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DAT 530

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Variability and Context

The way data is presented has a significant impact on how it is perceived, and the meaning attributed to it. In the previous module’s visualizations, the suicide rates per 100,000 people of different European countries in 2005 were compared to each other. Eight of these countries were also identified as being among the ten happiest countries in the world five years later.

Chart, bar chart

Description automatically generated

Suicide Rates per 100,000 people in European countries in 2005 (OECD Factbook, 2013).

What is not as obvious in this visualization, but available by expanding the time, is the trend for suicide rates for these same countries, as seen below. This visualization shows the various countries’ rates over the course of 25 years leading up to the 2005 data.

Chart, line chart

Description automatically generated

Suicide Rates per 100,000 people in European countries from 1980 to 2005 (OECD Factbook, 2013).

This visualization raises a lot of questions for further investigation, including what was going on in Hungary in 1981 when the suicide rate was 29.6 and in Denmark in 1980 when the suicide rate was 23.6. Isolated views of these two countries are seen in the visualization below. Both of these figures stand out, and both countries’ suicide rates dropped significantly to 10.3 and 6.1, respectively, indicating a 65% decrease for Hungary and a 74% decrease for Denmark in 25 years. Communism ending in Hungary in the 1980s may have increased hopefulness. In Denmark, unemployment skyrocketed in the 1970s and peaked around 1990 (Economic History Association, n.d.) following multiple political changes, after which time the suicide rate also decreased.

Chart, line chart

Description automatically generated

Suicide Rates per 100,000 people in Hungary and Denmark from 1980 to 2005 (OECD Factbook, 2013).

The trends seen show how there is little change in suicide rate in some countries, such as Greece. In other countries, it remains very inconsistent and changes, in some cases drastically, from year-to-year. Some countries have consistently declining suicide rates over these 25 years. To address the original question from Module One, how can the happiness of some countries be rated as so high while also having a high suicide rate, the trend for declining suicide rates may show the hopefulness of factors that also were measures of happiness in the United Nations study (United Nations Sustainable Development Solutions Network, 2014), such as social support, generosity, gross domestic product per capita, and perceptions of corruption.

A geographical representation of the suicide rates in Europe in 2005 show a scaled difference between where people live in the continent and the suicide rate. In Module One, the map below indicated a variation of suicide rates, with the lowest rates appearing to be in the southern-most countries. This led to the potential speculation that weather may play a role in suicide rates in European countries, where those who are closer to the equator have longer periods of sunlight in summer and winter, as well as warmer temperatures year-round.

Chart, bubble chart

Description automatically generated

Suicide Rates per 100,000 people in European countries 2005 (OECD Factbook, 2013).

Looking at an isolation of the five European countries with the highest rates of suicide and the five European countries with the lowest rates of suicide in 2005, a geographical delineation is not as clear. The visualization below shows the relative size of the suicide rates by location. As this map shows, only one of the five Nordic countries, Finland, is among the five European countries with highest suicide rates in 2005. In contrast, two of the five European countries with the lowest suicide rates in 2005 are farther north than some of those with the highest.

Map

Description automatically generated

Five Highest and Five Lowest Suicide Rates per 100,000 people in European countries 2005 (OECD Factbook, 2013).

In this visualization it becomes clearly apparent the difference in magnitude of suicide rates between two countries that are relatively close, Slovak Republic and Hungary. With a suicide rate of 10.4 in Hungary and 3.4 in Slovak Republic in 2005, the visualization shows how large that difference is. With the countries being in close proximity to each other, it raises questions about whether there is a geographical impact on the suicide rates, or if other factors are more relevant. This visualization allows for better hypothesis generation around geography as a variable impacting suicide rate, and identification of whether specific country data is outlier data that should be discarded.

References

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