ASSIGNMENT 1: Data Visualization

EXCEL & TABLEAU

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10/23/24

DATA ANALYSIS BOOTCAMP

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Task 1: Policies and Procedures

When handling data it is important to adhere to the Data Ethics Framework. This framework can be found on the UK Government website and outlines the key policies we are responsible for following as data analysts when analysing and interpreting data (GOV UK, 2020).

Some of the policies outlined in the Data ethics Framework are:

- **Personal Data**
  - General Data Protection Regulation (GDPR)
  - Data Protection Act 2018 (DPA 2018)
- **Equality and Discrimination**
  - Equality Act 2010
- **Sharing and Re-Use of Data**
  - Information Commissioner's Code of Practice for Data Sharing
  - Re-use of Public Sector Information Regulations 2015
- **Copyright and Intellectual Property**
  - Copyright and Rights in Databases Regulations 1997
  - Intellectual Property Act 2014.
- **Freedom of Information**
  - Freedom of Information Act 2000
  - Protection of Freedoms Act 2012
- **Statistics**
  - Code of Practice for Statistics

(GOV UK, 2020)

GDPR and DPA 2018 are very important policies to follow when handling any data, including the wealth of nations dataset. These policies are strict data protection laws and non-compliance can lead to hefty fines and legal consequences. It requires businesses and organisations to store and process data lawfully, fairly and transparently. Data must only be collected for specified and legitimate purposes. The data that is collected must be no more than what is necessary for the processing needs of the business and to carry out analysis. Businesses also need to ensure stored data is accurate and when needed, kept up to date. Data should also not be kept any longer than it is needed. Finally, businesses must store data securely and take accountability if anything happens to that data, such as reporting any data hacks (DataProtection.IE). In analytics, this can also include protecting personal information such as giving pseudonyms to names included in the analysis, so a person can't be identified (Srivastava, 2021).

It is also important when handling data to adhere to the Computer Misuse Act (1990). Businesses must have internal policies and security measures in place to ensure no one gains unauthorised access to computers and sensitive information. This is a requirement by law. Security measures can include passwords, firewalls, and tracking to see who accessed certain systems and when (GRI, 2023). Businesses must also have policies in place for reporting potential data breaches.

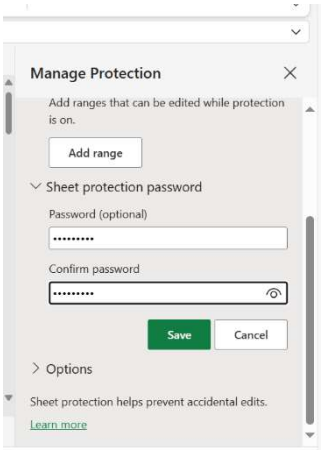
As a data analyst, it is important to understand why data ethics is important. Data ethics are important for businesses and government agencies for several reasons. Following data ethics allows businesses to build trust with their customers; by showing them, they respect their privacy and security and are committing to protecting their information. It ensures businesses are complying with legal regulations such as GDPR, not complying could lead to fines and legal action. It allows businesses to protect their reputation, data hacks and leaks for example can be detrimental to a

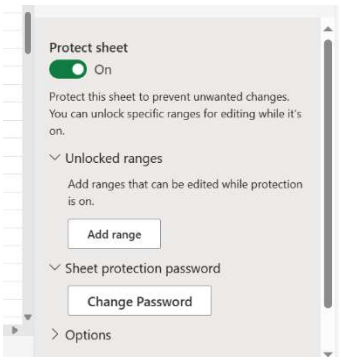
business's reputation, these can cause loss of customers, lack of trust and legal action. Finally, businesses need to follow data ethics as it allows them to uphold their ethical responsibility, data can contain sensitive and personal information and should be treated with respect, fairness, and transparency. This allows them to make a positive impact on society (ISBA, 2023).

These policies are relevant to the 'Wealth of Nations' dataset as it has a lot of sensitive information from a magnitude of different countries. When analysing and interpreting the data it is important to follow the key policies to ensure information is stored safely and securely and ensure all legal regulations are complied with. I will ensure the data is stored securely in line with GDPR and the Computer Misuse Act.

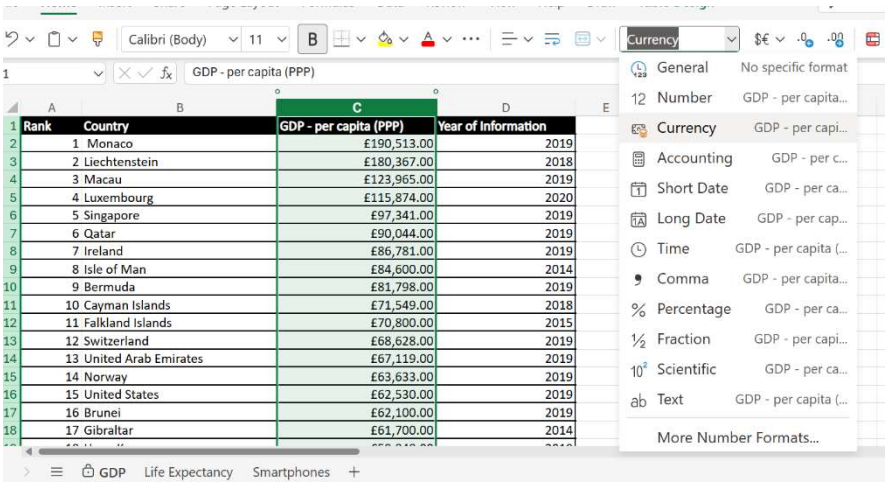
Task 2: Excel

1. **S**et a password to protect the workbook- Using review I password protected the workbook



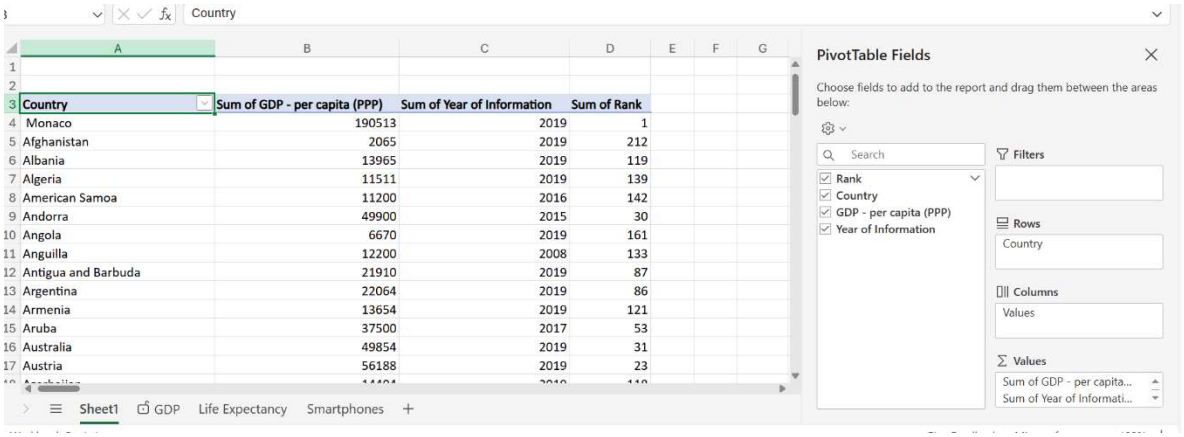


2. Highlight column C and change the data to display in British Pound symbol



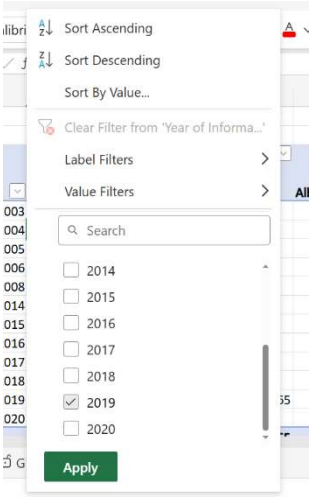
Rank	Country	GDP - per capita (PPP)	Year of Information
1	Monaco	£190,513.00	2019
2	Liechtenstein	£180,367.00	2018
3	Macau	£123,965.00	2019
4	Luxembourg	£115,874.00	2020
5	Singapore	£97,341.00	2019
6	Qatar	£90,044.00	2019
7	Ireland	£86,781.00	2019
8	Isle of Man	£84,600.00	2014
9	Bermuda	£81,798.00	2019
10	Cayman Islands	£71,549.00	2018
11	Falkland Islands	£70,800.00	2015
12	Switzerland	£68,628.00	2019
13	United Arab Emirates	£67,119.00	2019
14	Norway	£63,633.00	2019
15	United States	£62,530.00	2019
16	Brunei	£62,100.00	2019
17	Gibraltar	£61,700.00	2014

3. Turn the GDP sheet into a table. – Highlighted the data and turned it into a pivot table.



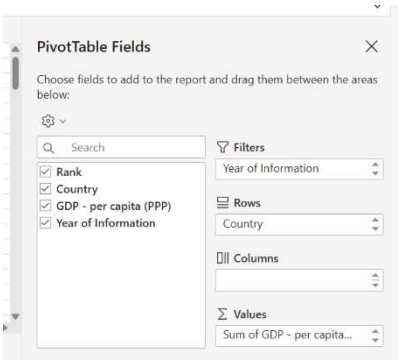
Country	Sum of GDP - per capita (PPP)	Sum of Year of Information	Sum of Rank
Monaco	190513	2019	1
Afghanistan	2065	2019	212
Albania	13965	2019	119
Algeria	11511	2019	139
American Samoa	11200	2016	142
Andorra	49900	2015	30
Angola	6670	2019	161
Anguilla	12200	2008	133
Antigua and Barbuda	21910	2019	87
Argentina	22064	2019	86
Armenia	13654	2019	121
Aruba	37500	2017	53
Australia	49854	2019	31
Austria	56188	2019	23

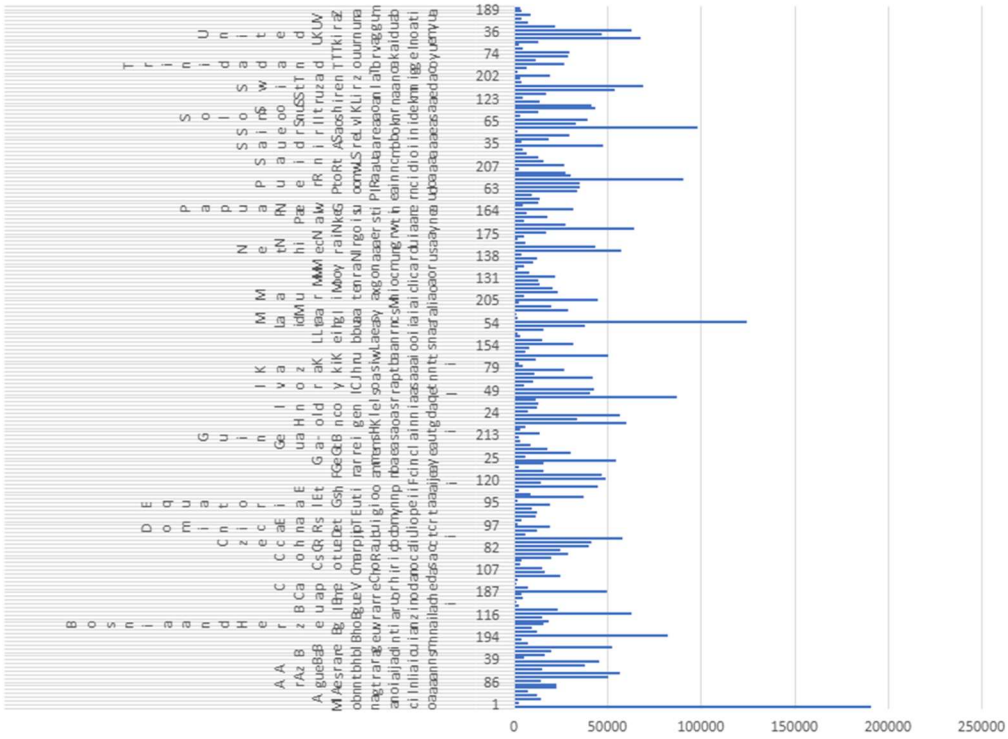
4. Filter the table to display only the information for 2019



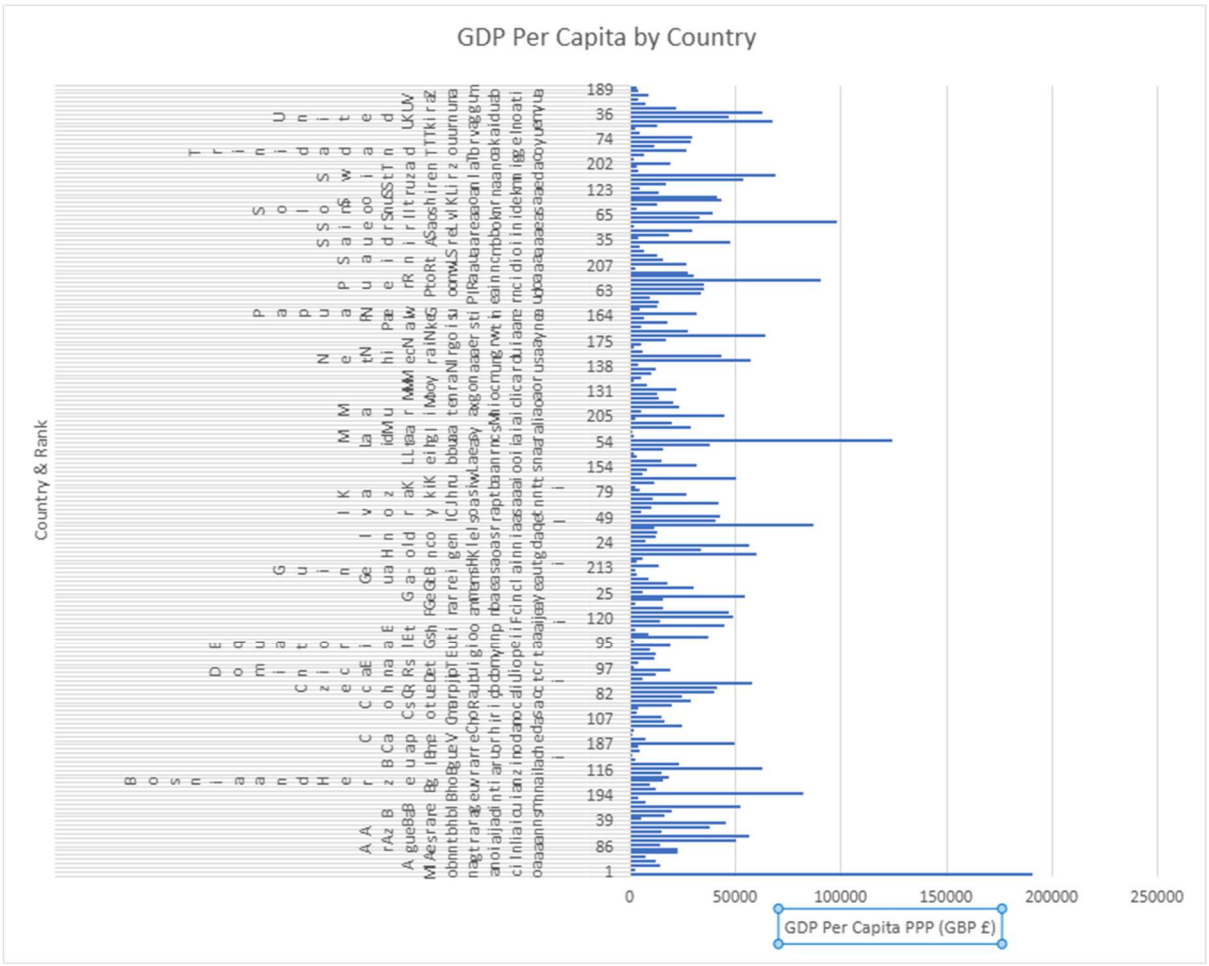
Year of Information	2019	
Country	Rank	Sum of GDP - per capita (PPP)
Monaco	1	190513
Afghanistan	212	2065
Albania	119	13965
Algeria	139	11511
Angola	161	6670
Antigua and Barbuda	87	21910
Argentina	86	22064
Armenia	121	13654
Australia	31	49854
Austria	23	56188
Azerbaijan	118	14404
Bahamas	55	37101
Bahrain	39	45011
Bangladesh	176	4754
Barbados	108	15639

5. Next create a chart that will only display the following data ‘Rank, Country and GDP - per capita (PPP). The chart can be anything as long as it is suitable.

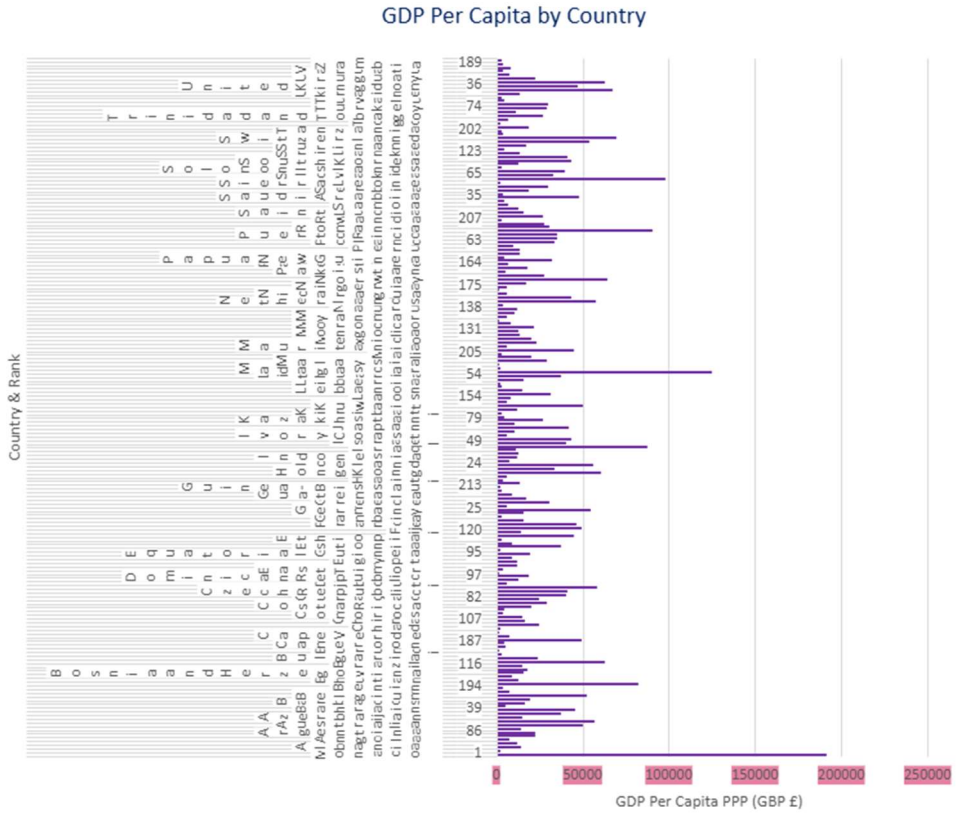




6. Using your creative skills edit the chart a. Add a title &
7. 7. Add X and Y axis labels

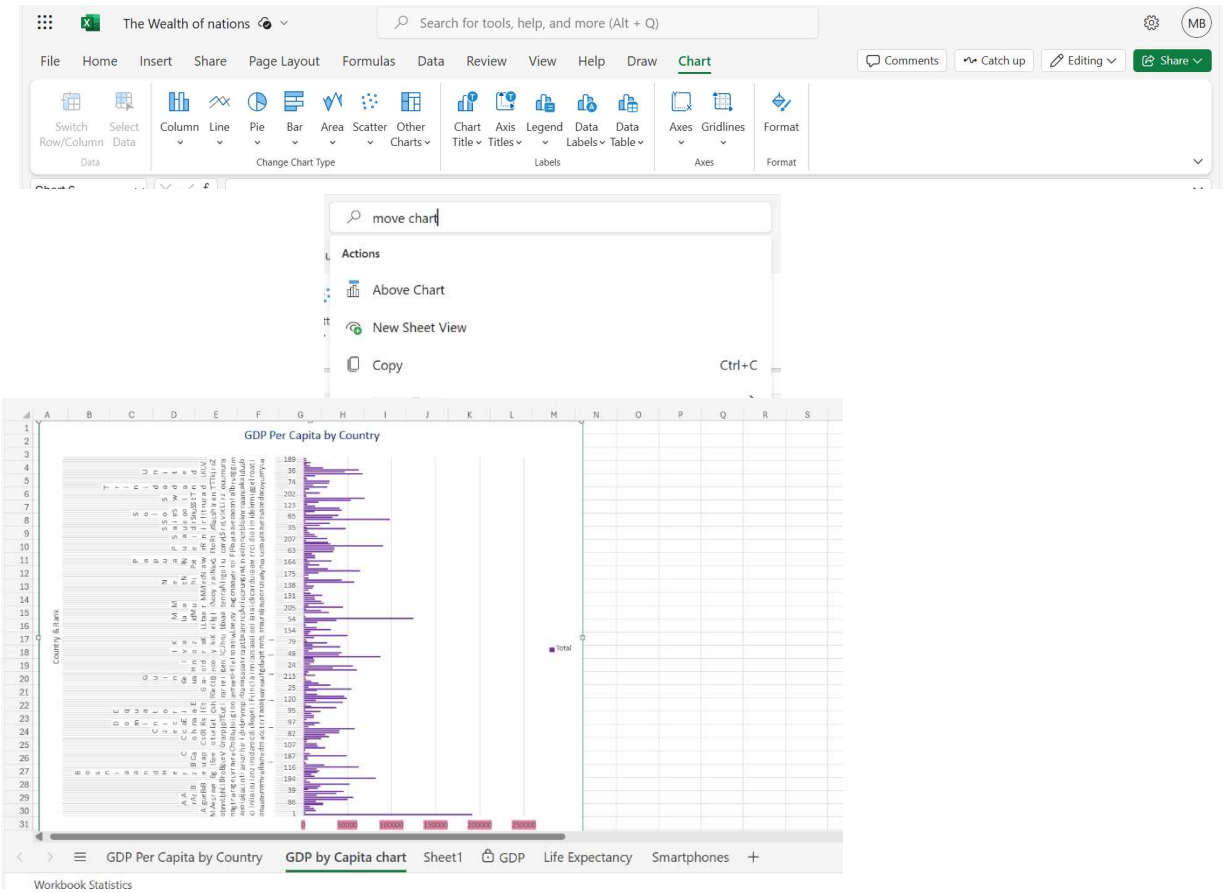


8. Make the chart visually pleasing – I changed the colours to make the chart more pleasing.

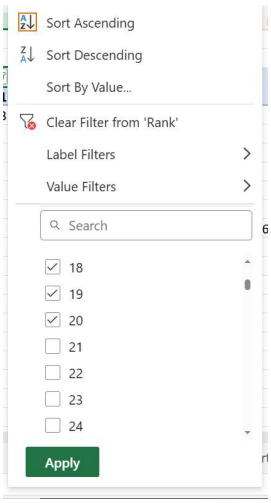


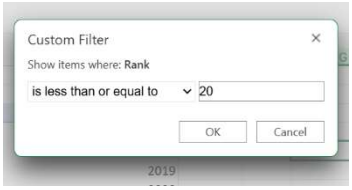
9. Move the chart to a new sheet tab and label with a suitable name

There is no move chart function on online excel, only desktop. I had to copy it into a new sheet.

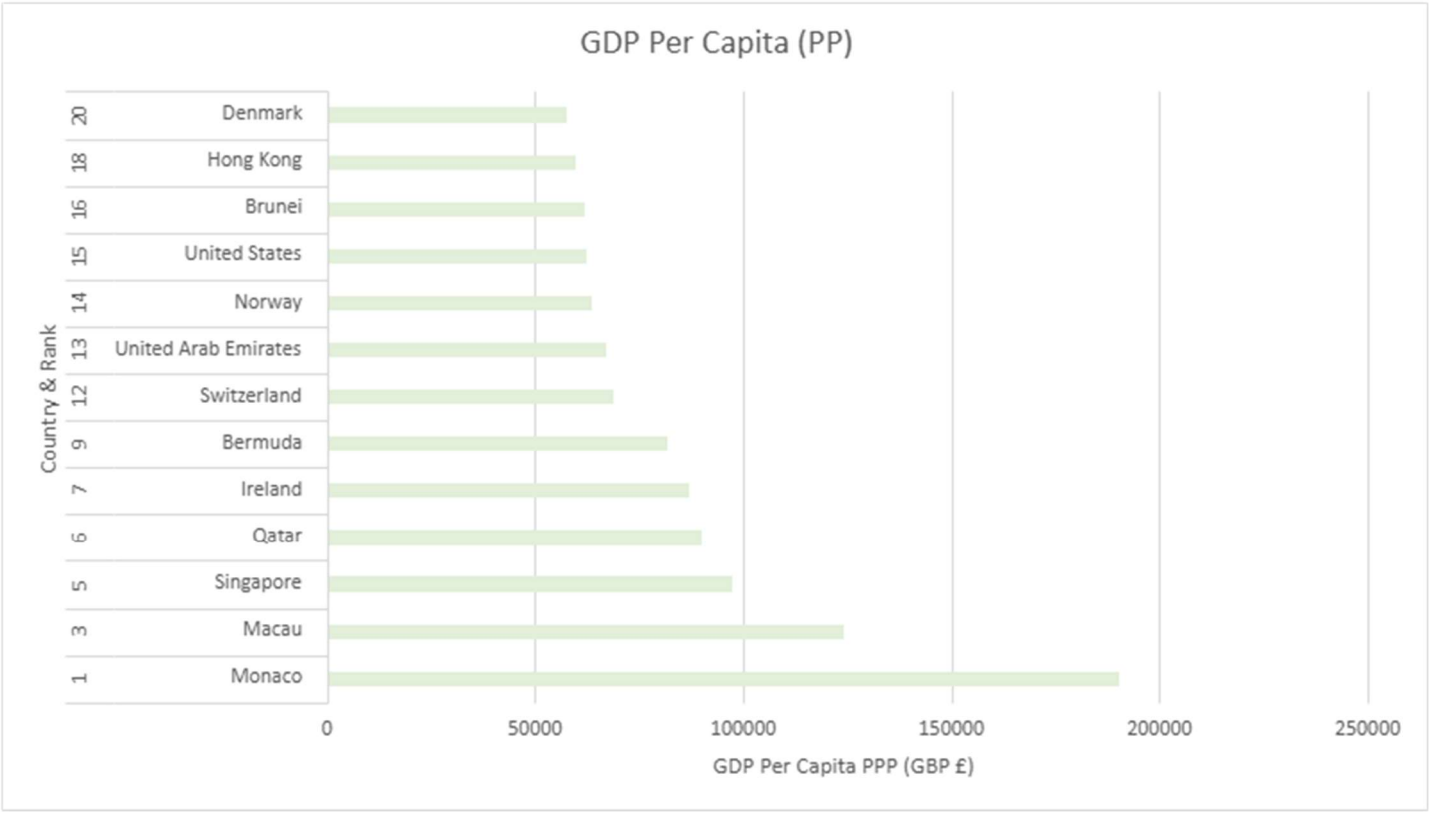


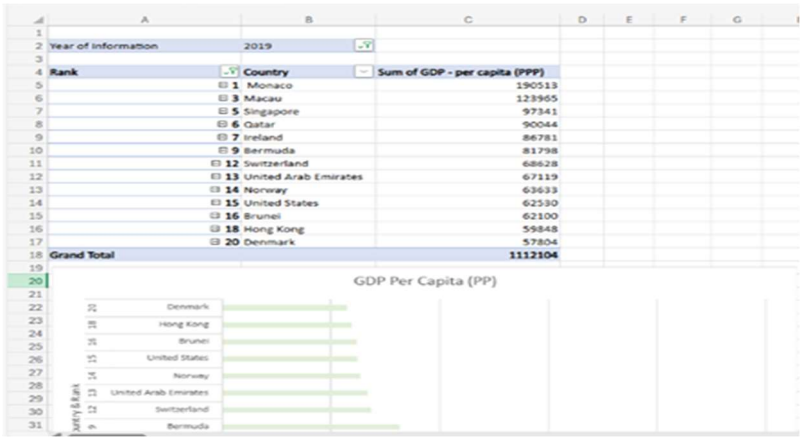
10. Create a sort for the top 20 highest ranking counties – There were 2 ways to do this as shown below and I tried both.





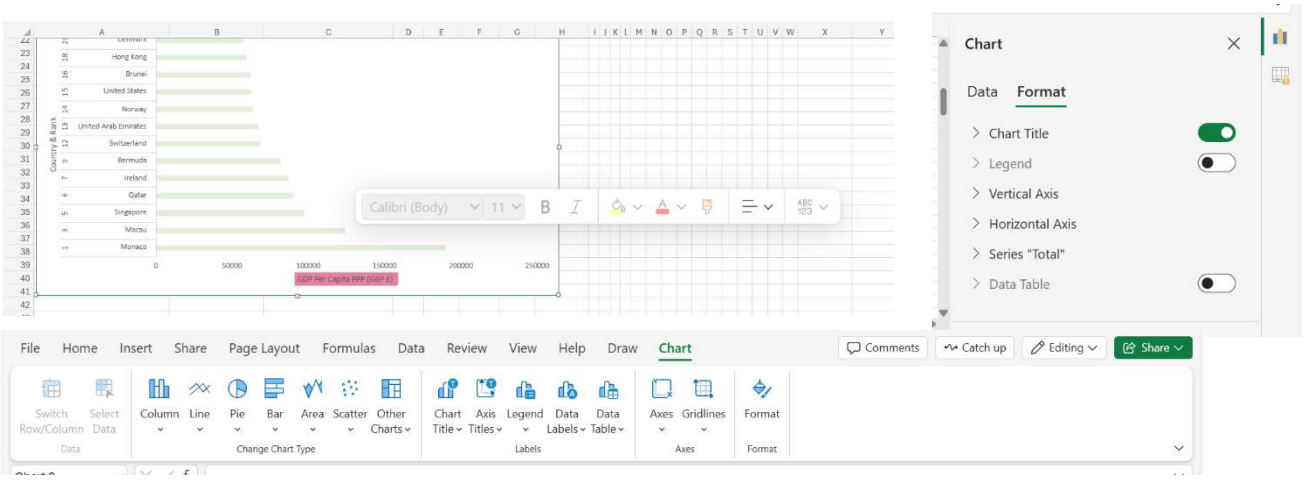
11. Next create a new Bar chart to display the 20 highest ranking countries from your sort and then move the chart to be underneath the table, as shown below.





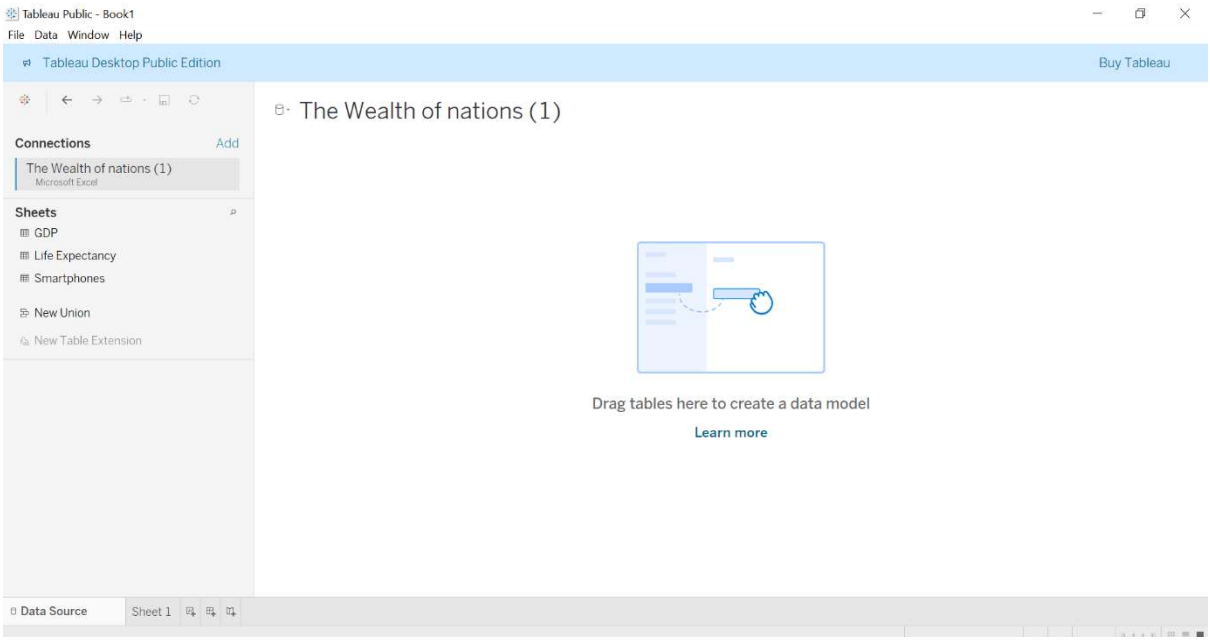
12. Colour the background by highlighting the area underneath the table as shown below. Find the add a fill colour icon and select a colour.

Doesn't seem to be an option to fill the background on Excel online.

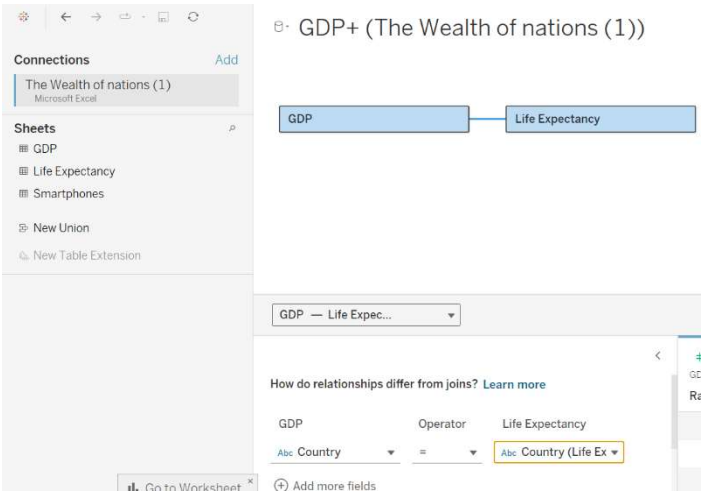


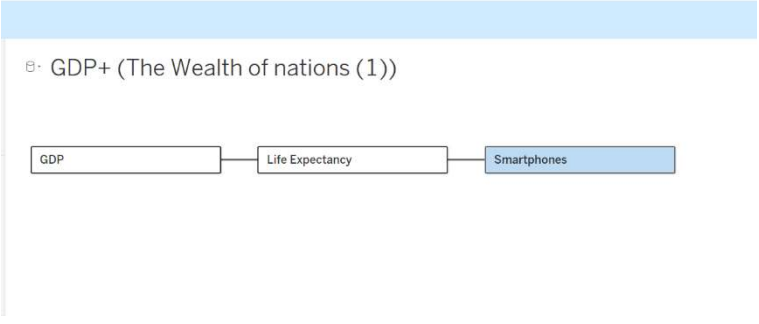
Task 3: Tableau

1) Import data

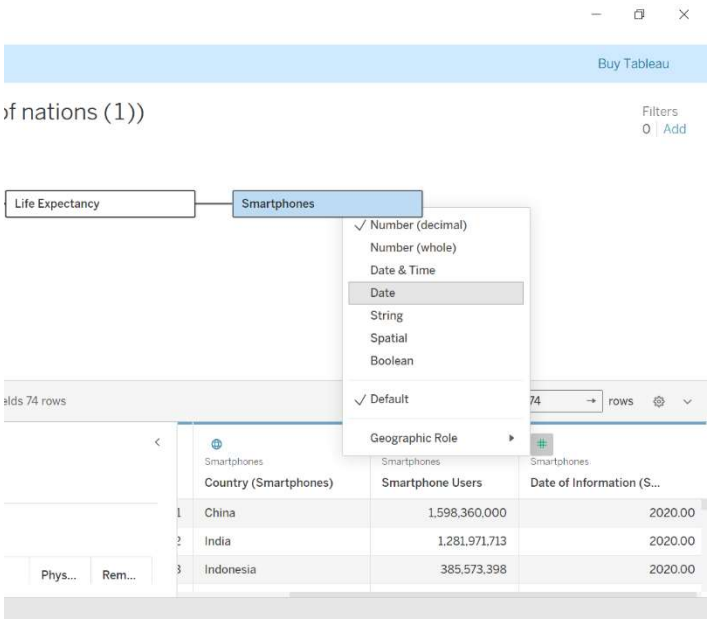


2) Set relationships





3) Check data



Did this for all 3 sheets.

4) Creating charts and dashboard to customers' requirements

Customers requirement:

The client is colour blind and requested you to bear this in mind when building your dashboard. The client is only interested in the top 20 highest ranking countries. All your visuals should be for the top 20 highest ranking countries.

Chart 1:

Chart 2:

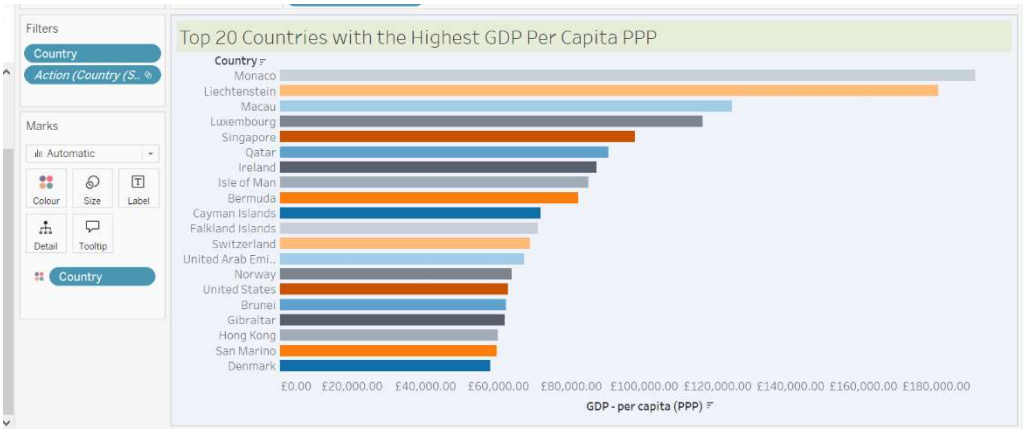


Chart 3:

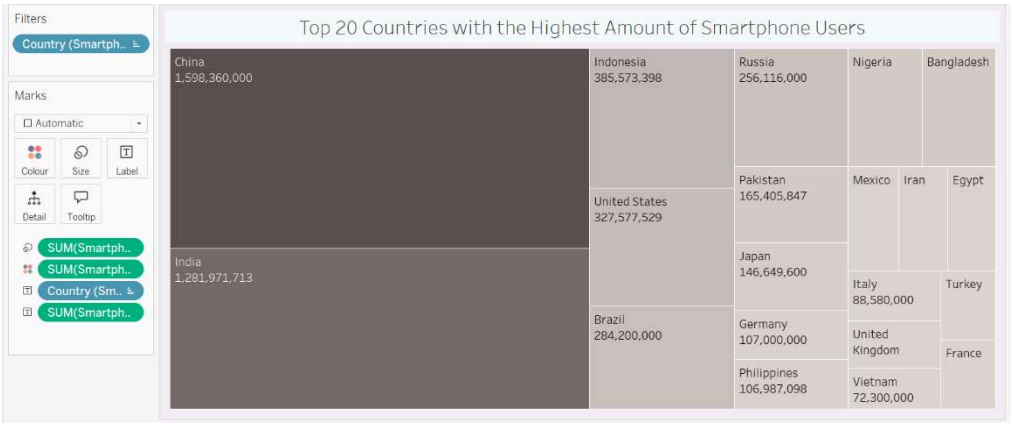


Chart 4:

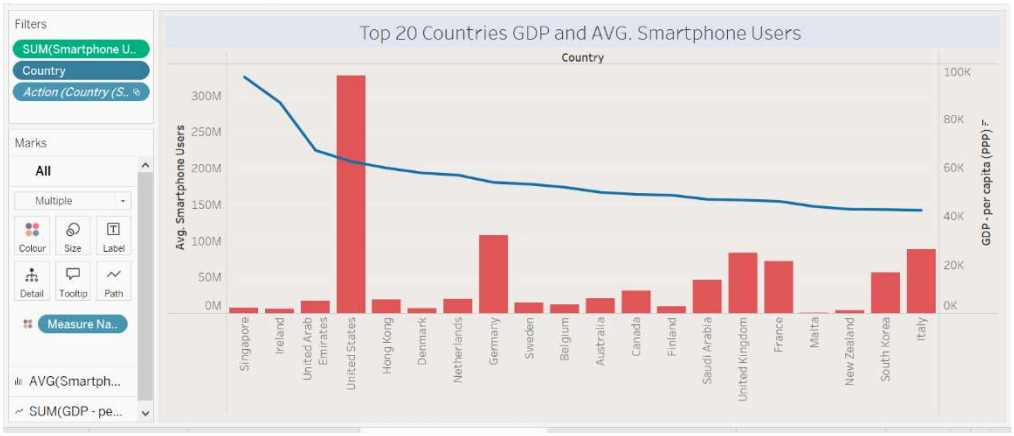


Chart 5:

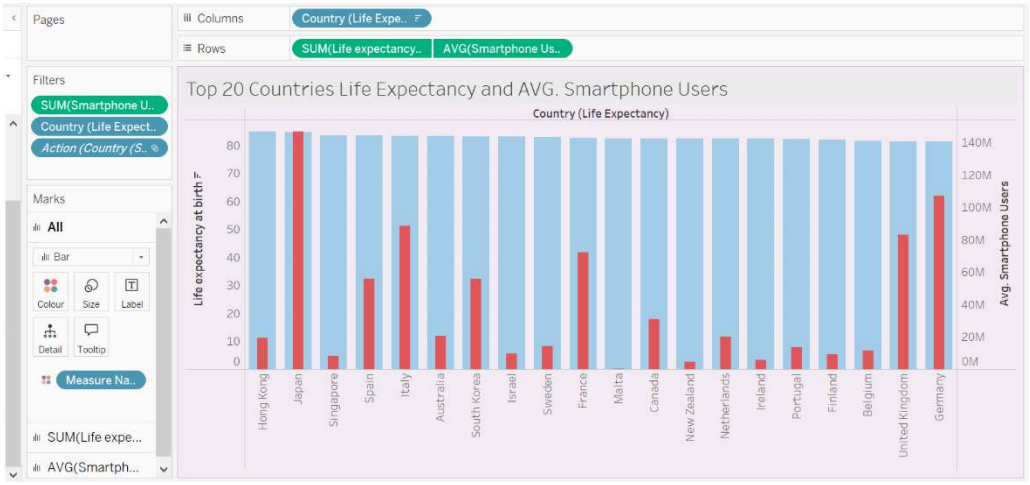
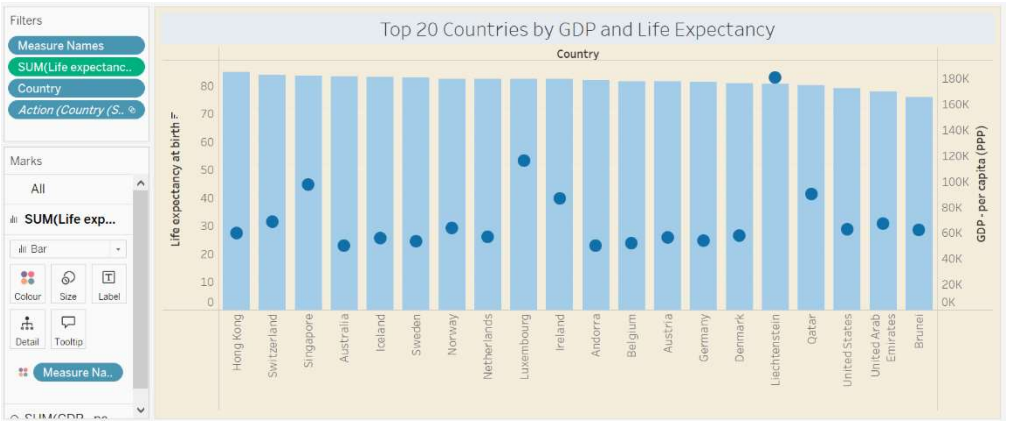
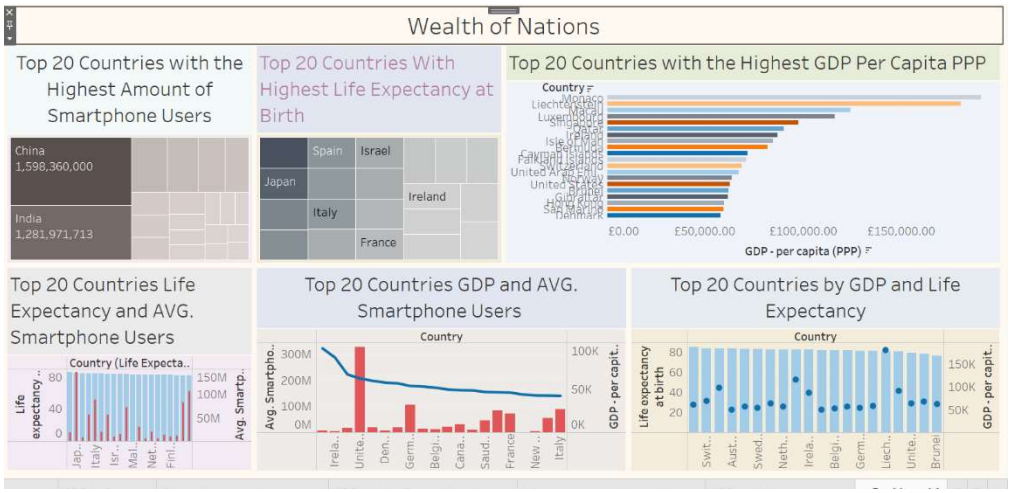


Chart 6:



Dashboard:
https://public.tableau.com/app/profile/marnie.blades/viz/assignmentwealthofnations2/Dashboard1?publish=yes



Reflection:

When I first began this assignment, I didn't think it would be too challenging for me but as I progressed through the work I was positively challenged. I found the formatting of Excel charts and tables a lot harder than any other programme we have used so far. I found it was messy and changing axis text orientation was difficult. I spent a lot of time researching how to improve my Excel charts and how to format them better. I also found Excel online didn't have all of the features the desktop version has so when researching, the information that came up wasn't applicable (Such as moving the chart to a new sheet and filling the background colour of the chart). I also struggled with finding relevant information on policies and procedures data analysts should use when handling data. I found a lot of general information about data ethics and GDPR and tried to understand them from an analyst's point of view, relating the general information to Task 1.

I think I did well with the tableau task. I enjoyed experimenting with the charts and dashboards. I enjoyed teaching myself new charts we hadn't covered before such as dual-axis charts which I taught myself. I did well applying the filters to the charts, selecting some charts to be used as filters, and making sure they all were filtered to the top 20 countries. I think my charts and dashboard followed the customer specifications and are insightful and visually pleasing.

Overall, I did enjoy the assignment, I found the challenge of it enjoyable. It has helped me with my understanding of Excel and Tableau and put my knowledge to the test. I hope I can take what I learnt from this assignment and put it to use in my self-study and future employment.