Visualizing Information 1

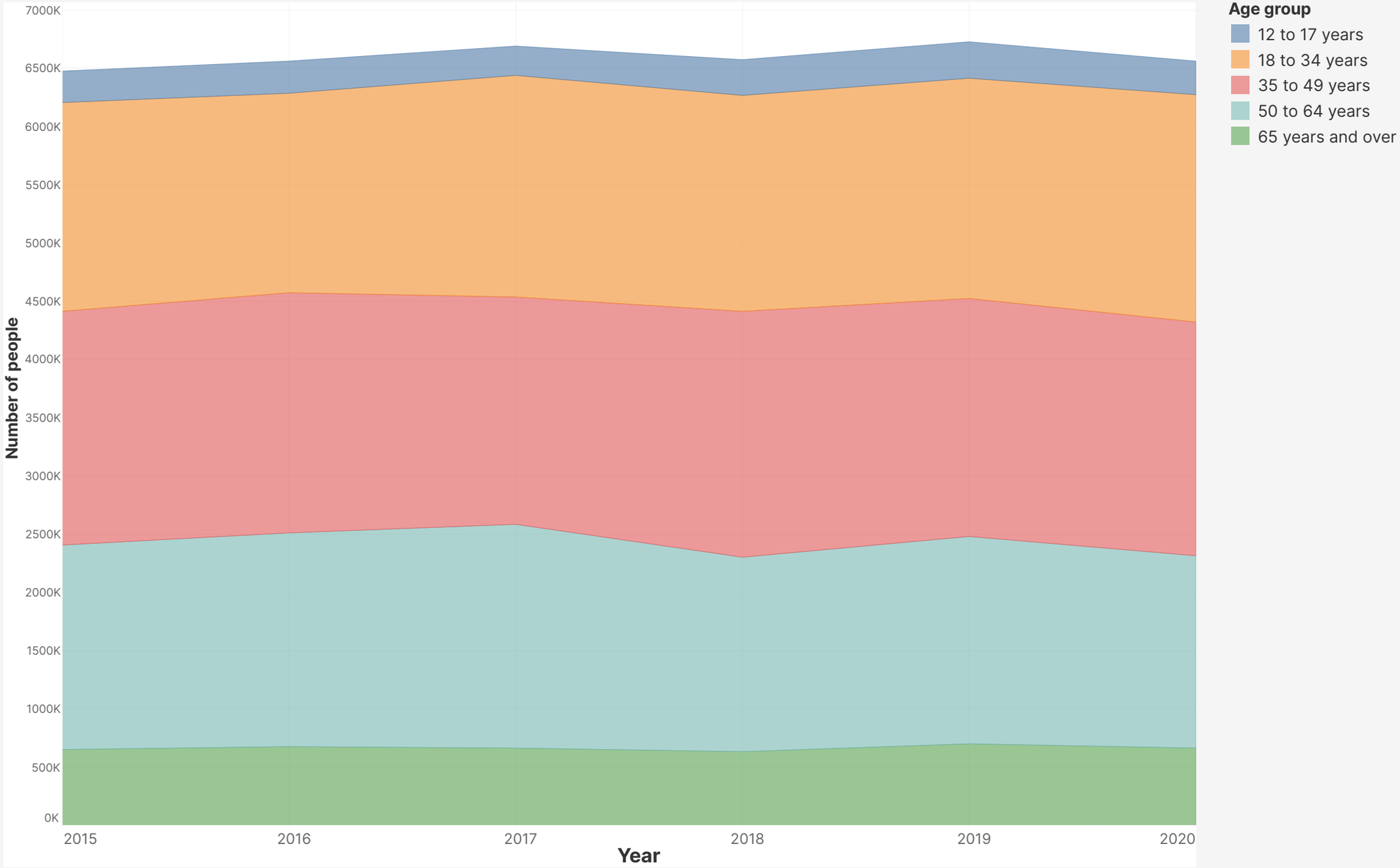
Project 3

Contents

Graphs

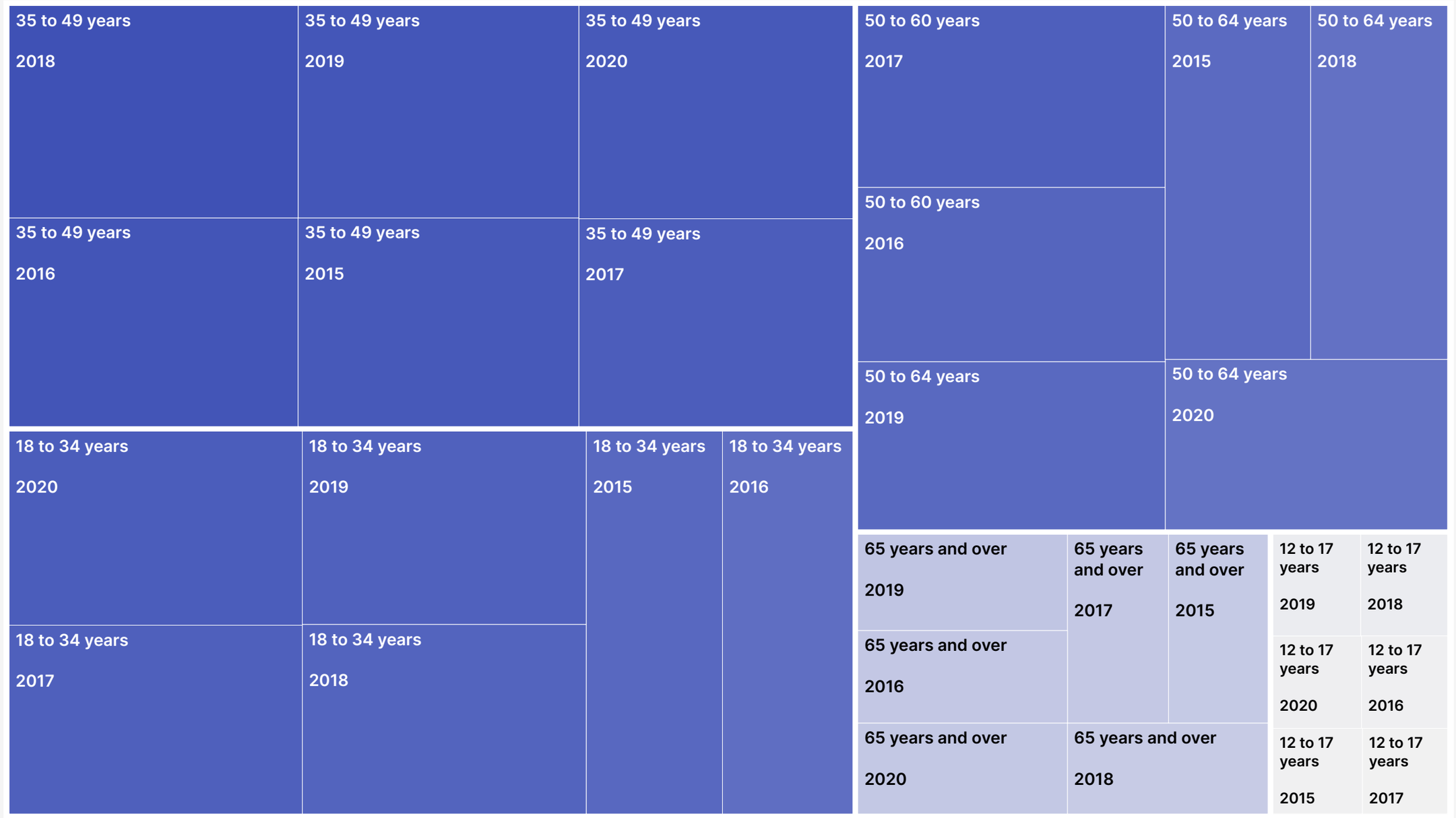
Area Graph

Perceived life stress of Canadians, by age group



Treemap

Perceived life stress of Canadians, by age group

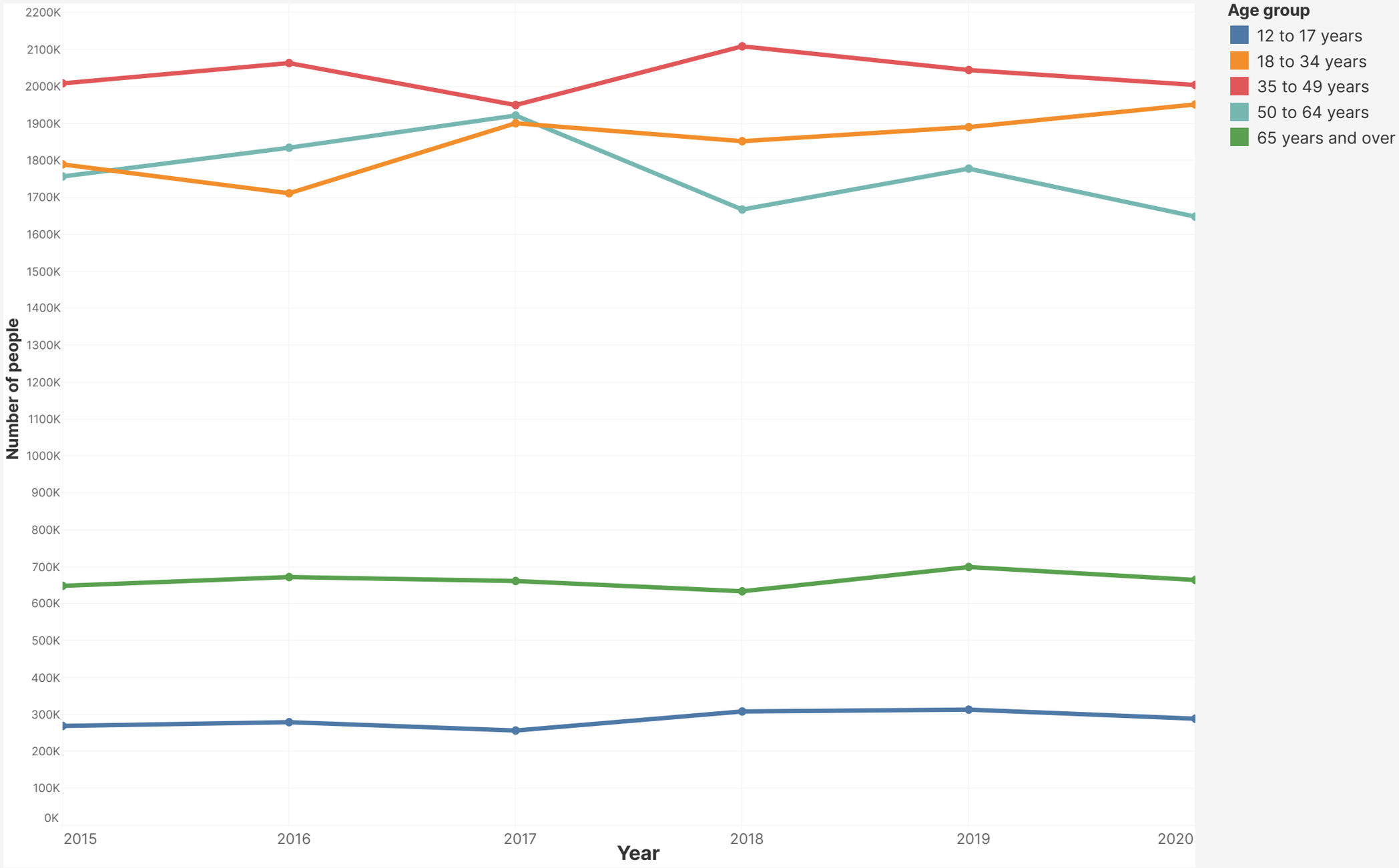


Number of people

257,600 — 2M

Line Graph

Perceived life stress of Canadians, by age group



Rationale

Rationale

The dataset I chose was a narrowed-down version of a much larger dataset that measured various health characteristics from 2015-2020. I narrowed down on a specific characteristic, perceived life stress, which was then broken down by age group and year.

As the two main variables in my dataset were age groups and years, I explored different ways to demonstrate trends and contrast different groups using different types of graphs.

The first graph I chose is an area graph. While the static version doesn't convey as much information as the original graph in Tableau (where you could hover over each section and see a clear breakdown), I still think this graph is a strong overall representation of the dataset because it puts the emphasis on the visual contrast between population numbers of each age group.

The second graph is a treemap and I think it's very similar to the area graph, besides a few notable distinctions. The layout enables the type to be much larger and therefore more legible at a glance. That, and the overall layout of the graph makes it a good choice for presenting this information to people without scaring them off with graphs and numbers; it's very approachable and legible by almost anyone. The monotone design also means I can assign a colour I feel represents the theme to the entire graph and then change the tint while tying that to a spectrum that represents the number of people, what would otherwise the y axis in another type of graph.

The third and final graph is a line graph and I chose this in order to emphasize the trends that are apparent in the data. Once again this graph shares some similarities with the area graph, but because the data is just represented as lines the emphasis shifts to the movement of each age group through time instead of their contrast with one another (or how they add up to a whole).

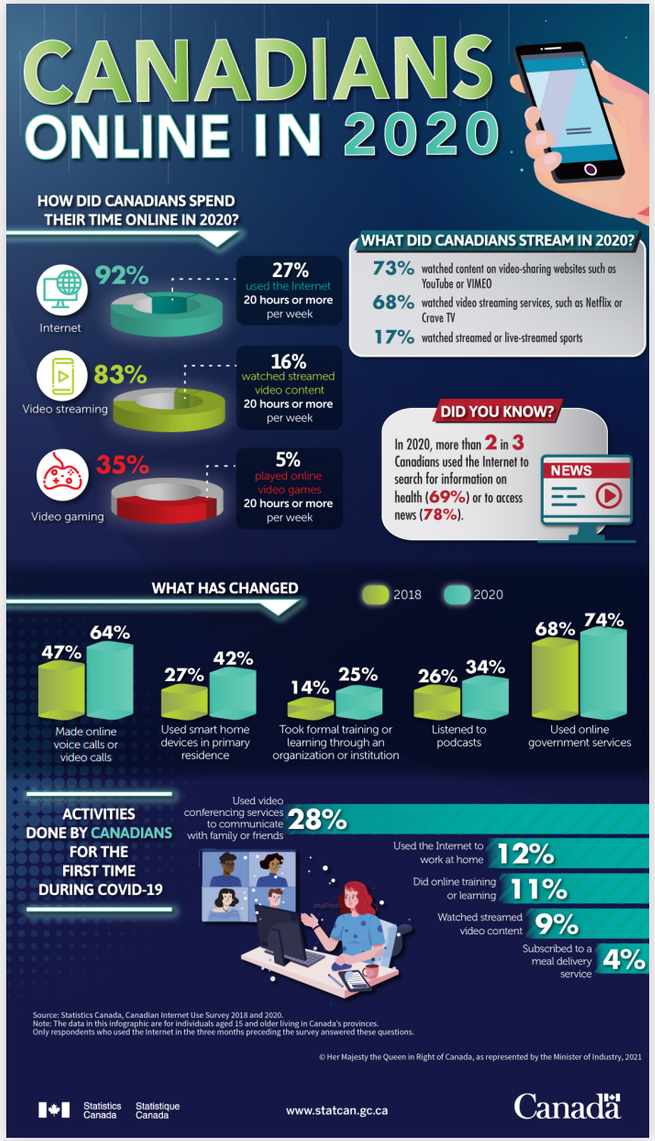
The three graphs I chose certainly overlap in some ways with one another, but there are still certain distinctions between them that make each one more suited for certain tasks.

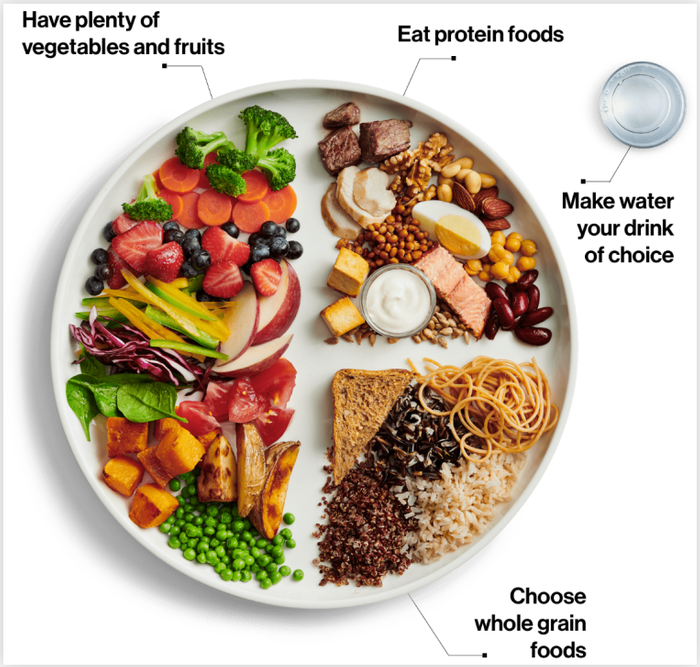
One thing that didn't cross my mind when I was creating the graphs was that I could manually add up the population data for each year and then have the total value for each age group from 2015-2020. The benefit of doing this would've been presenting a cleaner, easier to understand graph that focused on the contrast between the values of different age groups (such as an treemap) and then using the original data sorted into years to showcase trends (in the form of a line graph).

In-Class Activities

Critique Activity

Critique Activity





The Canadians Online in 2020 infographic does some things well, but also presents a few questionable design choices.

The overall flow is good, it's laid out in a portrait orientation and the viewer's eyes follow a natural path as they scan the infographic from left to right, top to bottom. Use of colour, contrast, & typography is also strong and strikes a good balance between aesthetically pleasant & legible. Sparse use of illustrations also adds a bit of flair to the overall layout & guides the viewer's eyes without being too distracting.

The choice of 3D effects on some of the graphs however is questionable. It doesn't really fit in with the rest of the graphics and in the case of the pie charts in the top left section, it makes them harder to decipher as opposed to flat, 2D pie charts.

Despite that, overall I like this graph as well and think it is relatively well thought out.

The food guide infographic is a successfully revamp of the old food pyramid. The new design is much more visual and cleverly uses imagery of real food to illustrate examples of the kinds of food that go into each food category.

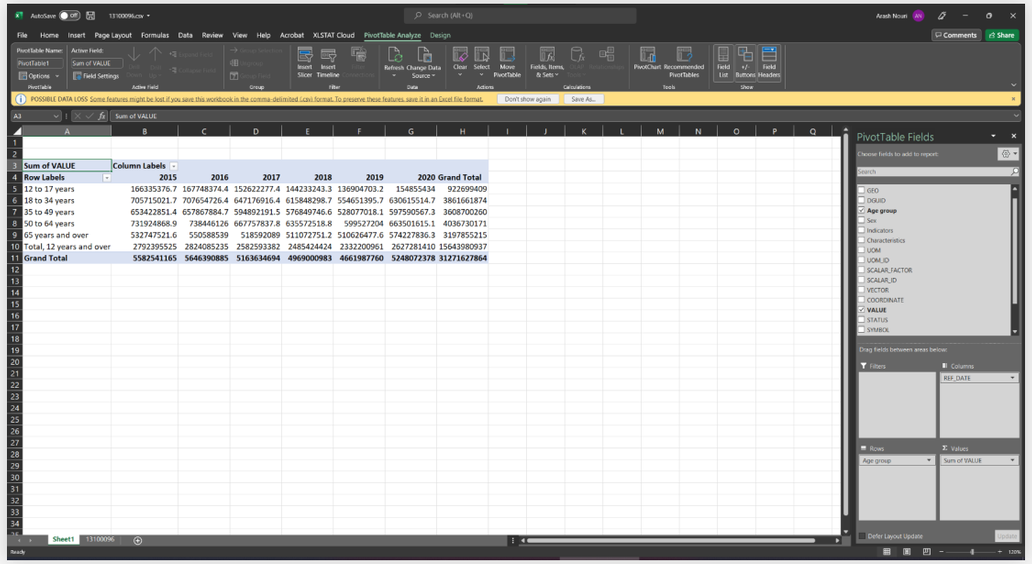
The placement of the food also resembles a pie chart and again cleverly illustrates the recommended portions of each category using real imagery.

Typography is clean and legible and the photography is likewise vivid. Every piece of food is easily distinguishable from the rest.

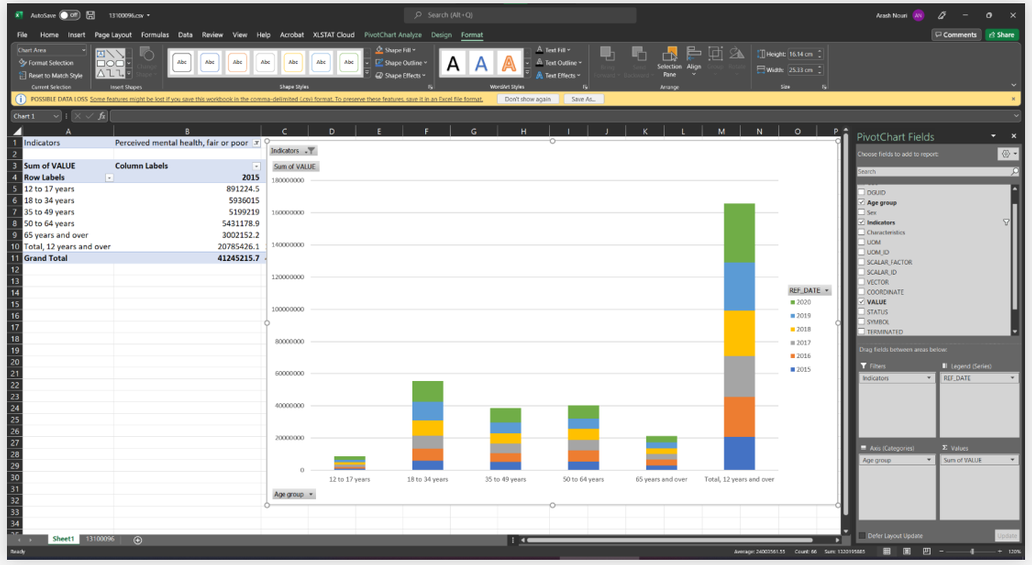
Overall I think this is a very strong infographic and it's unconventional design doesn't hinder it's goal at all, in fact I think it enhances it.

Tools Evaluation Activity

Tools Evaluation Activity



Sum of VALUE	Column Labels						
Row Labels	2015	2016	2017	2018	2019	2020	Grand Total
12 to 17 years	166335376.7	167748374.4	152622277.4	144233243.3	136904703.2	154855434	922699409
18 to 34 years	705715021.7	707654726.4	647176916.4	615848298.7	554651395.7	630615514.7	3861661874
35 to 49 years	653422851.4	657867884.7	594892191.5	576849746.6	528077018.1	597590567.3	3608700260
50 to 64 years	731924868.9	738446126	667757837.8	635572518.8	599527204	663501615.1	4036730171
65 years and over	532747521.6	550588539	518592089	511072751.2	510626477.6	574227836.3	3197855215
Total, 12 years and over	2792395525	2824085235	2582593382	2485424424	2332200961	2627281410	15643980937
Grand Total	5582541165	5646390885	5163634694	4969000983	4661987760	5248072378	31271627864



Indicators	Perceived mental health, fair or poor
Sum of VALUE	Column Labels
Row Labels	2015
12 to 17 years	891224.5
18 to 34 years	5936015
35 to 49 years	5199219
50 to 64 years	5431178.9
65 years and over	3002152.2
Total, 12 years and over	20785426.1
Grand Total	41245215.7

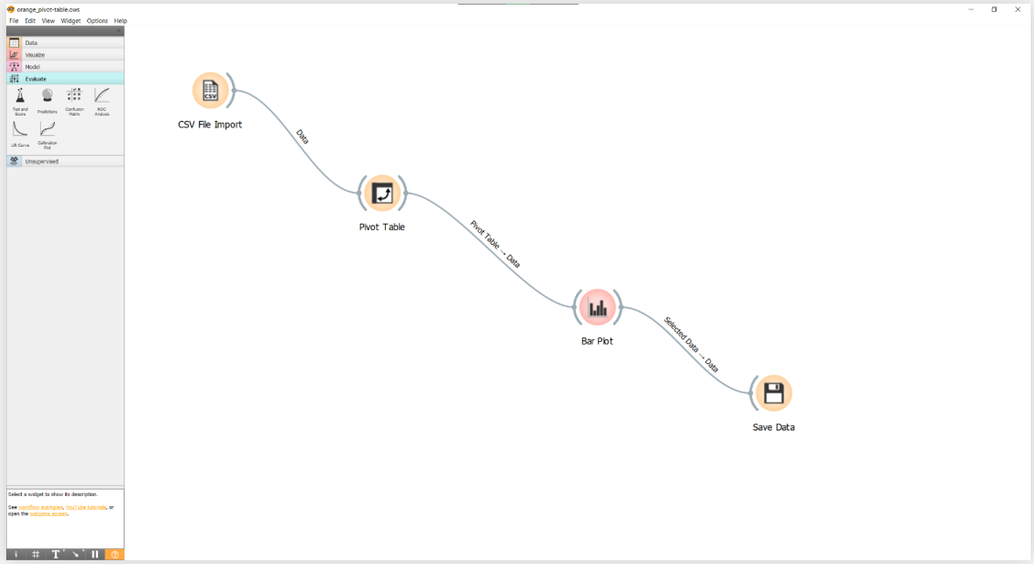
The process of creating a pivot table in Excel was very straightforward despite not having any prior experience.

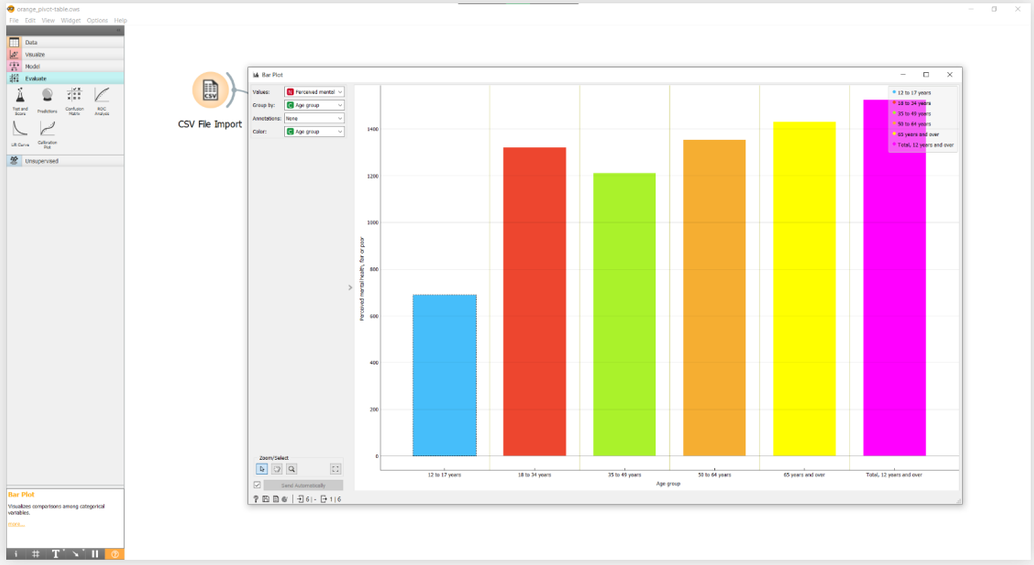
Once all of the data had been selected it was a matter of dragging and dropping the fields I wanted into either the columns, rows, filters, or values sections. Even if I didn't know where each field belonged at first, it was easy to figure it out as I could look at the live changes to the pivot table and make adjustments accordingly.

Similarly, creating a pivot chart from the pivot table was also very straightforward. All I had to do was create any graph and then start moving fields around, adding filters, or changing the type of graph. All of the changes were dynamic and I could see how changes in the fields would translate visually.

I really enjoyed using Excel for this task and I think I actually prefer it to the other tools, even Tableau, despite not choosing to use it going forward. I think that I will have to do another evaluation at a later point and compare it more directly with Tableau now that I've gotten familiar with the latter, especially how well Excels export settings measure up to Tableau.

Tools Evaluation Activity



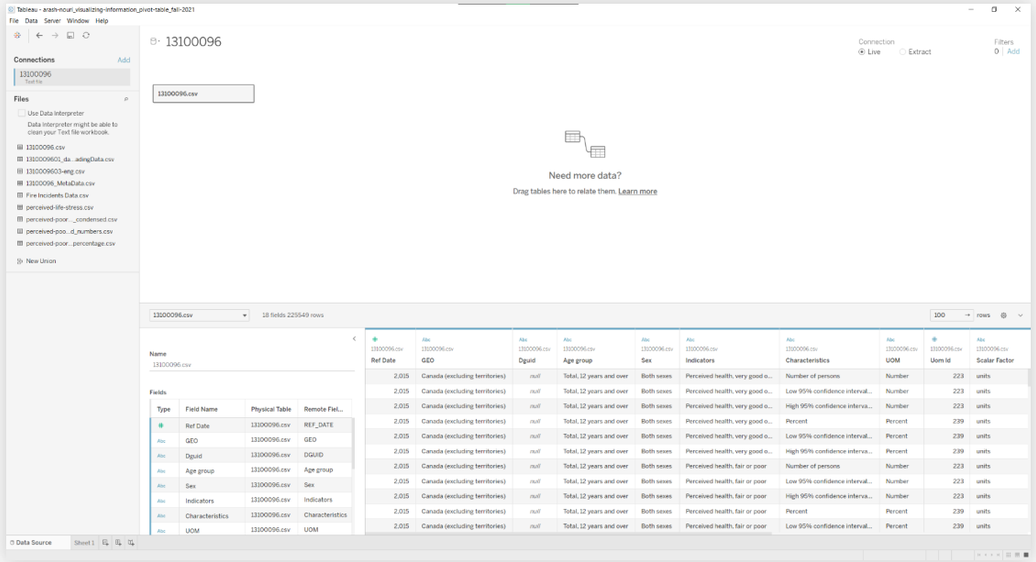


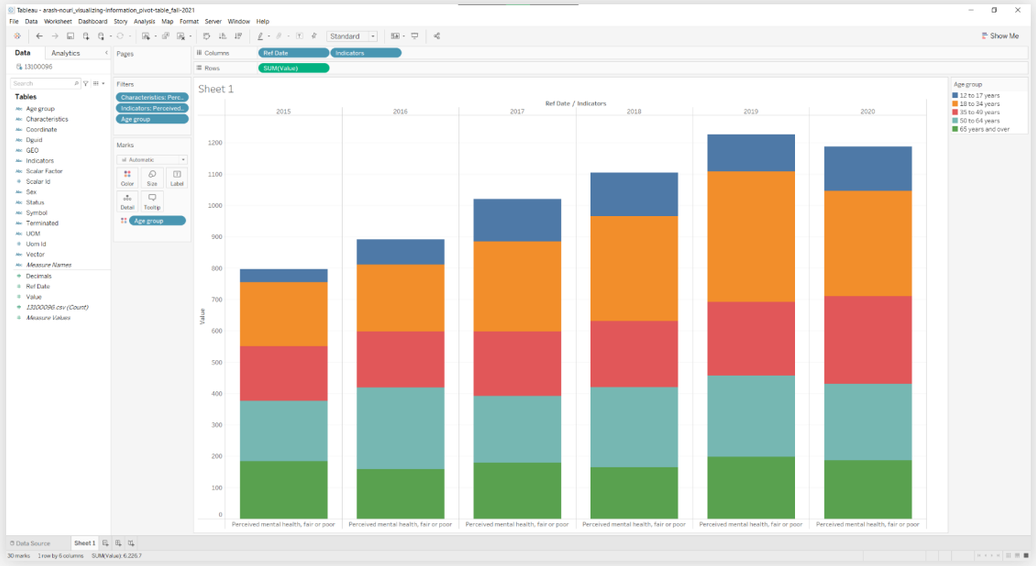
Orange was the most unique of the three tools I tried out.

I didn't like the results that I produced after spending a comparable amount of time with Orange compared to Excel or Tableau, and that ultimately influenced my decision to not pursue it further. I'm sure that if I spent more time watching tutorials and experimenting with the software I could produce much nice results that would be up to my standards.

There was one thing I really liked about Orange though, and that was the node-based workflow it used. It reminded me of similar workflows in tools like Blender, TouchDesigner, and Unreal Engine. I think that this might actually make it more intuitive to use once you start to experiment with more complex datasets and try to produce more detailed infographics, or want to produce several different types of graphs at once without flipping through different windows or workspaces.

Tools Evaluation Activity





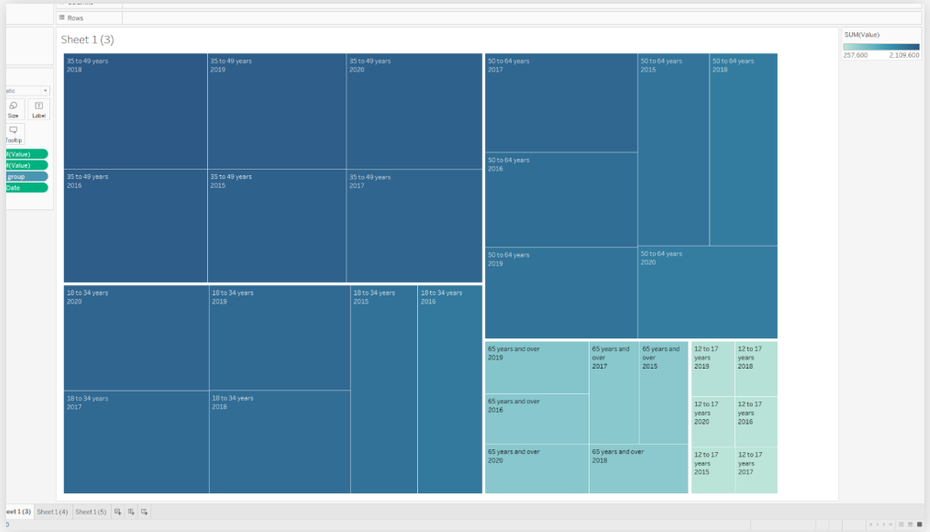
Using Tableau after learning how to create pivot tables and charts in Excel was a good experience because of the similarities. This allowed me to get up and going pretty quickly and start creating visuals early on without spending too much time learning the software.

Granted, there are a lot of tools and options in Tableau that I'll need to spend time exploring in-depth at another time, but creating a simple infographic comparable to what I could produce with Excel was relatively easy.

Despite deciding to use Tableau going forward for project 3 & 4, I still have some gripes about it. The biggest issue I found was with exporting graphs. Everything looks good in Tableau and you can spend time tweaking fonts, colours, and shapes, but you will still need to spend quite a bit of time tweaking the graph again once you export it as an editable PDF. This means opening each graph again in something like Illustrator and making sure the correct fonts are used and that all the type is properly aligned as it was in Tableau. This could be circumvented by exporting as a raster image, but then you lose any possibility of making further modifications. You'd have to nail the final look in Tableau and make sure the size you export in is of a sufficient resolution for your need.

Heuristic Evaluation Activity

Heuristic Evaluation Activity



Perceived life stress of Canadians, by age group

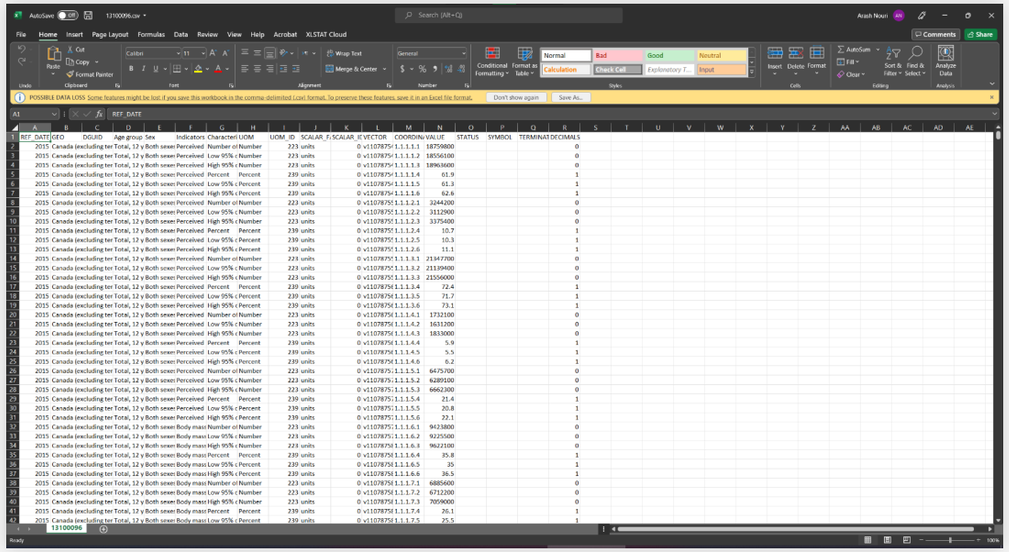
After comparing the area graph I generated in Tableau and discussing areas of improvement with my group, I began to make modifications that I believed would improve the heuristics of the graph and better adhere to the design principles that we've observed in graph examples we've seen so far.

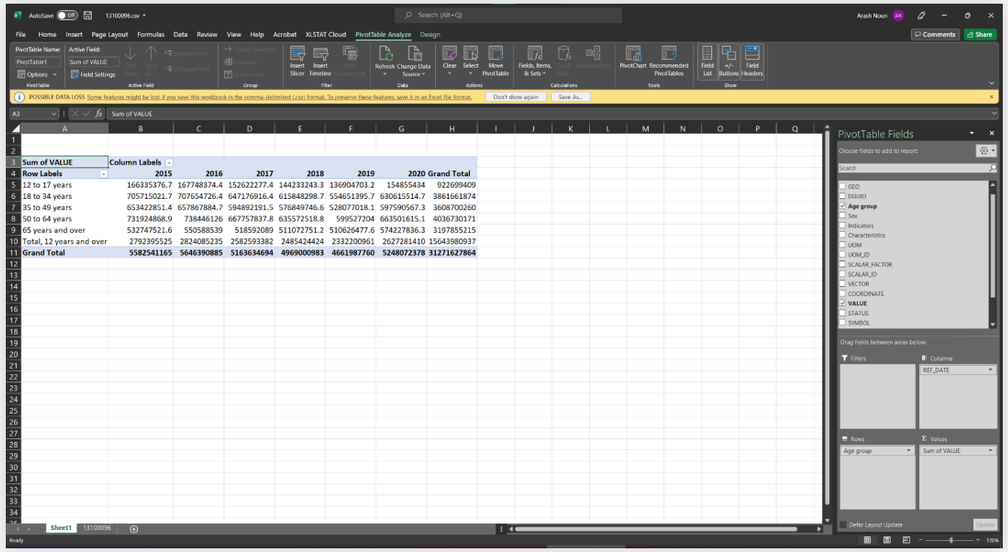
The first thing that came to mind was the typography. Not only did I change the default font used in Tableau to Inter, a font that renders very well at small sizes, I also made modifications after exporting the graph out of Tableau. When I went to edit the PDF I found several issues that were either inherent to Tableau or were a side-effect of the export process. Line height was all over the place, as well as tracking. The light weights also made the text difficult to read, so I increased them from around 200-300 to somewhere around 500-700. This, along with the larger text, increased line height, and tighter tracking considerably improved the legibility and contrast of the text against the solid colour backgrounds.

The other main issue with the original graph was the small legend placed in the upper right hand corner. At first I experimented with just increasing the size of it and fixing the text, but then I thought it would be much more visible and better located along the bottom of the graph. This way the size of the type could be increased, the gradient graphic could be considerably enlarged, and the viewer's eyes would take a much more natural path as they glance down quickly at the legend and back up and the graph.

Process

Process





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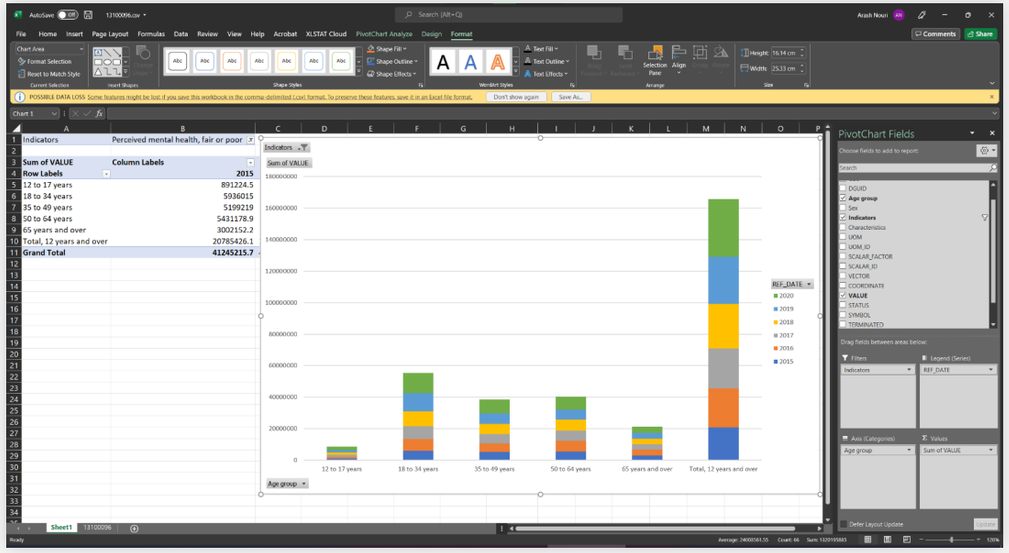

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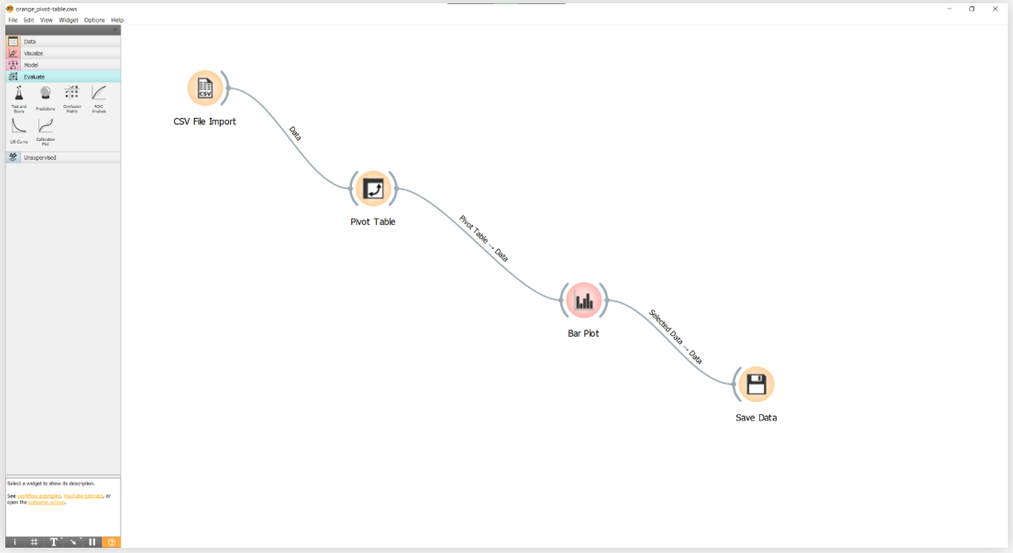

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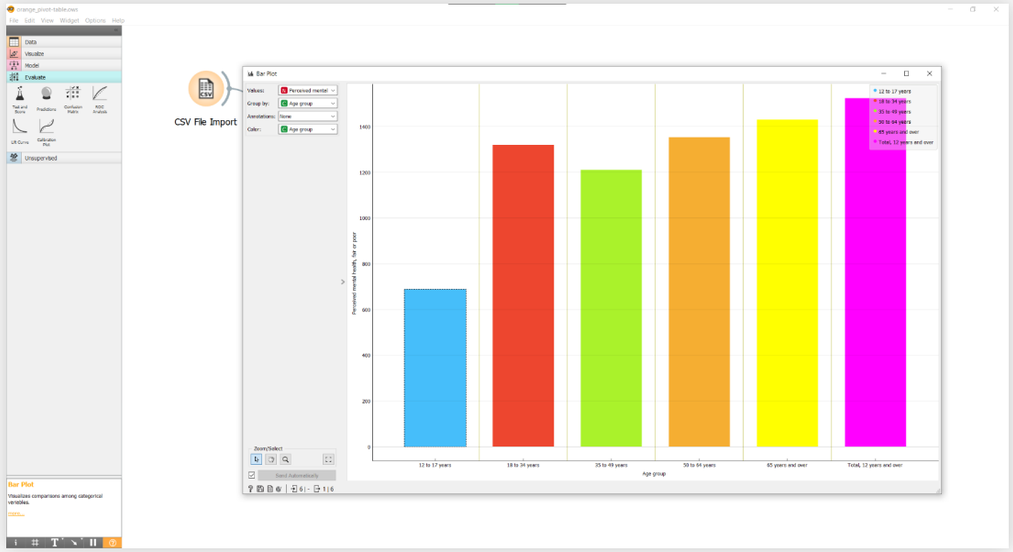
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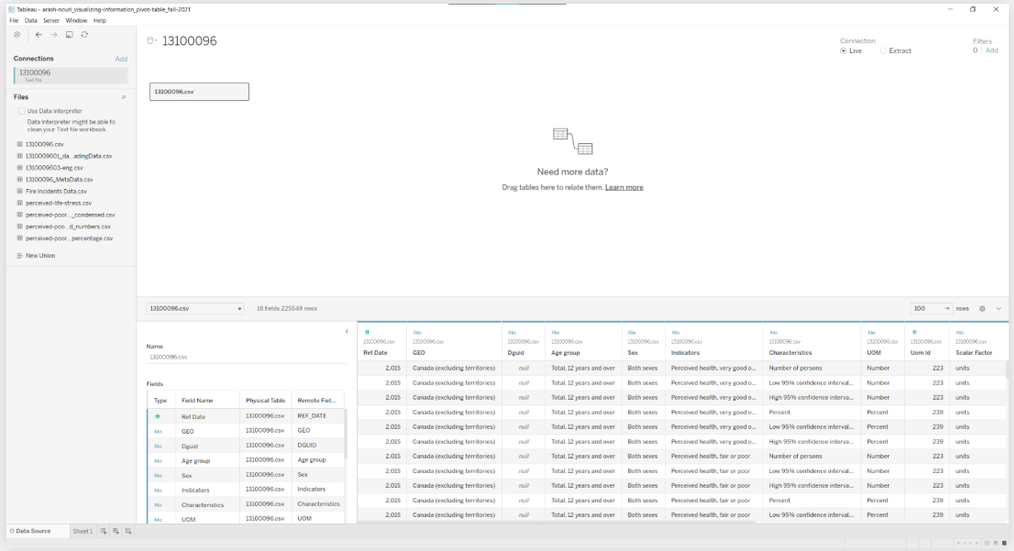
Bar Plot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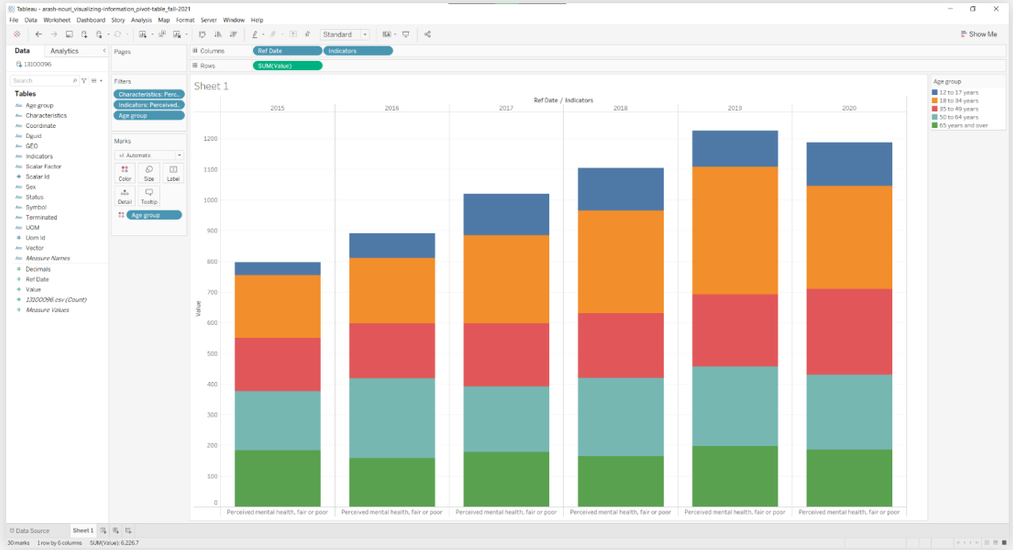
Need more data?
Drag tables here to relate them. Learn more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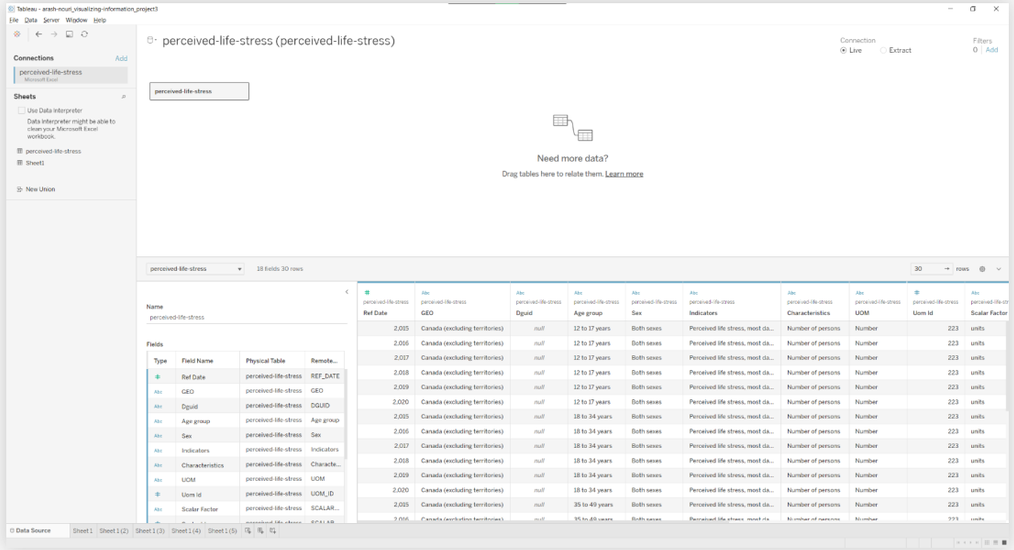
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Need more data?
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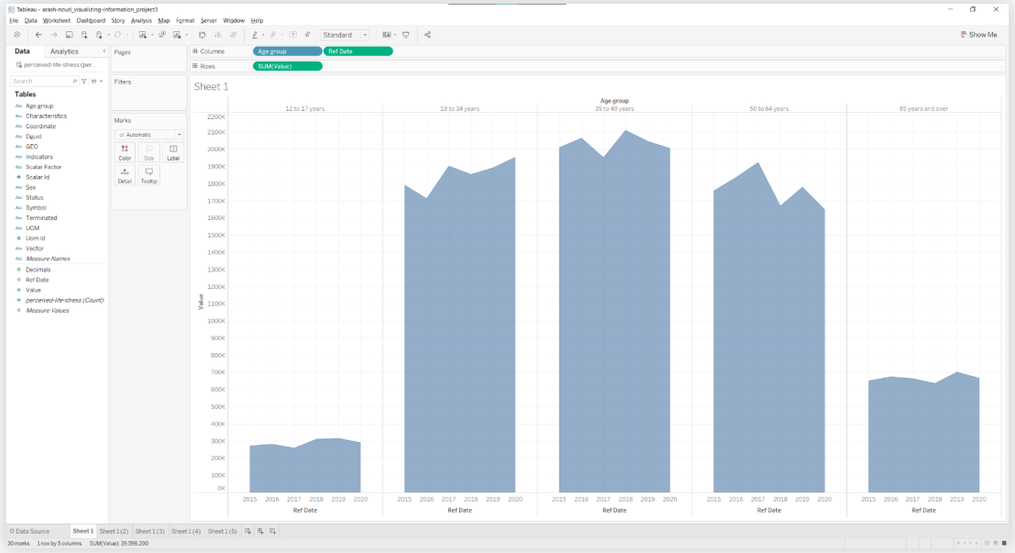
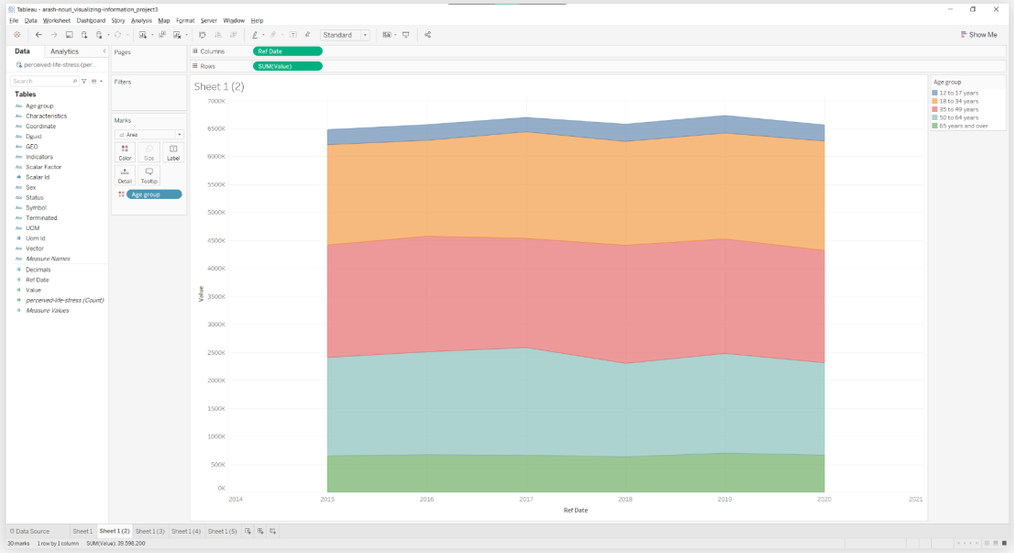
Process


Sheet 1
Age group
12 to 17 years
18 to 34 years
35 to 49 years
50 to 64 years
65 years and over
Value
Ref Date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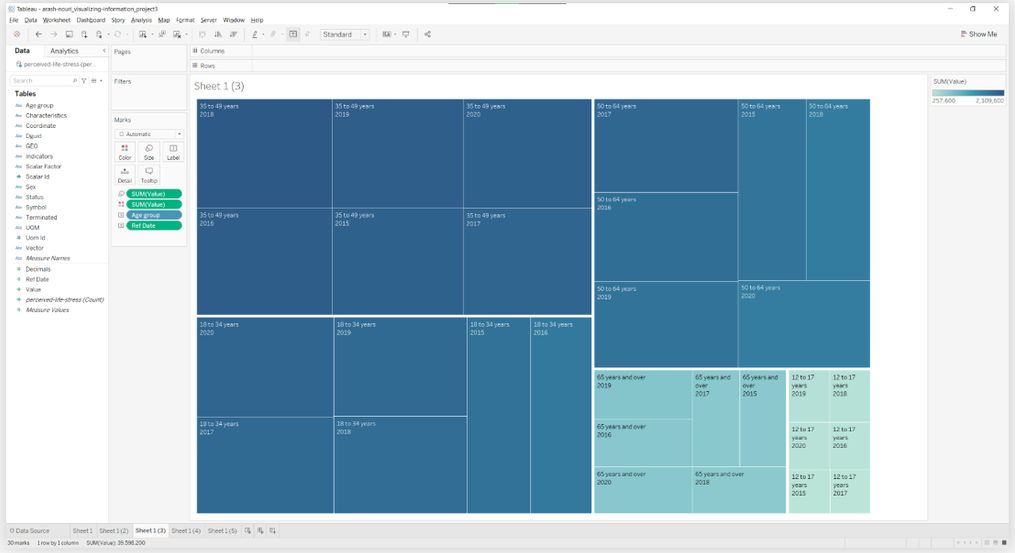
18 to 34 years
35 to 49 years
50 to 64 years
65 years and over
Value
Ref Date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SUM(Value)
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35 to 49 years 2019
35 to 49 years 2020
25 to 49 years 2016
35 to 49 years 2015
35 to 49 years 2017
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18 to 34 years 2019
18 to 34 years 2015
18 to 34 years 2016
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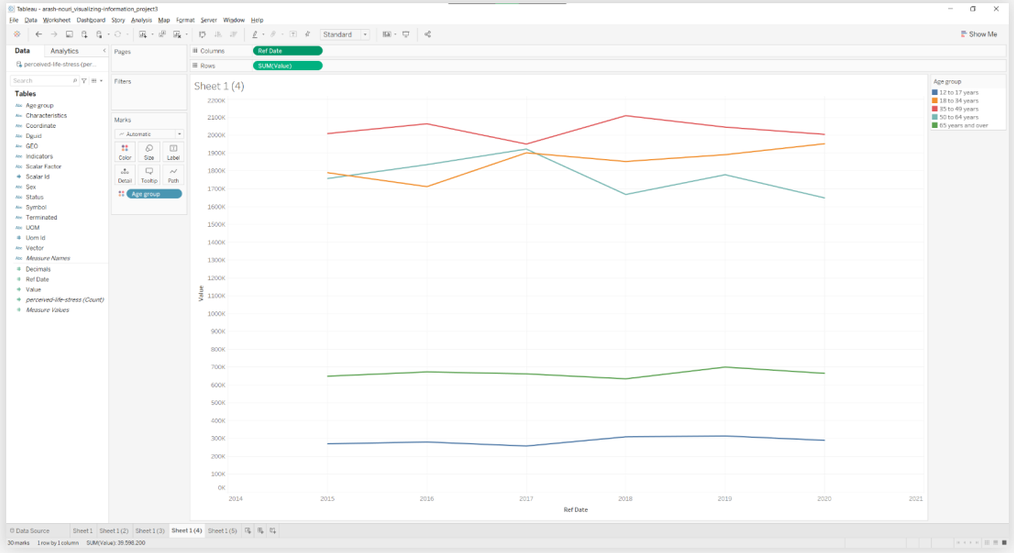
12 to 17 years 2017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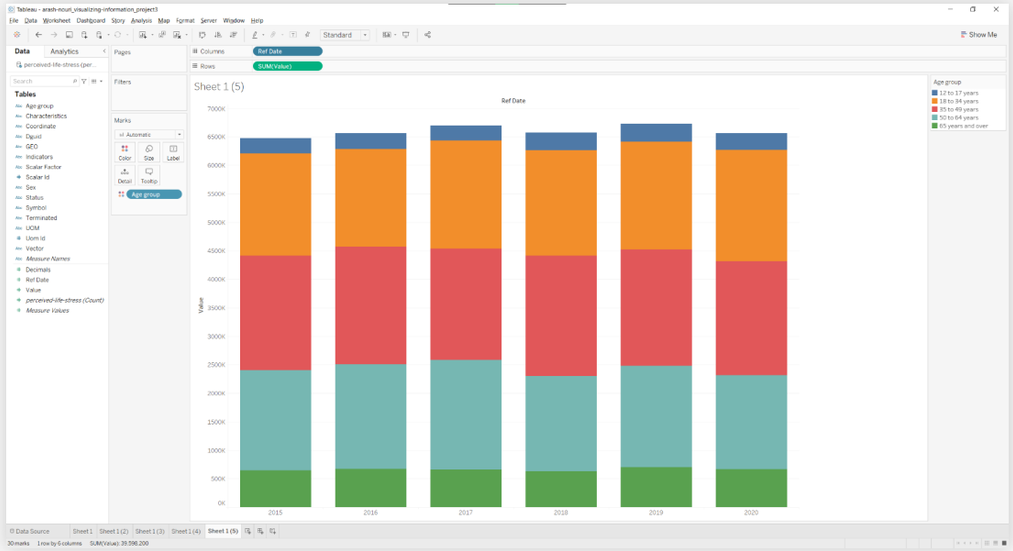
50 to 64 years
65 years and over
Value
Ref Date

Process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Value
Age group
12 to 17 years
18 to 34 years
35 to 49 years
50 to 64 years
65 years and over
2015
2016
2017
2018
2019
2020

References

References

Datasets

Table 13-10-0096-04 Perceived life stress, by age group, sourced from **Statistics Canada**

Table 13-10-0096-03 Perceived mental health, by age group, sourced from **Statistics Canada**

Table 13-10-0096-01 Health characteristics, annual estimates, sourced from **Statistics Canada**

Infographics

Food guide snapshot, sourced from **Canada's Food Guide**

Canadians Online in 2020, sourced from **Statistics Canada**