Data Visualization and Communication

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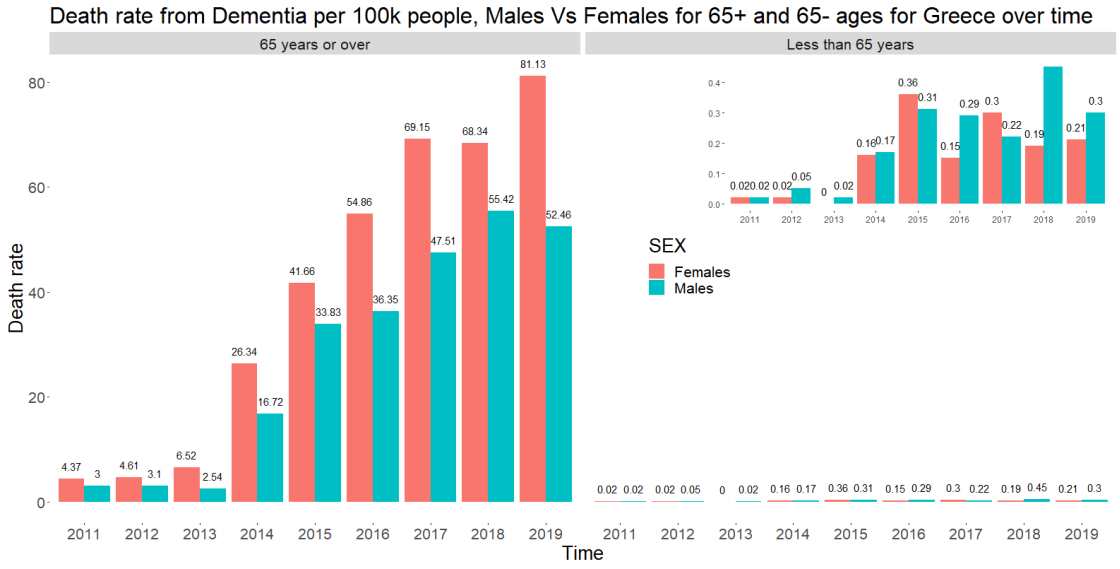
Data and Objective of the task

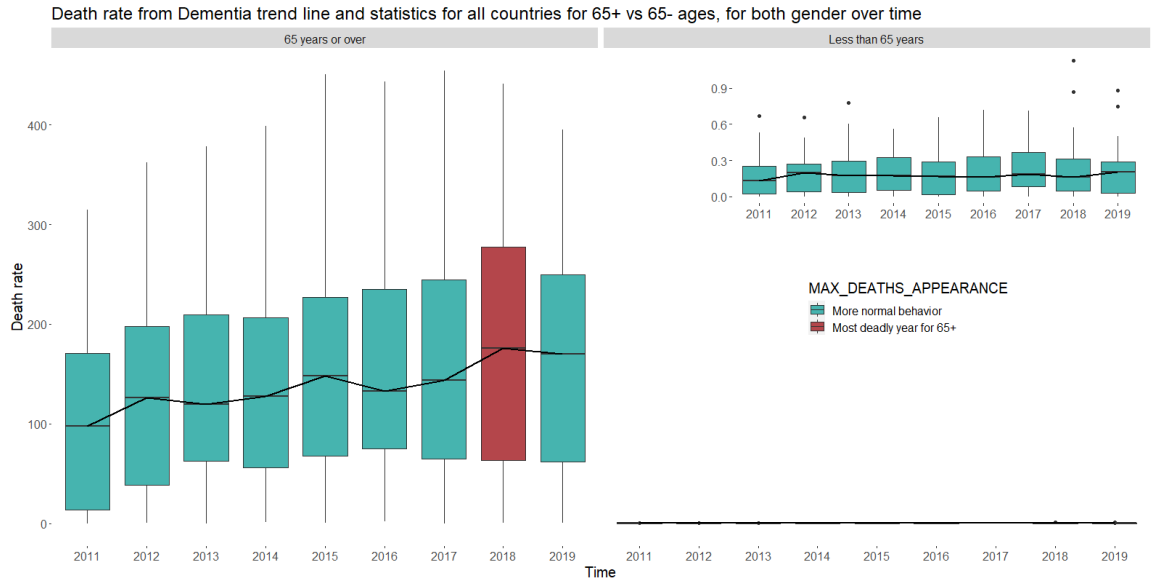
The data refer to the deaths from dementia throughout European Union. The data come from Eurostat. The purpose of this project is to examine how the deaths from dementia evolve from 2011 to 2019, giving a greater emphasis on Greece trend. Concluding weather Greece differ from the other European countries or not. Mentioning here that the measurements were calculated per 100k people.

To begin with, let's see the evolution of death rate by dementia for Greece.



From this chart we observe that for the age group of 65+ the death rate increasing over time and, we realize that the females have higher ratio than the males every year. Moreover, the scale of 65+ age group is much higher than the 65- hence we can't understand the trend of this age group. The graph helps us to get an idea of the trend of 65- age group, with the zoomed graph at the right in which we notice that there is more balance over the measurements with few higher values in 2018 and 2019 for males. In general, though the death rate by dementia for 65- is extremely low.

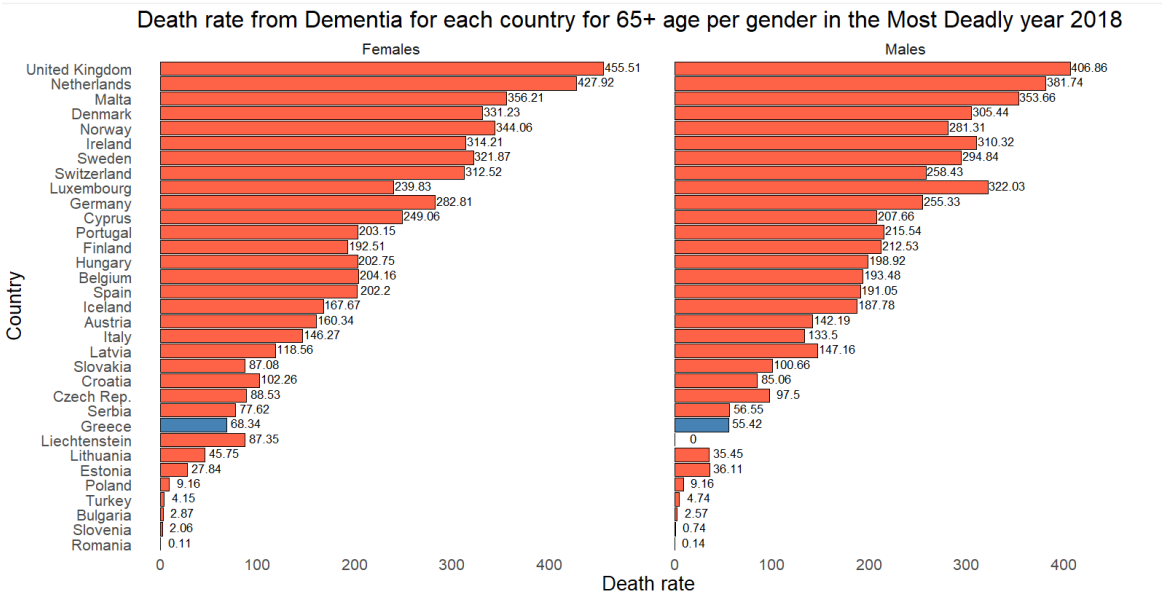
To continue we consider this time all European countries and check the trend of death rate from dementia over year. For both age groups.



For 65+ we observe that over year the death ratio from dementia is increasing and the variance of measurements is high. We also notice that the 2018 was the deadliest year which we will examine later.

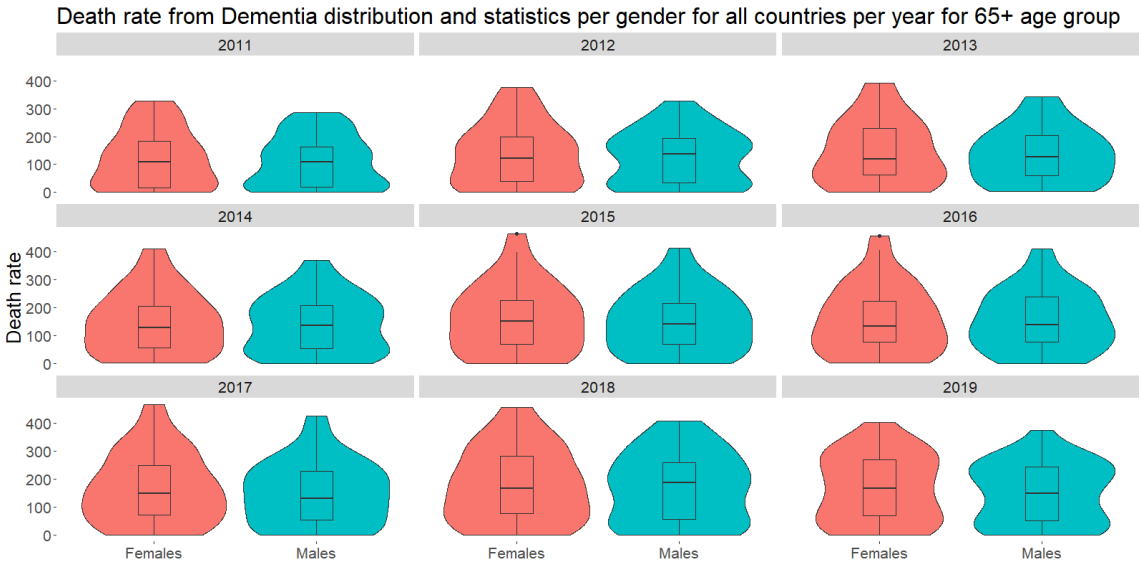
Because of the different scale of different age groups, the graph helps us to get some information with the zoomed depiction at the right. In which we observe that in general there is balance for measurements over year and we can see some outliers at the first 3 and last 2 years. Taking above into consideration we conclude that for the 65- age group death ratio from dementia for all countries is extremely low.

Afterwards while the 65- group measurements are low, we considering next only the 65+ age group and examine the deadliest year 2018.

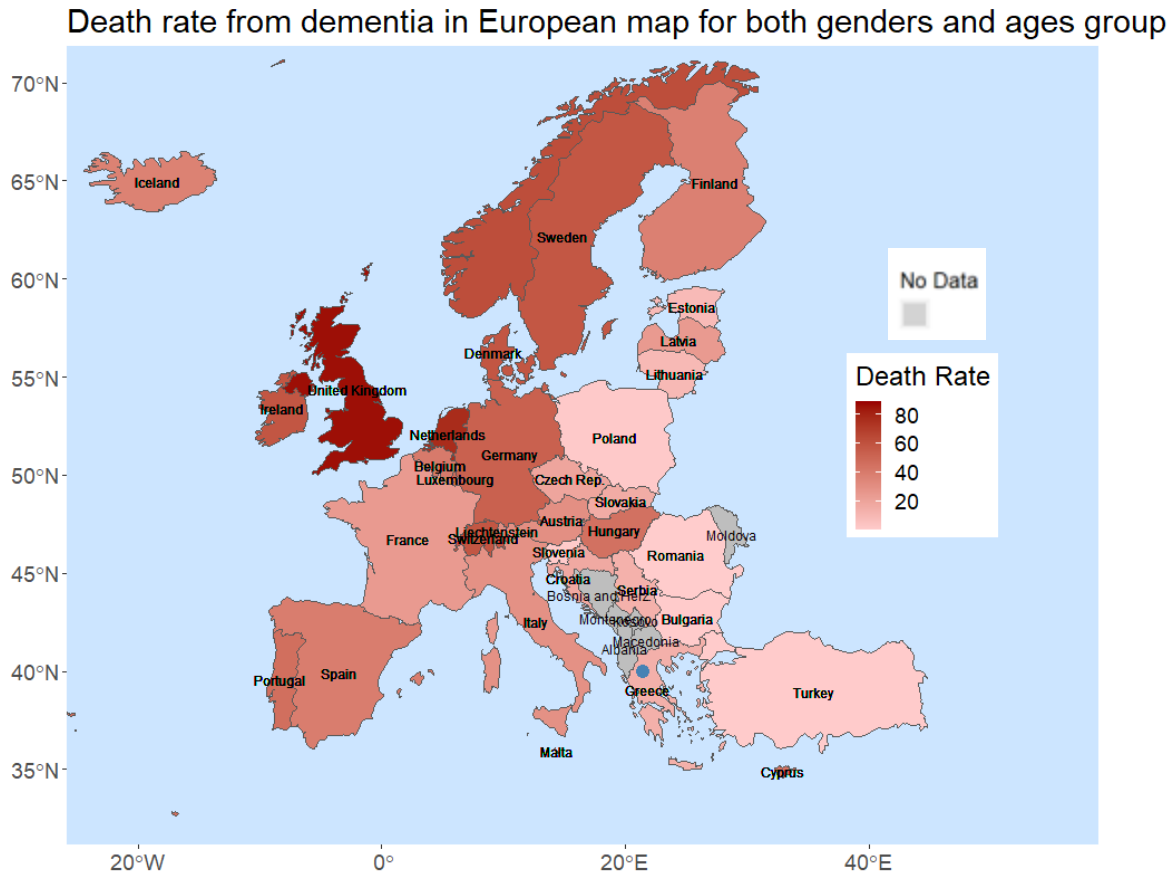


Examining the deadliest year 2018 we get better sense of how much females and males died that year for each country. In more details we observe that almost for each country more females died than males, we highlight as more affected countries from dementia the United Kingdom the Netherlands and the less affected Poland, Turkey, Bulgaria, Slovenia, and Romania. The Greece measurements follow the trend of the other countries were the death rate from dementia for the females are more than males and her measurements are close to the measurements of Serbia Lithuania, Czech for this year.

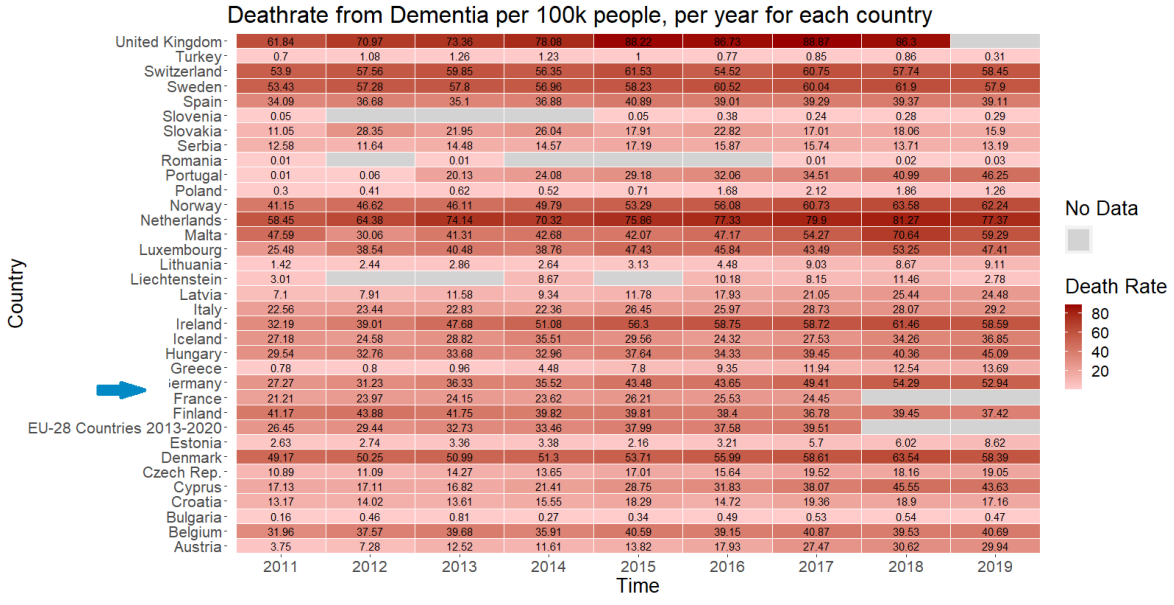
In the sequel, considering again the age group of 65+ we examine the distribution for all countries for females and males over year. In this graph the fact that the females and males measurements are close, becoming much clearer, because of the shape of distribution for females mirroring the distribution for m ales, with females affected more from dementia.



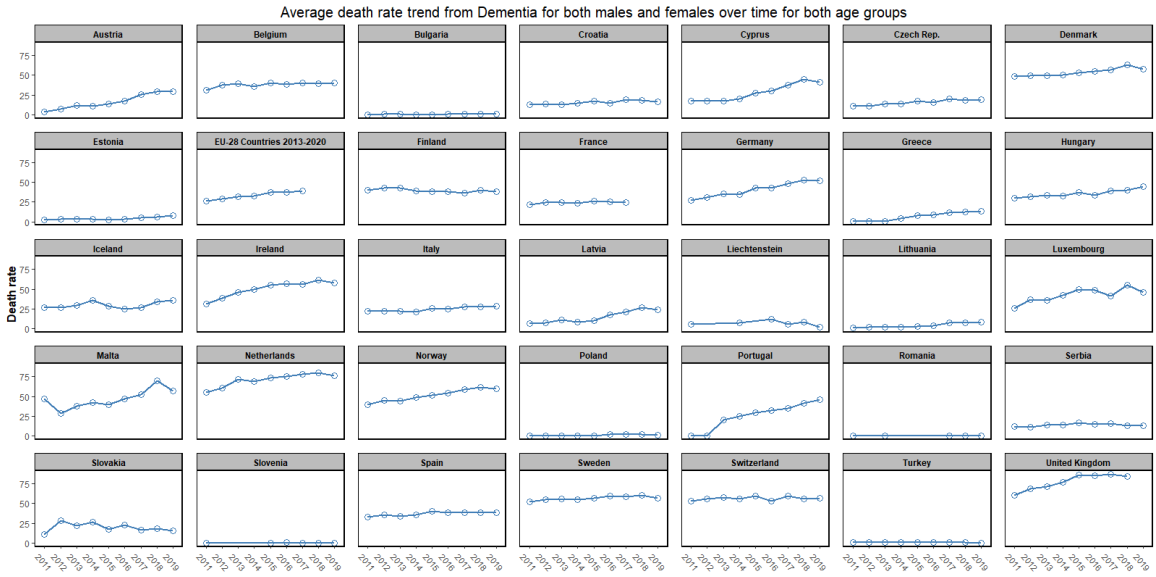
Afterwards the map below showcasing the death rate from dementia for both age groups and males, females. We notice from the map that the north countries tend to have darker color meaning that affected more from dead rate from dementia. Also, the Greece has darker color than Bulgaria, Turkey and close to Serbia, Czech, Estonia, Lithuania and maybe Latvia. No available data from other European Countries also easily detected.



To examine further the results which we extract from the map the following two depictions showcasing the trend over the year for each country. At the first we realize that all countries become darker over year and Greece indeed tend to follow the measurements of the Countries mentioned before.

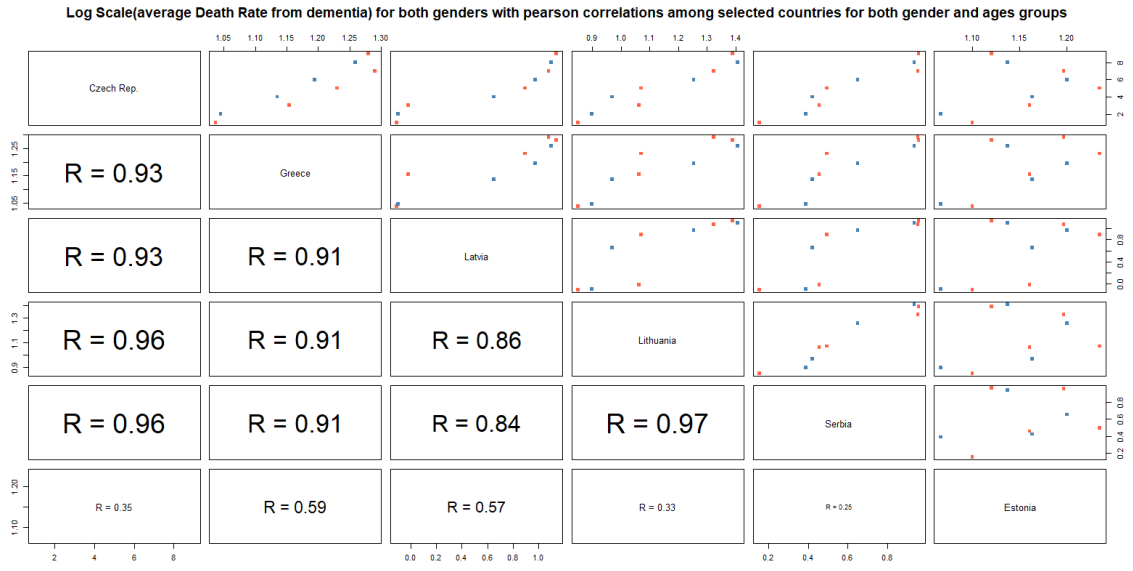


With the second plot we observe the trend and the similarity of Greece over the other Countries.



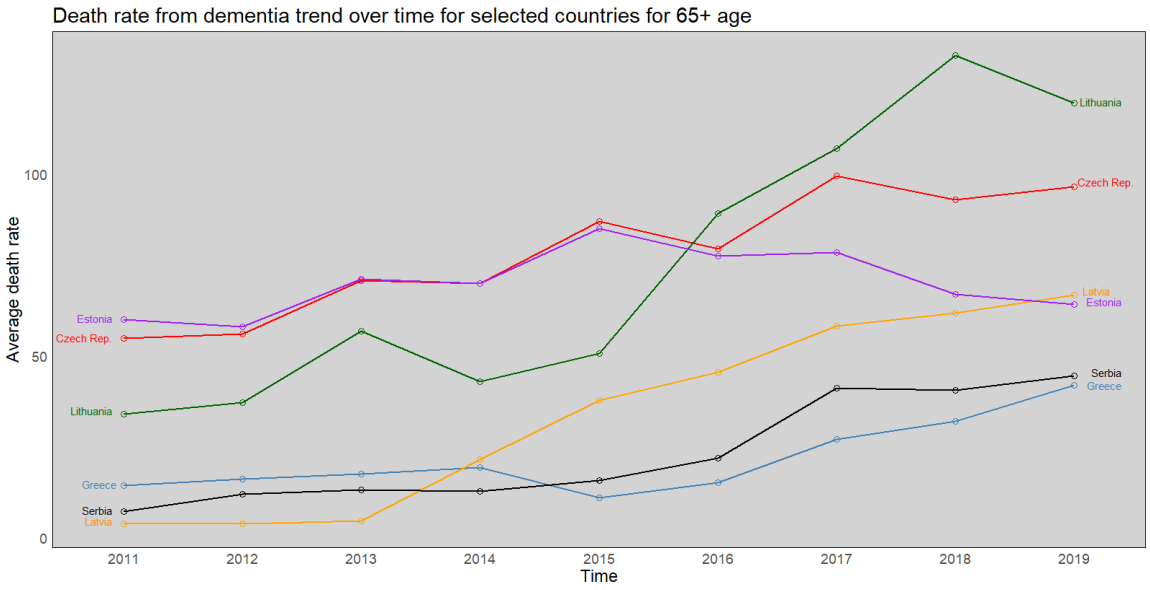
The trend line for Greece, Serbia, Czech, Estonia, Lithuania and maybe Latvia seems similar.

In the sequel, we took the Countries like Greece and with transformed value we calculate the Pearson Correlation to examine further the similarity.

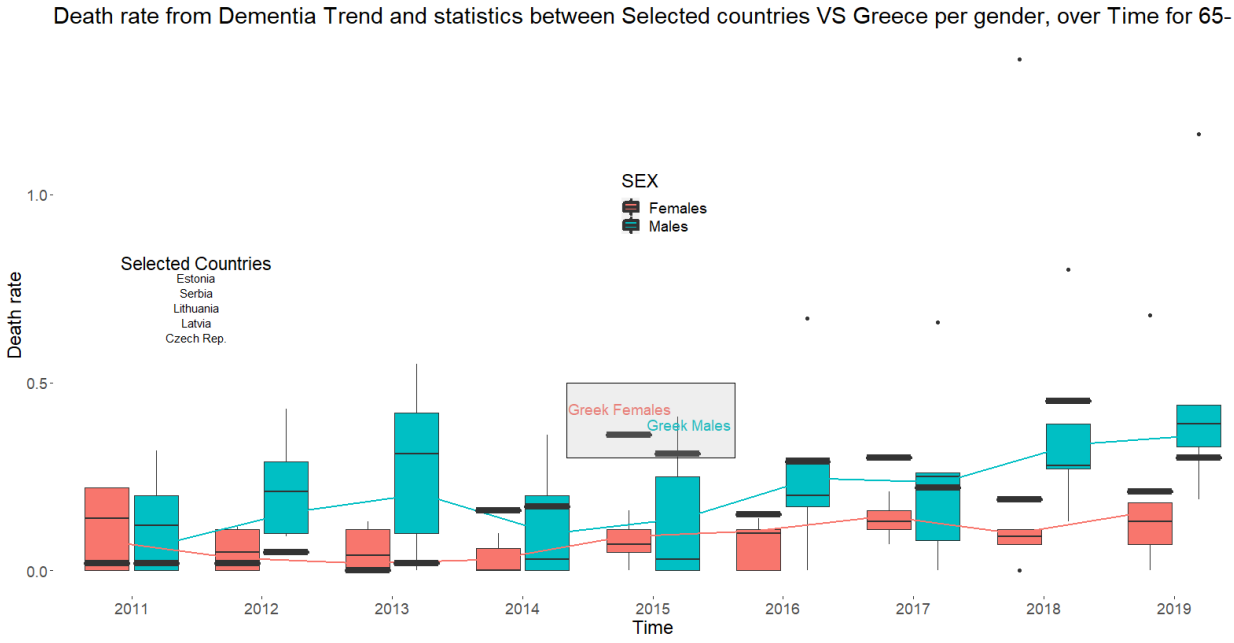


We expect that the Greece trend for the death rate from dementia was like the Selected countries the strange is the correlation with the Estonia with correlation 0.59.

To continue, at the following two graphs we observe in more details the measurements for 65+ and 65- age group for the Countries which were like Greece.



For this graph we verify again the increasing of deathrate from dementia for selected countries over time. We observe more clearly that at the first years Greece almost have the same measurements with Serbia and Latvia but after that we notice only the Serbia follows the Greece values with few differences in 2017 and 2018.



For the last graph we examine the 65- age groups in which the males affected more than the females and comparing with Greece we realize that after 2015 Greece measurements tend to differ a bit.

Conclusion

Taking the above analysis into consideration we conclude that Greece tends to differ a lot with most of the northwest European Countries and tends to be more similar with southeast countries. Respecting the number of affected people. The increasing trend taking place to the other countries happens to Greece respectively. So, life expectancy or wealth of each country probably are reasons which affect the death rate from Dementia, in future work it is strongly recommended to examine the correlation of these factors.