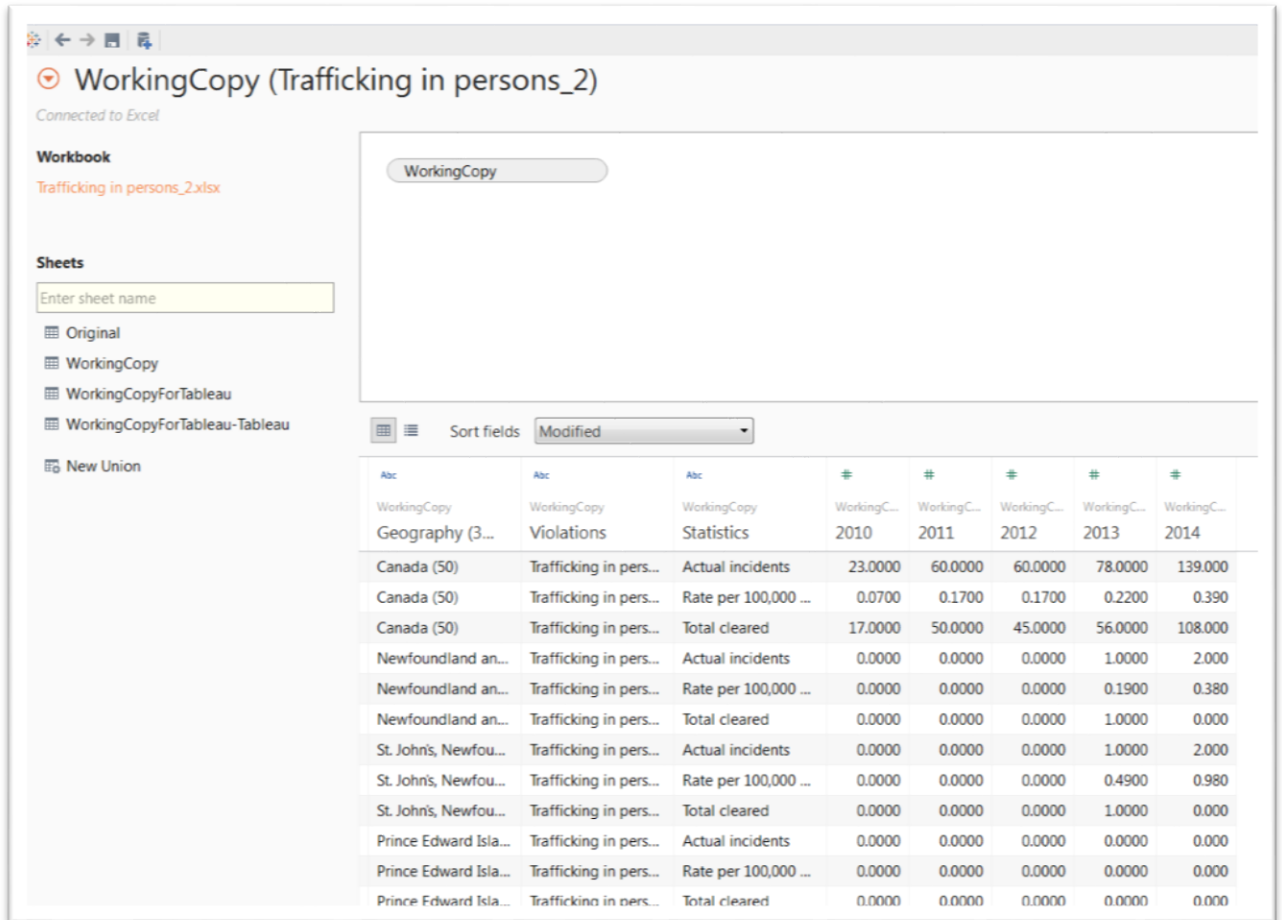


Reshaping data in Tableau 9.3

- 1) Make sure your dataset is clean, meaning the first row contains titles and there are no extraneous notes at the bottom of the table
- 2) Open Tableau and connect to your data, which should be in Excel format.
- 3) Drag the worksheet that contains your data into the “Drag sheets here” area
- 4) Hover your mouse over the worksheet tab in the “Drag sheets here” area to obtain an arrow to the right of the tab, click on it, and select the “Field names are in first row” option.
- 5) Your table should look something like this:



The screenshot shows the Tableau interface with a workbook named "WorkingCopy (Trafficking in persons_2)" connected to an Excel file "Trafficking in persons_2.xlsx". The left sidebar shows the "Sheets" pane with a list of sheets: "Original", "WorkingCopy", "WorkingCopyForTableau", "WorkingCopyForTableau-Tableau", and "New Union". The main view displays a table with the following data:

Abc	Abc	Abc	#	#	#	#	#
WorkingCopy	WorkingCopy	WorkingCopy	WorkingC...	WorkingC...	WorkingC...	WorkingC...	WorkingC...
Geography (3...	Violations	Statistics	2010	2011	2012	2013	2014
Canada (50)	Trafficking in pers...	Actual incidents	23.0000	60.0000	60.0000	78.0000	139.000
Canada (50)	Trafficking in pers...	Rate per 100,000 ...	0.0700	0.1700	0.1700	0.2200	0.390
Canada (50)	Trafficking in pers...	Total cleared	17.0000	50.0000	45.0000	56.0000	108.000
Newfoundland an...	Trafficking in pers...	Actual incidents	0.0000	0.0000	0.0000	1.0000	2.000
Newfoundland an...	Trafficking in pers...	Rate per 100,000 ...	0.0000	0.0000	0.0000	0.1900	0.380
Newfoundland an...	Trafficking in pers...	Total cleared	0.0000	0.0000	0.0000	1.0000	0.000
St. John's, Newfou...	Trafficking in pers...	Actual incidents	0.0000	0.0000	0.0000	1.0000	2.000
St. John's, Newfou...	Trafficking in pers...	Rate per 100,000 ...	0.0000	0.0000	0.0000	0.4900	0.980
St. John's, Newfou...	Trafficking in pers...	Total cleared	0.0000	0.0000	0.0000	1.0000	0.000
Prince Edward Isla...	Trafficking in pers...	Actual incidents	0.0000	0.0000	0.0000	0.0000	0.000
Prince Edward Isla...	Trafficking in pers...	Rate per 100,000 ...	0.0000	0.0000	0.0000	0.0000	0.000
Prince Edward Isla...	Trafficking in pers...	Total cleared	0.0000	0.0000	0.0000	0.0000	0.000

- 6) What we want to do is to pivot the table so the numbers are in rows instead of columns.

7) A Pivoted table, which is covered in Digging Deeper's online Excel appendix, would look like this:

	A	B	C	D
1	Geography	Incident_type	Year	Statistics
2	Newfoundland and Labrador	Actual incidents	2010	0
3	Newfoundland and Labrador	Actual incidents	2011	0
4	Newfoundland and Labrador	Actual incidents	2012	0
5	Newfoundland and Labrador	Actual incidents	2013	1
6	Newfoundland and Labrador	Actual incidents	2014	2
7	St. John's, Newfoundland and Labrador (4)	Actual incidents	2010	0
8	St. John's, Newfoundland and Labrador (4)	Actual incidents	2011	0
9	St. John's, Newfoundland and Labrador (4)	Actual incidents	2012	0
10	St. John's, Newfoundland and Labrador (4)	Actual incidents	2013	1
11	St. John's, Newfoundland and Labrador (4)	Actual incidents	2014	2
12	Prince Edward Island (51)	Actual incidents	2010	0
13	Prince Edward Island (51)	Actual incidents	2011	0
14	Prince Edward Island (51)	Actual incidents	2012	0
15	Prince Edward Island (51)	Actual incidents	2013	0
16	Prince Edward Island (51)	Actual incidents	2014	0
17	Nova Scotia	Actual incidents	2010	0
18	Nova Scotia	Actual incidents	2011	0
19	Nova Scotia	Actual incidents	2012	0
20	Nova Scotia	Actual incidents	2013	1
21	Nova Scotia	Actual incidents	2014	5
22	Halifax, Nova Scotia	Actual incidents	2010	0

8) We could do this in Excel. However, the newer versions of Tableau have simplified the task with a couple of mouse clicks.

- 9) In Tableau, select the columns that contain the years as headers and the incident numbers as violations.

Sort fields		Modified					
Abc	Abc	Abc	#	#	#	#	#
WorkingCopy	WorkingCopy	WorkingCopy	WorkingC...	WorkingC...	WorkingC...	WorkingC...	WorkingC...
Geography (3...	Violations	Statistics	2010	2011	2012	2013	2014
Canada (50)	Trafficking in pers...	Actual incidents	23.0000	60.0000	60.0000	78.0000	139.000
Canada (50)	Trafficking in pers...	Rate per 100,000 ...	0.0700	0.1700	0.1700	0.2200	0.390
Canada (50)	Trafficking in pers...	Total cleared	17.0000	50.0000	45.0000	56.0000	108.000
Newfoundland an...	Trafficking in pers...	Actual incidents	0.0000	0.0000	0.0000	1.0000	2.000
Newfoundland an...	Trafficking in pers...	Rate per 100,000 ...	0.0000	0.0000	0.0000	0.1900	0.380
Newfoundland an...	Trafficking in pers...	Total cleared	0.0000	0.0000	0.0000	1.0000	0.000
St. John's, Newfou...	Trafficking in pers...	Actual incidents	0.0000	0.0000	0.0000	1.0000	2.000
St. John's, Newfou...	Trafficking in pers...	Rate per 100,000 ...	0.0000	0.0000	0.0000	0.4900	0.980
St. John's, Newfou...	Trafficking in pers...	Total cleared	0.0000	0.0000	0.0000	1.0000	0.000
Prince Edward Isla...	Trafficking in pers...	Actual incidents	0.0000	0.0000	0.0000	0.0000	0.000
Prince Edward Isla...	Trafficking in pers...	Rate per 100,000 ...	0.0000	0.0000	0.0000	0.0000	0.000
Prince Edward Isla...	Trafficking in pers...	Total cleared	0.0000	0.0000	0.0000	0.0000	0.000
Nova Scotia	Trafficking in pers...	Actual incidents	0.0000	0.0000	0.0000	1.0000	5.000

- 10) Hover your cursor over the space just above the label "2014" to obtain an arrow.

- 11) Click on the arrow to obtain a drop-down menu, from which you'll choose the "pivot" option, which should produce a result that looks something like this:

Sort fields Modified					
Abc	#	Abc	Abc	Abc	
Pivot	Pivot	WorkingCopy	WorkingCopy	WorkingCopy	
Pivot field na...	Pivot field val...	Geography (3...	Violations	Statistics	
2010	23.000	Canada (50)	Trafficking in pers...	Actual incidents	
2010	0.070	Canada (50)	Trafficking in pers...	Rate per 100,000 ...	
2010	17.000	Canada (50)	Trafficking in pers...	Total cleared	
2010	0.000	Newfoundland an...	Trafficking in pers...	Actual incidents	
2010	0.000	Newfoundland an...	Trafficking in pers...	Rate per 100,000 ...	
2010	0.000	Newfoundland an...	Trafficking in pers...	Total cleared	
2010	0.000	St. John's, Newfou...	Trafficking in pers...	Actual incidents	
2010	0.000	St. John's, Newfou...	Trafficking in pers...	Rate per 100,000 ...	
2010	0.000	St. John's, Newfou...	Trafficking in pers...	Total cleared	
2010	0.000	Prince Edward Isla...	Trafficking in pers...	Actual incidents	
2010	0.000	Prince Edward Isla...	Trafficking in pers...	Rate per 100,000 ...	
2010	0.000	Prince Edward Isla...	Trafficking in pers...	Total cleared	


- 12) You'll notice that it resembles the Excel version in step 9.




- 13) Before we go any further, rename the two new columns by double clicking labels and typing new ones. I've called them "Year" and "Numbers".

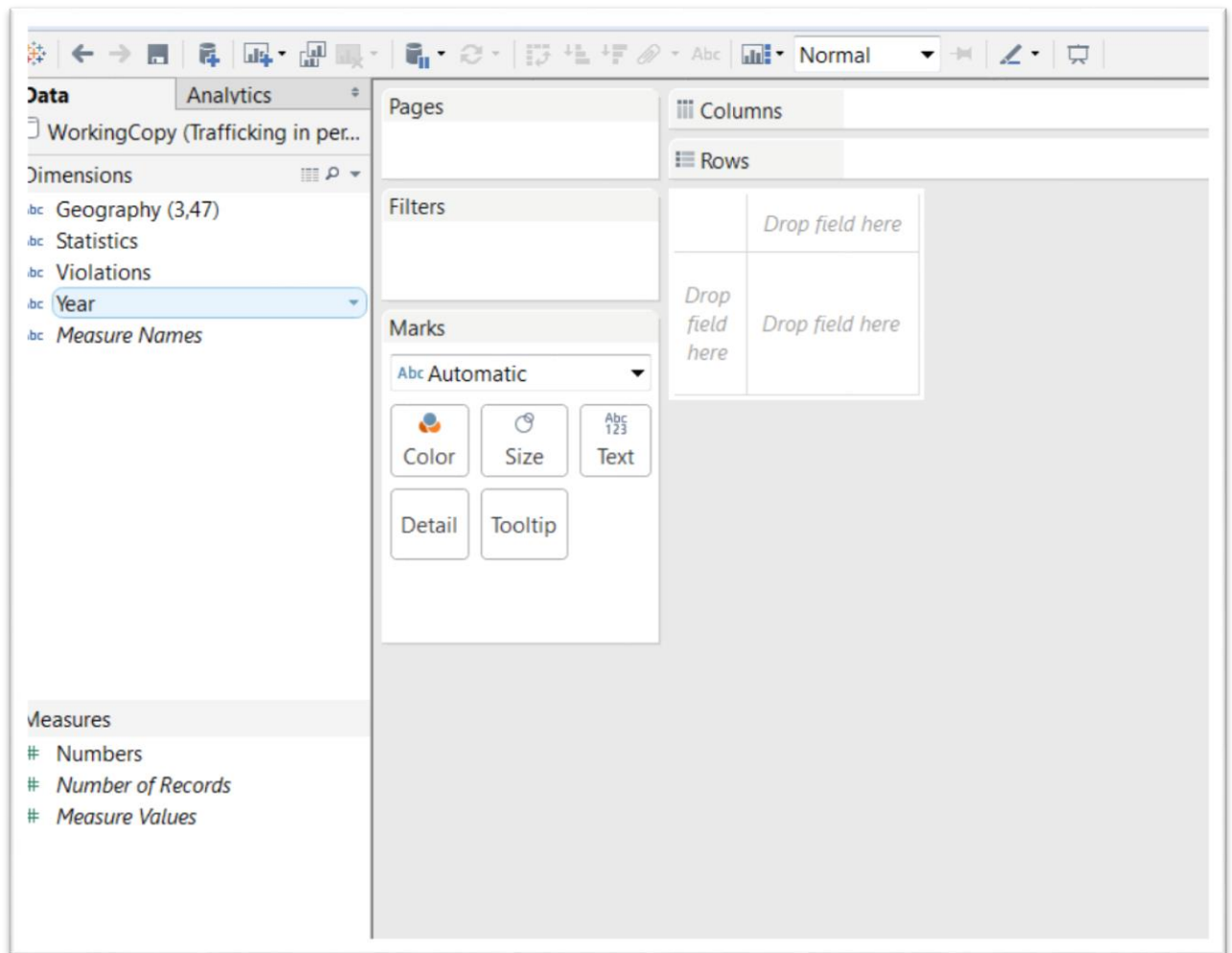
Sort fields Modified					
Abc	#	Abc	Abc	Abc	
Pivot	Pivot	WorkingCopy	WorkingCopy	WorkingCopy	
Year	Numbers	Geography (3...	Violations	Statistics	
2010	23.000	Canada (50)	Trafficking in pers...	Actual incidents	
2010	0.070	Canada (50)	Trafficking in pers...	Rate per 100,000 ...	
2010	17.000	Canada (50)	Trafficking in pers...	Total cleared	
2010	0.000	Newfoundland an...	Trafficking in pers...	Actual incidents	
2010	0.000	Newfoundland an...	Trafficking in pers...	Rate per 100,000 ...	
2010	0.000	Newfoundland an...	Trafficking in pers...	Total cleared	
2010	0.000	St. John's, Newfou...	Trafficking in pers...	Actual incidents	
2010	0.000	St. John's, Newfou...	Trafficking in pers...	Rate per 100,000 ...	

14) Once you're happy with the result, select the "Sheet 1" tab.

					Year	Numbers	Geography (3...	Violations	Statistics
					2010	23.000	Canada (50)	Trafficking in pers...	Actual incidents
					2010	0.070	Canada (50)	Trafficking in pers...	Rate per 100,000 ...
					2010	17.000	Canada (50)	Trafficking in pers...	Total cleared
					2010	0.000	Newfoundland an...	Trafficking in pers...	Actual incidents
					2010	0.000	Newfoundland an...	Trafficking in pers...	Rate per 100,000 ...
					2010	0.000	Newfoundland an...	Trafficking in pers...	Total cleared
					2010	0.000	St. John's, Newfou...	Trafficking in pers...	Actual incidents
					2010	0.000	St. John's, Newfou...	Trafficking in pers...	Rate per 100,000 ...
					2010	0.000	St. John's, Newfou...	Trafficking in pers...	Total cleared
					2010	0.000	Prince Edward Isla...	Trafficking in pers...	Actual incidents
					2010	0.000	Prince Edward Isla...	Trafficking in pers...	Rate per 100,000 ...
					2010	0.000	Prince Edward Isla...	Trafficking in pers...	Total cleared
					2010	0.000	Nova Scotia	Trafficking in pers...	Actual incidents

 Go to Worksheet ×

Data Source **Sheet 1**   



- 15) “Dimensions” in the data menu are for columns, such as names, that contain text. “Measures” house numbers or integers. In this case, the only integers are the number of recorded violations for each year. Everything else is text, including the “Year” column, which we want Tableau to interpret as text. Otherwise it will want to perform math on the numbers, where for this visualization we want to group the violations by year, just like we would in a pivot table.

16) Drag the Geography field into the “Drop field here” section to left in the screenshot above.

The screenshot shows a Tableau interface with the following components:

- Pages**: Empty shelf.
- Columns**: Contains the field **Geography (3,47)**.
- Rows**: Empty shelf.
- Filters**: Empty shelf.
- Marks**: Contains the mark type **Automatic**. Below it are buttons for **Color**, **Size**, **Text**, **Detail**, and **Tooltip**.

The main view displays a list of Canadian locations, each with a small 'Abc' icon to its right. The locations are:

Location	Abc
Abbotsford-Mission, Br..	Abc
Alberta	Abc
Barrie, Ontario (8)	Abc
Brantford, Ontario (8)	Abc
British Columbia (28,41..	Abc
Calgary, Alberta	Abc
Canada (50)	Abc
Edmonton, Alberta	Abc
Guelph, Ontario (8)	Abc
Halifax, Nova Scotia	Abc
Hamilton, Ontario (33)	Abc
Kelowna, British Colum..	Abc
Kingston, Ontario (8)	Abc
Kitchener-Cambridge-..	Abc
London, Ontario	Abc
Manitoba	Abc
Moncton, New Brunswi..	Abc
Montréal, Quebec (38,5..	Abc
New Brunswick	Abc
Newfoundland and Lab..	Abc
Northwest Territories (1..	Abc
Nova Scotia	Abc
Nunavut (15)	Abc
Ontario (7,67)	Abc
Ottawa-Gatineau, Ontar..	Abc
Ottawa-Gatineau, Ontar..	Abc
Ottawa-Gatineau, Queb..	Abc
Peterborough, Ontario (..	Abc
Prince Edward Island (5	Abc

17) Drag the Numbers (the name I've given to the number of violations) into the area to the right of "Geography".

The screenshot shows a Tableau workspace titled "WorkingCopy (Trafficking in per...". The interface includes a Dimensions pane on the left with "Geography (3,47)" selected, and a Measures pane with "Numbers" selected. The Marks card shows "SUM(Numbers)" as the aggregation. The Columns shelf contains "Geography (3,47)". The Rows shelf is empty. The main view displays a table of data.

Geography (3,47)	
Abbotsford-Mission, Br..	0.0
Alberta	45.6
Barrie, Ontario (8)	7.4
Brantford, Ontario (8)	0.0
British Columbia (28,41..	63.8
Calgary, Alberta	18.8
Canada (50)	637.0
Edmonton, Alberta	14.6
Guelph, Ontario (8)	2.8
Halifax, Nova Scotia	7.0
Hamilton, Ontario (33)	22.7
Kelowna, British Colum..	0.0
Kingston, Ontario (8)	0.0
Kitchener-Cambridge-..	17.5
London, Ontario	1.2
Manitoba	10.4
Moncton, New Brunswi..	0.0
Montréal, Quebec (38,5..	73.0
New Brunswick	0.0
Newfoundland and Lab..	4.6
Northwest Territories (1..	3.3
Nova Scotia	9.6
Nunavut (15)	4.8
Ontario (7,67)	394.6
Ottawa-Gatineau, Ontar..	79.9
Ottawa-Gatineau, Ontar..	81.9
Ottawa-Gatineau, Queb..	3.6

- 18) Drag the “Year” into the blank square above the Numbers, or the “Columns” section in the menu above the table.

The screenshot shows the Tableau Analytics interface. On the left, the 'Data' pane lists dimensions: Geography (3,47), Statistics, Violations, Year, and Measure Names. The 'Measures' pane lists: Numbers, Number of Records, and Measure Values. The 'Columns' shelf contains 'Year' and the 'Rows' shelf contains 'Geography (3,47)'. The 'Marks' shelf is set to 'SUM(Numbers)'. The main view displays a table with the following data:

Geography (3,47)	2010	2011	2012	2013	2014
Abbotsford-Mission, Br..	0.0	0.0	0.0	0.0	0.0
Alberta	5.1	4.1	3.1	21.3	12.2
Barrie, Ontario (8)	0.0	0.0	0.0	2.5	5.0
Brantford, Ontario (8)	0.0	0.0	0.0	0.0	0.0
British Columbia (28,41..	3.1	35.4	15.2	3.0	7.1
Calgary, Alberta	1.1	2.1	1.1	11.4	3.1
Canada (50)	40.1	110.2	105.2	134.2	247.4
Edmonton, Alberta	1.1	0.0	2.1	8.3	3.1
Guelph, Ontario (8)	0.0	0.0	0.0	0.0	2.8
Halifax, Nova Scotia	0.0	0.0	0.0	2.2	4.7
Hamilton, Ontario (33)	0.0	5.4	9.7	0.0	7.5
Kelowna, British Colum..	0.0	0.0	0.0	0.0	0.0
Kingston, Ontario (8)	0.0	0.0	0.0	0.0	0.0
Kitchener-Cambridge...	4.4	0.0	0.0	3.4	9.7
London, Ontario	0.0	1.2	0.0	0.0	0.0
Manitoba	0.0	0.0	0.0	5.2	5.2
Moncton, New Brunswi..	0.0	0.0	0.0	0.0	0.0
Montréal, Quebec (38,5..	7.1	19.3	8.1	15.2	23.4
New Brunswick	0.0	0.0	0.0	0.0	0.0
Newfoundland and Lab..	0.0	0.0	0.0	2.2	2.4
Northwest Territories (1..	0.0	3.3	0.0	0.0	0.0
Nova Scotia	0.0	0.0	0.0	2.1	7.5
Nunavut (15)	0.0	0.0	0.0	4.8	0.0
Ontario (7,67)	23.1	49.2	76.3	81.4	164.7
Ottawa-Gatineau, Ontar..	2.1	8.4	12.7	19.2	37.4
Ottawa-Gatineau, Ontar..	2.1	8.3	12.6	18.9	40.0
Ottawa-Gatineau, Queb..	0.0	0.0	0.0	0.0	3.6
Peterborough, Ontario (...)	0.0	0.0	2.8	0.0	0.0
Prince Edward Island (5..	0.0	0.0	0.0	0.0	0.0
Quebec (50,62)	9.1	19.1	11.1	18.1	50.4
Québec, Quebec	0.0	0.0	3.3	3.3	21.4

- 19) These numbers are compilations of all the violation types. We want to filter the data for one of the three options: Actual incidents; Rate per 100,000 population, or Total cleared. (NOTE: You may have more options, depending on what you downloaded from the StatsCan website.)

- 20) Drag the column that contains the violation categories (In this case, “Statistics”) into the “Filters” area to the immediate right, which produces a dialog box.

The screenshot shows the Tableau Desktop interface. On the left, the 'Columns' shelf contains 'Year' and the 'Rows' shelf contains 'Geography (3,47)'. The 'Marks' shelf is set to 'SUM(Numbers)'. A data table is displayed with columns for Geography, 2010, and 2011. The 'Statistics' column is highlighted in blue. A dialog box titled 'Filter [Statistics]' is open, showing the 'General' tab. The 'Select from list' radio button is selected. The list contains three items: 'Actual incidents', 'Rate per 100,000 population', and 'Total cleared'. The 'Actual incidents' item is selected. The 'All' button is highlighted. The 'Summary' section shows 'Field: [Statistics]', 'Selection: Selected 0 of 3 values', 'Wildcard: All', 'Condition: None', and 'Limit: None'. The 'Apply' button is highlighted.

Geography (3,47)	2010	2011
Abbotsford-Mission, Br..	0.0	0.0
Alberta	5.1	4.0
Barrie, Ontario (8)	0.0	0.0
Brantford, Ontario (8)	0.0	0.0
British Columbia (28,41..	3.1	3.9
Calgary, Alberta	1.1	2.0
Canada (50)	40.1	110.0
Edmonton, Alberta	1.1	0.0
Guelph, Ontario (8)	0.0	0.0
Halifax, Nova Scotia	0.0	0.0
Hamilton, Ontario (33)	0.0	0.0
Kelowna, British Colum..	0.0	0.0
Kingston, Ontario (8)	0.0	0.0
Kitchener-Cambridge...	4.4	0.0
London, Ontario	0.0	1.0
Manitoba	0.0	0.0
Moncton, New Brunswi..	0.0	0.0
Montréal, Quebec (38,5..	7.1	19.0
New Brunswick	0.0	0.0
Newfoundland and Lab..	0.0	0.0
Northwest Territories (1..	0.0	0.0
Nova Scotia	0.0	0.0
Nunavut (15)	0.0	0.0
Ontario (7,67)	23.1	49.0
Ottawa-Gatineau, Ontar..	2.1	8.0
Ottawa-Gatineau, Ontar..	2.1	8.0
Ottawa-Gatineau, Queb..	0.0	0.0
Peterborough, Ontario (..	0.0	0.0
Prince Edward Island (5..	0.0	0.0
Quebec (50,62)	9.1	19.0
Québec, Quebec	0.0	0.0
Regina, Saskatchewan	0.0	0.0
Saguenay, Quebec (5,55)	0.0	0.0
Saint John, New Bruns..	0.0	0.0
Saskatchewan (11)	0.0	2.1

- 21) Choose “Actual incidents”, “Apply”, and then “OK”.
- 22) Now we can sort the numbers for each year in ascending or descending order. We can also filter the year column for just one year by hovering your cursor over the “Year” tab next to “Columns” until you see a black arrow, clicking on the arrow to obtain a drop-down menu, and then

selecting the filter option, which produces a dialog box.

The screenshot shows the Tableau Desktop interface. The main view is a data table with columns for Geography, Year, and various measures. The 'Columns' shelf contains 'Year' and the 'Rows' shelf contains 'Geography (3,47)'. A dialog box titled 'Filter [Year]' is open, showing the 'General' tab. The 'Select from list' radio button is selected, and a list of years (2010, 2011, 2012, 2013, 2014) is displayed with checkboxes. The 'Summary' section shows 'Field: [Year]', 'Selection: Selected 5 of 5 values', 'Wildcard: All', 'Condition: None', and 'Limit: None'. The 'OK' button is highlighted.

Geography (3,47)	2010	2011	2012	2013	2014
Abbotsford-Mission, Br...	0.0	0.0	0.0	0.0	0.0
Alberta	4.0	0.0	0.0	0.0	0.0
Barrie, Ontario (8)	0.0	0.0	0.0	0.0	0.0
Brantford, Ontario (8)	0.0	0.0	0.0	0.0	0.0
British Columbia (28,41...	3.0	1.0	0.0	0.0	0.0
Calgary, Alberta	1.0	0.0	0.0	0.0	0.0
Canada (50)	23.0	6.0	0.0	0.0	0.0
Edmonton, Alberta	1.0	0.0	0.0	0.0	0.0
Guelph, Ontario (8)	0.0	0.0	0.0	0.0	0.0
Halifax, Nova Scotia	0.0	0.0	0.0	0.0	0.0
Hamilton, Ontario (33)	0.0	0.0	0.0	0.0	0.0
Kelowna, British Colum...	0.0	0.0	0.0	0.0	0.0
Kingston, Ontario (8)	0.0	0.0	0.0	0.0	0.0
Kitchener-Cambridge...	2.0	0.0	0.0	0.0	0.0
London, Ontario	0.0	0.0	0.0	0.0	0.0
Manitoba	0.0	0.0	0.0	0.0	0.0
Moncton, New Brunswi...	0.0	0.0	0.0	0.0	0.0
Montréal, Quebec (38,5...	4.0	1.0	0.0	0.0	0.0
New Brunswick	0.0	0.0	0.0	0.0	0.0
Newfoundland and Lab...	0.0	0.0	0.0	0.0	0.0
Northwest Territories (1...	0.0	0.0	0.0	0.0	0.0
Nova Scotia	0.0	0.0	0.0	0.0	0.0
Nunavut (15)	0.0	0.0	0.0	0.0	0.0
Ontario (7,67)	11.0	2.0	0.0	0.0	0.0
Ottawa-Gatineau, Ontar...	1.0	0.0	0.0	0.0	0.0
Ottawa-Gatineau, Ontar...	1.0	0.0	0.0	0.0	0.0
Ottawa-Gatineau, Queb...	0.0	0.0	0.0	0.0	0.0
Peterborough, Ontario (...)	0.0	0.0	0.0	0.0	0.0
Prince Edward Island (5...	0.0	0.0	0.0	0.0	0.0
Quebec (50,62)	5.0	1.0	0.0	0.0	0.0
Québec, Quebec	0.0	0.0	0.0	0.0	0.0
Regina, Saskatchewan	0.0	0.0	0.0	0.0	0.0
Saguenay, Quebec (5,55)	0.0	0.0	0.0	0.0	0.0
Saint John, New Bruns...	0.0	0.0	0.0	0.0	0.0
Saskatchewan (11)	0.0	1.0	0.0	0.0	0.0

23) Select 2014, Apply and OK.

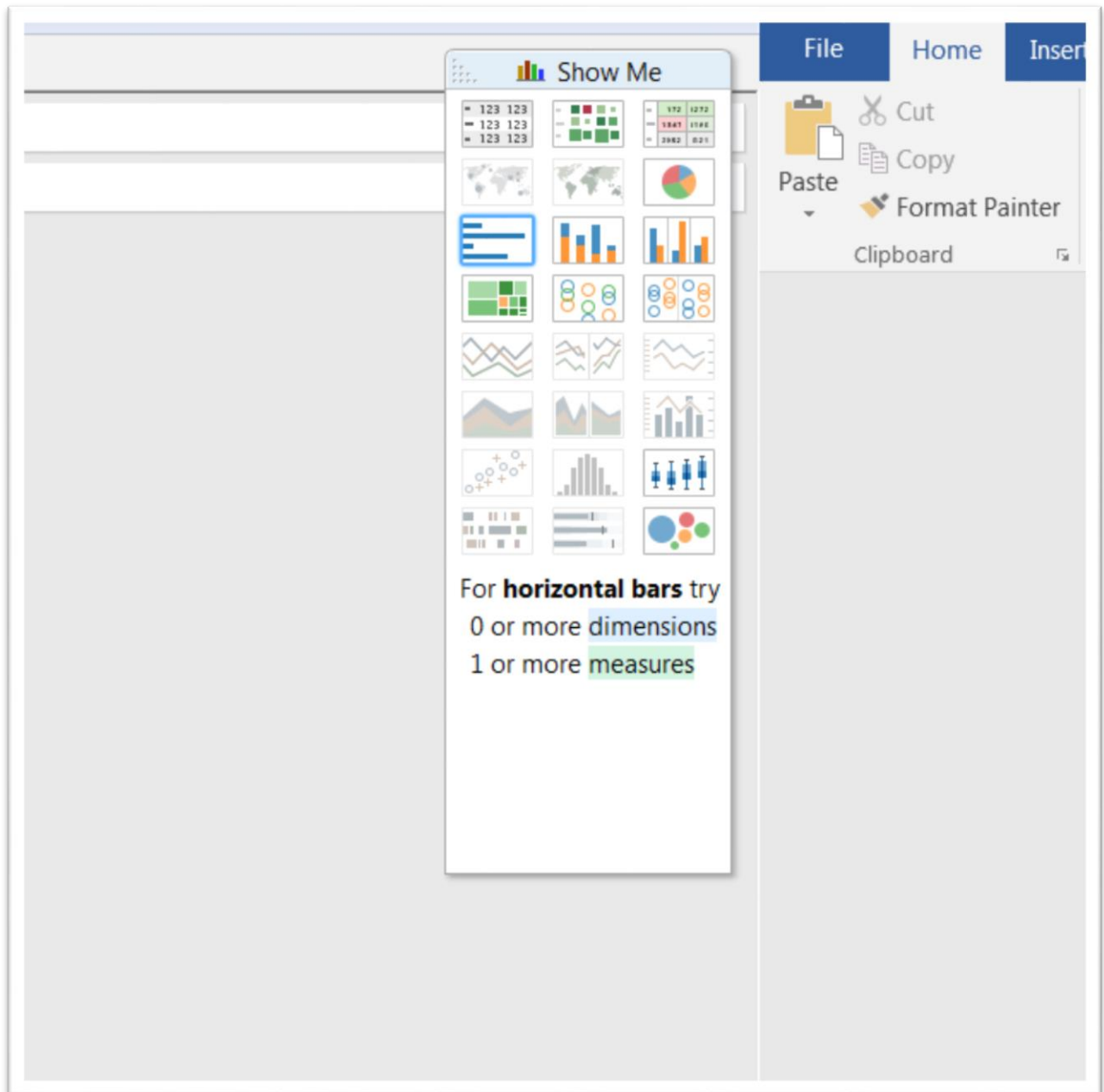
The screenshot shows a Tableau worksheet with the following configuration:

- Columns:** Year
- Rows:** Geography (3,47)
- Marks:** SUM(Numbers)
- Filters:** Statistics: Actual incidence.., Year: 2014

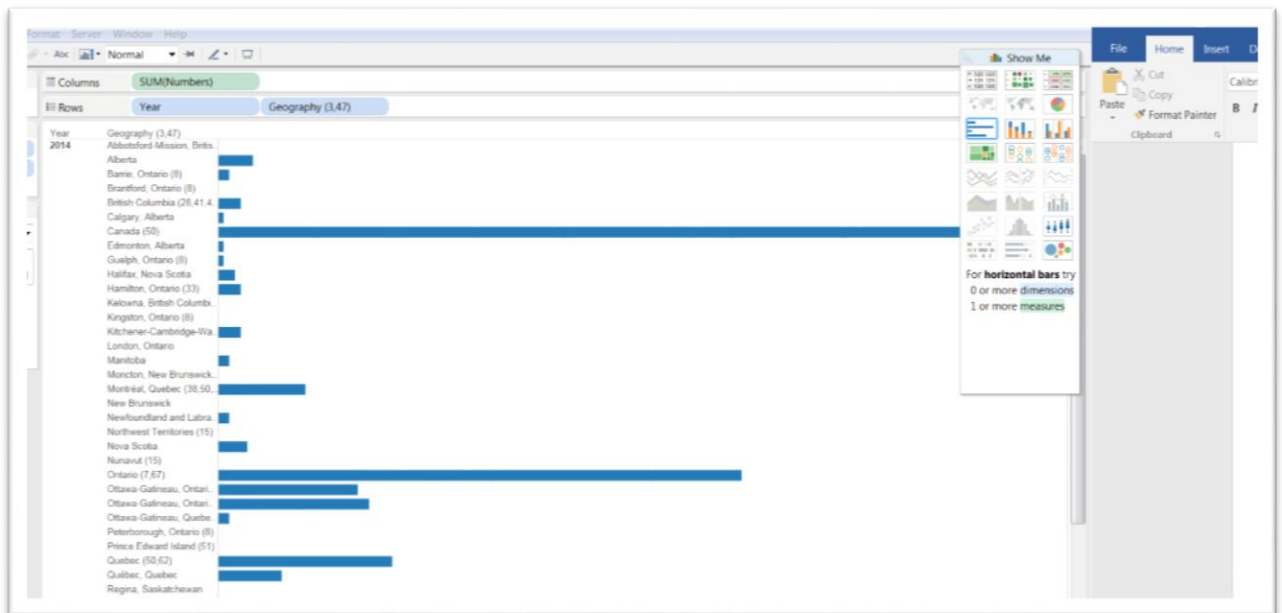
The resulting table displays the sum of numbers for each geography in 2014. The data is as follows:

Geography (3,47)	Year	2014
Abbotsford-Mission, Br..	2014	0.0
Alberta	2014	6.0
Barrie, Ontario (8)	2014	2.0
Brantford, Ontario (8)	2014	0.0
British Columbia (28,41..	2014	4.0
Calgary, Alberta	2014	1.0
Canada (50)	2014	139.0
Edmonton, Alberta	2014	1.0
Guelph, Ontario (8)	2014	1.0
Halifax, Nova Scotia	2014	3.0
Hamilton, Ontario (33)	2014	4.0
Kelowna, British Colum..	2014	0.0
Kingston, Ontario (8)	2014	0.0
Kitchener-Cambridge...	2014	4.0
London, Ontario	2014	0.0
Manitoba	2014	2.0
Moncton, New Brunswi..	2014	0.0
Montréal, Quebec (38,5..	2014	15.0
New Brunswick	2014	0.0
Newfoundland and Lab..	2014	2.0
Northwest Territories (1..	2014	0.0
Nova Scotia	2014	5.0
Nunavut (15)	2014	0.0
Ontario (7,67)	2014	90.0

24) To make the visualization more interesting, you're presented with a number of options in the floating "Show Me" table to the right.



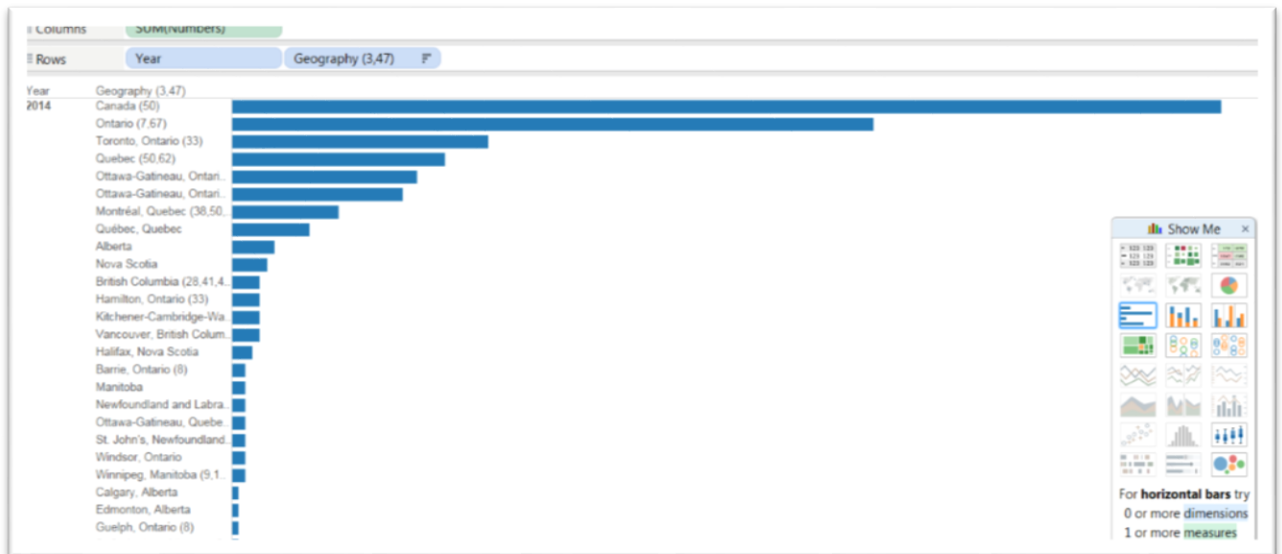
25) Select the blue horizontal bar chart.



26) Sort the values in descending order by hovering your cursor of the label under the table's X axis (at the bottom)



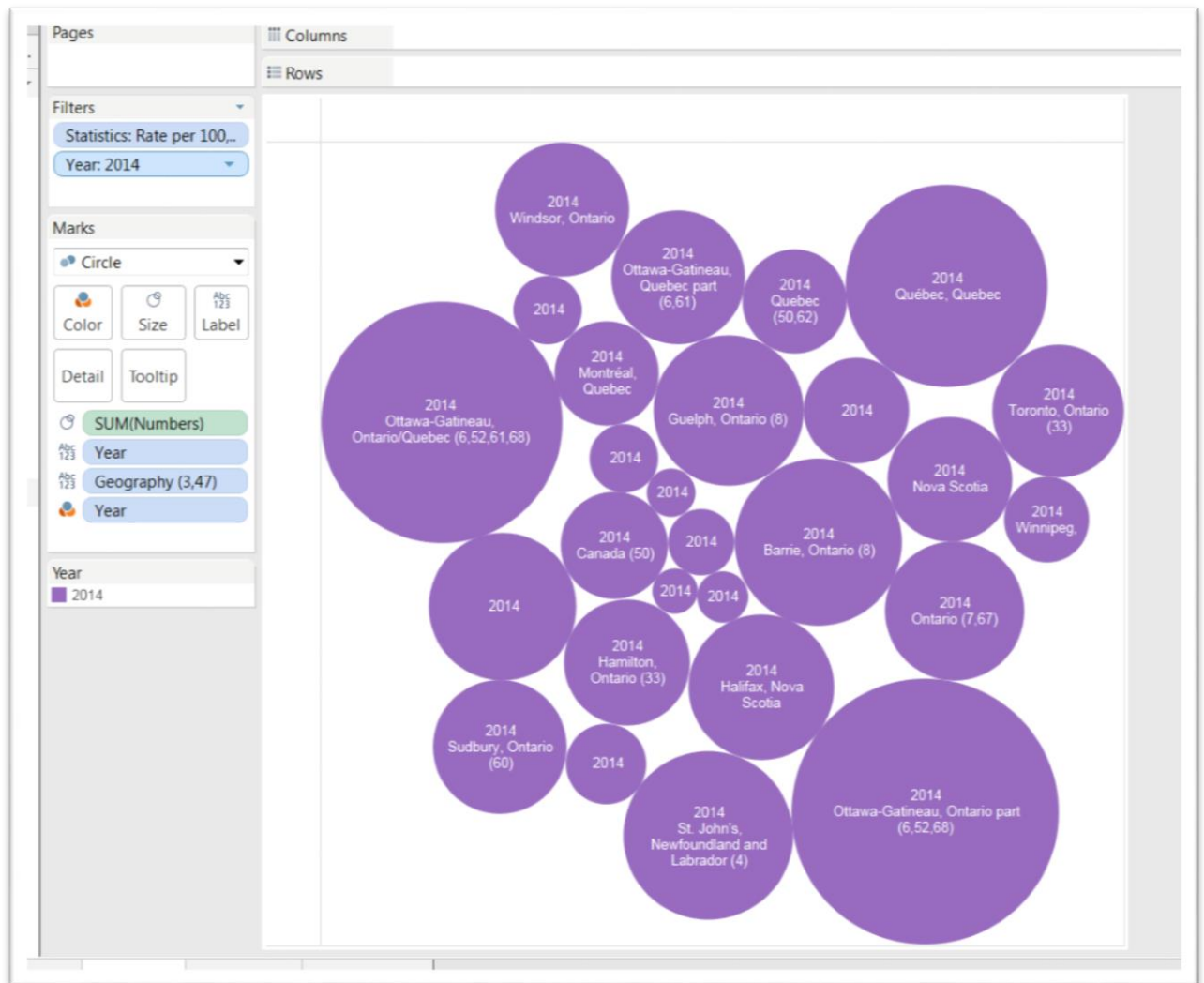
27) Until a small icon with horizontal bars appears with an arrow pointing downwards. Click on the icon.



28) If you're happy with the result, name the worksheet and save the Workbook, something you should be doing after regularly.

29) Open a new worksheet and repeat the process, this time for "Rate per 100,000."

30) This time, instead of using a bar chart to visualize the result, use circles.

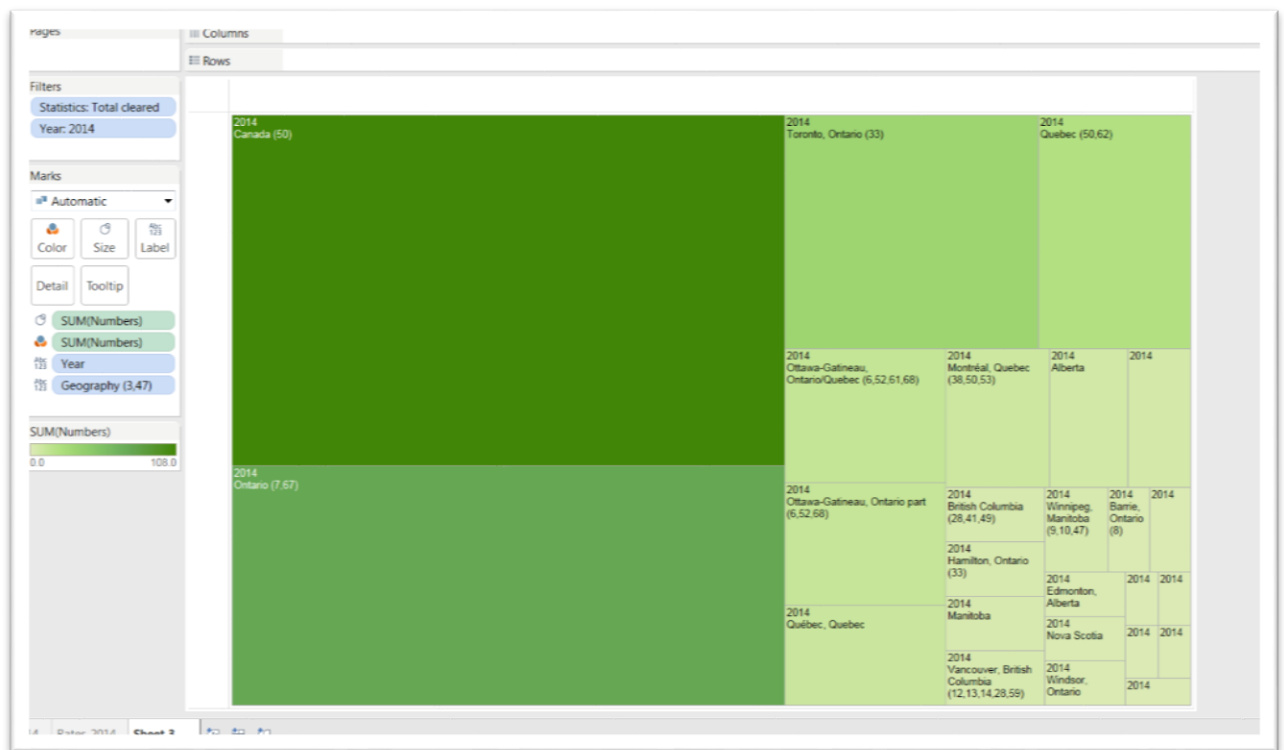


31) Rename your worksheet and open a new one.

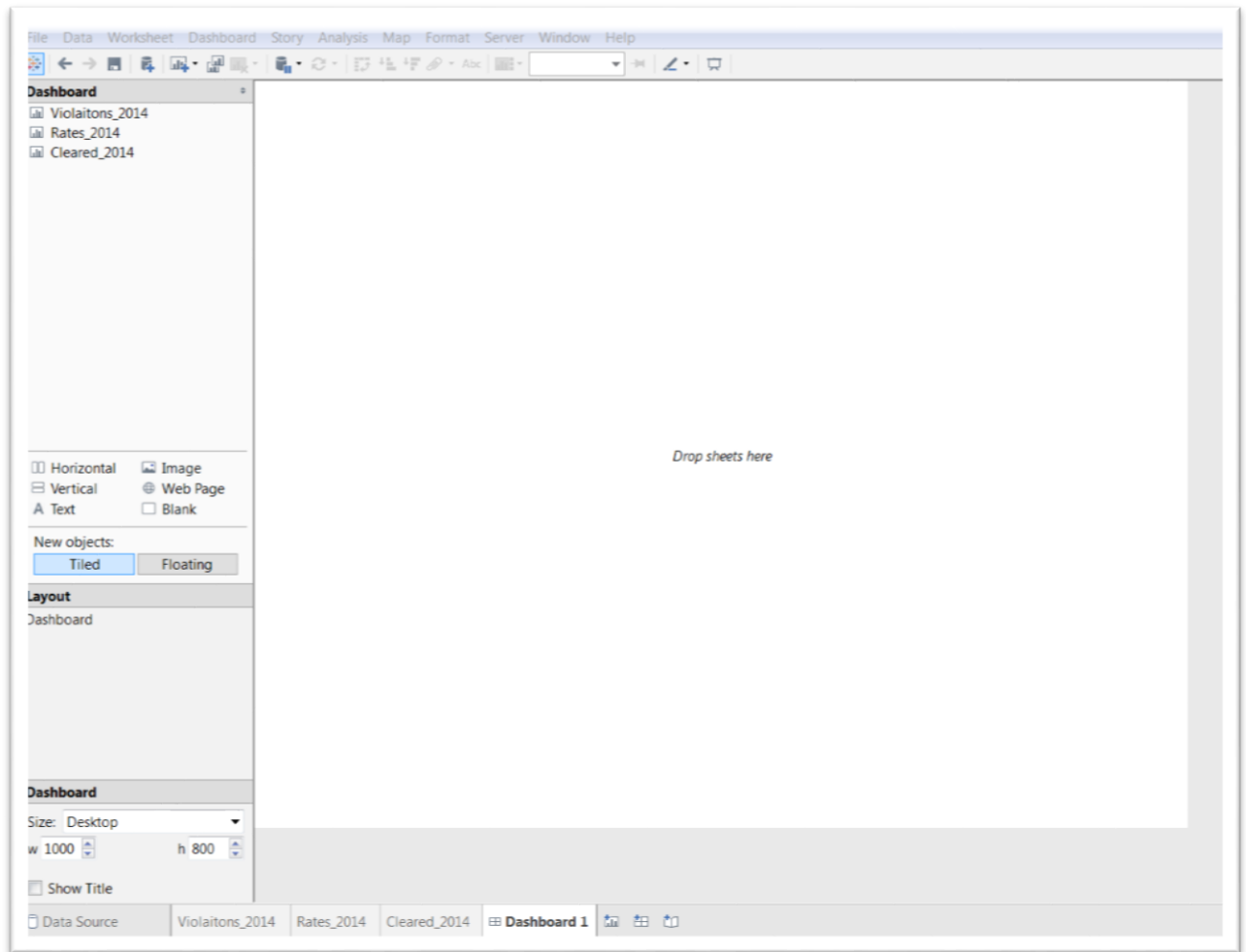
32) Repeat the same process for "Total cleared".

33) Choose a different visualization from the options that are not greyed out. (NOTE: If your "Show Me" box, disappears – especially if you're working with two screens, which you should be --

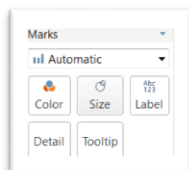
simply click your mouse in any area to the right of the table.



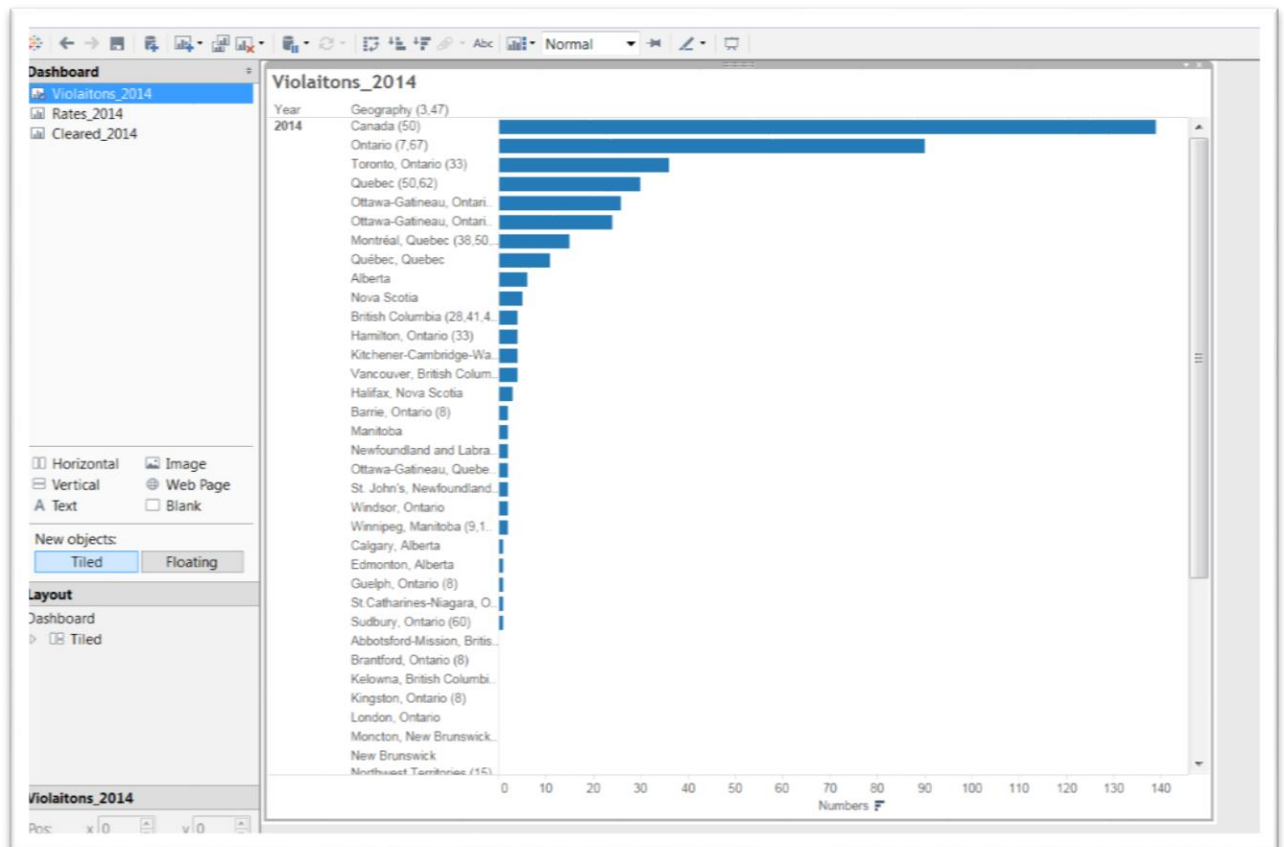
- 34) Now we're ready to create a dashboard. Right-click on the next worksheet tab, and select the "New dashboard" option from the drop-down menu.



- 35) This area will house our interactive visualization.
- 36) You can see that the three tables are located in the menu to the left. The "Layout" is a dashboard. And the sizes can be adjusted to fit different-sized screens and mobile devices.
- 37) Think about which table you want to be your main visualization. In this case, it will be the violations for 2014. So drag the tab into the "Drop sheets here" area. The horizontal bar chart works well for comparing discrete values in descending order. (As an option, if you also want to see the numbers at the end of each bar, in addition to the X axis at the bottom, drag the "Numbers" tab, or in your case the column that contains the values, and drop it into the "Label"

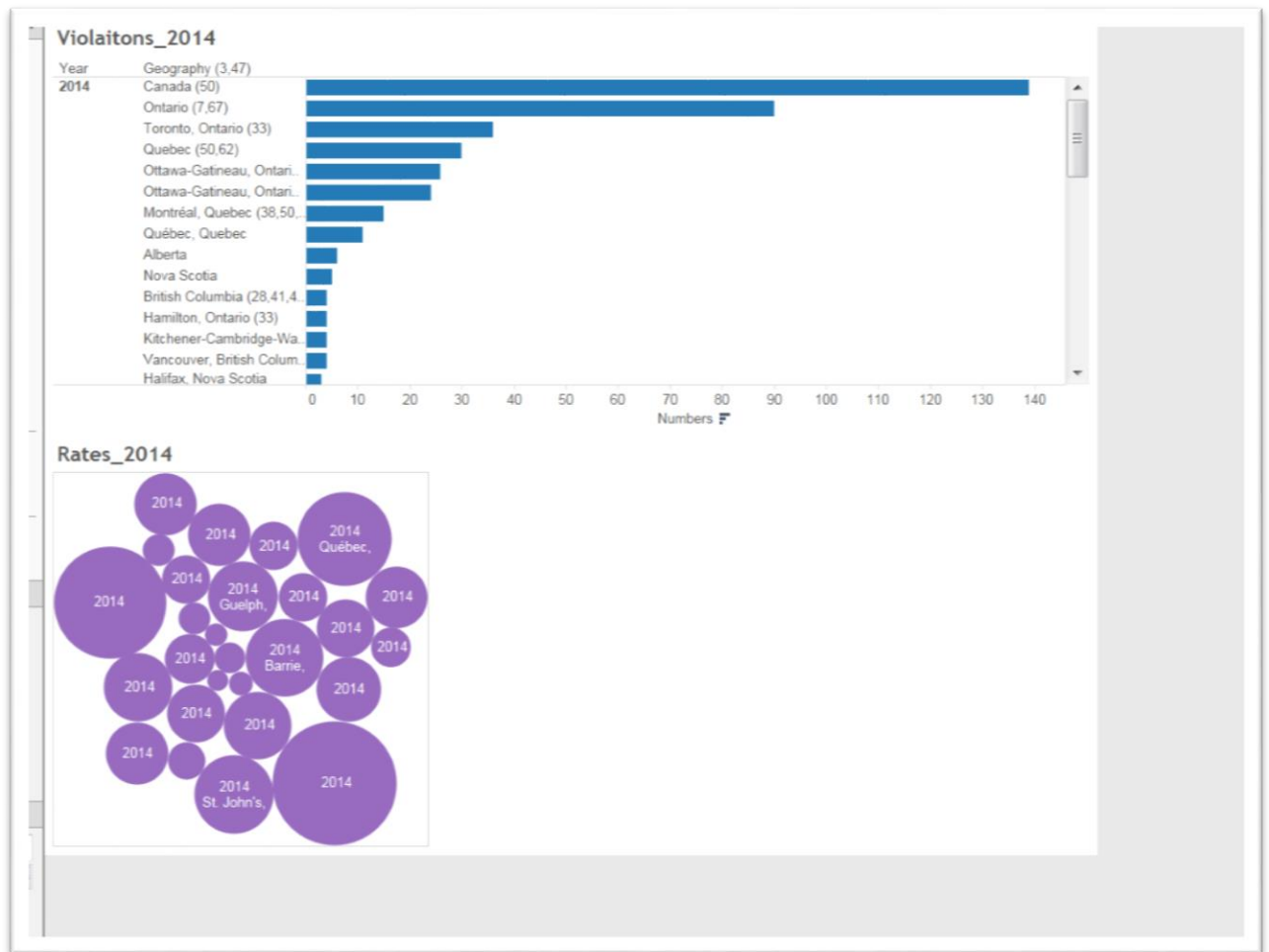


tab)



38)

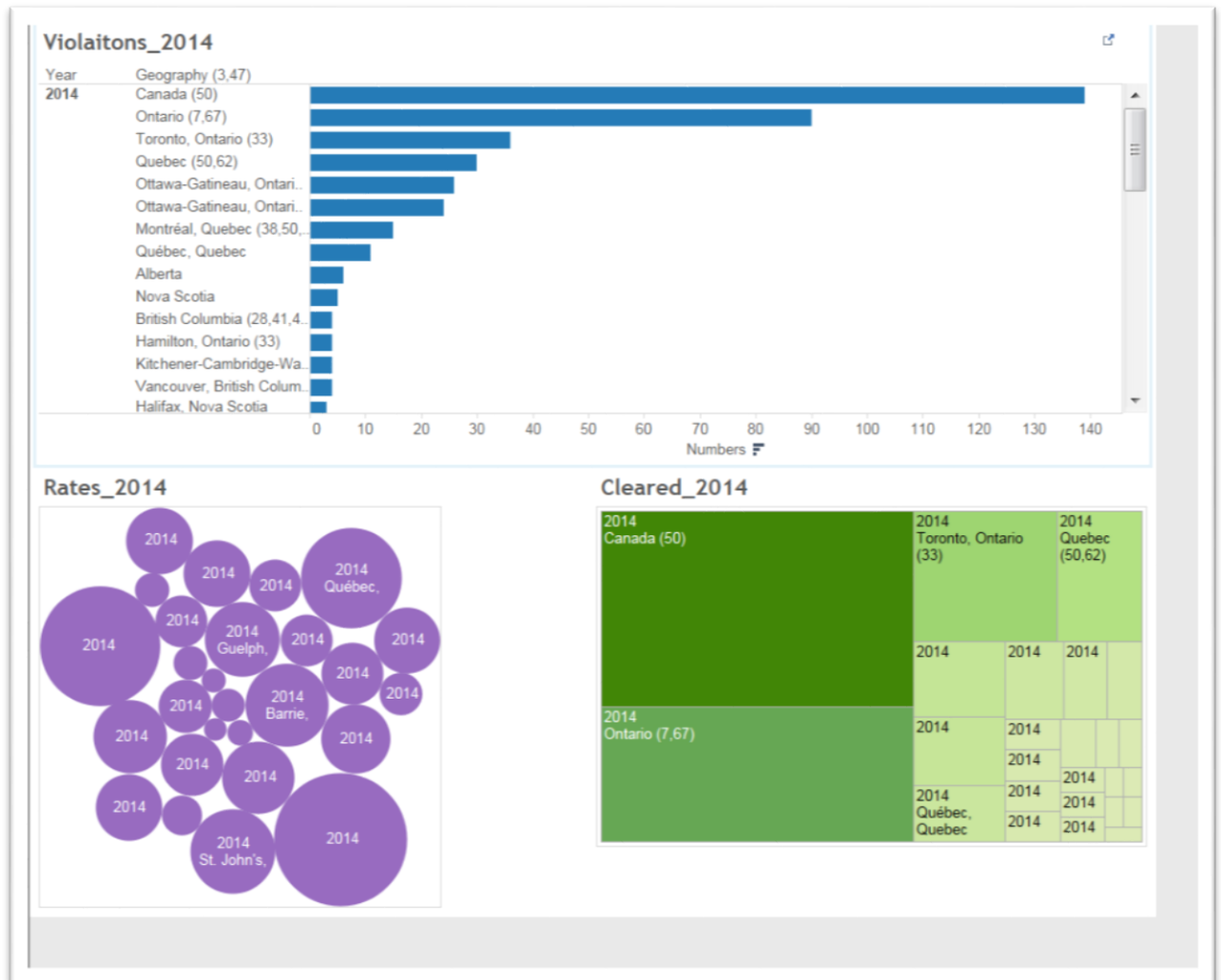
39) Drag the rates tab and release it just below violations. This is the tricky part. Position your cursor on the border at the bottom of the violations tab under it is surrounded by a tiny grey rectangle, and release it.



40)

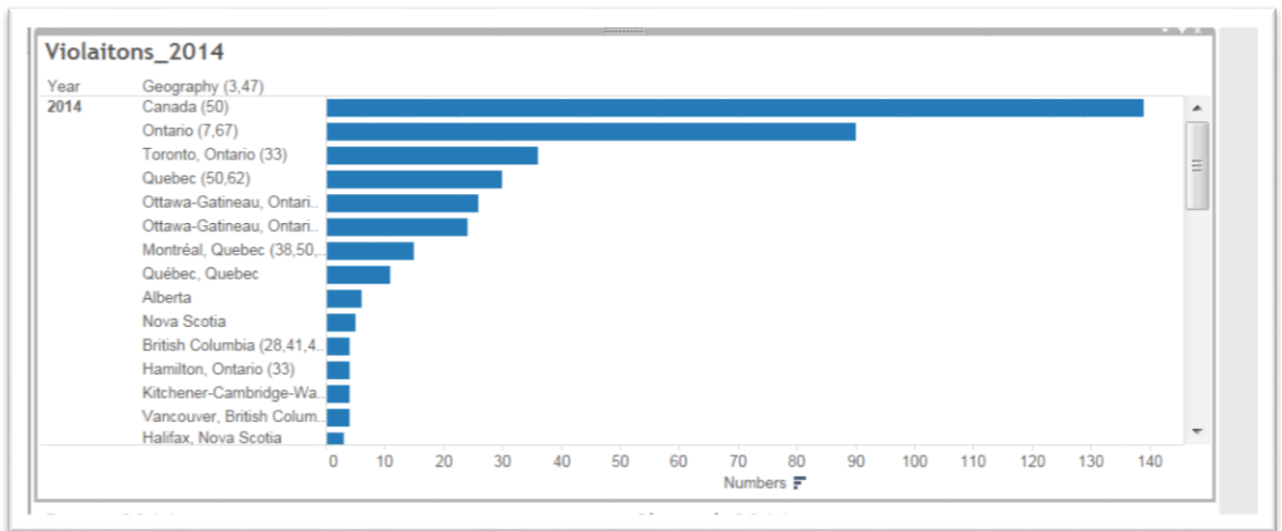
41) If you get a Year menu appearing at the top right of the dashboard, just click on the area to obtain a grey border, click on the "x" to delete.

42) To place the “Cleared” tab on your dashboard, drag and release it to the right of “Rates”. You can also delete the rates menu that appears at the top right.



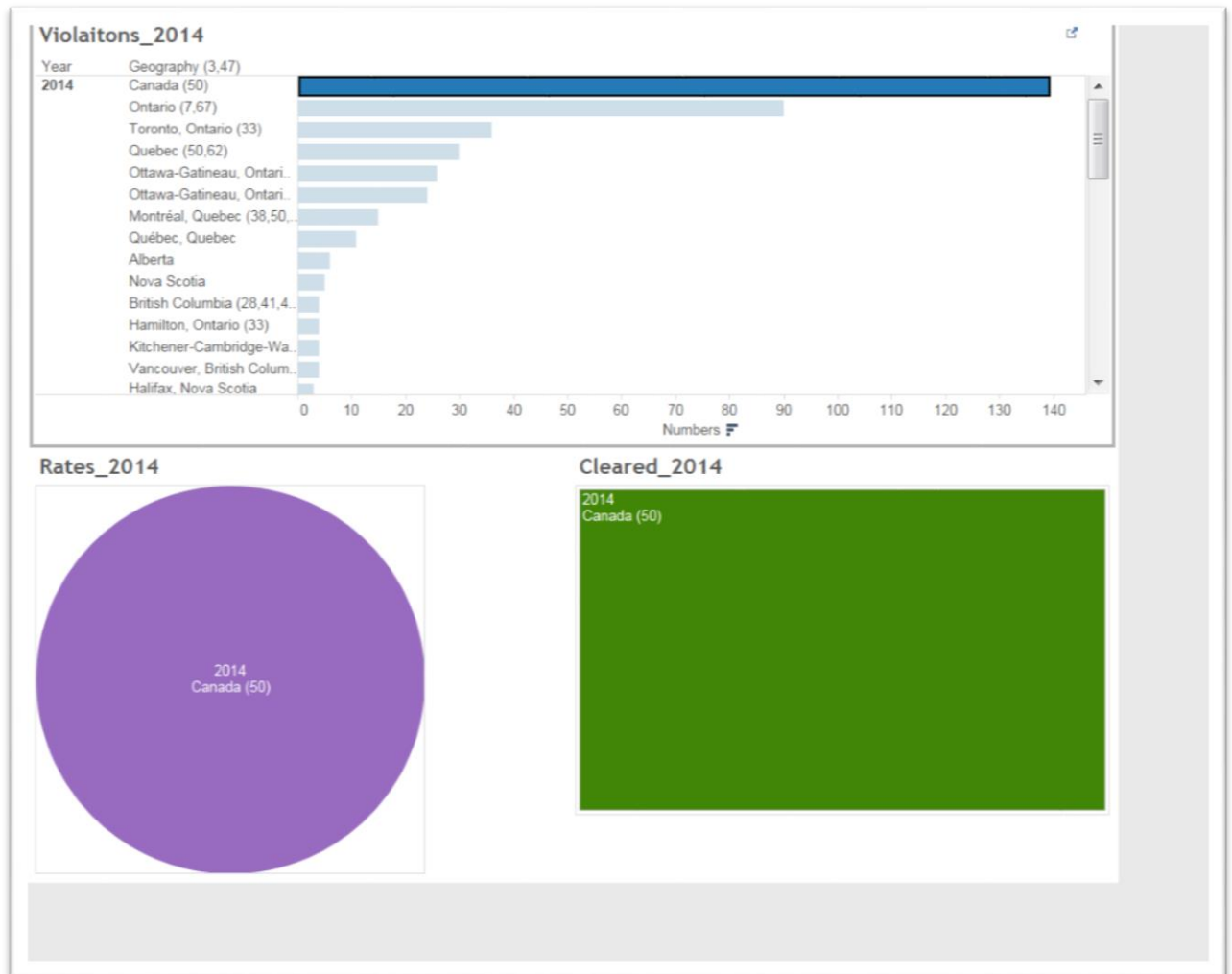
43) Now we want to make the visualization interactive; that is, clicking on a bar on the violations table, produces a corresponding values on the other two tables. To do this, we must make the violations table the “filter” table.

44) To activate this option, click inside the violations table to obtain a grey border.



45) Click on the downward arrow to the top right to obtain a drop-down menu, and select the "Use as filter" option.

46) Now when you click on Canada, it produces corresponding visualizations for the other two tables.



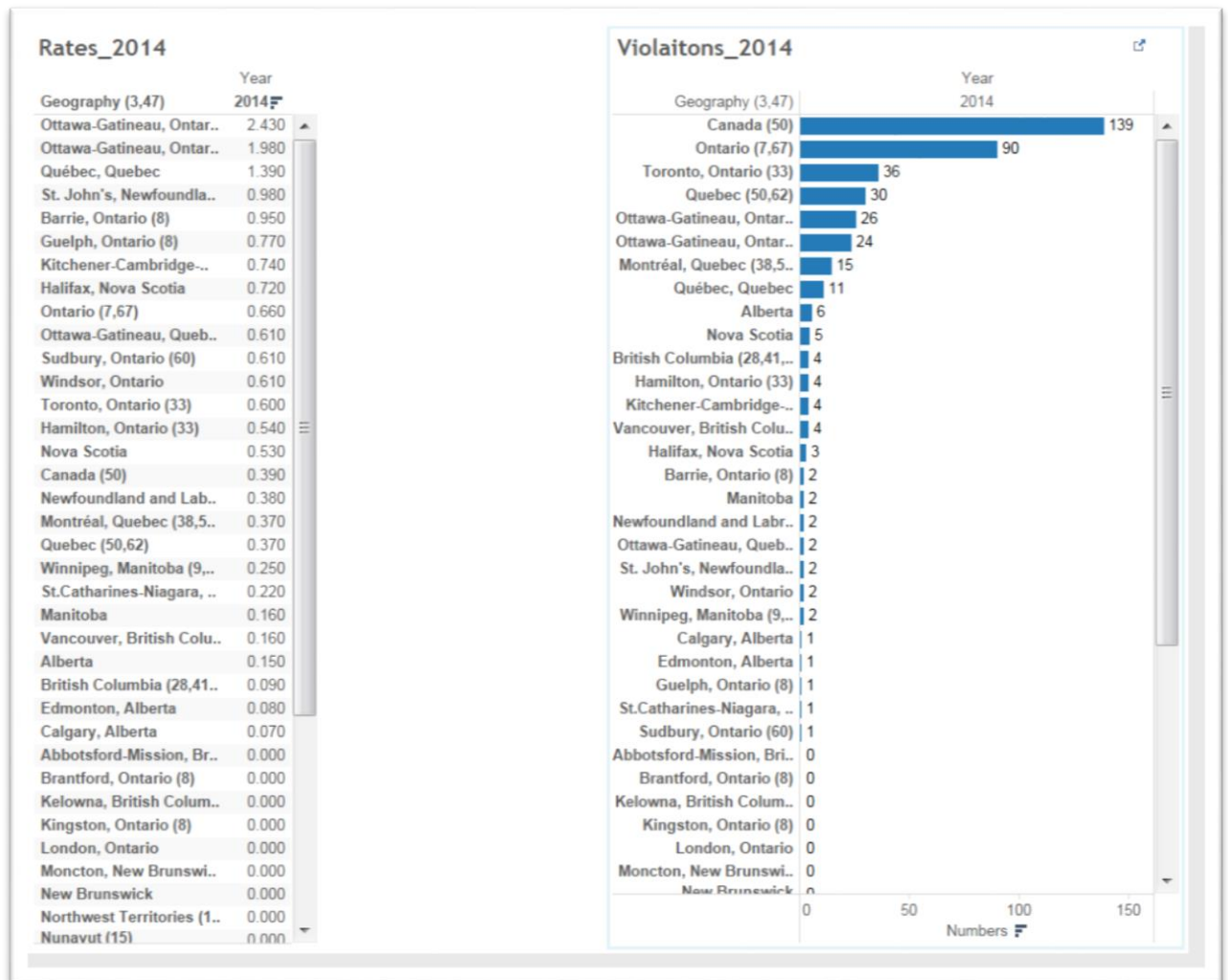
47) Hovering your cursor over the visualizations allows you to see the numbers.

48) To return to the entire value set, click anywhere inside the violations table.

49) If you're happy with the result (NOTE: play around with visualizations that are more appealing than these ones.)

50) You may recall, that when we discussed the human trafficking the story, the real surprise was in the rates, and the fact that Ottawa had the highest one in 2016. This means that you might want to create another dashboard where the rate is your main table. Your result could look

something like this.



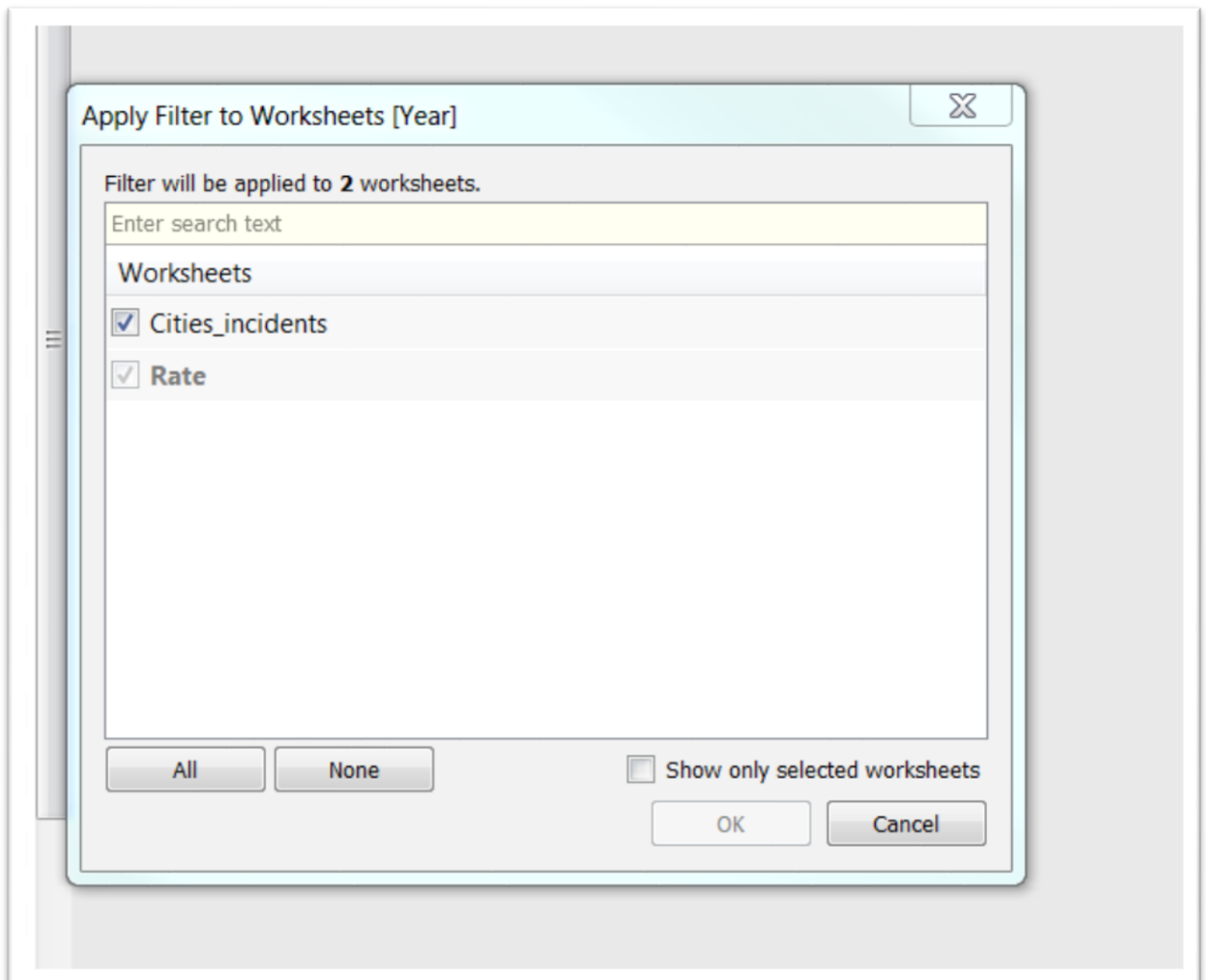
51) THIS IS KEY: To ensure that your filtering for 2014 – or whatever year you choose – stays consistent in the dashboard, you must take an additional step.

52) Return to the Rate tab, click the arrow in the Year tab placed in the “Filter’s” section.

The screenshot shows a data visualization tool interface. The top toolbar includes icons for data, filters, and formatting. The main area is divided into sections: Pages, Columns (Year), and Rows (Cities). A filter is applied to 'Year: 2014'. A context menu is open over the filter, with options: Edit filter..., Show filter, Clear filter, Add to context, Apply to worksheets, Sort..., Create set..., Dimension, Attribute, Measure, and Remove. The 'Apply to worksheets' option is highlighted with a red box, and its sub-menu is also highlighted with a red box, showing three options: All using this data source, Selected worksheets... (selected), and Only this worksheet. The background shows a table of data with columns 'Cities' and 'Year'.

Cities	Year
Ottawa-Gatineau, Ontar..	2.430
Ottawa-Gatineau, Ontar..	1.980
c, Quebec	1.390
n's, Newfoundla..	0.980
Ontario (8)	0.950
, Ontario (8)	0.770
ner-Cambridge--	0.740
or, Ontario	0.610
o, Ontario (33)	0.600
on, Ontario (33)	0.540
icotia	0.530
a (50)	0.390
undland and Lab..	0.380
mental, Quebec (38,5..	0.370
Quebec (50,62)	0.370
Winnipeg, Manitoba /9	0.250

53) Choosing “Selected worksheet produces this dialog box.



54) Select the worksheets two which you’d like to be connected. In this case, “Cities_incidents”

55) If you have more than one worksheet that will be part of your visualization on the dashboard, select them.

56) Now when your dashboard will ONLY be filtered for the year that you choose, in this case 2014.

57) It is the dashboard – renamed, of course – that we want to show in our story.

58) But before uploading the result to Tableau, we need to give the tables a title.

59) To do this, just double-click on the given names, which produces a dialog box.

The screenshot displays a data visualization interface with two main components and an overlaid dialog box.

Rate Table:

Cities	Year
Ottawa-Gatineau, Ontar..	2.430
Ottawa-Gatineau, Ontar..	1.980
Québec, Quebec	1.390
St. John's, Newfoundla..	0.980
Barrie, Ontario (8)	0.950
Guelph, Ontario (8)	0.770
Kitchener-Cambridge...	0.740
Halifax, Nova Scotia	0.720
Ontario (7,67)	0.660
Ottawa-Gatineau, Queb..	0.610
Sudbury, Ontario (60)	0.610
Windsor, Ontario	0.610
Toronto, Ontario (33)	0.600
Hamilton, Ontario (33)	0.540
Nova Scotia	0.530
Canada (50)	0.390

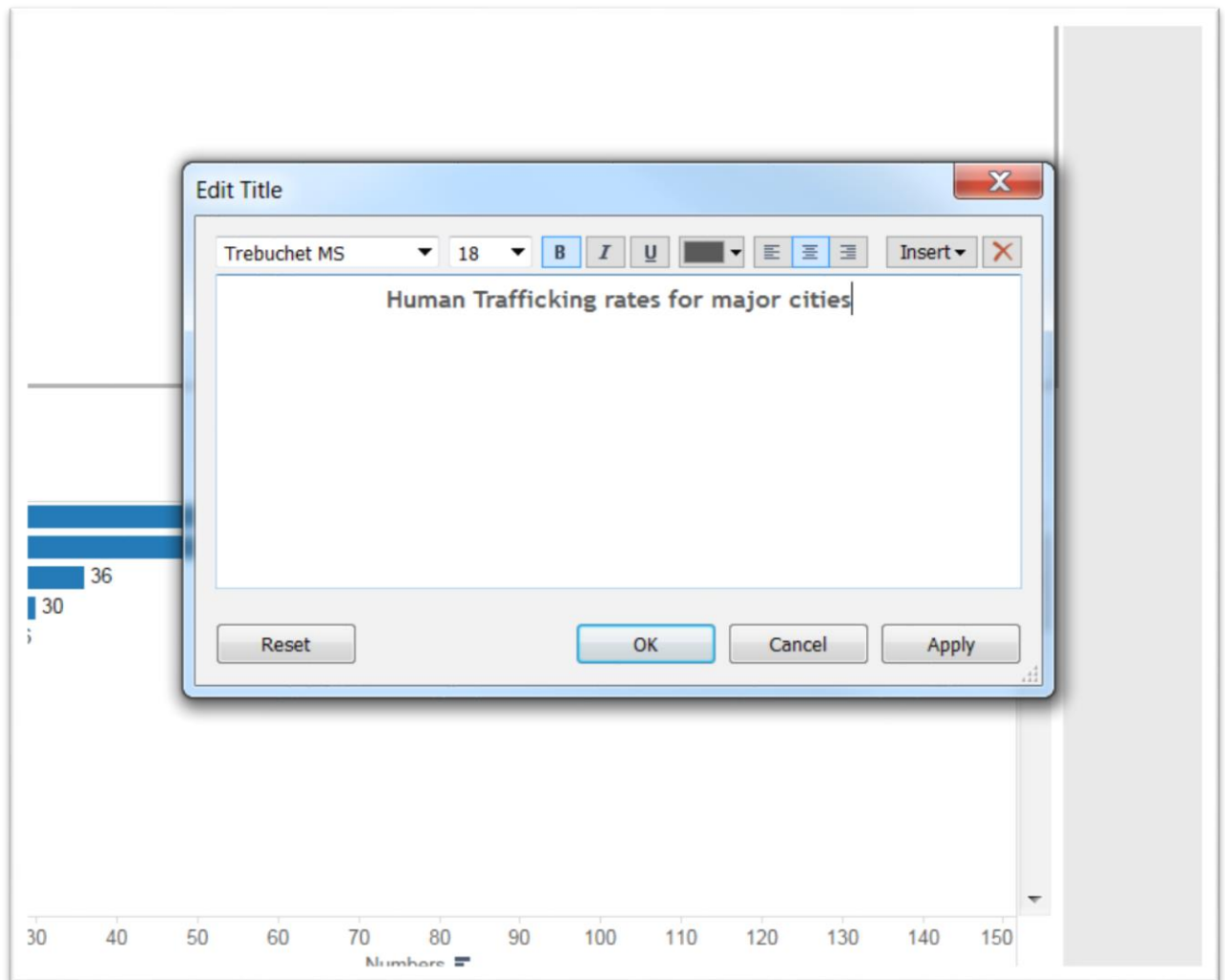
Cities_incidents Horizontal Bar Chart:

Cities	Incidents
Canada (50)	36
Ontario (7,67)	30
Toronto, Ontario (33)	26
Quebec (50,62)	24
Ottawa-Gatineau, Ontar..	15
Ottawa-Gatineau, Ontar..	11
Montréal, Quebec (38,5..	6
Québec, Quebec	5
Alberta	4
Nova Scotia	4
British Columbia (28,41...	4

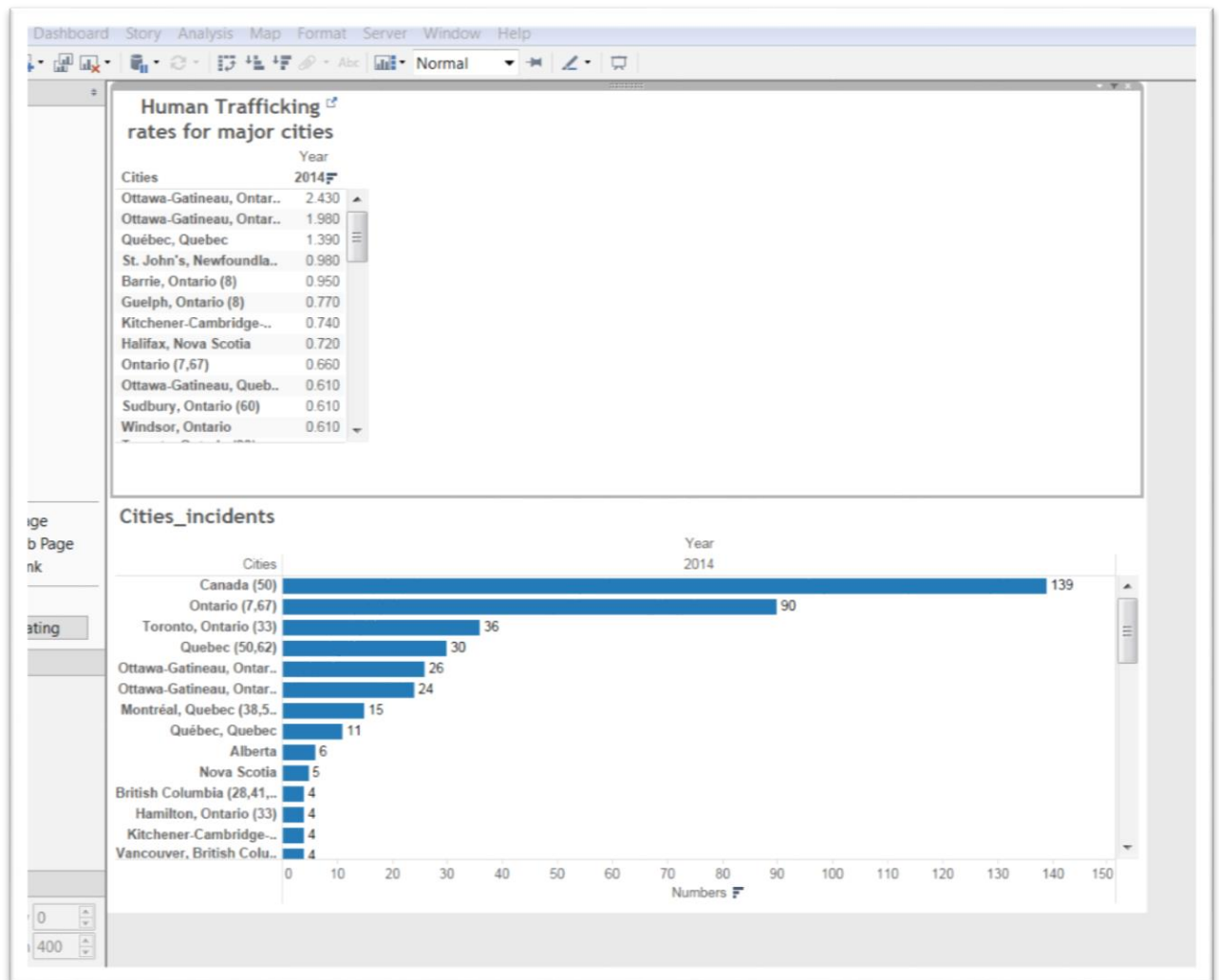
Edit Title Dialog Box:

The dialog box is titled "Edit Title" and contains a text input field with the placeholder text "<Sheet Name>". It includes a toolbar with formatting options (font face: Trebuchet MS, size: 12, bold, italic, underline, color, background color, text color, text alignment, bullet point, indent) and an "Insert" dropdown. At the bottom, there are "Reset", "OK", "Cancel", and "Apply" buttons.

60) Type the new name, select the font, colour and alignment.



61) Apply the result and select OK.



62) Repeat the same steps to rename the bottom table.

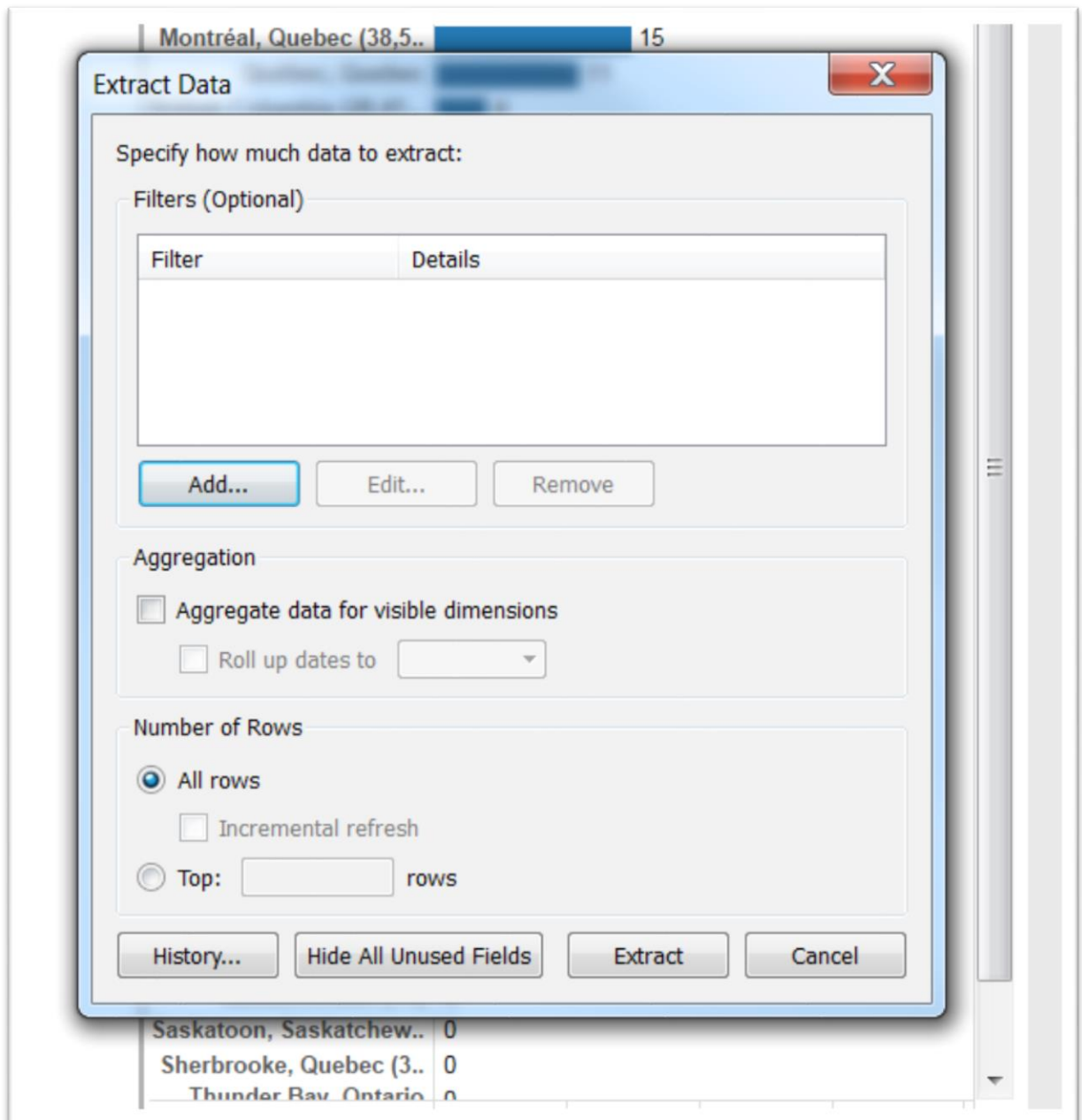
63) Now if you're happy with the result and want to upload your visualization to Tableau, go to the "Data" portion of your menu.

64) Scroll to the bottom of your drop-down menu which will contain the title of your Excel workbook.

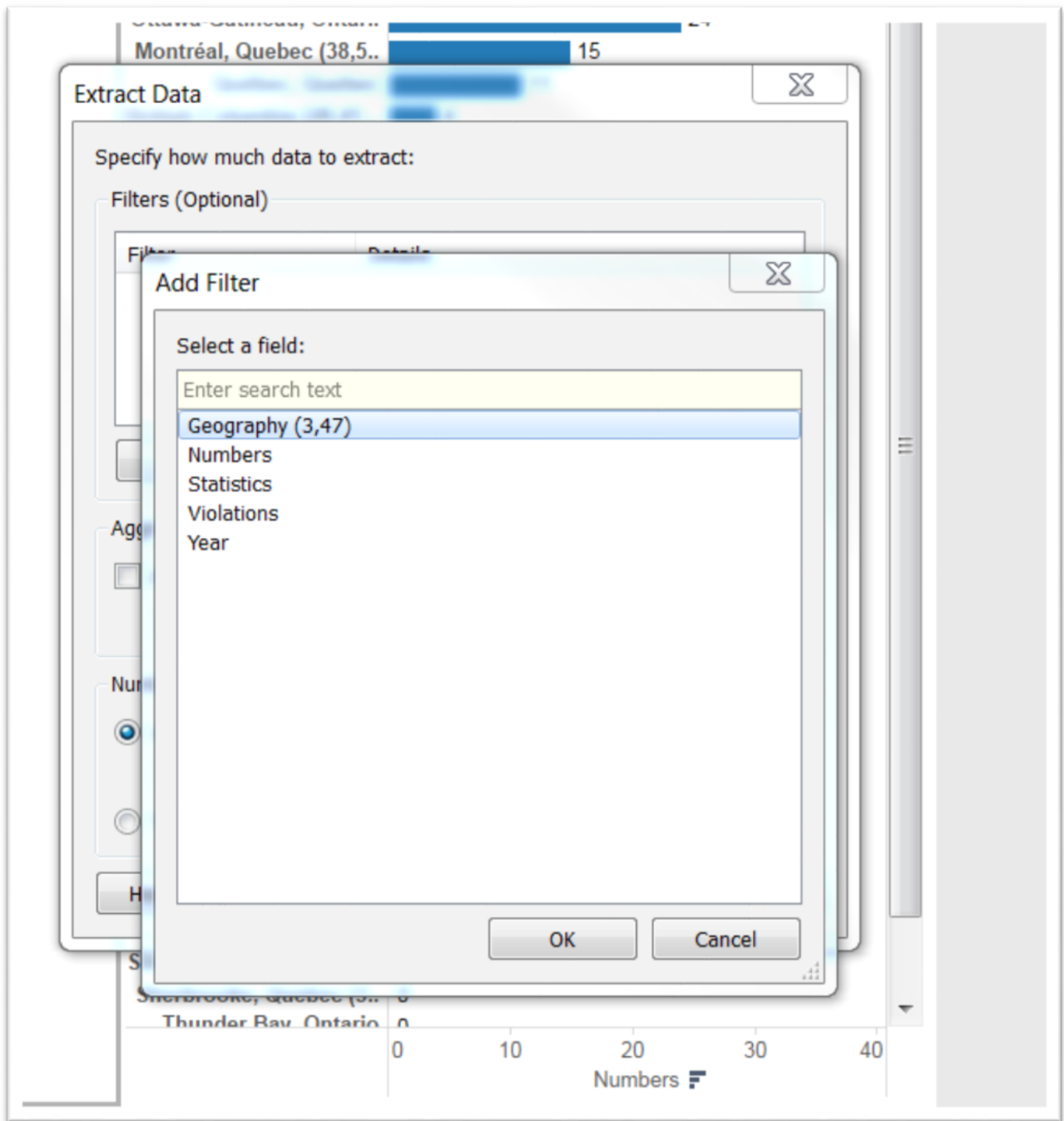
65) To get a sense of what I've done, check out the [draft visualization](#) on our website.

66) The method used to extract data depends on whether you're using the desktop or public version of Tableau. The next few steps will explain how to save and embed the interactive visualization on your dashboard.

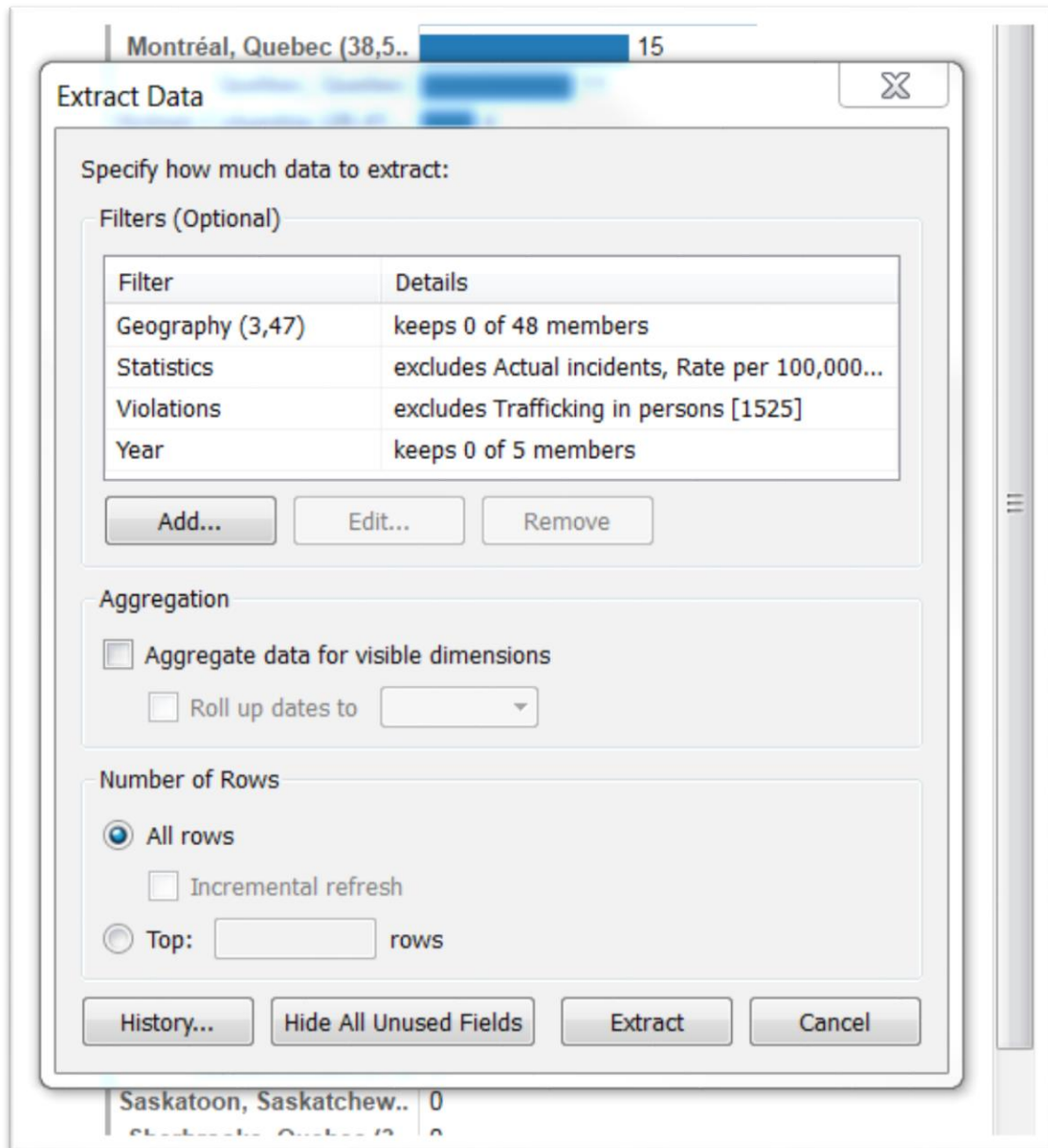
67) Tableau Desktop: Choose the “extract data” option.



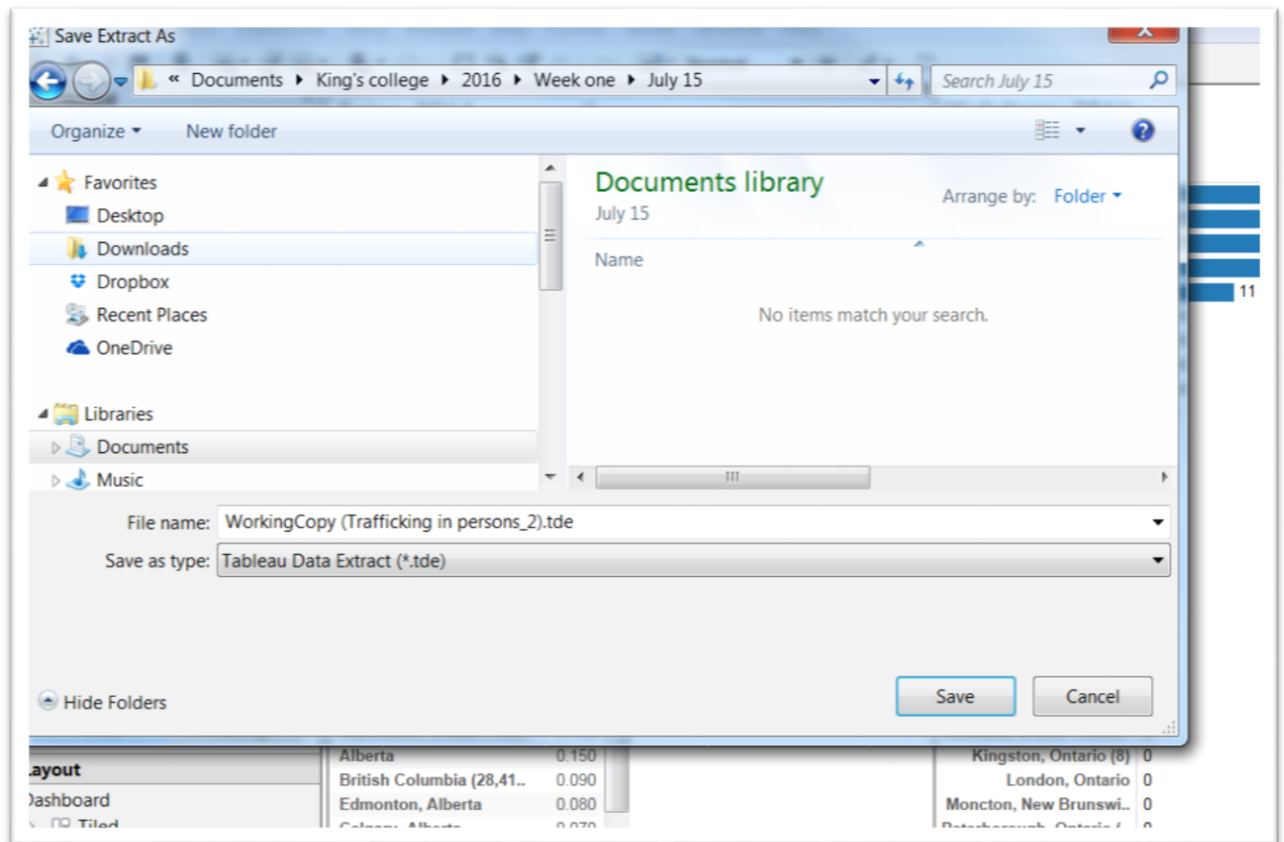
68) Tableau Desktop: Select the “Add” button.



69) Tableau Desktop: You'll have to add each column individually, and be sure to select all the categories by clicking on the "select all" option.



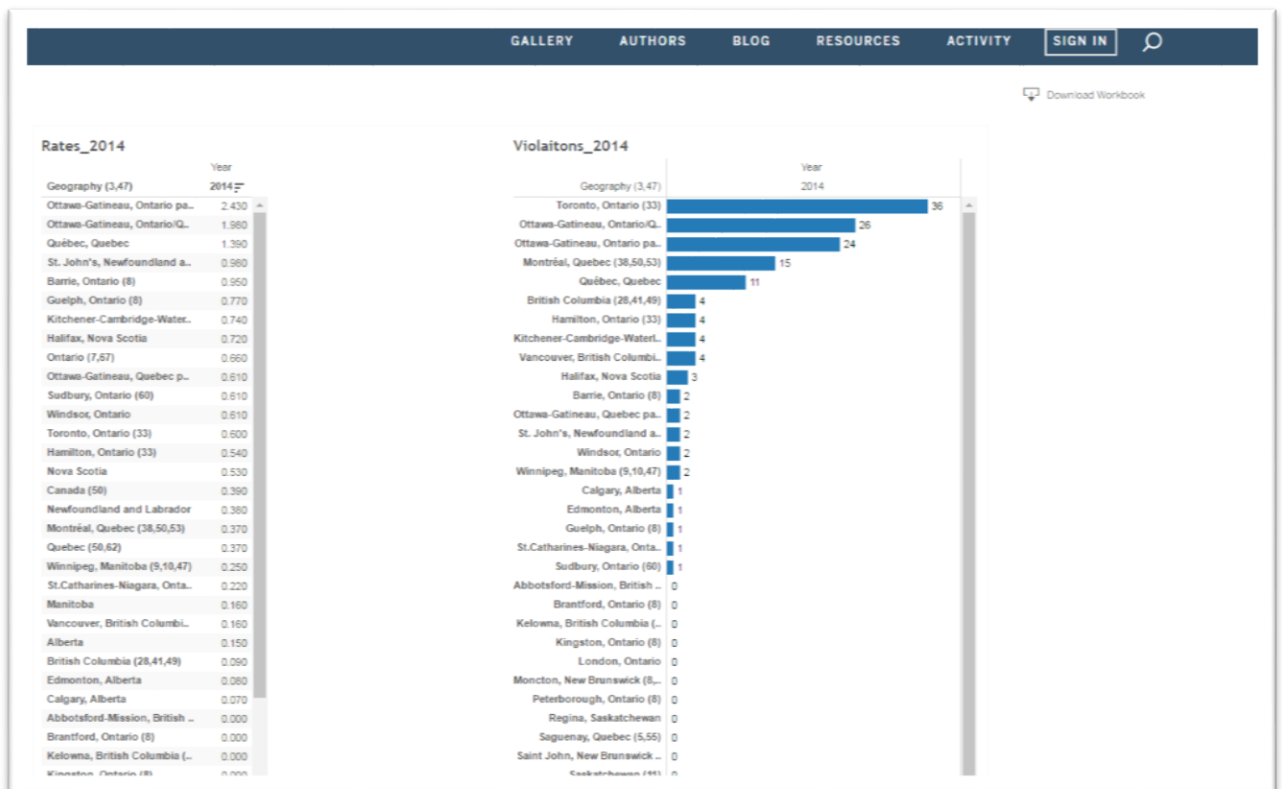
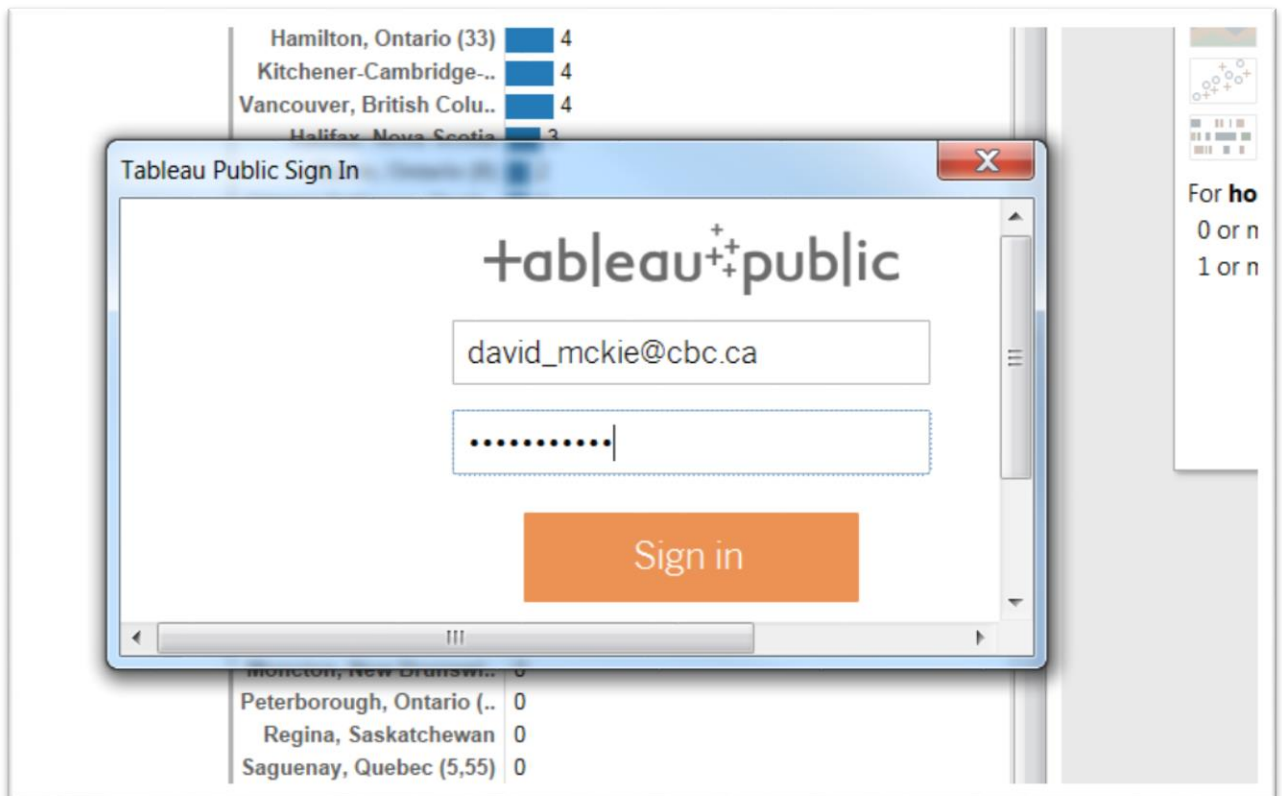
70) Tableau Desktop: Select the “Extract” tab.



71) Tableau Desktop: Save the extract in the folder you’ve created for this assignment.

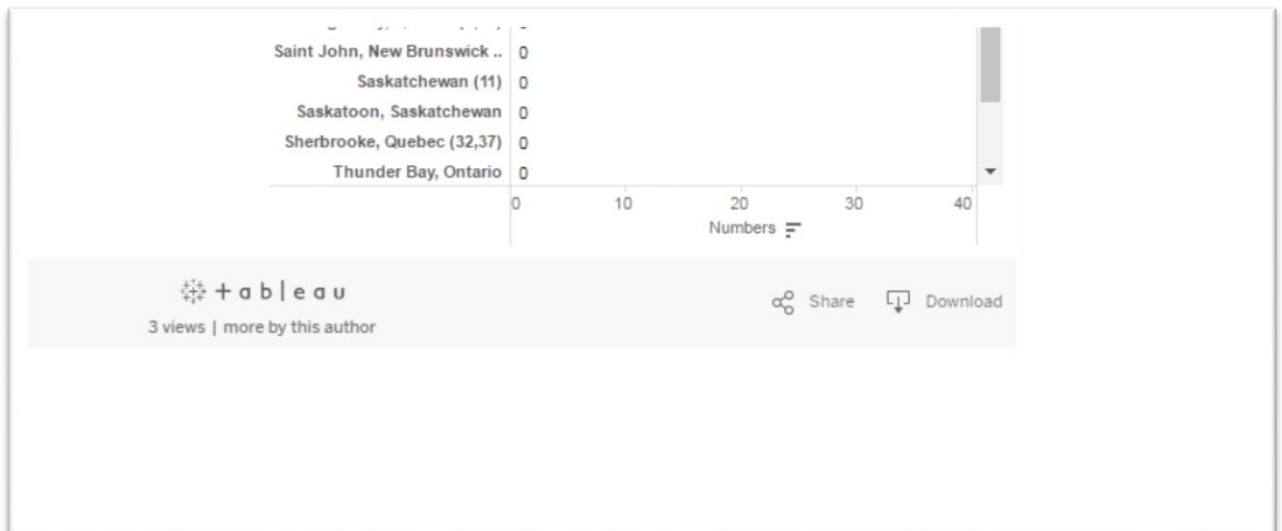
72) Tableau Desktop: Now you’ll be able to save the visualization to Tableau, by going to the “Server” section of your menu to Tableau Public, and then Save to Tableau Public.

73) Tableau Desktop: You'll get a dialog box, asking you to sign in.



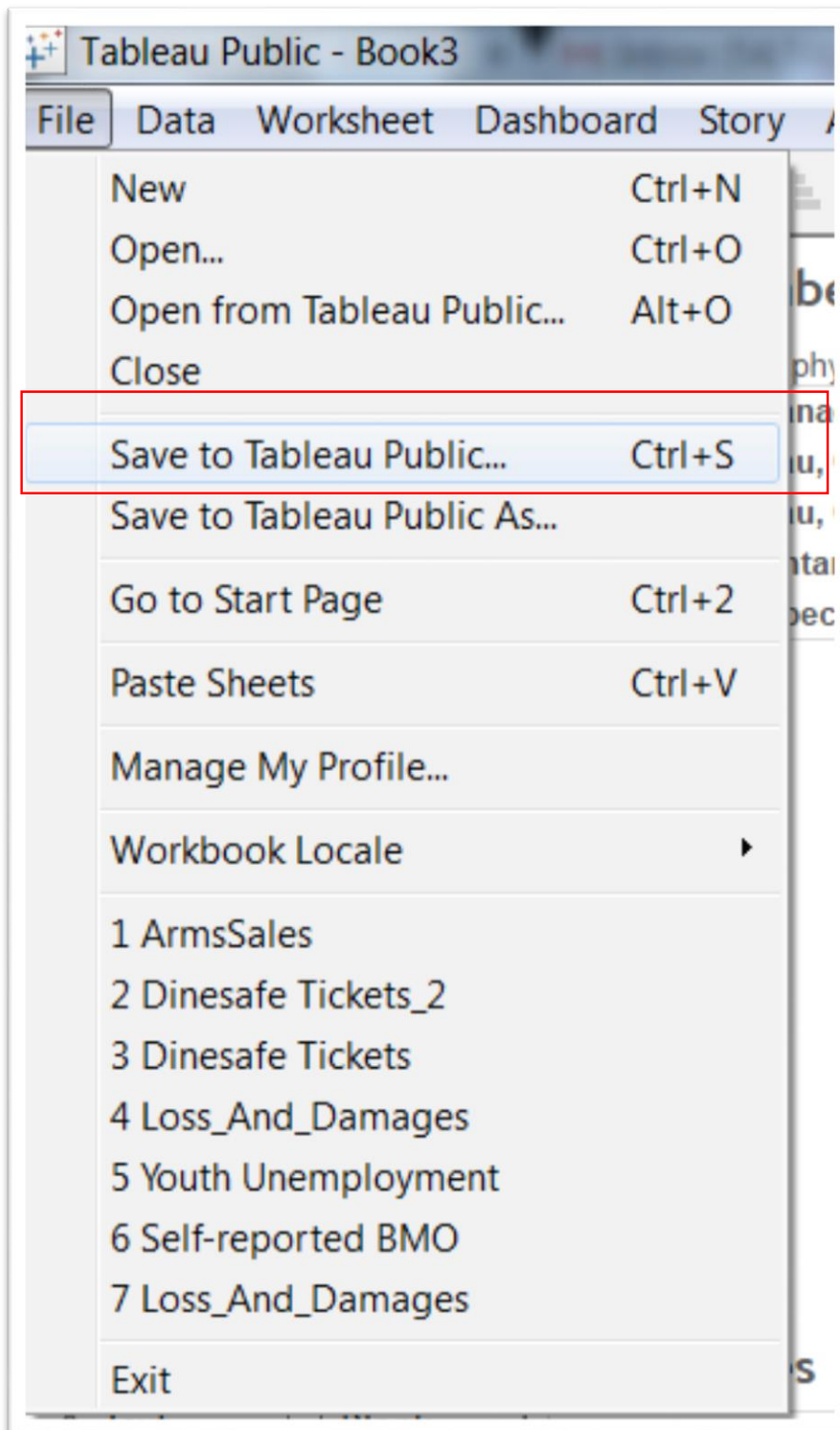
74)

- 75) Tableau Desktop: To obtain the visualization's embed code, scroll to the bottom of the table, and select the "share" icon.



- 76) Tableau Desktop: Click on the embed code, copy it, and then paste it into the HTML portion of your blog post.
- 77) Tableau Public: The process to get to the step that you see in the screen grab above is much simpler. Simply go to your "File" portion of the menu, and select the "Save to Tableau Public"

option.



78) You will get a sign-in prompt.

79) Plug in your email address and password.

80) Sharing the visualization produces a screen grab similar to the one in step 75.

81) Once you've copied the embed code, you can paste it into your blog post.