Data: from the source to the senses

Creative Technology Module 8 assignment

Source report Data Visualisation

Group Covid

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Introduction

To say corona has had an impact on life, would be an understatement. Over the last year, it has had devastating effects on the world, and humanity as a whole. Yet there were also positive side effects due to the Covid-19 crisis. The project group divided this into 5 different categories, and created 12 visualizations out of it, all telling the story of the positive impact of covid on environmental and non-environmental factors. These visualisations were all based on sources, and in this short report, These will be shortly explained per visualisation, and how the data was used.

Air pollution

The first visualisation shown was the changes in the 10 busiest air routes in the world due to covid-19. The data used for this was a combination of sources. The idea for the topic came from this website(1). The data was then compared to data(2) and that was then checked with data from OAG(3) and from the whatisflying database(4). This was then all merged and made into a format suitable for the 3d interactive map in Flourish with the help of Excel and Openrefine.

For the second visualisation, data was retrieved from Carbon Monitor(5) by the use of their data download function. A specific selection was made for the data by the filter options provided on the website, and the data was then imported into excel, where, with the help from data from the Express news lockdown timeline of the UK(6) the difference between pre and aft lockdown were put into the data as well. Then, the data was exported to tableau where the visualisation was created.

For the third visualisation, which was about the amount of traffic in the UK and how much of a difference there is during the pandemic, the data came from this site(7). The dataset was cleaned and some data was removed by using OpenRefine and Excel.

The fourth visualisation was about the amount of smog (air pollution that reduces visibility, caused by exhaust fumes) in the UK, before and after the first official lockdown was announced. The data for this visualisation was retrieved from this dataset(8). The lockdown point was added from the Express news lockdown timeline again(6). It was also cleaned in Excel.

Death avoidance due to clean air

The first visualisation of death avoidance showed the avoided deaths due to cleaner air as a result of covid-19 in Europe in April of 2020, divided by country. The data used for this visualisation was found on statista(B1). Because the data would later be compared to the deaths of the EU countries, Norway was left out of this visualisation too, as it is not part of the European Union. This data was filled into an extruded map in Flourish.

The data of the second visualisation was also found on statista(B2): the total deaths attributable to air pollution in 2019, which are visualised by the larger bands. This data was reduced to the

countries of the former (represented by the lighter parts) dataset[B1]: Germany, UK, Italy, France, Spain, Poland, Portugal, Romania and Sweden. The data was calculated to degrees of a circle. During this, it turned out that the data of Portugal and Sweden was not visible when on the same scale, so that data was filtered out. The data was visualised using Adobe Illustrator.

Electricity

Both visualisations that were related to electricity can be found on statista. The data for the Change in electricity output in Europe during COVID-19 lockdown by fuel type 2020[E1], didn't need any transformation before it was being used. The data for the Electricity demand reductions in Europe during COVID-19 lockdown by country 2020[E1], also didn't need any transformation.

Export

Both visualisations that covered the topic export were found on Office for National Statistics [EX] Hoe doe ik dit tot de macht?The data from figure 2 and 3 from that website were used. For the first visualisation the dataset of figure 2 was used. To show how big the reduction of import and export was I chose to only use that part from the dataset. In excel this edit was made and after the visualization was made using flourish.

For the second visualisation the dataset of figure 3 was used. Which shows the restrictions in export and import during the pandemic in the UK. With Tableau an interactive dashboard was made of these restrictions per industry. Where you can filter on export or import.

Sales

Visualization 1: NL Bicycle Sales

The data for the bicycles sales in the Netherlands was originally found on Statista, which had a visualisation of the sales volume of new bicycles in the Netherlands[s1]. Through this I found the source of the data which was a document from 'Fietsen in de Statistiek' [s2]. This document gave more detailed information about the bicycles sales as well as the value of the sold bicycles. I used both the amount of bikes sold, as well as their total value in the visualisation. The final visualisation was made with Flourish.

Visualization 2: USA Book Sales

In order to visualize the amount of books sold for visualization 2, I used three datasets. All three datasets came from Statista but they all cover a different aspect of the market. The first dataset shows the amount of printed books sold from 2016 to 2020[s3]. The second dataset shows the amount of e-books sold from 2016 to 2020[s4]. The last dataset shows the revenue in sales of hardback books from 2010 to 2020[s5]. These three datasets were combined to give a complete overview of the book market before and during the pandemic. In order to compare the three

datasets they were normalized, this was necessary because one of them is the amount of sales in billion dollars while the other two are the amount of units sold in millions. The final visualisation was made with Flourish.

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