

Statistics Canada Research Data Centre (RDC) Alternatives: Conducting Research During COVID-19

Elizabeth Hill & Kristi Thompson May 20, 2020







Who we are

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Access to Data

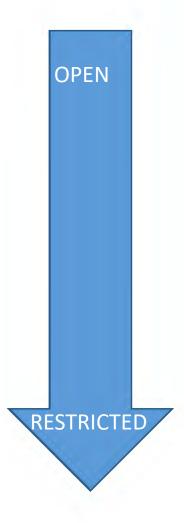
- 1. Overview of access levels to Statistics Canada data
- 2. What type of access is available at academic institutions?
- 3. Statistics Canada Continuum of Data Access
 - 1. Open
 - 2. Data Liberation Initiative
 - 3. RTRA
 - 4. RDC





Access to Statistics Canada Data

- Web site http://statcan.gc.ca
- Data extractors (Data Liberation Initiative DLI)
 - Odesi.ca
 - Statistics Canada Nesstar
 - http://dli-idd-nesstar.statcan.gc.ca/webview/
- Real Time Remote Access
- Research Data Centre (Currently closed due to Covid-19)









Access to Statistics Canada Data

The Continuum of Data Access Model helps users identify the various levels of data access at Statistics Canada, of which the DLI is one avenue. The model uses cost, the conditions attached to the terms of use, and the content of the statistical information as it applies to the various dissemination channels.







Continuum of Microdata Access

Access to microdata

Statistics Canada recognizes that researchers require access to microdata at the individual business, household or person level for research purposes. To preserve the privacy and confidentiality of respondents, and to encourage the use of microdata, Statistics Canada offers a wide range of options through a series of online channels, facilities and programs.









About the DLI

- The Data Liberation Initiative (DLI) is a partnership between Postsecondary institutions and Statistics Canada for improving access to Canadian data resources
 - Provide support related to use of products including Public Use Microdata Files (PUMFs) at academic institutions
 - Training services and support provided by Statistics Canada
 - Promotion of data and statistical literacy
 - List of DLI Members:
 - https://www.statcan.gc.ca/eng/dli/contact





Categories within the Continuum

- Unrestricted access to microdata (on campuses DLI members)
 - Public Use Microdata Files Collection
 - The Data Liberation Initiative
- Remote access to microdata
 - Real time Remote Access (RTRA)
- Restricted access to microdata
 - Research Data Centre (RDC) Programs









About odesi

- <odesi> is a web-based data exploration, extraction and analysis tool.
 It is the product of a unique partnership between university libraries,
 business, and government, which greatly improves access to
 statistical data for researchers, teachers, and students.
- <odesi> is of benefit to both the experienced and beginning researcher. It introduces undergraduates to data literacy and data discovery at an early stage in their careers; it provides the experienced researcher the ability to search immediately across hundreds of datasets and collections, allowing for faster and more meaningful data reviews, and instant access to data for further study.







Odesi (microdata)

<odesi> is best viewed using Chrome or Firetox

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∃ ODESI (Click to View Categories)

- Agriculture
- Business and Financial
- ☐ Census of Population
 - □ CANADA
 - **2016**

 - **⊞** Profiles

 - **±** 2011
 - **3006**
 - **±** 2001
 - **1996**
 - **1991**
 - **1986**
 - 1981 1976

 - **1971**
 - **±** 1951
 - **# 1941**
 - **±** 1931
 - **±** 1921
 - **1911**
 - ☐ 1901☐ National Sample of the 1901 Census[Canada]
 - 1 1001



A data portal for researchers, teachers and students; inspiring, developing and supporting research excellence.

Un portail de données à l'intention des chercheurs, professeurs et étudiants, qui vise à inspirer, à développer et à appuyer l'excellence en matière de recherche.





Note: In many cases, it is advisable to weight analysis results before reporting them. Correct weighting requires careful consideration, please always consult the weighting procedures of the study before applying the weights. To apply weights, select the Weight icon and choose the weight variable to be used. All results need careful interpretation. The data collectors and the data producers bear no responsibility for the analysis and interpretation of the data.

Note: Dans la plupart des cas, il est recommandé de pondérer les résultats d'analyse avant d'en rendre compte. Une pondération correcte nécessite une attention natriculière, veuillez toujours consulter les procédures de nondération d'une étude avant d'appliquer des pondérations. Pour appliquer les pondérations sélectionner l'icône







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odesi









Nesstar at Statistics Canada



Search surveys and statistical products
Search DLI variables
Contact Us Statistics Canada Open Licence

□ 1 % EN ?

- E Statistics Canada Public Use Microdata Files (PUMF)
- Fichiers de microdonnées à grande diffusion de Statistique Canada (FMGD)
- Statistics Canada metadata for Master Files (RDC)
- El Métadonnées pour les fichiers maîtres de Statistique Canada (CDR)
- Hidden Objects

Welcome to the NESSTAR data portal, a web-based exploration, extraction and analysis tool for social science data. The NESSTAR data portal consists of several catalogues of Statistics Canada data:

Statistics Canada Public Use Microdata Files (PUMF)

English catalogue of public use microdata files, which contain anonymized, non-aggregated data. Users can download the data file and associated metadata.

Fichiers de microdonnées à grande diffusion de Statistique Canada (FMGD)

French catalogue of public use microdata files, which contain anonymized, non-aggregated data. Users can download the data file and associated metadata.

Statistics Canada metadata for Master Files (RDC)

English catalogue of detailed microdata files, which contains most of the original information collected during the survey interview. Users can only browse or search the survey metadata.

Métadonnées pour les fichiers maîtres de Statistique Canada (CDR)

French catalogue of detailed microdata files, which contains most of the original information collected during the survey interview. Users can only browse or search the survey metadata.

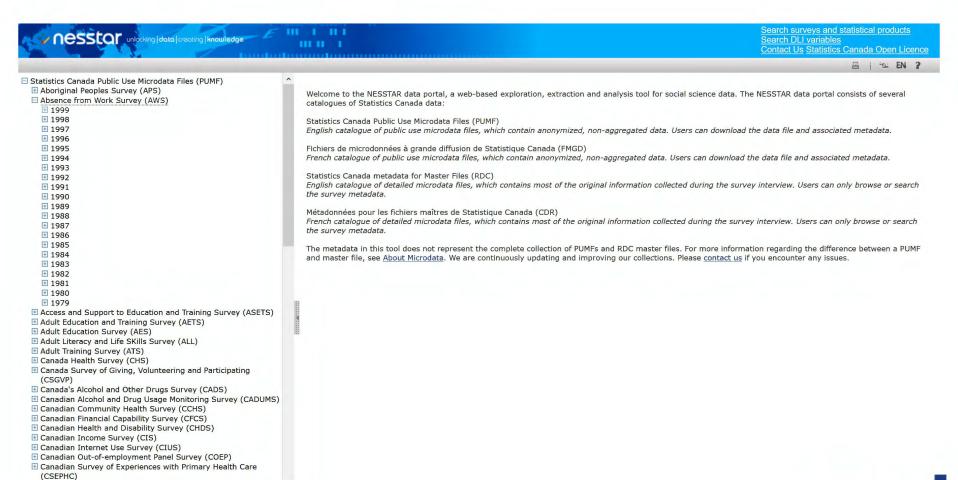
The metadata in this tool does not represent the complete collection of PUMFs and RDC master files. For more information regarding the difference between a PUMF and master file, see About Microdata. We are continuously updating and improving our collections. Please contact us if you encounter any issues.







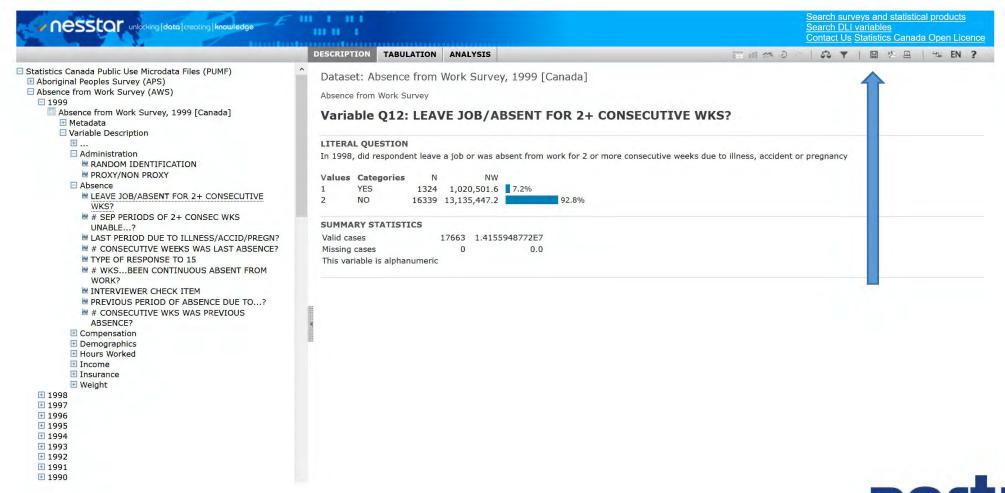
Nesstar at Statistics Canada







Nesstar at Statistics Canada









The RTRA system is an online **remote access** facility allowing users to run SAS programs, in **real-time**, against microdata located in a central and secure location. A full range of descriptive statistics are available through the **Real Time Remote Access** tool.

A number of Canadian universities have subscribed to RTRA.



Due to Covid-19 restrictions and the closure of university campuses in Canada, and in-turn the RDC, Statistics Canada is providing access to RTRA for approved RDC researchers.

If you are a RDC Researcher, access to RTRA will be available through the RDC.







When is RTRA Appropriate?

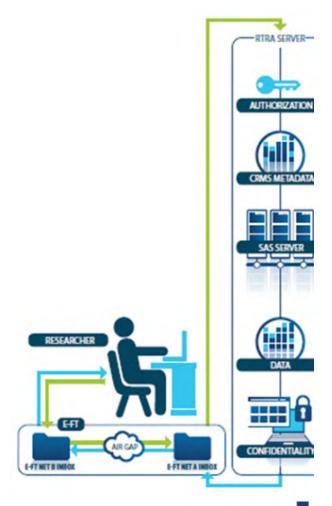
- When complex modeling is not required
- When PUMF lacks required detail or the project does not fit the requirements of the RDC
- Provides access to datasets that do not have a PUMF







- Access from any computer with Internet access using a secure username and password
- Submissions made in the form of SAS programs using an EFT site
- Confidentiality is automated









- Fast access to a pool of data sets
- Deemed employee status not required (RDC requirement)
- Access to data sets aren't restricted to approved projects
- Vetting of outputs is fully automated
- Accessible at any time through the internet.
- Full range of descriptive statistics available through the RTRA.







- 1.Rapid access:
 - >24/7 access to documentation, dummy data, RTRA accounts
 - > RTRA results within an hour
- 2. Expands research data options
 - > e.g., <u>continuous</u> variables
- 3. All points in the research lifecycle
 - e.g., strengthens research proposals and grant applications, and data light end users
- 4. Building end-user statistical analysis skills
 - > Supported by researcher-centred RTRA support and training
 - › Basic level statistical analysis experience required







Notes from the User Guide (https://www.statcan.gc.ca/eng/rtra)

- Your SAS program has to be written in a standard format in order to automate the confidentiality process within RTRA
- Frequencies are rounded, this is explained within the User Guide
- Some variables are renamed, others are deleted (if disclosure risk is an issue)
- 3 types of Statistics are calculated within RTRA
 - Basic statistics, including frequency, mean, percentiles, percent distribution, proportions, ratio and share
 - Higher order statistics these statistics calculate differences between the basic statistics available in the RTRA system
 - Sequential over time statistics, compare the value of every cell with the value of the cell directly below it in the table in a sequential manner over time







Real Time Remote Access – Available Data

Over 200 Survey Cycles

For a full list see: http://www.statcan.gc.ca/eng/rtra/surv

Surveys of Particular interest include:

- Labour Force Survey (monthly additions)
- Canadian Survey on Disability
- Aboriginal Peoples Survey
- Participation and Activity Limitation Survey
- Canadian Community Health Survey
- Post-secondary Student Information System







- Review of RTRA surveys not available as public microdata
- Canadian Cancer Registry
- Homicide Survey
- Postsecondary Student Information System
- Registered Apprentice System
- Uniform Crime Reports
- Canadian Mental Health Survey
- Health Services Access Survey
- Longitudinal Survey of Immigrants to Canada
- Maternity Experiences Survey
- National Apprenticeship Survey
- Post-Secondary Education Participation Survey
- Survey of Young Canadians
- Survey on Living with Chronic Diseases in Canada (SLCDC): Arthritis







Real Time Remote Access – Administrative Data

- Uniform Crime Reporting
- Canadian Cancer Registry
- Registered Apprenticeship Information System
- Post-secondary Student Information System
- Homicide Data







General disclosure rules & controls applied to all outputs:

- Smallest level of geography is provincial
- Only weighted data are released
- All logs are scanned and modified for protection
- Maximum number of successful submissions per day: 10
- Maximum number of tables per request: 10
- No more than 500 categories can be produced for a given variable
- The RTRA System applies Additive and Controlled Rounding to all frequencies. The rounding base is survey-driven







RTRA Benefits

- Anytime access
- Few conditions on access and use of data
- Full Master files available
- Deemed employee status not required
- Up to 100 successful table outputs per day (10 per submission)
- Available program examples in RTRA documentation
- Using RTRA (in usual circumstances (when campuses are open), or in planning research, can enhance an RDC application







RTRA Limitations

- Job submission have to be made in SAS
- Only certain statistics available (descriptive)
- Output are tables
- Not all data sets are available
- Time investment required to understand the dataset and documentation in advance of running an RTRA submission

Available descriptive statistics include: frequency, mean, percentiles, percent distribution, proportions, ratio and share







How to Access RTRA

 If you are a RDC researcher, you can ask for access through the RDC Program

• If you are a non-RDC researcher, contact your local Data Liberation Initiative (DLI) contact

- E-mail RTRA program directly
 - statcan.madrtra-damadtr.statcan@canada.ca







Research Data Centre



Research Data Centre

The Research Data Centres promote and facilitate research that uses Statistics Canada microdata files at 32 universities across the country, as well as 3 Federal Research Data Centres located in the National Capital Region. Researchers, who become deemed employees of Statistics Canada, access data that include population and social household surveys, administrative data holdings and linked data. The confidentiality of respondents is protected through the use of policies and procedures that create a culture of confidentiality within the research community

https://www.statcan.gc.ca/eng/microdata/data-centres





Alternatives To Statistics Canada

Survey by survey recommendations





General Notes

- U.S. data can be a better replacement for RDC files than Canadian PUMFs because U.S. public use variables are generally released at a level of detail close to that which in Canada is only accessible in the RDC.
- U.K. data is also often quite detailed.
- U.S. has no equivalent of Statistics Canada data is collected by the Census Bureau, Federal Reserve, Bureau of Labor Statistics, Center for Health Statistics, Center for Education Statistics...
- This leads to some duplication; other areas fall through the cracks
- Some major surveys are done by universities or other organizations (e.g. the U.S. GSS).





General Notes continued...

- Using U.S. data in place of Canadian is obviously problematic for anything that looks at health system factors and health outcomes due to the differences in health insurance.
- U.K. like Canada has national health insurance, but systems are not identical
- U.S. and Canada are closer demographically and economically than Canada and U.K.
- Relationships among social and health factors are likely to be comparable in countries at a similar level of development, prevalence estimates less so
- Sometimes the country is less important than other aspects of the research question







Searching for replacement data

- If you are looking for a replacement for a government survey, keep in mind that governments have similar data collection needs so the best equivalent may be another government survey
- Think big major national think tanks, well-funded research organizations
- It can be tempting to start with a general survey archive like ICPSR but this has two issues
 - Will miss a lot of data, including some government data
 - Results will be dominated by smaller specialized surveys
- This is less a problem in countries with actual national data archives such as the UK





Economic and Labour surveys

Labour Force Survey, Canadian Income Survey, Household Spending and others







Labour Force and Income Surveys

- The <u>Current Population Survey</u> (Census Bureau)— like LFS, used to gauge unemployment rate, but asks about a number of other topics
 - NBER Supplements Coverage Chart
- <u>Survey of Consumer Finances</u> (Federal Reserve) includes an oversample of wealthy households
- Survey of Income and Program Participation (SIPP) (Census Bureau)
- <u>Panel Study of Income Dynamics</u> (University of Michigan) oversamples low income households
- National Survey of Unbanked and Underbanked Households is from the Federal Deposit Insurance Corporation and conducted as a supplement to the CPS
- U.K. Labour Force Survey releases longitudinal as well as crosssectional data







Consumer and Expenditure Surveys

- <u>Consumer Expenditure Survey</u> from the Bureau of Labour Statistics compare Canada's Survey of Household Spending. 1980 now.
- Food expenditure supplement to the <u>CPS</u> is similar to Canada's discontinued Family Food Expenditure survey. Also...
- Department of Agriculture <u>Food Acquisition and Purchase Survey</u>, combination of expenditure survey and a nutrition / consumption survey
- <u>Survey of Consumer Expectations</u> from the New York Fed questions focusing on personal prospects and expectations
 - Available annually 2013 now
- University of Michigan <u>Surveys of Consumers</u> (aka Survey of Consumer Attitudes and Behavior) questions focusing more on expectations for the economy in general
 - Available monthly 1991 now
- U.K. Living Costs and Food Survey goes back to 1957





Health surveys

Canadian Community Health Survey, Addiction Surveys, and others







Canadian Community Health Survey

- National Health Interview Survey (NHIS) is probably most comparable to the CCHS. Includes modules on alcohol use and physical activity and has good coverage of mental health
- The <u>National Health and Nutrition Examination Survey</u> (NHANES) is comparable to the CCHS nutrition modules and also overlaps the Canadian Health Measures survey
- UCLA's <u>California Health Interview Survey</u> is also a useful source with some questions that aren't in the others
- The U.K. has several health surveys; I'll just mention the Health Survey for England







Addiction Surveys

- The <u>Behavioral Risk Factor Surveillance System (BRFSS)</u> and the <u>Youth Risk</u> <u>Behavior Surveillance System (CDC)</u>
- National <u>Adult</u> and <u>Youth</u> Tobacco Survey (CDC)
- Monitoring the Future high school cross-sectional that focuses on drug use
- <u>National Survey on Drug Use and Health (NSDUH)</u> and other data from the <u>Substance Abuse and Mental Health Archive</u>
- Of possible interest a public use file for a Health Canada survey of young adults' drug use has been added to <u>ODESI</u>







Others

- <u>National Health Interview Survey on Disability</u> is similar to Canada's Survey on Disability / Participation and Activity Limitation Survey / etc. Last conducted in 1994. Currently the CDC suggests using the limited set of disability questions in the <u>American Community Survey</u> (Census bureau) to estimate disability prevalence.
- <u>Listening to Mothers Survey</u> (modules conducted between 2002 and 2018) has questions in common with Canada's Maternity Experiences survey





GSS, Specific GSS modules







General Social Survey

- Obviously, the <u>U.S. General Social Survey</u>
- World Values Surveys some cycles include Canada
- Pew Center for People and the Press, particularly the <u>Social Trends</u> surveys
- The <u>American National Election Study</u> covers some social topics quite well – more than the Canadian Election Study
- Best analog to the time use module is the <u>American Time Use Survey</u> from the BLS
- The National Crime Victimization Survey is comparable to the GSS victimization modules
- <u>CPS supplement on civic engagement</u> has some content in common with the Canadian GSS Giving, Volunteering and Participating module. Also consider the <u>American National Election Study</u>
- The British Social Attitudes Survey is probably the best UK bet but has more of a political focus and is closer to the ANES / CES than the GSS.







Longitudinal Surveys

NLSCY, LSIC, NGS







NLSCY Alternatives

- Longitudinal data from the Bureau of Labour Statistics:
 - National Longitudinal Surveys of Youth (NLSY) <u>1979</u> and <u>1997</u>
 - Children of the 79 cohort is a fascinating add-on
 - NLSY is strongly focused on labour market outcomes where the NLSCY covered social and health topics as well
- National Centre for Education Statistics data may be better for educationfocused research questions or for looking at younger respondents
 - <u>Early Childhood Longitudinal Studies</u>
 - Secondary Longitudinal Studies Program
- Also consider the <u>National Longitudinal Study of Adolescent to Adult Health</u> (from UNC) particularly for research into physical or mental health, or social networks
- The <u>Wisconsin Longitudinal Study</u> (1957-2011) is another survey following adolescents into adulthood and has unique features including psychological and personality testing, sibling data, and genetic data
- The UK Data Service houses a number of <u>longitudinal surveys</u>, including the Millennium Cohort Study and the Child Development Study.





Immigration and Graduates

- Princeton's Population Research department conducts some immigration-focused longitudinal studies:
 - New Immigrant Survey is the closest equivalent I've found to Canada's longitudinal survey of immigrants.
 - Highly Skilled and Educated Immigrants
 - Children of Immigrants Longitudinal Study
- The CPS has an International Migration supplement from 2008, but it is a cross-section
- Also note the U.K. Longitudinal Study of Immigrant Children
- Also, though recent modules of Canada's National Graduates Survey aren't longitudinal, I
 wanted to toss a couple of graduate surveys in here
- The <u>Baccalaureate and Beyond Longitudinal Study (B&B)</u> is the closest equivalent to Canada's National Graduates survey
- Princeton's <u>National Longitudinal Survey of Freshmen</u> may also be of interest looks specifically at minority achievement





Link Compendium





Government Data Sets

- U.S. Government Data Collection Agencies
 - Bureau of Labour Statistics
 - National Longitudinal Surveys site
 - <u>Census.gov</u> not just the census!
 - National Center for Education Statistics
 - National Center for Health Statistics under the CDC
 - Bureau of Justice Statistics
- UK Data Service







Nongovernmental Starting Points

- ICPSR Interuniversity Consortium for Political and Social Research
 - houses some (not all) government surveys, Monitoring the Future, thousands more
- Pew Center for People and the Press
 - I haven't mentioned their Internet and social media surveys...
- <u>IPUMS</u>, University of Minnesota
 - U.S. and international census data, CPS
- <u>Institute for Social Research</u> at the University of Michigan
- Princeton University Office of Population Research





Thank You!

- Discussion and questions?
- Either ask questions over Zoom, (audio or chat window), or email us.

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