

Assignment 1

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Task 1

1. Super Bowl Ad Time (2014)

The super bowl is the final match of the national football league. The match and the festivities around it are so-called super bowl sunday which has over the years become the most watched TV show in the US. It is therefore a goldmine for companies that want to advertise themselves.

On this site you can analyze which sector's that got the most commercial time and when their ad ran during the big game.

At first glance, you can note which categories the sectors work in at the top of the page. It is also clear that the game is divided into 4 quarters and one halftime and is displayed as one row each.

Just below the categories, a summary is given of how many advertisements were shown and the total time during the match spent on advertising, in this case 91 commercials with a total time of 55 minutes and 7 seconds. If you click on one of the specific categories, you can also get a summary of the total number of commercials within that category and the total time. This gives a good overview of the categories and it is possible for those responsible for marketing to draw conclusions about which sector chooses to pay the most for advertising time, which then will probably also increase the price for the companies that want to pay for an advertising space. At the same time, the sectors that are in the minority may be offered a lower price.

The pie chart at the top right corner shows a summary of the whole game and the time spent on the match itself, halftime and advertising. The pie chart matches each part with the bits placed in the rows, which makes it easy for a user to connect what is what and it also connects the whole information visualization.

Each row contains the commercials that were shown during that section. The width of the bars indicates how long an advertisement has been displayed, which is quite easy to understand. The larger the width, the more commercial time.

Also, when clicking on one ad, the category of that ad is highlighted and all the commercials within that category in each section as well, see Figure 1. This feature can be useful when you want to see the flow during the match and see how the same type of sector is distributed. Having all the advertisements that are in the same category, one after the other, can disadvantage the companies as you become one in the crowd.

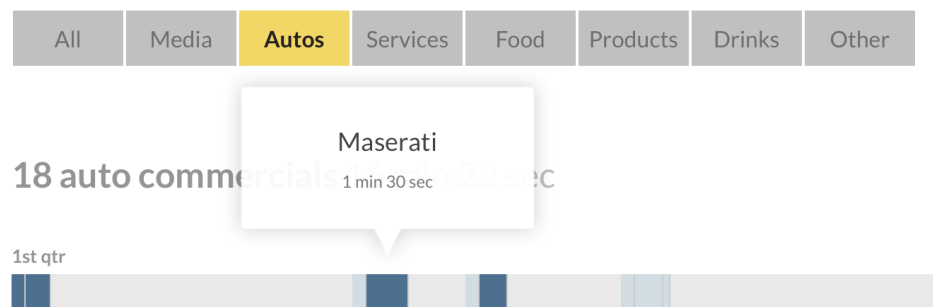


Figure 1

Overall, this type of visualization for this type of situation is quite easy to understand and is very user-friendly. Based on what you want to analyze, this statistics allow you to pick out certain information.

2. EU Referendum (2016)

The information declares the voting results of the brexit referendum. It took place in June 2016 in UK and Gibraltar and it brought up the election for weather the countries should leave EU or not. At the first glance the reader is presented with a short description of what the campaign was about. It gives the reader a fairly good hint of what is to come but not really what parts of the election that is to be discussed. Like the age group analysis and the comparison to previous voting result at the end of the page.

The votes and statistics are visualized in maps and charts. The first thing to notice is that the images of the large maps are larger than the screen which forces the user to scroll up and down the image to be able to analyze the whole map at once. It also cuts the labels at the top which describes the colors representation for the different parts of the map, see Figure 2. At the end of the map some info are given to which parts of UK that had higher votes than 70% by just declaring the names of cities. Some further information about every part clearly outlined in the map would be useful. For someone that does not have the best knowledge in the UK geography it's hard to extinguish and understand which part is corresponding to which city. The intensity of color increases when the percent increases which is intuitive.

Leave share of the vote

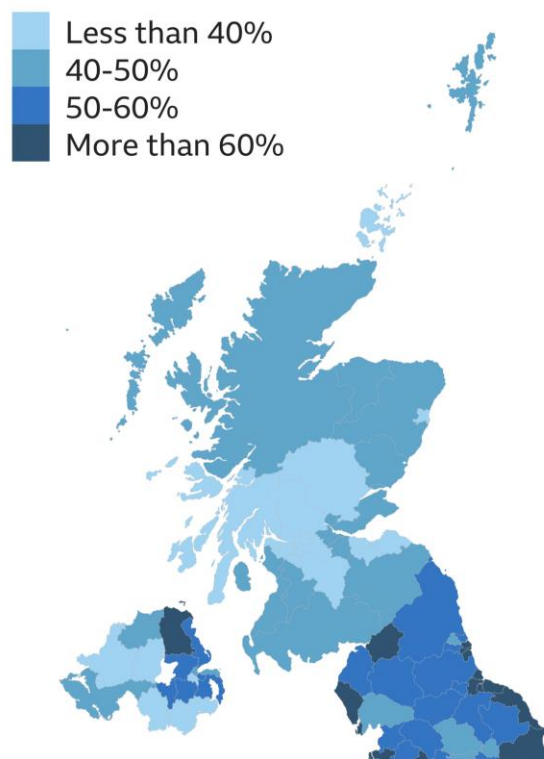


Figure 2

Another visualization is bar charts, see Figure 3. This visualization is clear and shows just as much as you need to know. At the bottom of the page there is a large version of the bar chart that shows the voting result in the same way but for all the voting areas. The chart is very long but it gives good understanding and makes it easy to

find a specific result. All the bar charts are also sorted decreasingly to the amount of leave votes which is nice.

Support for Leave, the top five areas (%)

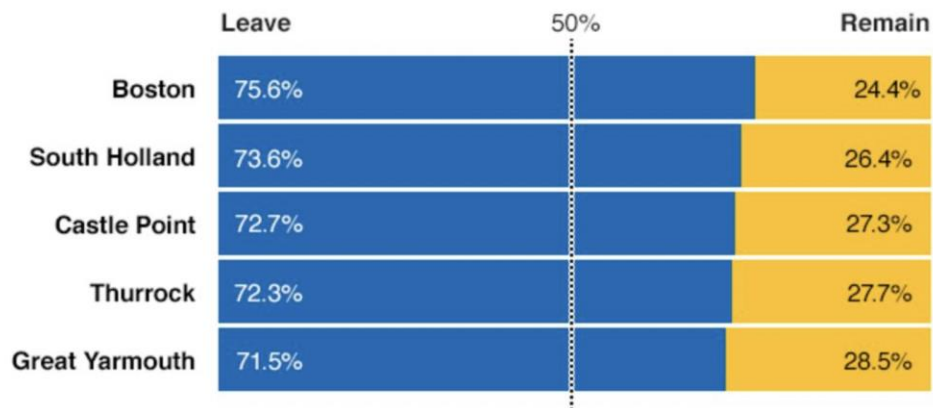


Figure 3

The same two types of maps/charts were used to visualize the remain votes, turnout, age groups voting and the final result of the voting. Further down the article the reader is presented two maps beside each other that show the connection between age and turnout, shown in Figure 4. This is a better way to use the maps, the leave and remain votes could've been shown like this as well. In this way the maps don't take up as much space, which is fair for the limited amount of information they are giving.

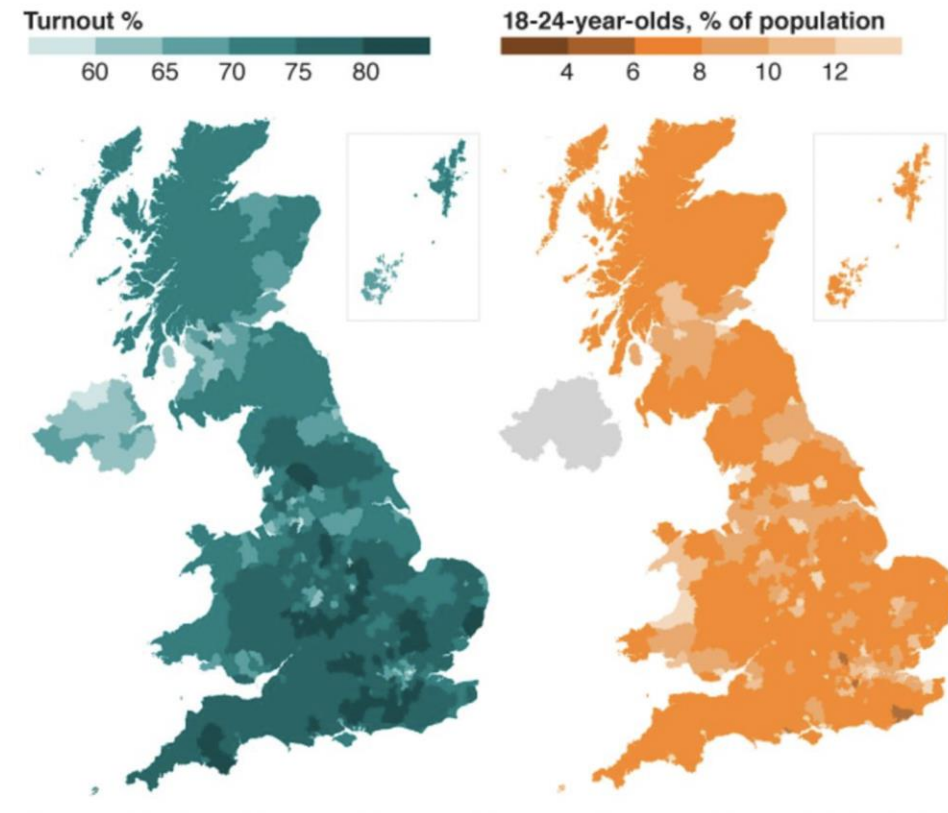


Figure 4

Overall, the visualization works but the extensive use of charts and maps could be decreased to avoid confusion. The final result map should have been placed at the top of the page to provide the reader with fast access to the actual outcome. Then the more specific information and statistics can be provided if the reader is interested.

3. US Presidential Election (2016)

This information visualization shows how the election in the US 2016 went, between Hillary Clinton and Donald Trump.

At first glance, there is a lot of information to take in and it feels a bit heavy and it is difficult as a user to know where to start.

On the first page you are given the most essential information, namely who won the presidency. This is probably what a general user wants to look for and it is therefore

smart to show that information first.

Since around the 2000 United States presidential election, red states and blue states have referred to states of the United States whose voters choose either the Republican Party (red) or Democratic Party (blue) ¹. It is therefore almost a must to use these colors when visualizing to prevent confusion, which makes this information visualization good from that point of view. At the same time, it should be using relative coloring since you may miss meaningful nuances and the fact that the votes can be very even. For example, in Michigan Trump only won by one percentage point and the state is shown as completely red, see Figure 5, when it should really be a mixture of red and blue.

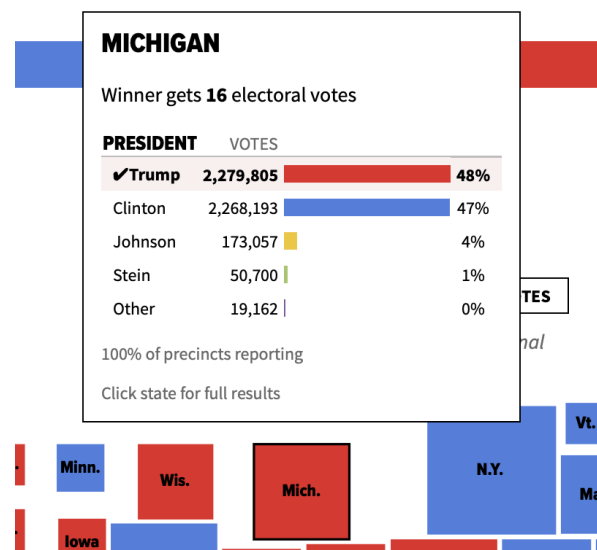


Figure 5

The map that is shown is also arranged geographically in both perspectives, what distinguishes them is whether the size of the state represents its electoral votes. This is linked to what reality looks like and it is easy to locate on the map, if you are geographically educated, that is.

If you are only interested in the general outcome of the presidential election, this

¹ https://en.wikipedia.org/wiki/Red_states_and_blue_states

information can be found at the top. Here you see the number of votes each president received and what it took to win, see Figure 6.

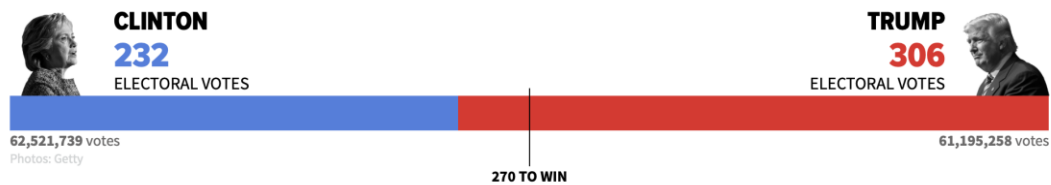


Figure 6

The information is structured in such a way that you can get more in-depth info the more you explore the site, which is good for the lazy user.

4. Free and Occupied Beds for Covid-19 Patients in Germany (2020)

This interactive display of information shows the current overview of hospital bed capacity for covid-19 patients in Germany. The visualization consists of a map of Germany and a toolbox placed as an overlay to the left, see Figure 7. The box can be hidden by pressing an icon in the upper left corner to not disturb the map view. It has a search bar at the top where the user can search for a specific hospital which is convenient if the user has a specific place in mind to investigate.

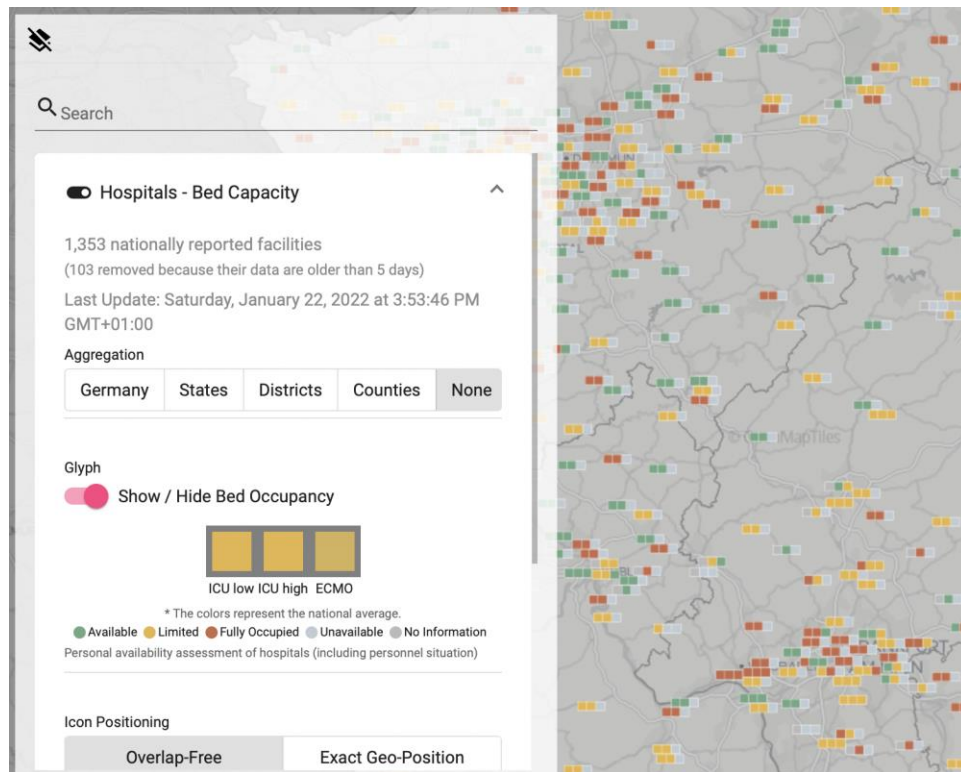


Figure 7

In the box, three drop down menus are displayed. The first one is for the overview of bed capacities, the second for covid case view and the third is for displaying additional landmarks. We will go through them one by one. The first one is the main function of the visualization, we get to sort the results in five different categories: Germany, States, Districts, Counties and none. This is really good for scaling up and down the results, getting a more specific view if desired.

The actual bed occupancy can be displayed in two different ways, with filling in the area in question with a color (Figure 8) or by using glyphs (Figure 9). The glyphs show three different types of occupancy all at once while the area filling only shows one at a time.

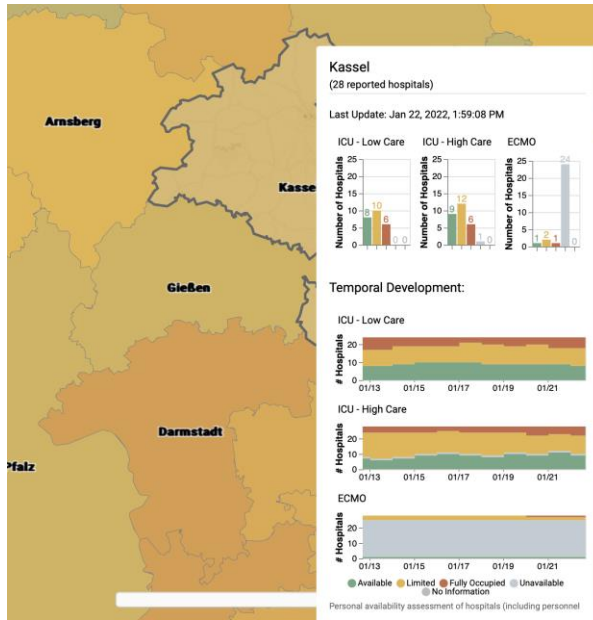


Figure 8

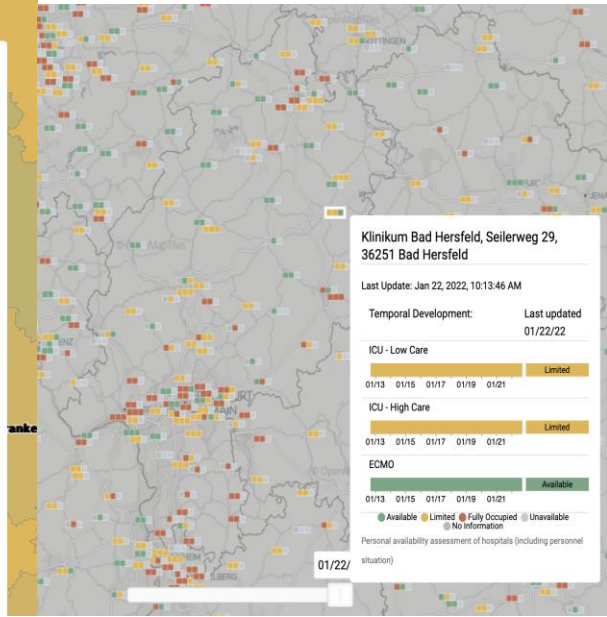


Figure 9

The beds are divided into different types of occupancy: ICU – Low care, ICU – High care and ECMO. The color gradient goes from green, which corresponds to available, to yellow, which corresponds to limited, and red that corresponds to full. This is intuitive color choices to what we would expect, the colors meaning and the glyphs structure are also stated to the user in the toolbox. When hovering above an object of a category more detailed info about that specific area or hospital is displayed. This shows of good layering for more in depth information. The user can decide if he/she wants to know more or not without the visualization being too messy and crowded at the beginning.

The second drop down bar gives the opportunity to show covid cases and with the help of a couple buttons show and sort the info by different parameters such as deaths, tested positive, time period, and area. The data is shown by filling in areas with colors and with a container in the corner describing the color span, see Figure 10. Here the user also gets more in depth info when hovering over an area.

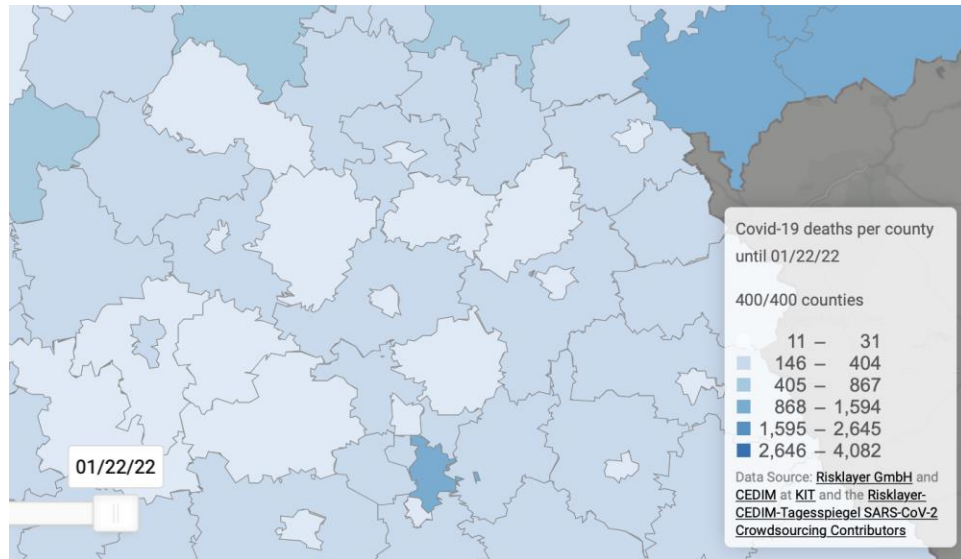


Figure 10

At the bottom of the map there is a slide bar that states the date of the data. This could in theory be useful but it does not seem to work properly. When tweaking the slider the data in the glyphs don't correspond to the in depth information showing when hovering over them. The dates on the bars are still this weeks dates but the colors do change.

Another negative thing is that the GIS show the neighboring countries when zooming out which is unnecessary in this case because the data is only considering Germany. This could be confusing and tiring for the eye.

Task 2

1. Relationship between life expectancy, income and population, Gapminder tools (good information visualization)

Gapminder tools use reliable data to develop easy information visualization to rid people of their misconceptions. Here you are free to analyze different types of categories and study relationships. These specific images show the bubble diagram visualized lineary in a 2D spatial domain, where the relationship between the life expectancy and income. The size of the bubbles represents the population of a country and the color represents the world region. See Figure 11.

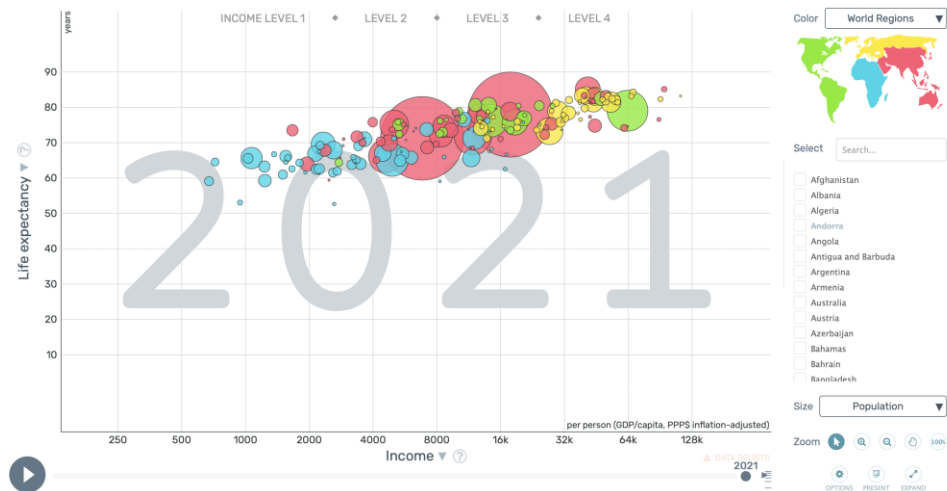


Figure 13

You can inspect the data by hovering over the bubbles and get to more detailed information about the corresponding country or you can inspect a specific country by clicking the checkboxes in the menu to the right. By doing the second option you can also easily analyze the relationship between multiple countries, see Figure 14.

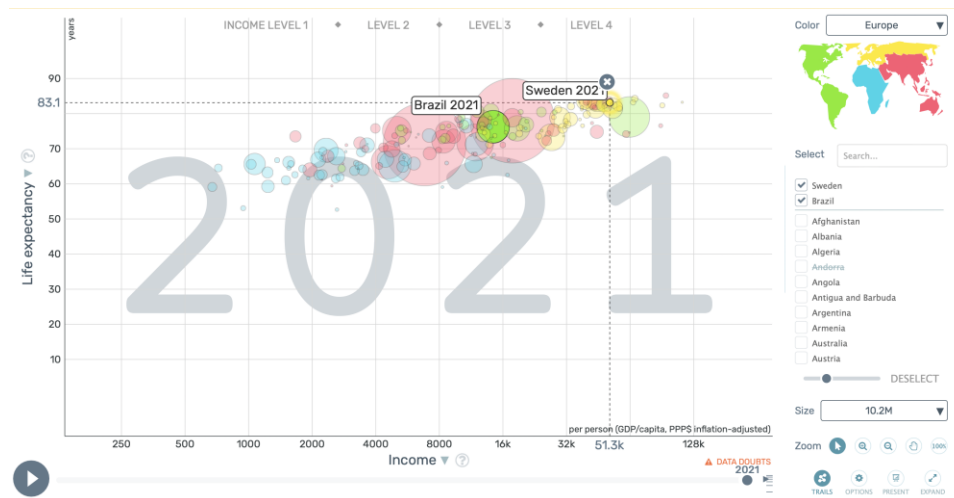


Figure 14

Gapminder tools allow the user to manipulate all the parameters, such as both axis, the color and size of the bubbles. The user can also interact with the slider at the bottom to change the year of the data, this year is also displayed in gray in the background of the graph.

Overall, this represent a good information visualization where the user has the freedom to extract information in a fun and interactive way.

2. “Coronavaccin - I Sverige och världen”, SVT (bad information visualization)

In this article, by SVT Nyheter, one can follow the development of vaccination against covid-19 and how many that has been vaccinated in Sweden and in the rest of the world ². They use data from Folkhälsomyndigheten and visualize it to give the readers a better understanding.

In one section SVT visualizes how many of Sweden's inhabitant who have started vaccination and who have received at least two doses. This is shown in a line chart, pie chart and a table where everyone cooperates with each other.

² <https://www.svt.se/datajournalistik/corona-vaccin/>

You start by picking a region in Sweden in the line chart followed by a certain age group in the pie chart, see Figure 12.

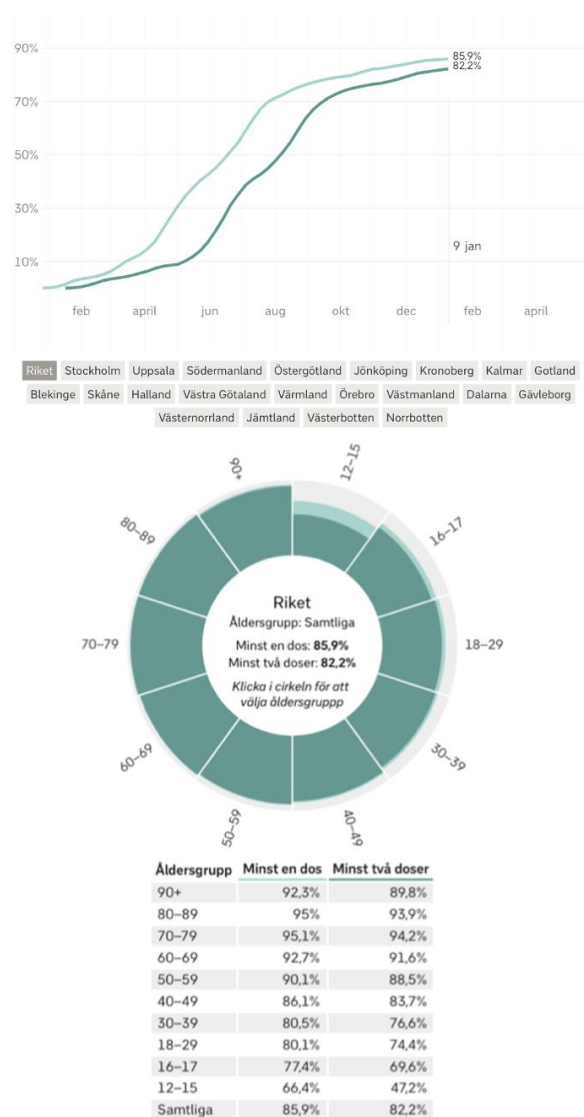


Figure 13

The table underneath the circle diagram in Figure 12, represents the same numbers as the pie chart itself. It is therefore unnecessary since they both represent the same

data but in two different ways. However, the line chart is good to have to see how the number of vaccinated increases over time.

The pie chart in this case is also not the best visualization technique. Since the numbers between the age groups don't vary much, viewers are not able to see the difference between slice sizes and, thus, compare them.

It is therefore better to visualize the data in a bar chart, see Figure 13 below.

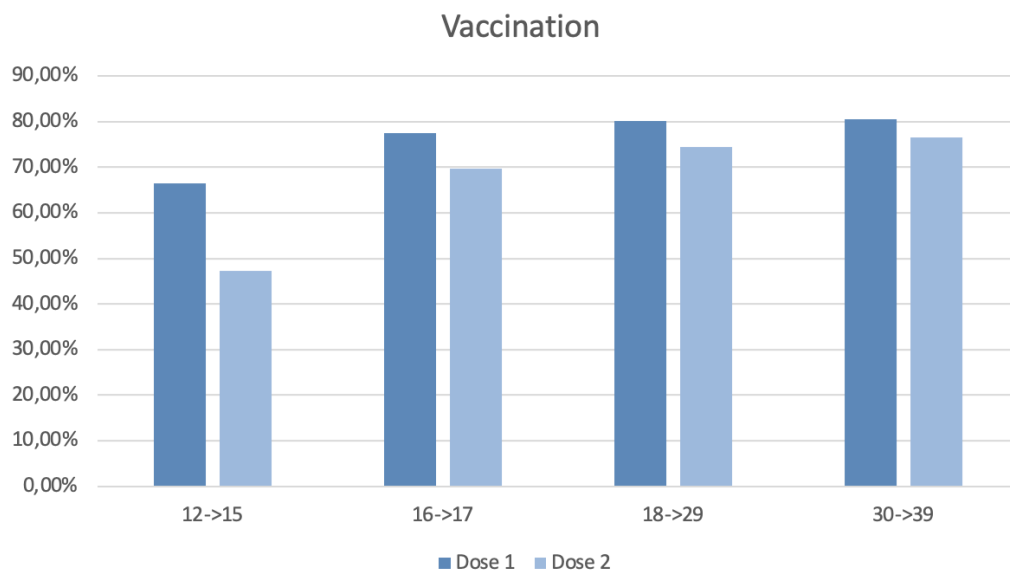


Figure 14