



GPRM 230

A (very) quick look at Statistical and Geospatial data

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What we will cover today

- Definition of Microdata
- Access to Microdata files
- Microdata
 - <odesi> (for Statistics Canada microdata)
 - QICSS (to access Statistics Canada's master files)
- Definition of Geospatial Data (GIS data)
- A quick overview of GIS data sources



STATISTICAL MICRODATA

What is microdata?

Microdata consists of the data directly observed or collected from a specific unit of observation (individual cases, answers from one individual, from one respondent).

Aggregate data

- Every cell represents *added up* data (or frequencies), i.e. how many people living in Quebec identify themselves as South Asian, Chinese, Black, etc.
- These stats can be expressed in absolute numbers or percentages
- Beyond basic sums and percentages, no serious statistical analysis can be done with aggregated data

Microdata

- Each row represents the answers of an *individual respondent*
- Often the numbers are codes, not actual values.
- Thus you need the documentation to understand the data
- Raw data is what should be used to conduct in-depth statistical analysis.

Aggregate data vs. Microdata

Aggregate Data (2006 Census)

Ethnocultural Portrait of Canada - Data table - Windows Internet Explorer

http://www12.statcan.ca/census-recensement/2006/dp-pd/hlt/97-562/pages/page.cfm?Lang=E&Geo=CMA&Code=24&Table=

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Concordia Libraries Ethnocultural Portrait of ...

Statistics Canada
www.statcan.gc.ca

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Home > Census > Data products > Highlight tables > Ethnocultural Portrait of Canada

Visible minority groups, 2006 counts, for Canada, provinces and territories, and census metropolitan areas and census agglomerations - 20% sample data

Select a view

Quebec 2006 counts Submit

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Geographic name	Total - Population by visible minority groups	Total visible minority population ¹	South Asian ²	Chinese	Black	Filipino	Latin American	Southeast-Asian ³
Canada	31,241,030	5,068,090	1,262,865	1,216,570	783,795	410,695	304,245	239,935
Quebec	7,435,905	654,355	72,845	79,830	188,070	24,200	89,505	50,455
Alma, CA (Que.)	32,280	215	10	40	45	10	25	80
Amos, CA (Que.)	17,590	165	0	20	70	20	0	55
Baie-Comeau, CA (Que.)	29,455	150	0	35	65	0	10	10
Campbellton (Quebec part), CA	3,040	10	0	10	0	0	0	0
Cowansville, CA (Que.)	12,095	95	15	10	50	0	0	10
Dolbeau-Mistassini, CA (Que.)	14,390	70	0	30	10	10	0	10
Drummondville, CA (Que.)	76,400	1,660	10	70	240	0	1,095	105
Granby, CA (Que.)	66,800	1,285	0	130	305	20	460	100
Hawkesbury (Quebec part), CA	1,400	0	0	0	0	0	0	0
Joliette, CA (Que.)	42,515	705	30	105	285	0	185	55
La Tuque, CA (Que.)	15,070	105	0	20	50	0	0	15

Done

Start

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Ethnocultural Portrait...

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Microdata (unaggregated)

SurveyData.sav - SPSS Data Editor

File Edit View Data Transform Analyze Graphs Utilities Add-ons Window Help

1 : ID 1

	ID	Program	Affiliation	Age	LibSocial	LibIndiv	LibGroup	LibSilent	IndivFreq	IndivLocat	IndLibLocat	GrLocat	GrLibrL
1	1	JMSB MBA	2	2	1	4	4	1	4	2	0	5	0
2	2	Political science	1	2	1	3	2	2	3	1	1	1	1
3	3	Art history	2	2	1	5	2	5	2	0	0	0	1
4	4	English	1	2	4	3	3	5	2	0	3	1	1
5	5	Accounting	1	1	3	4	3	5	1	2	3	1	1
6	6	ENCS	2	2	2	5	3	4	2	2	3	5	2
7	7	JMSB	1	1	1	4	3	5	1	3	3	3	1
8	8	Engineering	1	2	1	4	4	5	2	0	3	5	1
9	9	JMSB. Finance	1	2	1	3	3	5	1	3	3	3	1
10	10	n/a	5	4	2	5	4	5	1	5	3	5	2
11	11	Sociology	1	1	1	5	3	5	1	2	1	0	1
12	12	MSc. Administration	2	2	4	4	4	4	1	3	3	3	1
13	13	ENCS	1	2	4	2	2	1	1	3	1	5	1
14	14	JMSB	1	2	4	4	4	5	2	2	1	3	1
15	15	Political science	1	1	5	1	1	1	3	6	3	1	2
16	16	BComm	1	2	5	5	3	5	1	0	2	3	1
17	17	Civil engineering	1	3	2	4	3	1	2	0	3	1	1
18	18	JMSB	1	1	1	5	4	5	1	3	2	3	4
19	19	Film studies	1	1	2	4	4	4	2	0	2	0	0
20	20	Finance	1	1	2	5	5	4	1	3	0	3	1
21	21	JMSB	1	3	1	5	4	5	2	3	2	3	4
22	22	Accounting	0	1	4	4	4	4	1	0	3	3	4
23	23	Leisure sciences	1	1	1	5	5	5	2	3	1	2	1
24	24	CIISE	2	2	3	2	1	5	1	4	0	2	1
25	25	JMSB	1	1	1	4	3	5	1	3	1	2	1
26	26	Marketing	1	1	1	3	3	2	2	3	1	3	1
27	27	Economics	1	1	3	4	4	5	2	0	3	0	1
28	28	Marketing	1	2	2	4	4	3	2	0	3	5	1
29	29	ECE	1	1	1	5	2	5	1	4	0	6	1
30	30	n/a	2	4	4	2	2	2	2	0	1	1	1
31	31	Child studies	1	1	1	5	4	5	2	3	2	1	1

Data View Variable View

SPSS Processor is ready

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AN OVERVIEW OF STATISTICS CANADA MICRODATA

Microdata from Statistics Canada

1. Public Use Microdata Files (PUMF)

- They are *samples* of the complete datasets
- Preserve the confidentiality of respondents

2. Master Files

- Complete datasets
- Only available from the QICSS data centre



ACCESS TO DATASETS

How to access PUMFs

- PUMFs are made available to **students and faculty** through the **<odesi>** database
- Some files may not be in **<odesi>**
 - Ask the data librarian (that's me!) to download them for you



<ODESI> DEMO

Example of products



GEOSPATIAL DATA

A definition...

Geospatial data, also known as GIS data, is any numeric data that contains explicit geographic positioning information.

Can be accessed and manipulated by *Geographic Information System* software (such as ArcGIS) to produce:

- detailed maps
- sophisticated spatial analysis

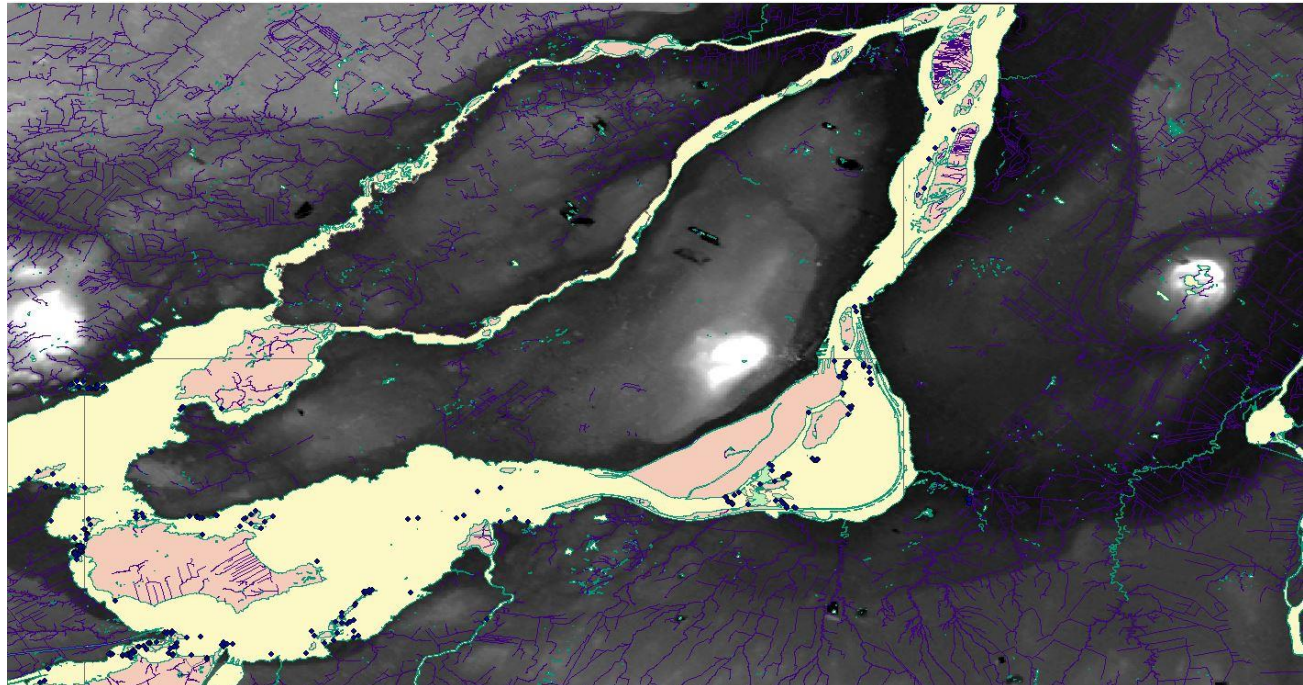
Topographic data – e.g. CanVec

Include features such as: parks, buildings, street networks, hydrography, administrative boundaries, points of interest, etc.



LiDAR and DEM

- “LIDAR (Light Detection and Ranging) is a remote sensing technology that collects 3-dimensional point clouds of the Earth’s surface. These elevations can be either ground or reflective surface elevations.”
- “A Digital Elevation Model (DEM) is a digital representation of ground surface topology or relief”



Orthophotos

Orthophotos are digital images based on aerial photographs.



How to obtain the data from our collections?

1. Identify the specific area (product tiles) you want using the indexes available from the GIS Research Guide (if applicable)
2. Contact the GIS/Data Librarian to obtain the data:
alex.guindon@Concordia.ca

N.B. If are confused by Step 1, just contact me 😊