**Excel – Breath Tests**

1. Task (about 20 min)
2. Learners present their conclusion from this dataset (pay attention to ambiguous and/or contradicting conclusions they are stating)
3. Discussion of the results. Here are some of the conclusions you could have drawn:
   1. Less accidents over the past 10 years – ROADS ARE GETTING SAFER
   2. No change over the last 4 years – NO CHANGE IN ROAD SAFETY
   3. Spike in motorbike accidents – ROADS ARE GETTING MORE DANGEROUS
4. More interesting results:
   1. Huge spike in 2014: Romania was accepted into the EU
   2. Huge dip in 2013: Sale of alcohol was restricted?
   3. Significant increase from 2014 would need to be explained: for example, in 2014, few new countries were accepted to EU, and all those bloody foreigners who can’t drive etc. Or maybe, cost of the alcohol went down? Or opening hours of supermarkets changed? Or great depression caused more drink driving?
   4. Finally, were those spikes/dips really that huge?
5. Even more interesting results:
   1. Less people breath tested – SPENDING CUTS TO BLAME
   2. More people failing breath tests – POLICE ARE MORE EFFICIENT
   3. If only the first graph is shown, we can conclude that there is significant decrease in the proportion of drivers breath analysed after an accident – can start blaming spending cuts etc. However, if the second graph is shown, may notice that there is significant increase in percentage of drivers failing the test, so maybe, new equipment / method / technique allows police to use other ways of determining if breath analysis is necessary? And allows to test only the most suspicious cases, which means less formal tests but significantly more drivers failing the test.
6. You can see that the same dataset could be used to prove contradicting statements – especially useful for politicians! So do not trust anyone!
7. [OPTIONAL] Extra question. Is it fair to say that motorbike riders are the most dangerous road users? The answer will probably be NO as the percentage of motorbikes involved in accidents it steadily lower than cars
8. More examples of data misrepresentation: https://medium.com/swlh/statistics-the-art-of-deception-f48a86d57df1
9. How to avoid data visualisation mistakes: https://www.toptal.com/designers/ux/data-visualization-mistakes