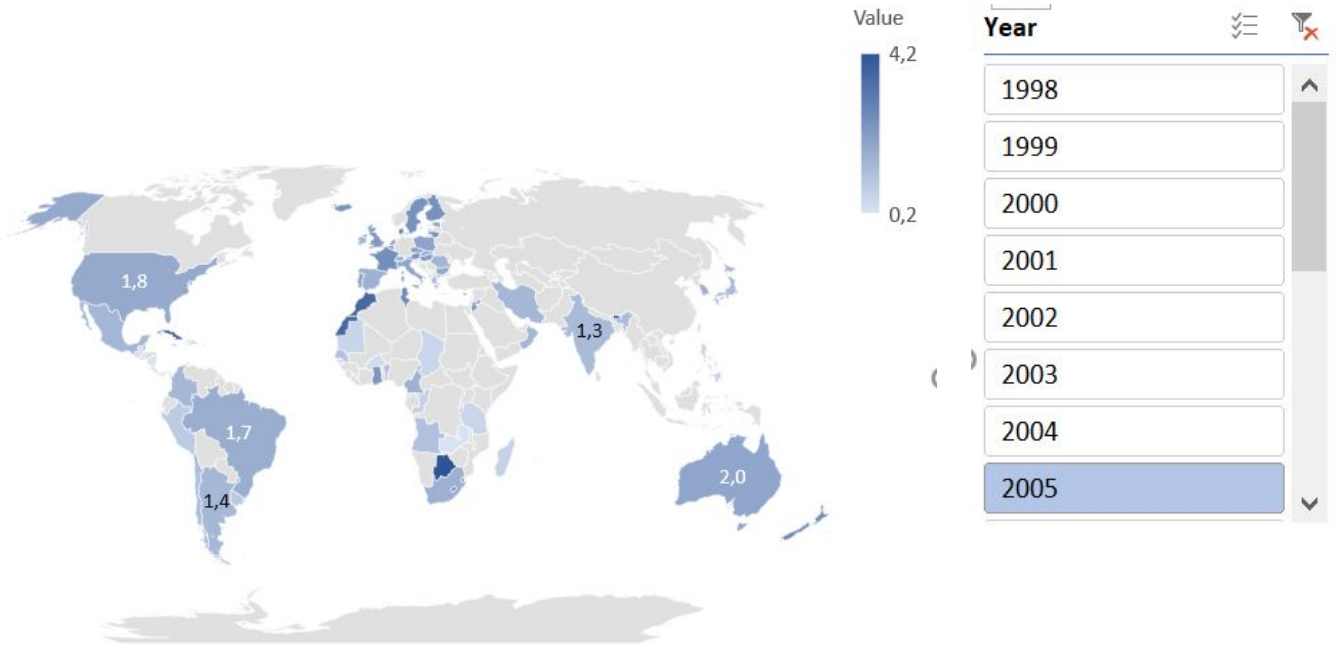
For my first visualisation I looked at the difference between countries in terms of Primary Education Expenditure by share of GDP. If you just look at the Primary Education Expenditure, the factor “country size” would influence the visualisation too heavily. To factor out country size, the “by share of GDP” was added. I added a slicer to select the year of interest. Data from 1998 to 2014 is visualised.



#8 Secondary Education Expenditure by share of GDP

For my second visualisation, I looked at the difference between countries in terms of Secondary Education Expenditure by share of GDP. Again, to factor out country size, the “ by share of GDP” was added. And again a slicer to select the year of interest. Data from 1998 to 2014 is visualised.

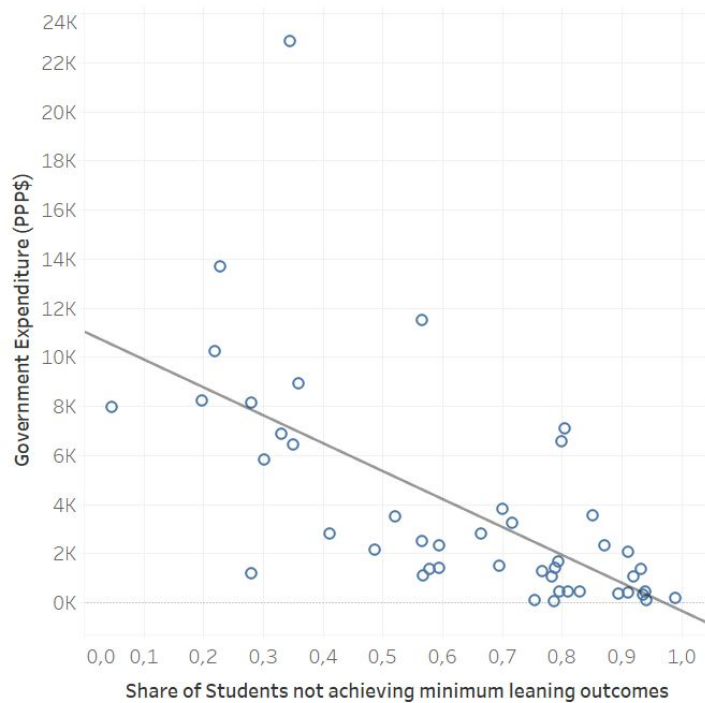
Secondary Education Expenditure by share of GDP



#9 Government Expenditure vs students' achievements.

To show the effects that the different government expenditures have on the students' achievements, I visualised the share of students achieving no or minimum learning outcomes vs total education expenditure per student (PPP\$). By moving the cursor over one dot, the detailed information about the corresponding country becomes visible. I took a random selection of 46 countries in total for visualisation purposes.

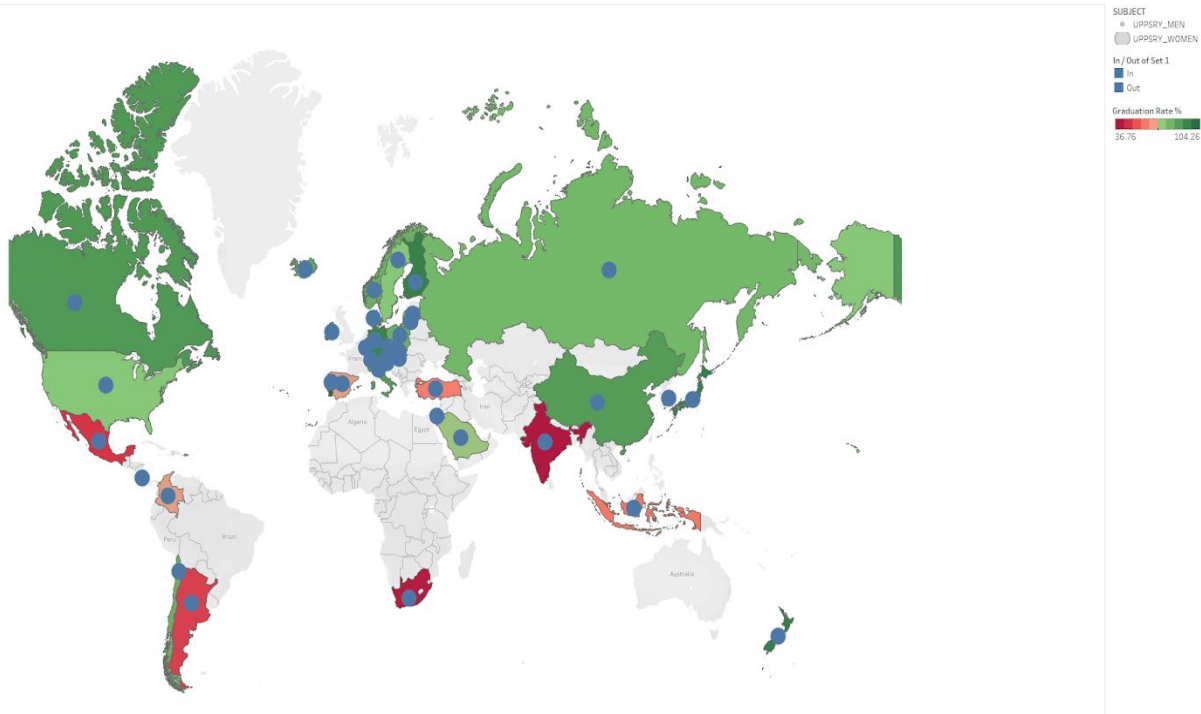
Share of students achieving minimum learning outcomes by government expenditure per student



Education and Graduation Renk Rosmalen

#10 Graduation rate male and female per country

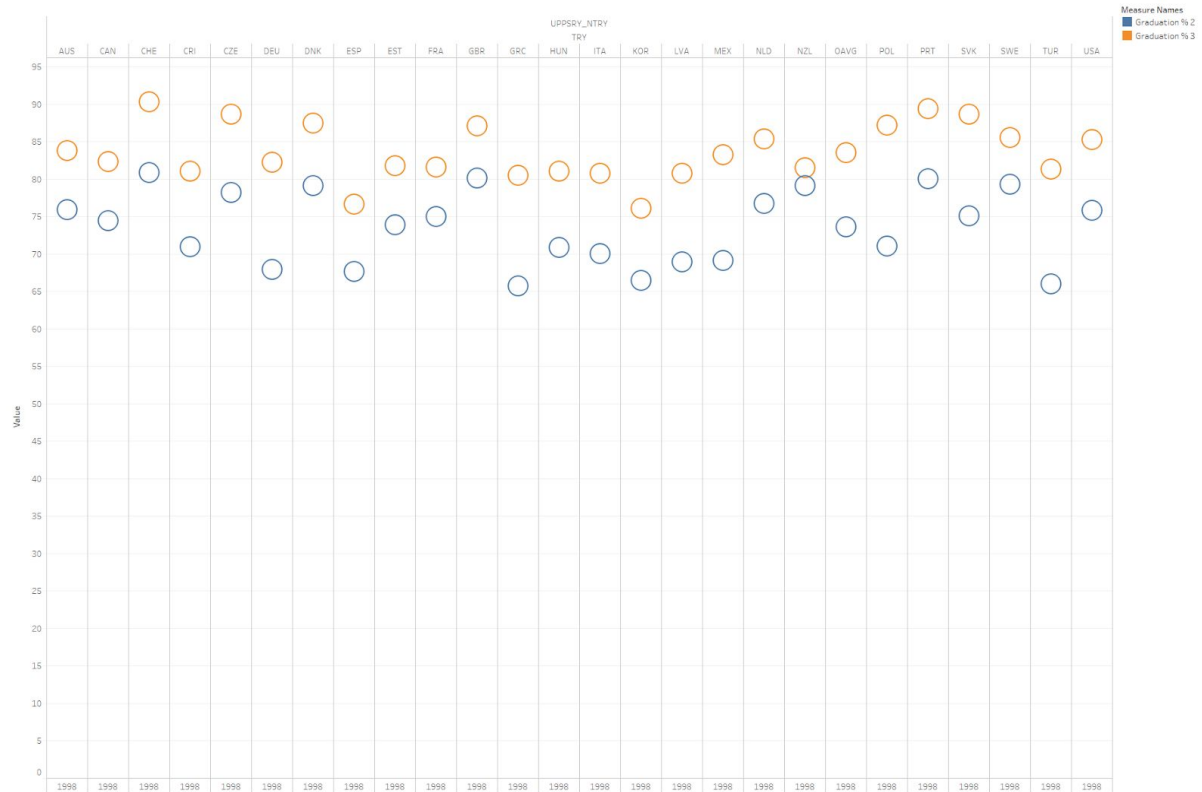
For the first visualization I looked into the graduation rate of upper secondary education per country. To show the full scope of the dimensions I chose a world map. Each country has its own colour, based on how close to 100% they are the colour gets more green. The highest percentage gets shown, this is male most of the time so that doesn't show much. The dot in the center of that country shows the other gender. The viewer can select a timeframe he wants to see in a list below the legend. It was not possible for me to find graduation information about every country in the timeframe of 2005 - 2017, so some countries remain empty.



#11 Job chance per education level

In the second visualization I chose to show the differences in job chances between upper secondary (blue) and tertiary education (orange). The viewer can filter information based on country and year by using the list below the legend. This allows for the comparison of many different countries in a given time frame, to see where to move for a high job chance, or where to get (cheap) laborers.

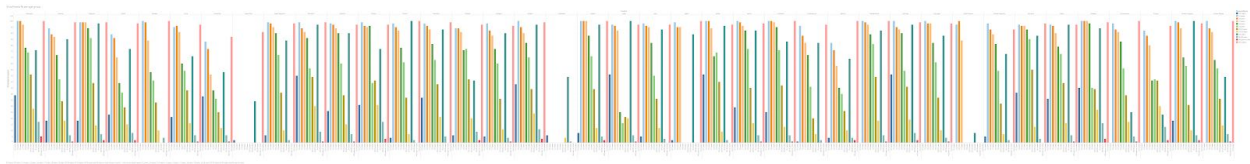
Graduation percentage per country per year per education level



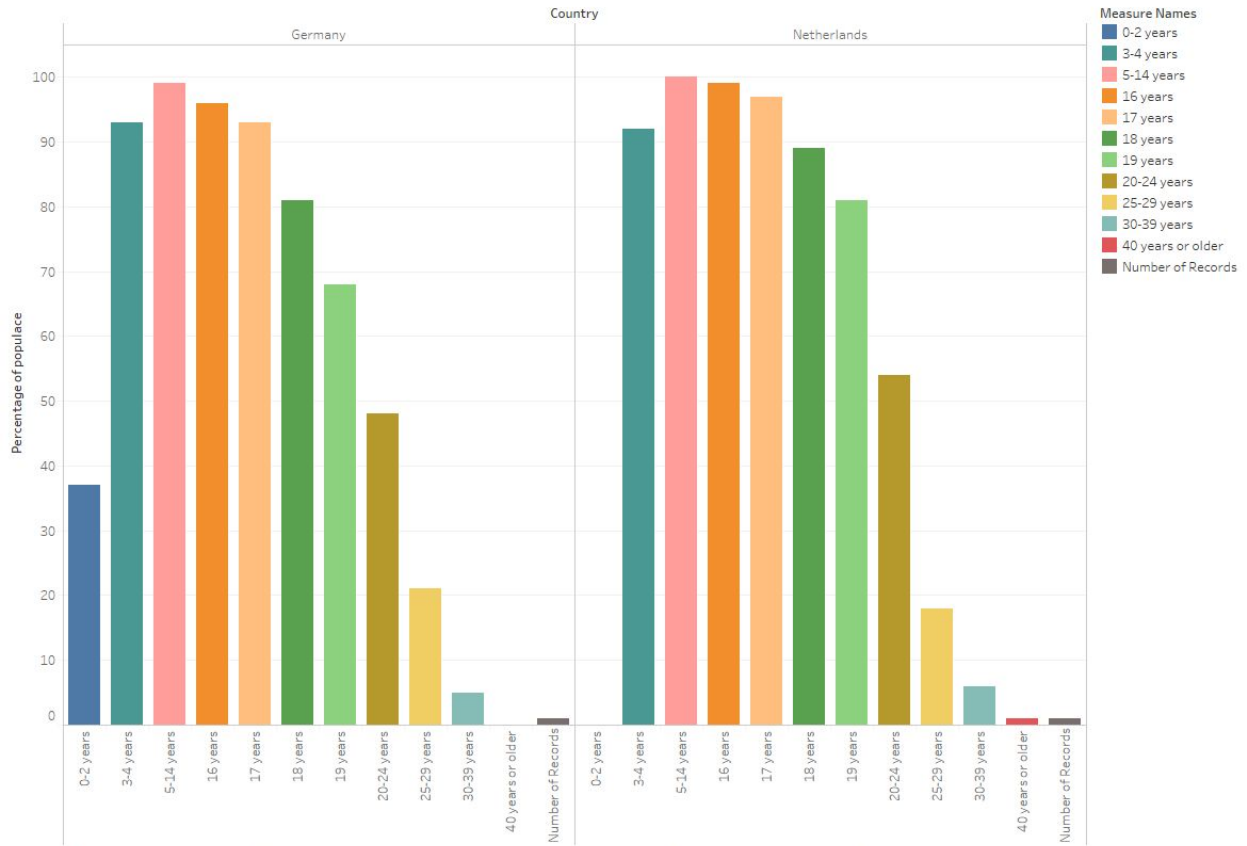
Graduation % 2 and Graduation % 3 for each TIME Year- broken down by SUBJECT (DP_LIVE_02062020132343324.csv), SUBJECT and LOCATION. Color shows details about Graduation % 2 and Graduation % 3. Details are shown for Graduation % 2 and Graduation % 3. The view is filtered on TIME Year and LOCATION. The TIME Year filter keeps 1998. The LOCATION filter keeps 44 of 44 members.

#12 Education occupation

For the third visualization I wanted to do something with age grouping. Due to limited obtainable databases on this subject I chose to pick education occupation per age group, indirectly obtaining graduation information. This bar graph shows how large the percentage of a given age group of a certain country is still occupying an educational institution. The age groups are represented by a colour mapping. These age groups, as well as the countries can be filtered using the list below the legend. This was a rather large database so below I listed filtered examples.

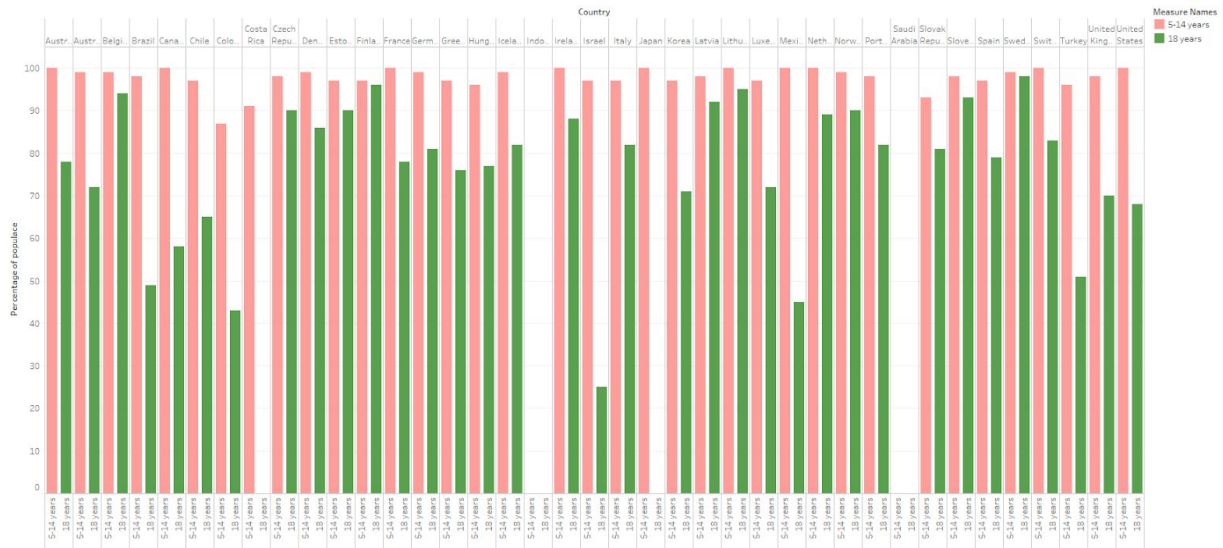


Enrollment % per age group



0-2 years, 3-4 years, 5-14 years, 16 years, 17 years, 18 years, 19 years, 20-24 years, 25-29 years, 30-39 years, 40 years or older and Number of Records for each Country. Color shows details about 0-2 years, 3-4 years, 5-14 years, 16 years, 17 years, 18 years, 19 years, 20-24 years, 25-29 years, 30-39 years, 40 years or older and Number of Records. The view is filtered on Country, which keeps Germany and Netherlands.

Enrollment % per age group

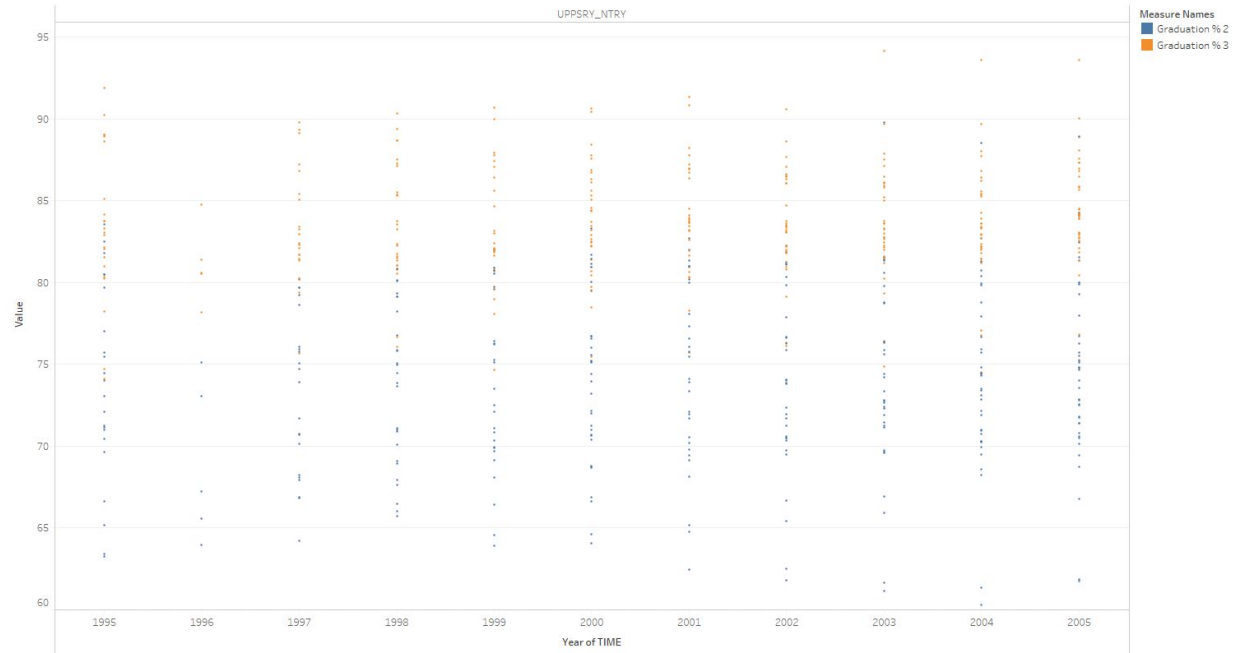


5-14 years and 18 years for each Country. Color shows details about 5-14 years and 18 years. The view is filtered on Country, which keeps 39 of 39 members.

#13 Alternate approach to job chance per education level

While creating the second visualization I experimented with the visualization as shown below. I chose to keep it in as a sort of bonus visualization as it does add some value to the chosen second. It is a more generalized overview of the job chance per country. The viewer can filter the displayed information by year by using the slider below the legend. It shows how countries compare to one another on job chance levels per year.

Graduation rate per country per year per education level



The plots of Graduation % 2 and Graduation % 3 for TIME Year broken down by SUBJECT (DP_LIVE_02062020132343324.csv). Color shows details about Graduation % 2 and Graduation % 3. Details are shown for SUBJECT and LOCATION. The data is filtered on TIME Year, which keeps 11 members. The view is filtered on TIME Year, which ranges from 1990 to 2018.