

Finding patterns in Statistics Canada crime data tutorial

Crime is perhaps the most written-about topic in most newsrooms.

Though the beat system has largely disappeared due to staff cuts and a move towards the use of generalists, newsrooms STILL tend to cover certain issues, if not with specialists, then folks who may count the area as ONE of their specialties. Everyone, it seems, covers crime.

It is for this reason, the Statistics Canada's crime databases provide an invaluable resource for journalists on deadline and looking for longer-term projects. And it's the reason that I've stressed using it for the first assignment.

When reporting on crime, it's best to use rates, as they measure the frequency with which offences occur for, say, every 100,000 people, which is the multiplier that police forces and StatsCan use. Rates also allow for comparisons between jurisdictions of various sizes. You can compare Ottawa to the much larger Toronto. You can see how Ottawa stacks against Ontario's rate, or Canada's. Using this methodology, we can quickly determine which cities have the highest homicide rates, leading to stories about the most dangerous places to live. We can do the same for provinces, and countries for that matter. Rates level the statistical playing field.

For more about rates, please consult, or re-visit, the [tutorial](#) that delves into this all-important topic for journalists.

In this tutorial, we will use filtering and sorting to come up with ideas that could lead to stories.

We'll use human trafficking data, in large part because the result is surprising.

So let's get started:

- 1) Go to Statistics Canada's "Incident-based crime statistics, by detailed violations: <http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=2520051>
- 2) Select the "Add/Remove data" tab which will allow for a deeper dive into the data.

3) You'll find six steps that will allow you to filter the dataset for the information that you want.

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Table 252-0051 [1](#), [2](#), [3](#), [54](#)

Incident-based crime statistics, by detailed violations
annual (number unless otherwise noted)

Data table [Add/Remove data](#) Manipulate Download Related information Help

Select the specific items from each step to create your customized CANSIM table.

Step 1- Select: Geography [3](#), [47](#)
(48 of 48 items selected)

Use the following checkboxes to select/deselect items from the list below: [+ Expand](#)

- ☒ All ☒ ☒ ☒
- ☒ Canada [50](#)
 - ☒ Newfoundland and Labrador
 - ☒ St. John's, Newfoundland and Labrador [4](#)
 - ☒ Prince Edward Island [51](#)

Step 2- Select: Violations
(1 of 255 items selected)

Use the following checkboxes to select/deselect items from the list below: [+ Expand](#)

- ☐ All ☒ ☐ ☐ ☐ ☐ ☐
- ☒ Total, all violations [0]
 - ☐ Total, all Criminal Code violations (including traffic) [25]
 - ☐ Total, all Criminal Code violations (excluding traffic) [50]
 - ☐ Total violent Criminal Code violations [1,001] [16](#)

4) Expand the Step 1 Geography section to obtain a full list of jurisdictions.

Use the following checkboxes to select/deselect items from the list below: [- Collapse](#)

- ☒ All ☒ ☒
- ☒ Canada ⁵⁰
 - ☒ Newfoundland and Labrador
 - ☒ St. John's, Newfoundland and Labrador ⁴
 - ☒ Prince Edward Island ⁵¹
 - ☒ Nova Scotia
 - ☒ Halifax, Nova Scotia
 - ☒ New Brunswick
 - ☒ Moncton, New Brunswick ^{8, 58}
 - ☒ Saint John, New Brunswick ^{4, 47, 58}
 - ☒ Quebec ^{50, 62}
 - ☒ Saguenay, Quebec ^{5, 55}
 - ☒ Québec, Quebec
 - ☒ Sherbrooke, Quebec ^{32, 37}
 - ☒ Trois-Rivières, Quebec
 - ☒ Montréal, Quebec ^{38, 50, 53}
 - ☒ Ottawa-Gatineau, Quebec part ^{6, 61}
 - ☒ Ontario ^{7, 67}
 - ☒ Ottawa-Gatineau, Ontario/Quebec ^{6, 52, 61, 68}
 - ☒ Ottawa-Gatineau, Ontario part ^{6, 52, 68}
 - ☒ Kingston, Ontario ⁸
 - ☒ Peterborough, Ontario ⁸
 - ☒ Toronto, Ontario ³³
 - ☒ Hamilton, Ontario ³³
 - ☒ St. Catharines-Niagara, Ontario
 - ☒ Kitchener-Cambridge-Waterloo, Ontario
 - ☒ Brantford, Ontario ⁸
 - ☒ Guelph, Ontario ⁸
 - ☒ London, Ontario
 - ☒ Windsor, Ontario
 - ☒ Barrie, Ontario ⁸
 - ☒ Sudbury, Ontario ⁶⁰

5) Canada is the main category, followed by the provinces and territories, and the cities. The geography categories allow you to drill down by jurisdictions, allowing for comparisons between cities, cities to provinces, or cities to Canada.

6) De-select all the categories by clicking on the radio box to the left of “Canada”.

Use the following checkboxes to select/deselect items from the list below:

- ☐ All ☐ ☐ ☐
- ☐ Canada [50](#)
 - ☐ Newfoundland and Labrador
 - ☐ St. John's, Newfoundland and Labrador [4](#)
 - ☐ Prince Edward Island [51](#)
 - ☐ Nova Scotia
 - ☐ Halifax, Nova Scotia
 - ☐ New Brunswick
 - ☐ Moncton, New Brunswick [8](#), [58](#)
 - ☐ Saint John, New Brunswick [4](#), [47](#), [58](#)
 - ☐ Quebec [50](#), [62](#)
 - ☐ Saguenay, Quebec [5](#), [55](#)
 - ☐ Québec, Quebec
 - ☐ Sherbrooke, Quebec [32](#), [37](#)
 - ☐ Trois-Rivières, Quebec
 - ☐ Montréal, Quebec [38](#), [50](#), [53](#)
 - ☐ Ottawa-Gatineau, Quebec part [6](#), [61](#)
 - ☐ Ontario [7](#), [67](#)
 - ☐ Ottawa-Gatineau, Ontario/Quebec [6](#), [52](#), [61](#), [68](#)
 - ☐ Ottawa-Gatineau, Ontario part [6](#), [52](#), [68](#)
 - ☐ Kingston, Ontario [8](#)
 - ☐ Peterborough, Ontario [8](#)
 - ☐ Toronto, Ontario [33](#)
 - ☐ Hamilton, Ontario [33](#)
 - ☐ St.Catharines-Niagara, Ontario
 - ☐ Kitchener-Cambridge-Waterloo, Ontario
 - ☐ Brantford, Ontario [8](#)
 - ☐ Guelph, Ontario [8](#)

7) Select Canada, Ontario, and “Ottawa-Gatineau, Ontario part” and “Toronto”.

Use the following checkboxes to select/deselect items from the list below:

- ☒ All ☐ ☐ ☐
- ☒ Canada [50](#)
 - ☐ Newfoundland and Labrador
 - ☐ St. John's, Newfoundland and Labrador [4](#)
 - ☐ Prince Edward Island [51](#)
 - ☐ Nova Scotia
 - ☐ Halifax, Nova Scotia
 - ☐ New Brunswick
 - ☐ Moncton, New Brunswick [8](#), [58](#)
 - ☐ Saint John, New Brunswick [4](#), [47](#), [58](#)
 - ☐ Quebec [50](#), [62](#)
 - ☐ Saguenay, Quebec [5](#), [55](#)
 - ☐ Québec, Quebec
 - ☐ Sherbrooke, Quebec [32](#), [37](#)
 - ☐ Trois-Rivières, Quebec
 - ☐ Montréal, Quebec [38](#), [50](#), [53](#)
 - ☐ Ottawa-Gatineau, Quebec part [6](#), [61](#)
 - ☒ Ontario [7](#), [67](#)
 - ☐ Ottawa-Gatineau, Ontario/Quebec [6](#), [52](#), [61](#), [68](#)
 - ☒ Ottawa-Gatineau, Ontario part [6](#), [52](#), [68](#)
 - ☐ Kingston, Ontario [8](#)
 - ☐ Peterborough, Ontario [8](#)
 - ☒ Toronto, Ontario [33](#)
 - ☐ Hamilton, Ontario [33](#)
 - ☐ St. Catharines-Niagara, Ontario

8) Expand the Step 2 Violations section to obtain the full list of violations.

Step 2- Select: Violations

(1 of 255 items selected)

Use the following checkboxes to select/deselect items from the list below: [- Collapse](#)

☐ All ☒ ☐ ☐ ☐ ☐ ☐

- ☒ Total, all violations [0]
 - ☐ Total, all Criminal Code violations (including traffic) [25]
 - ☐ Total, all Criminal Code violations (excluding traffic) [50]
 - ☐ Total violent Criminal Code violations [100] [16](#)
 - ☐ Homicide [110] [17, 24](#)
 - ☐ Murder, first degree [1110] [17, 24](#)
 - ☐ Murder, second degree [1120] [17, 24](#)
 - ☐ Manslaughter [1130] [17, 24](#)
 - ☐ Infanticide [1140] [17, 24](#)
 - ☐ Total other violations causing death [120]
 - ☐ Criminal negligence causing death [1150]
 - ☐ Other related violations causing death [1160]
 - ☐ Attempted murder [1210]
 - ☐ Sexual assault, level 3, aggravated [1310]
 - ☐ Sexual assault, level 2, weapon or bodily harm [1320]
 - ☐ Sexual assault, level 1 [1330]
 - ☐ Total sexual violations against children [130] [26, 70, 73](#)
 - ☐ Sexual interference [1345] [26, 70](#)
 - ☐ Invitation to sexual touching [1350] [26, 70](#)
 - ☐ Sexual exploitation [1355] [26, 70](#)
 - ☐ Making sexually explicit material available to children [1367] [48, 70](#)
 - ☐ Parent or guardian procuring sexual activity: person procured under the age of 16 years [3165] [77](#) (Terminated)
 - ☐ Parent or guardian procuring sexual activity [1368] [64, 70](#)
 - ☐ Householder permitting illegal sexual activity: person under the age of 16 years [3167] [77](#) (Terminated)
 - ☐ Householder permitting prohibited sexual activity [1369] [64, 70](#)
 - ☐ Luring a child via a computer [1370] [26, 70](#)
 - ☐ Assault, level 3, aggravated [1410]
 - ☐ Assault, level 2, weapon or bodily harm [1420]

9) Select “Trafficking in persons”

- ☐ Conspiracy to commit murder [1220]
- ☐ Other sexual violations [1340]
- ☐ Sexual Exploitation of a person with a disability [1356]
- ☐ Incest [1360]
- ☐ Corrupting morals of a child [1365]
- ☐ Anal intercourse [1375]
- ☐ Bestiality, commit or compel person [1380]
- ☐ Voyeurism [1385]
- ☐ Nonconsensual distribution of intimate images [1390] [75](#)
- ☐ Trap likely to or causing bodily harm [1475]
- ☐ Hostage taking [1520]
- ☒ Trafficking in persons [1525]
- ☐ Intimidation of a justice system participant or a journalist [1621]
- ☐ Intimidation of a non-justice participant [1622]
- ☐ Explosives causing death or bodily harm [1628]
- ☐ Arson, disregard for human life [1629]
- ☐ Other violent violations [1630]

- 10) Expand “Step 3 Statistics”, de-select all the categories, then select “Rate per 100,000”.

Step 3- Select: Statistics
(14 of 14 items selected)
Use the following checkboxes to select/deselect items from the list below: [- Collapse](#)

☐ All ☒ ☐

- ☐ Actual incidents
- ☒ Rate per 100,000 population
- ☐ Percentage change in rate ²⁴
- ☐ Total cleared
 - ☐ Cleared by charge
 - ☐ Cleared otherwise
- ☐ Total, persons charged ²³
- ☐ Rate, total persons charged per 100,000 population aged 12 years and over ³¹
- ☐ Total, adult charged
- ☐ Rate, adult charged per 100,000 population aged 18 years and over ³¹
- ☐ Total, youth charged ^{39, 40}
- ☐ Rate, youth charged per 100,000 population aged 12 to 17 years ³¹
- ☐ Total, youth not charged ^{39, 40}
- ☐ Rate, youth not charged per 100,000 population aged 12 to 17 years ³¹

- 11) In “Step 4 Select the time frame,” click on the small black arrows to obtain the drop-down menu for the years and choose from 2009 to 2015.

Step 4 - Select the time frame
By default, only data for the most recent periods available will be retrieved. You may use the lists below to select a different time frame.
From : 2009 ▼ To : 2015 ▼ (Annual data)

- 12) If you're happy with your selections, click the "Apply" tab in "Step 6" to see what your table will look like.

Table 252-0051 [1](#), [2](#), [3](#), [54](#)
Incident-based crime statistics, by detailed violations
 annual

[Data table](#) [Add/Remove data](#) [Manipulate](#) [Download](#) [Related information](#) [Help](#)

The data below is a part of CANSIM table 252-0051. Use the [Add/Remove data](#) tab to customize your table.

Selected items [\[Add/Remove data\]](#)

Statistics = Rate per 100,000 population (rate)

Geography ^{3, 47}	Violations	2009	2010	2011	2012	2013	2014	2015
Canada ⁵⁰	Total, all violations [0]	7,281.47	6,996.36	6,627.06	6,458.60	5,969.98	5,775.78	5,888.19
	Trafficking in persons [1525]	0.12	0.07	0.17	0.17	0.22	0.40	0.59
Ontario ^{7, 67}	Total, all violations [0]	5,310.02	5,073.39	4,796.40	4,612.28	4,183.68	4,003.38	3,990.64
	Trafficking in persons [1525]	0.19	0.08	0.20	0.31	0.37	0.71	1.04
Ottawa-Gatineau, Ontario part ^{6, 52, 68}	Total, all violations [0]	5,069.50	4,788.61	4,621.50	4,590.90	4,023.85	3,692.22	3,617.12
	Trafficking in persons [1525]	0.00	0.11	0.42	0.73	1.23	2.33	5.92
Toronto, Ontario ³³	Total, all violations [0]	4,284.50	4,060.66	3,888.83	3,624.22	3,348.98	3,247.85	3,290.00
	Trafficking in persons [1525]	0.27	0.12	0.31	0.39	0.39	0.62	0.66

Footnotes: [Back to original table](#)

- 13) If you're satisfied, select the "Download" tab above the table to produce two options.

Incident-based crime statistics, by detailed violations
annual

Data table Add/Remove data Manipulate **Download** Related information Help

Select an option to download data in the desired format.

Option 1 - Download data as displayed in the Data table tab

Select the language:
English

Select the data output format type:
time as columns

Select the file format:
CSV (comma-separated values) English spreadsheet

Series details: normal retrieval
vector identifier, plus coordinate, plus data

Download data

Option 2 - Download entire table

Select the file format:
CSV (comma-separated values) English spreadsheet (13.1 mb) (Files modified on 2016-07-20)

Download entire table

- 14) Since we don't want to download the entire table – in large part because it's too big for Excel, but not for MySQL which we'll learn in subsequent tutorials – chose "download data" tab under "Option 1".

Statistics Canada Statistique Canada

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Information for... Browse by subject Browse by key resource Help Canada.ca

Home

Alternative format - CSV document

The following document is available for downloading or viewing:

- Download file from CANSIM (CSV Version: 7.196kb)

If you do not have a software that converts Comma-separated value (CSV) or semicolon-separated value (SCSV) file formats, download the following viewer:

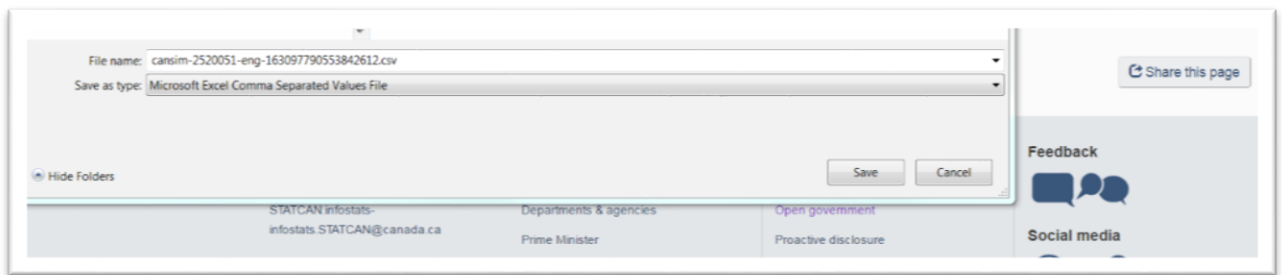
- Excel viewer

Date modified: 2016-09-15

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- 15) Select the “Download file from CANSIM (CSV Version 7.196kb)” link.



- 16) Browse to the location on your hard drive where you want to keep the Cansim table, and give it an understandable label, something like “Human Trafficking Violation_ cansim-252-0051.csv. Notice that we want to keep the numerical reference to the Cansim table -- 252-0051 – that contains the crime data.
- 17) Open the table and adjust the column widths.

	Violations	Statistics	2009	2010	2011	2012	2013	2014	2015
Total, all violations [0]	Rate per 100,000 population	7281.47	6996.36	6627.06	6458.6	5969.98	5775.78	5888.19	
Trafficking in persons [1525]	Rate per 100,000 population	0.12	0.07	0.17	0.17	0.22	0.4	0.59	
Total, all violations [0]	Rate per 100,000 population	5310.02	5073.39	4796.4	4612.28	4183.68	4003.38	3990.64	
Trafficking in persons [1525]	Rate per 100,000 population	0.19	0.08	0.2	0.31	0.37	0.71	1.04	
Total, all violations [0]	Rate per 100,000 population	5069.5	4788.61	4621.5	4590.9	4023.85	3692.22	3617.12	
Trafficking in persons [1525]	Rate per 100,000 population	0	0.11	0.42	0.73	1.23	2.33	5.92	
Total, all violations [0]	Rate per 100,000 population	4284.5	4060.66	3888.83	3624.22	3348.98	3247.85	3290	
Trafficking in persons [1525]	Rate per 100,000 population	0.27	0.12	0.31	0.39	0.39	0.62	0.66	

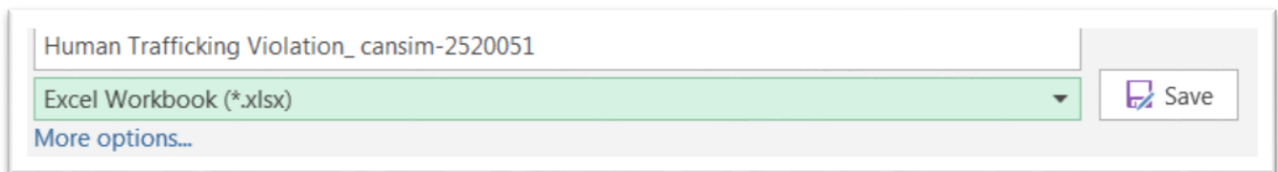
Footnotes:

- 1 For the period from 1998 to 2015 Incident-based Uniform Crime Reporting Survey (UCR2) data are not available for all respondents. In order to report this
- 2 During the production of each year's crime statistics, data from the previous year are revised to reflect any updates or changes that have been received from
- 3 The methodology for calculating census metropolitan area (CMA) populations was modified in 2003. Starting in 1996, the populations for CMAs have been a
- 6 The census metropolitan area (CMA) of Ottawa-Gatineau was formerly known as Ottawa-Hull.
- 7 During the revision of 2001 data for the province of Ontario, a discrepancy in methodology applied by the forces in the province using the Ontario Municipal
- 33 In 2009, slight changes were made to the respondent-to-CMA mapping for this census metropolitan area (CMA) which have resulted in minor revisions to pri
- 47 With the release of 2012 data, revised population estimates at the respondent level were applied back to and including 2004. This resulted in boundary chan
- 50 In 2012, it was discovered that the Montreal Police Service had been incorrectly applying the agreed upon definition for reporting child pornography incident
- 52 Ottawa numbers also include child pornography incidents reported by the National Child Exploitation Coordination Centre of the Royal Canadian Mounted P
- 54 Police reported statistics may be affected by differences in the way police services deal with minor offences. In some instances, police or municipalities mig
- 67 Ontario numbers also include child pornography incidents reported by the Canadian Police Centre for Missing and Exploited Children of the RCMP which is lo
- 68 Prior to 2013, all incidents of child pornography recorded by the Royal Canadian Mounted Police Service's Canadian Police Centre for Missing and Exploited

Source:
7 Statistics Canada. Table 252-0051 - Incident-based crime statistics, by detailed violations, annual (number unless otherwise noted)
8 (accessed: September 15, 2016)

- 18) You'll notice that the table looks like the one we saw on the website; the name of the table and Cansim number at the top, the jurisdictions in the first column, the foot notes underneath the table.
- 19) Paste the website's URL in B2, the first available cell in the first row.
- 20) Save the csv file.
- 21) Because this is a csv file, it only supports one worksheet. We may want copy and paste version of this table on successive worksheets.

- 22) So let's save this table as an Excel file.



- 23) Now it's time for a bit of clean up. Select the table in your Excel file.

Geography (3,47)	Violations	Statistics	2009	2010	2011	2012	2013	2014	2015
Canada (50)	Total, all violations [0]	Rate per 100,000 population	7281.47	6996.36	6627.06	6458.6	5969.98	5775.78	5888.19
Canada (50)	Trafficking in persons [1525]	Rate per 100,000 population	0.12	0.07	0.17	0.17	0.22	0.4	0.59
Ontario (7,67)	Total, all violations [0]	Rate per 100,000 population	5310.02	5073.39	4796.4	4612.28	4183.68	4003.38	3990.64
Ontario (7,67)	Trafficking in persons [1525]	Rate per 100,000 population	0.19	0.08	0.2	0.31	0.37	0.71	1.04
Ottawa-Gatineau, Ontario part (6,52,68)	Total, all violations [0]	Rate per 100,000 population	5069.5	4788.61	4621.5	4590.9	4023.85	3692.22	3617.12
Ottawa-Gatineau, Ontario part (6,52,68)	Trafficking in persons [1525]	Rate per 100,000 population	0	0.11	0.42	0.73	1.23	2.33	5.92
Toronto, Ontario (33)	Total, all violations [0]	Rate per 100,000 population	4284.5	4060.66	3888.83	3624.22	3348.98	3247.85	3290
Toronto, Ontario (33)	Trafficking in persons [1525]	Rate per 100,000 population	0.27	0.12	0.31	0.39	0.39	0.62	0.66

- 24) Copy and paste it into a new worksheet, and adjust the column widths.

Human trafficking violation_cansim-2520051.xlsx - Excel

File Home Insert Page Layout Formulas Data Review View Developer Tableau Tell me what you want to do

Clipboard Font Alignment Number Conditional Formatting Table Styles

A1 Geography (3,47)

	A	B	C	D	E	F	G	H	I	J	K
1	Geography (3,47)	Violations	Statistics	2009	2010	2011	2012	2013	2014	2015	
2	Canada (50)	Total, all violations [0]	Rate per 100,000 population	7281.47	6996.36	6627.06	6458.6	5969.98	5775.78	5888.19	
3	Canada (50)	Trafficking in persons [1525]	Rate per 100,000 population	0.12	0.07	0.17	0.17	0.22	0.4	0.59	
4	Ontario (7,67)	Total, all violations [0]	Rate per 100,000 population	5310.02	5073.39	4796.4	4612.28	4183.68	4003.38	3990.64	
5	Ontario (7,67)	Trafficking in persons [1525]	Rate per 100,000 population	0.19	0.08	0.2	0.31	0.37	0.71	1.04	
6	Ottawa-Gatineau, Ontario part (6,52,68)	Total, all violations [0]	Rate per 100,000 population	5069.5	4788.61	4621.5	4590.9	4023.85	3692.22	3617.12	
7	Ottawa-Gatineau, Ontario part (6,52,68)	Trafficking in persons [1525]	Rate per 100,000 population	0	0.11	0.42	0.73	1.23	2.33	5.92	
8	Toronto, Ontario (33)	Total, all violations [0]	Rate per 100,000 population	4284.5	4060.66	3888.83	3624.22	3348.98	3247.85	3290	
9	Toronto, Ontario (33)	Trafficking in persons [1525]	Rate per 100,000 population	0.27	0.12	0.31	0.39	0.39	0.62	0.66	

- 25) Name the worksheet something like "HumanTrafficking1". You'll notice that we have no spaces between the words in our label. There are two reasons for this: space is limited on the tabs; and database naming conventions for titles dictate that spaces not be used. In this instance, we could have also used an underscore to join the words.
- 26) Because we'll want to visualize our results, it's best to rid the labels of the numbers beside them.
- 27) You can do this, by double-clicking inside the cells, which you can now treat as mini-documents.

	A
1	Geography (3,47)
2	Canada (50)

Human Trafficking Violation_cansim-2520051.xlsx - Excel										
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	A	B	C	D	E	F	G	H	I	J
1	Geography	Violations	Statistics	2009	2010	2011	2012	2013	2014	2015
2	Canada	Total, all violations	Rate per 100,000 population	7281.47	6996.36	6627.06	6458.6	5969.98	5775.78	5888.19
3	Canada	Trafficking in persons	Rate per 100,000 population	0.12	0.07	0.17	0.17	0.22	0.4	0.59
4	Ontario	Total, all violations	Rate per 100,000 population	5310.02	5073.39	4796.4	4612.28	4183.68	4003.38	3990.64
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6	Ottawa-Gatineau, Ontario part	Total, all violations	Rate per 100,000 population	5069.5	4788.61	4621.5	4590.9	4023.85	3692.22	3617.12
7	Ottawa-Gatineau, Ontario part	Trafficking in persons	Rate per 100,000 population	0	0.11	0.42	0.73	1.23	2.33	5.92
8	Toronto, Ontario	Total, all violations	Rate per 100,000 population	4284.5	4060.66	3888.83	3624.22	3348.98	3247.85	3290
9	Toronto, Ontario	Trafficking in persons	Rate per 100,000 population	0.27	0.12	0.31	0.39	0.39	0.62	0.66

28) That's better.

29) Apply the filter, and select the "Trafficking in persons" in column B.

Human Trafficking Violation_cansim-2520051.xlsx - Excel

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From Access

From Web

From Text

Get External Data

From Other Sources

Existing Connections

New Query

Get & Transform

Show Queries

From Table

Recent Sources

Refresh All

Connections

Properties

Edit Links

Connections

Sort

Filter

Sort & Filter

Clear

Reapply

Advanced

Flash Fill

Remove Duplicates

Data Validation

Consolidate

Relationships

Manage Data Model

Data Tools

What Analyze

A1

Geography

	A	B	C	D	E	F	G	H	I	J
1	Geography	Violations	Statistics	2009	2010	2011	2012	2013	2014	2015
3	Canada	Trafficking in persons	Rate per 100,000 population	0.12	0.07	0.17	0.17	0.22	0.4	0.59
5	Ontario	Trafficking in persons	Rate per 100,000 population	0.19	0.08	0.2	0.31	0.37	0.71	1.04
7	Ottawa-Gatineau, Ontario part	Trafficking in persons	Rate per 100,000 population	0	0.11	0.42	0.73	1.23	2.33	5.92
9	Toronto, Ontario	Trafficking in persons	Rate per 100,000 population	0.27	0.12	0.31	0.39	0.39	0.62	0.66
10										

30) These is what we want: the trafficking in persons rates for Ottawa, Toronto, Ontario and Canada. Copy this table and paste it into a new worksheet, which you should name.

31) Now we're looking for patterns.

32) First, let's determine the increase over time. The numbers for 2009 look pretty small. In fact, for Ottawa the rate was zero. Without conducting an interviews, it's hard to know why the numbers are so low. It could be, for instance, that the police forces had few resources to combat this crime,

which compared to others like assault is more infrequent. So let's choose a time period that makes a bit more sense, say from 2011 to 2015, four years.

- 33) In column K, label K1 "Percent_Change_2011-2015"
- 34) Now calculate the percent change using the generic formula, (NEW NUMBER – OLD NUMBER)/OLD NUMBER.
- 35) In this case the new number is in column J, 2015. The old number is in column F, 2011.

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J	K
1	Geography	Violations	Statistics	2009	2010	2011	2012	2013	2014	2015	Percent_Change_2011-2015
2	Canada	Trafficking in persons	Rate per 100,000 population	0.12	0.07	0.17	0.17	0.22	0.4	0.59	$= (J2 - F2) / F2$
3	Ontario	Trafficking in persons	Rate per 100,000 population	0.19	0.08	0.2	0.31	0.37	0.71	1.04	
4	Ottawa-Gatineau, Ontario part	Trafficking in persons	Rate per 100,000 population	0	0.11	0.42	0.73	1.23	2.33	5.92	
5	Toronto, Ontario	Trafficking in persons	Rate per 100,000 population	0.27	0.12	0.31	0.39	0.39	0.62	0.66	
6											
7											

The formula bar shows the formula for cell J2: $= (J2 - F2) / F2$.

36) Hit enter, format the cell as a percent with one decimal place...

The screenshot shows the Microsoft Excel interface with the file name 'cansim-2520051.xlsx'. The ribbon includes 'Data Tools' (Flash Fill, Remove Duplicates, Data Validation, Consolidate, Relationships, Manage Data Model) and 'Analyze' (What-If Analysis, Forecast Sheet, Group, Ungroup, Subtotal, Data Analysis, Solver). The spreadsheet data is as follows:

	H	I	J	K	L	M	N	O	P
12	2013	2014	2015	Percent_Change_2011-2015					
17	0.22	0.4	0.59	2.470588235					
31	0.37	0.71	1.04						
73	1.23	2.33	5.92						
39	0.39	0.62	0.66						

The 'Format Cells' dialog box is open, showing the 'Number' tab. The 'Category' list on the left has 'Percentage' selected. The 'Sample' field displays '247.1%' and the 'Decimal places' field is set to '1'. A note at the bottom states: 'Percentage formats multiply the cell value by 100 and displays the result with a percent symbol.' The 'OK' and 'Cancel' buttons are at the bottom right.

37) and copy the formula to the bottom of the table.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Geography	Violations	Statistics	2009	2010	2011	2012	2013	2014	2015	Percent_Change_2011-2015	
2	Canada	Trafficking in persons	Rate per 100,000 population	0.12	0.07	0.17	0.17	0.22	0.4	0.59		247.1%
3	Ontario	Trafficking in persons	Rate per 100,000 population	0.19	0.08	0.2	0.31	0.37	0.71	1.04		420.0%
4	Ottawa-Gatineau, Ontario part	Trafficking in persons	Rate per 100,000 population	0	0.11	0.42	0.73	1.23	2.33	5.92		1309.5%
5	Toronto, Ontario	Trafficking in persons	Rate per 100,000 population	0.27	0.12	0.31	0.39	0.39	0.62	0.66		112.9%

38) The percentages are impressive, but because the numbers are so small, percent increases may not be our best angle. At best we can say that the arrest rates are increasing.

39) It may be more newsworthy to compare Ottawa's to that of Toronto, Ontario and Canada.

40) To do this, we can sort the 2015 figures in descending order.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Geography	Violations	Statistics	2009	2010	2011	2012	2013	2014	2015	Percent_Change_2011-2015	
2	Ottawa-Gatineau, Ontario part	Trafficking in persons	Rate per 100,000 population	0	0.11	0.42	0.73	1.23	2.33	5.92		1309.5%
3	Ontario	Trafficking in persons	Rate per 100,000 population	0.19	0.08	0.2	0.31	0.37	0.71	1.04		420.0%
4	Toronto, Ontario	Trafficking in persons	Rate per 100,000 population	0.27	0.12	0.31	0.39	0.39	0.62	0.66		112.9%
5	Canada	Trafficking in persons	Rate per 100,000 population	0.12	0.07	0.17	0.17	0.22	0.4	0.59		247.1%

41) Interesting. Ottawa has the highest rate.

42) There could be many reasons for this. So now it's time to begin asking questions and conducting interviews.

43) You've successfully used this dataset as a great tip sheet.