

Critiquing and Creating Data Visualisations - Assignment 1

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CRITIQUING AND CREATING DATA VISUALISATIONS

Data Analysis and Visualisation



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Introduction

In this assignment there will be two subsections, one subsection will be discussing the characteristics of an infographic called "Physical activity for Adults UK" where it will be heavily reviewed for colour choice, text placement, graphs, graphics, cognition and improvements that can be made on the graph for the future. The second section of this report will be for a custom-made infographic with the data sample from the Rapid Covid-19 Surveillance data for Wales.

Physical Activity for UK Adults

The infographic that is going to be analysed in great detail is the Physical activity for UK adult's infographic and it suggests that all adults should do between 75 – 150 minutes of physical activity a week to stay more active, fit and healthy. The infographic also describes the advantages of being fit and healthy and showing the chances of illnesses that can be reduced by staying fit and active.

Even though this infographic is trying to promote a message of staying fit and healthy, the way they have done so comes off complex and very difficult to read, having many different sources of information, graphics and text thrown at you at once without a good place to start and take in all the information, there is places where colour usage, text placement and design, graph choice, graphic choices and more improvements can be made to this infographic to make it more understandable and flexible for different audiences so more people can read it, expanding its audience.



The main message

The main message of this infographic is to promote fitness for adults and older people during their average week to help them prevent their illnesses in the future such as diabetes and cardiovascular disease. The infographic suggests doing around 75-150 minutes a week of fitness to reduce these illnesses.

Colour Usage / Colour Blindness Decisions

The colour decisions on this infographic where colour enough to be eye catching on the main section so if someone is looking for through different infographics they will be able to see this one a lot faster.

However, if someone with a colour blindness disability, for example Protanopia would be seeing the infographic then they would see it with a lot less colour depth and the colours would all merge in together with the background text making it harder for people to read and overall, less eye catching. [1]

Text Usage on the Infographic

Even though the text usage on the infographic is minimal, the text that is displayed in a way that is very understandable and readable for the reader of the infographic as nothing is heavily cluttered and there is space around the text that allows for ease of reading.

One of the downsides the text and typography within the infographic is how the sizes are one large size or one small size, no in-between and the information chosen to be the larger font scale isn't as useful as it can be. Having more useful information be in a larger text scale, having key and valuable information be larger in text size would help greatly. [2]

The text on this infographic is very minimal but can be very impactful and should give the reader some information they can take away from the infographic and have learnt something useful, the text should always try to direct the read to the main information in the infographic. [3]

Graph Choice Selection

The graphical choice selection that was made on this infographic is the one within the top right section of the infographic where it displays a bar chart explaining what fitness can do for you with it reducing the risk of life changing diseases hitting you. However, the location of the graphic is placed in a way where it's not the first thing that your eyes are drawn to due to its location.

When choosing the graphs and the location of said graphs if they are heavily detailed and have important information then you would want them to either be in the center or be in a colour that will catch the readers eyes to it. Using the ICCOR Method you can see that this graphic does none of what is suggested. [4]

Graphics Usage within the Infographic

The graphic selection within the infographic is special and intruding to the readers, having a large red circle with not a lot of information inside of it as the central piece of the infographic is off putting as it pushes potentially more useful information to the side away from the center where it would be read first.

The infographic design is very symmetrical and has equal amounts of information on both sides, meaning there is zero imbalance in where your attention will be directed as everything will be directed to the exact same place, being the entire infographic. Having an equal sided



infographic makes it so that you can read the entire infographic without an imbalance in where your eyes will want to look. [5]

Cognitive Design on the infographic

The cognitive design within the infographic has no huge flaws as the typography chosen is readable and understandable and the size choice makes it so that there is no struggle reading the information provided on the infographic.

There is no location on the infographic where the text becomes difficult to read or where the content is becoming less based on the main purpose, which is to assist young adults in staying fit, which this infographic does. [6]

Improvements to be made on the infographic

Overall, the main purpose of the infographic gets its point across, it shows the reasoning on why people should stay fit. However, the literacy choices that were made when creating this infographic are poor as you can see from just having a glimpse at it, choosing looks and colours over giving information instead of having to splice it up into smaller subsections.

Having two graphics be shoved to the top of the infographic away from the center area makes it so they seem less important when they are some of the more impactful places of information so they should be more focused towards the center area of the infographic.

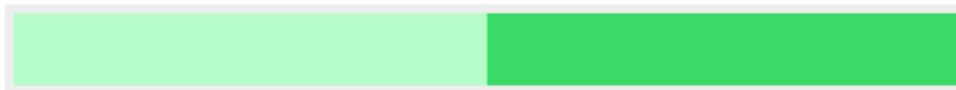
The colour choice on the webpage can be improved in the fact that if people are affected with different forms of colour blindness it can cause the infographic to suffer and end up showing a presentation, using the website vis4.net it will show you how you can choose specific colours that will not be ruined for people if they have different colour blindness. [7]

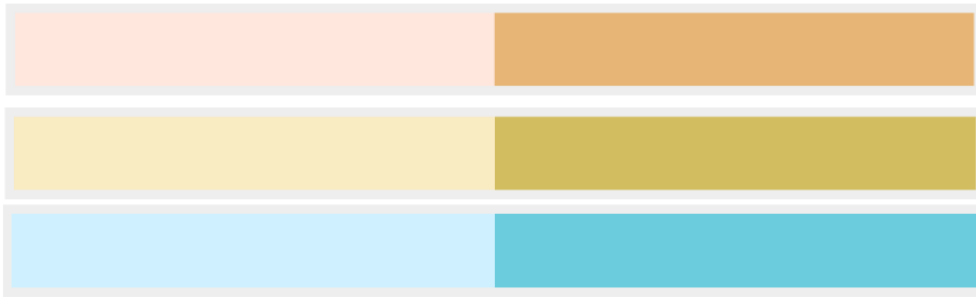
COVID-19 Cases Data

The Covid Cases Data for October 2021 contains sample data from the Rapid COVID 19 data for Wales which was recently released by Public Health Wales, with this data an infographic had to be created and designed to answer four different questions that would be asked about all the lines of data which needed to use the entire data set that was given, including the headline data, total tests, rolling 21 days and rolling 7 days.

Colour Choices

For the infographic design there was always the need to make sure that colour correction was good so that people with colour-blindness would be able to read the data without the need of having to put the infographic through a colour changer, as the greens and purple chosen aren't near similar that they contrast one another and the colour differences between the greens make it easier to always tell a difference between the colours. When using the website [Chroma.js Colour Palette Helper](https://chroma.js.org/) [7] you can see the colour difference if you did have colour-blindness from normal to deuteranopia to protanopia and tritanopia.





With the background colour being purple and navy there needed to still be enough difference between them that they would be identifiable to what was a background element and what was an image box to display a graphic inside of, once again using the website colour palette helper there the colour choice was found out to be understandable and still very graphically impacting with its colours not matter the colour blindness.



People with Tritanopia will be seeing a larger colour difference than expected however they are still able to identify between the background colour and the box colour used for graphics.

Graph Usage

The data that was gathered had been chosen to be displayed in a bar, pie, gauge and line graph to make it so that there are enough different graphs that are the best to display the data gathered, these charts are chosen as they are easily understandable and readable to a broader audience and assist people that are looking to get more information about the Covid-19 virus in Wales and how bad the virus has become.

The graph choice was to make sure that the graphs can present the data well with having all the information needed on each graphic and that they are understandable by a broader audience, making sure that all the data is presented in each graph to make sure that the 4 questions were answered is a necessity as without the correct information then the graph is useless.

The reason behind the choice of these graph sets is that the data that was gathered was the best to present in each format for each question, such as having to find out the percentage of all cases presented by local authority was used with a line graph as there was two sets of data that needed to be compared to one another.

Text Usage

As this is an infographic, the text is very limiting as the main information should be displayed within the axes and on the graph and without huge boxes of writing, which is why on this infographic there is only one box and has minor information writing about what the infographic is about.

Graphic Usage

For graphics on the infographic, the decision to add a block theme for the graphs with boxes around them to make them easily identifiable for people without having to look and find them hidden away was the best idea as the graphs were the most important feature for this infographic, an additional graphic that was added was the addition of smaller doctors either sitting or standing by different graphs on the infographic as this infographic is all about your health and acknowledgement with how the COVID-19 Virus currently is in Wales so the doctors with medical masks suited it well.

Use of White Space

White space is important when designing infographics since it creates a balance without overflowing your infographic with too much information [8], in the infographic that was created you can see that there is a fair amount of white space between the graphics that allows for each graph to breathe and not be over cluttering the infographic with too much information and looking far too hectic, hence the lining features between the top, middle and bottom graphs to make there be more space between them, or to feel that way.

Conclusion

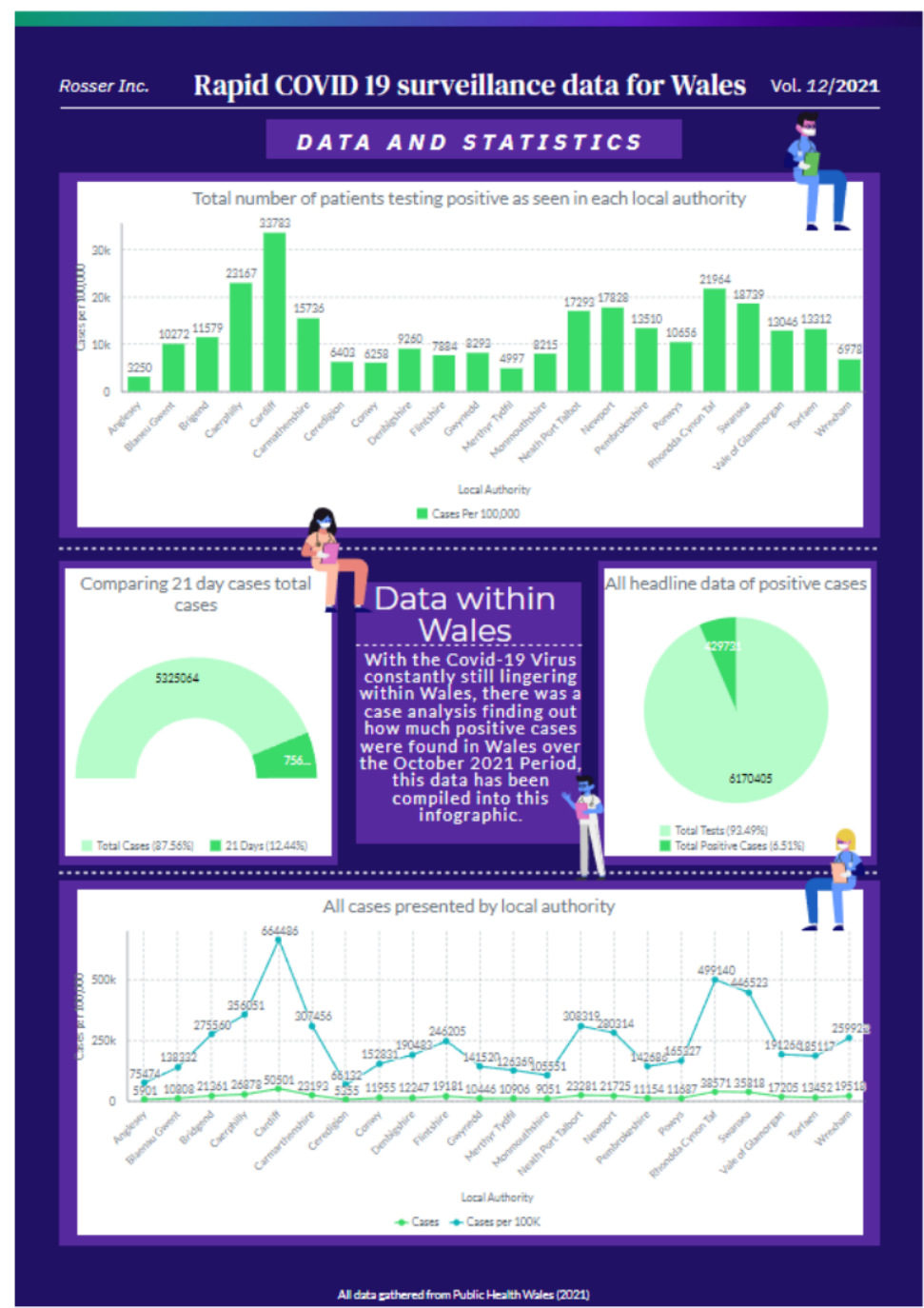
As a conclusion to the infographics design, there could be some improvements that can be made to this infographic such as having more text that is responsive to the data presented and choosing different colours to add on to the theme other than just green and purple, as the more colours that are used within an infographic then the more eye catching it is for the audience.

Having different sizes and scales for each of the data would allow you to present the data in a way where you want the more informative parts of the graphic to be shown more while the least informative sections can have smaller graphs overall, allowing for more of a balance in what can be seen as informative over equality for each graph.

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Appendix
Appendix A:



Appendix B:

7 Days		
Local Authority	Cases	100K Cases
Anglesey	260	3250
Blaenau Gwent	808	10272
Bridgend	892	11579
Caerphilly	1768	23167
Cardiff	2765	33783
Carmarthenshire	1176	15736
Ceredigion	538	6403
Conwy	486	6258
Denbighshire	574	9260
Flintshire	618	7884
Gwynedd	591	8293
Merthyr Tydfil	432	4997
Monmouthshire	1287	8215
Neath Port Talbot	1069	17293
Newport	1375	17828
Pembrokeshire	1069	13510
Powys	770	10656
Rhondda Cynon Taf	1732	21964
Swansea	1509	18739
Vale of Glamorgan	1168	13046
Torfaen	967	13312
Wrexham	514	6978

Appendix C:

21 days		
Local Authority	Cases	100,000 incidence
Anglesey	978	12266
Blaenau Gwent	1672	21171
Bridgend	2148	27801
Caerphilly	4263	56333
Cardiff	8135	110724
Carmarthenshire	3472	45868
Ceredigion	990	12160
Conwy	1435	18332
Denbighshire	1652	26576
Flintshire	1858	24278
Gwynedd	1650	23076
Merthyr Tydfil	994	11529
Monmouthshire	1731	20032
Neath Port Talbot	3154	42123
Newport	3055	39629
Pembrokeshire	2760	35629
Powys	2174	30587
Rhondda Cynon Taf	4342	55029
Swansea	4251	53301
Vale of Glamorgan	3154	34891
Torfaen	2471	33961
Wrexham	1589	21484

Appendix D:

Total Cases		
Local Authority	Cases	100,000 incidence
Anglesey	5901	75474
Blaenau Gwent	10808	138332
Bridgend	21361	275560
Caerphilly	26878	356051
Cardiff	50501	664486
Carmarthenshire	23193	307456
Ceredigion	5355	66132
Conwy	11955	152831
Denbighshire	12247	190483
Flintshire	19181	246205
Gwynedd	10446	141520
Merthyr Tydfil	10906	126369
Monmouthshire	9051	105551
Neath Port Talbot	23281	308319
Newport	21725	280314
Pembrokeshire	11154	142686
Powys	11687	165327
Rhondda Cynon Taf	38571	499140
Swansea	35818	446523
Vale of Glamorgan	17205	191266
Torfaen	13452	185117
Wrexham	19518	259922

Critiquing and Creating Data Visualisations - Assignment 1

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