August 9th, 2023

Data to Decisions: A practical guide for finding and using labour market information

By Jamie Ward and Leslie Feltham

MEMORIAL UNIVERSITY

REGIONAL ANALYTICS LABORATORY

The Harris Centre

With support from

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RAnLab is a part of the Harris Centre at Memorial University that aims to support evidence-based policies for regional development through capacity building initiatives and regional economic and spatial analytics.

WHO WE ARE

Jamie Ward
Manager,
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Associate Director,
Harris Centre

Presentation outline

- **Welcome and introductions**
- **RAnLab: What we do**
- **Finding and Using Labour Market Information**
- **Barriers to working with local data**
- **Helpful resources**

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What hat are you wearing today?

ⓘ Start presenting to display the poll results on this slide.

What We Do

A connection between Memorial University and Newfoundland and Labrador communities.

The Harris Centre

Working with all units at Memorial, the Harris Centre builds connections, encourages informed debate and supports collaboration to enhance the University and NL through mutually beneficial partnerships

Public policy forums

Thriving Regions Partnership Process

Vital Signs

Research funding

And more!

RAnLab

RAnLab is a part of the Harris Centre that aims to support evidence-based policies for regional development through capacity building initiatives and regional economic and spatial analytics

Data analytics

Data modelling

Data and information management

Capacity building

And more!

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Future Skills Centre

What We Do

RAnLab informs regional economic planning and development.

LOCAL | HELPFUL | FLEXIBLE | ENGAGING

RAnLab...

- informs evidence-based analysis and decision-making
- provides practical and helpful tools that support local capacity building
- develops custom models
- supports local research and development through partnerships
- works with local data that capture local context required for useful modelling
- outputs are flexible—developed to meet specific requirements

What We Do

RAnLab supports regional economic planning and development through capacity building initiatives.

It's not enough to just have data, it must be useful!

- Data models and analyses are for policy development and planning
- Engage to learn areas of weaknesses in decision making that data can support
- Interrogate administrative sources for gaps
- Transparency of methods and sources is critical
- Statistical information is coupled with guides and core key concepts are explained

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How familiar are you with accessing and using data to inform your work?

ⓘ Start presenting to display the poll results on this slide.

Labour Market Information

LMI refers to data and insights about the supply and demand for labour in a particular geographic region or industry.

- Includes data about job vacancies, wages, employment trends, and skills required for specific occupations

- Geography and industry classifications are essential

- LMI is used by a wide range of people, for example:
  - Job seekers to make informed decisions about career choices
  - Businesses to plan their workforce needs
  - Policymakers to develop labour market policies and programs

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What are some of your go-to data sources?

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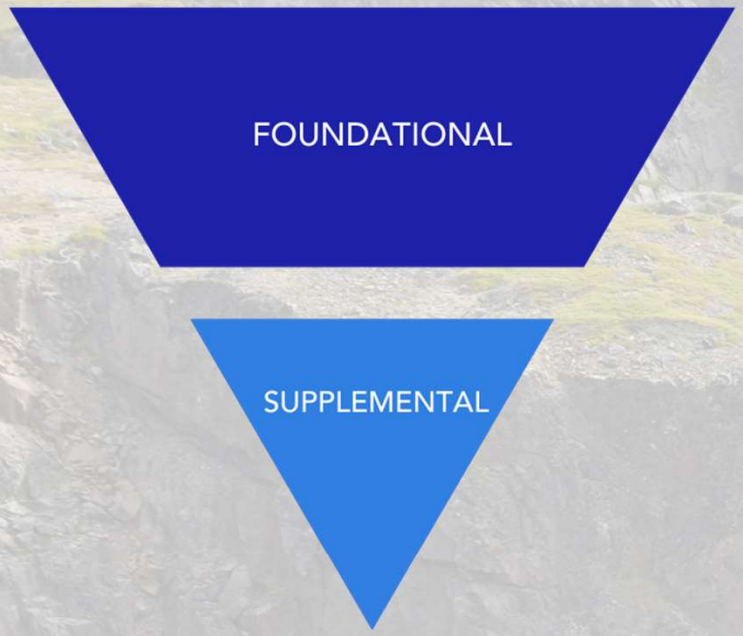
Finding and Using Labour Market Information

LMI data sources are plentiful and can be helpful when used appropriately.



Finding and Using Labour Market Information

LMI data sources are plentiful and can be helpful when used appropriately.

Data is consistent, temporal, and transparent which provides a baseline to build from.

Examples: Labour Force Survey, Job Bank, Survey of Employment, Payrolls, and Hours, Census of Population.

Finding and Using Labour Market Information

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FOUNDATIONAL

Data is consistent, temporal, and transparent which provides a baseline to build from.

Examples: Labour Force Survey, Job Bank, Survey of Employment, Payrolls, and Hours, Census of Population.

SUPPLEMENTAL

Data is usually focused on a geographic area, subject area, or specific industry.

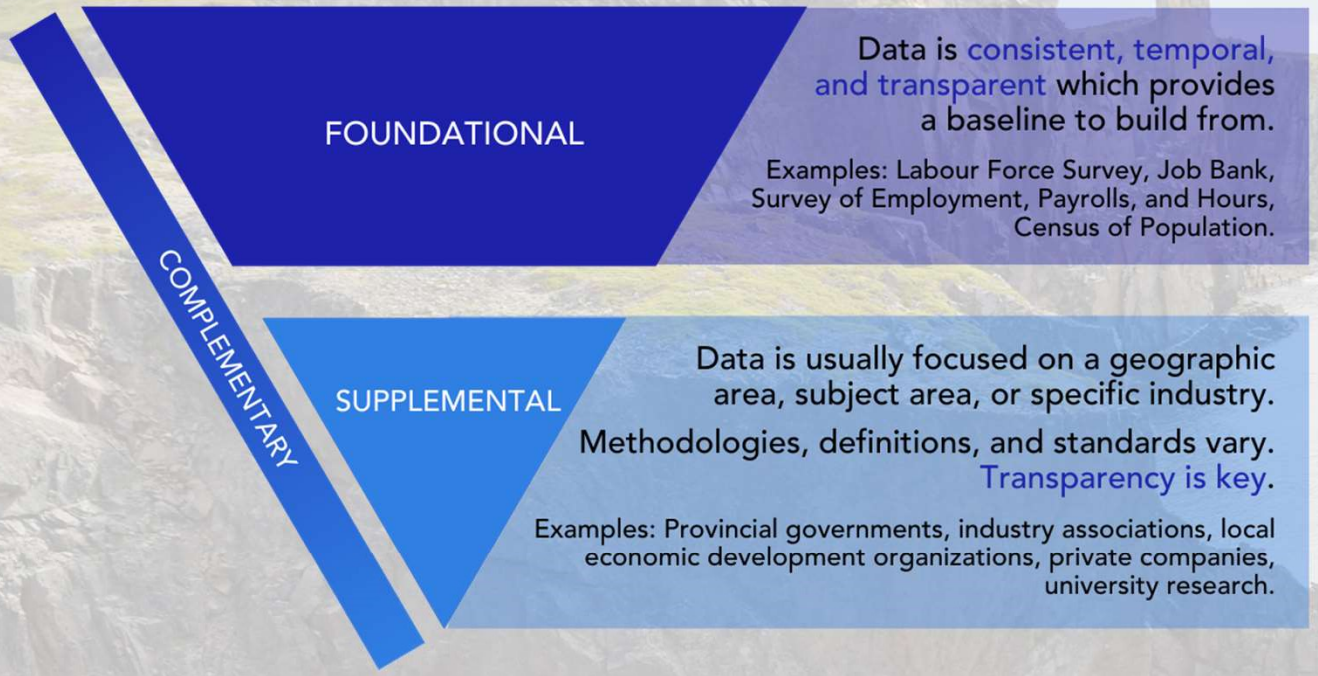
Methodologies, definitions, and standards vary. Transparency is key.

Examples: Provincial governments, industry associations, local economic development organizations, private companies, university research.

Taking a comprehensive data source approach illuminates a fuller, more accurate picture of labour market conditions.

Finding and Using Labour Market Information

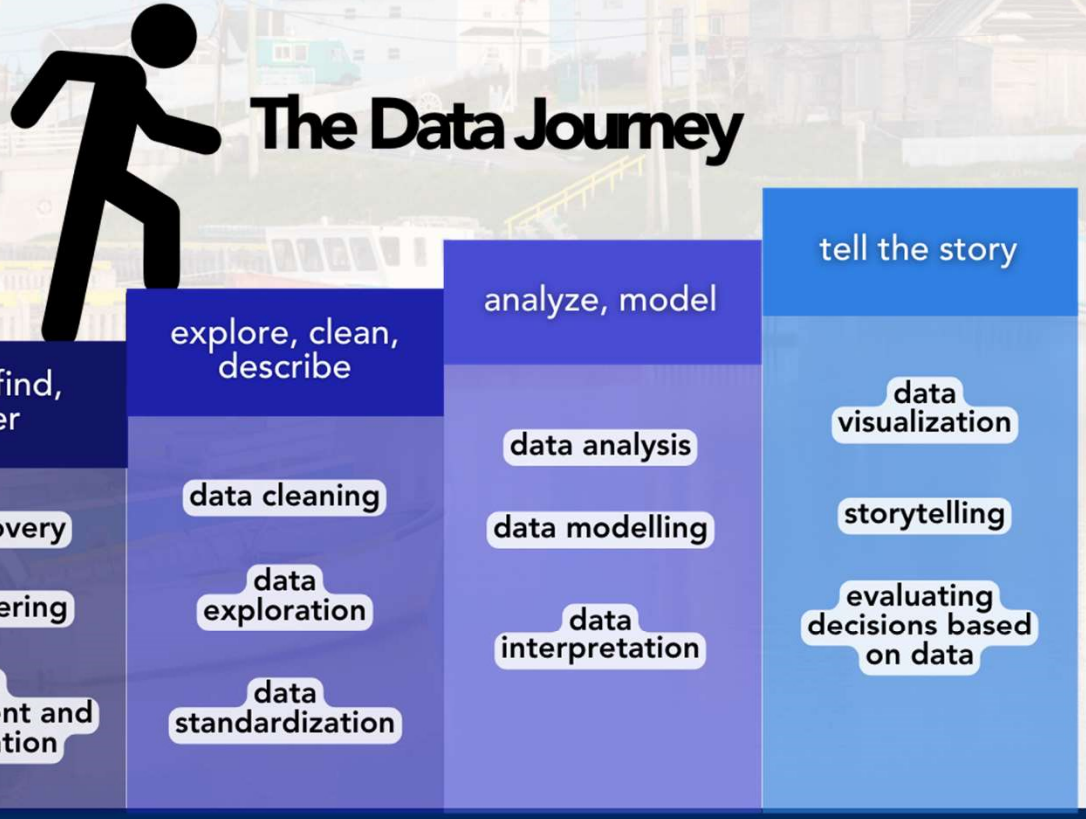
LMI data sources are plentiful and can be helpful when used appropriately.



Taking a comprehensive data source approach illuminates a fuller, more accurate picture of labour market conditions.

Finding and Using Labour Market Information

Using data is a process.



Source: Statistics Canada

Finding and Using Labour Market Information

LMI data sources are plentiful and can be helpful when used appropriately.

Helpful things to remember

- Always define your research question → Define your geography and outline indicators
- Start with foundational sources → Use the most trustworthy and transparent sources first
- Explore other datasets → Relate your findings back to your research question—what's missing?
- Approach all datasets with a critical eye → Carefully review metadata and trust your gut
- Ask for help! → Connect with a local data expert

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Share the names of people and organizations within your network that help you use data!

ⓘ Start presenting to display the poll results on this slide.

Finding and Using Labour Market Information

RAnLab connects directly with local decision-makers.

31
municipalities

496
fact sheets

Local example

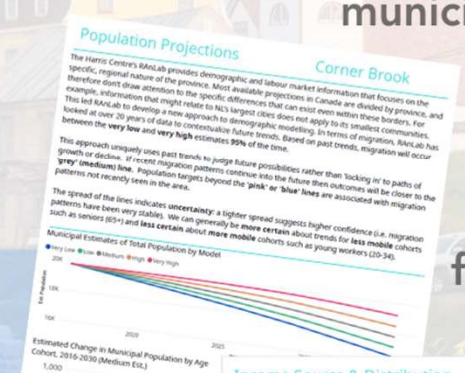
Big Data: Big Ideas

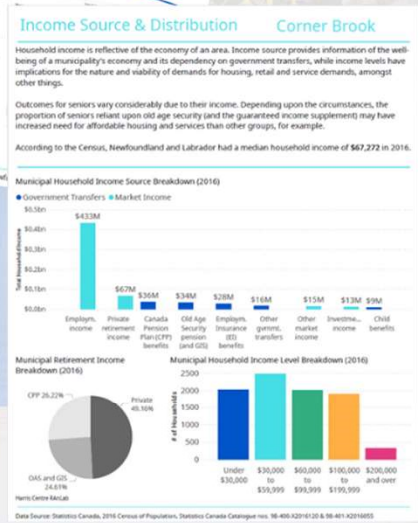
Crafted basic fact sheets with baseline demographic and economic data

Determined what issues communities were interested in

Met with community representatives—such as mayors, town clerks, municipal planners, etc.

Crafted customized fact sheets with data on local housing markets and labour force skills in communities and regions.





Barriers to working with local data

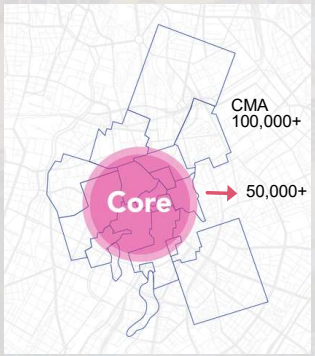
Newfoundland and Labrador is a rural province.

45% of NL's population lives outside of a CMA/CA

90% of the 276 municipalities are in a rural area

Census Metropolitan Area

Population: 100,000+
Core: 50,000+

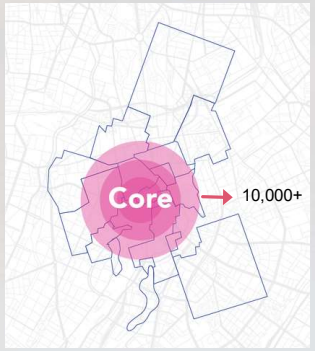


CMAs in NL (2021)

St. John's

Census Agglomeration

Core: 10,000+



CAs in NL (2021)

Grand Falls-Windsor
Gander
Corner Brook

Barriers to working with local data

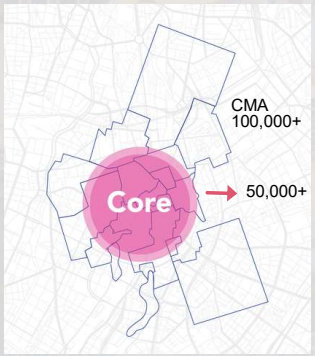
Canada has many rural communities.

16% of Canada's population lives outside of a CMA/CA

80% of Canada's 5,161 municipalities are in a rural area

Census Metropolitan Area

Population: 100,000+
Core: 50,000+



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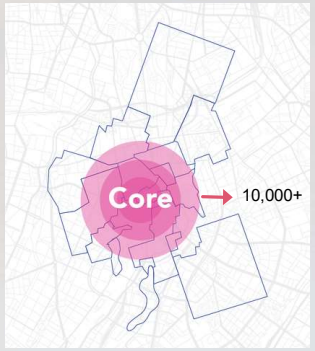

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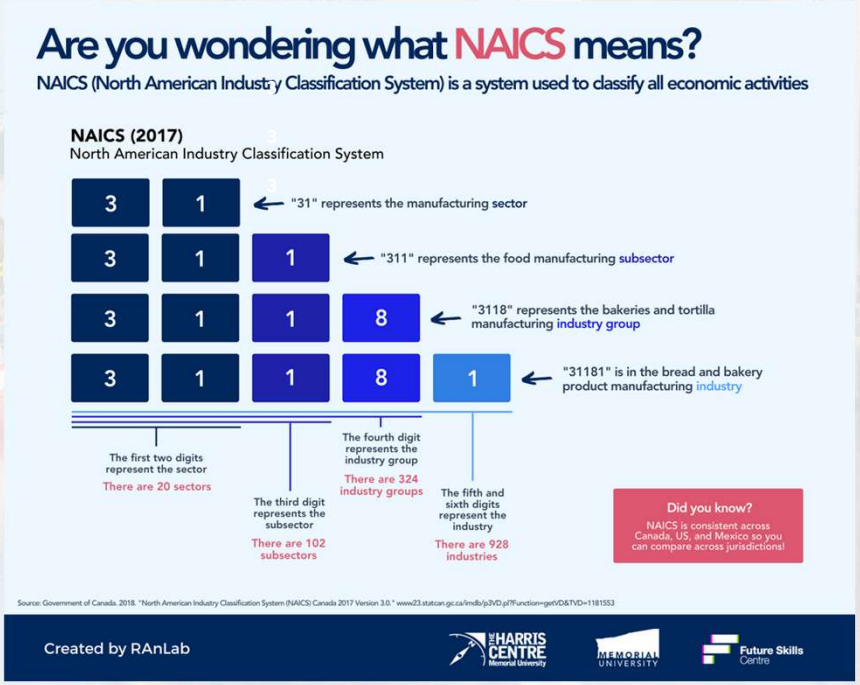
Barriers to working with local data

Data is local and so are the barriers.

Systematic, structural knowledge can be challenging

- Geography
  - Some datasets are only available for CMA and CAs
- Understanding of classifications
- Knowledge of algorithms
- Staying on top of changes (e.g. Bay Roberts CA)



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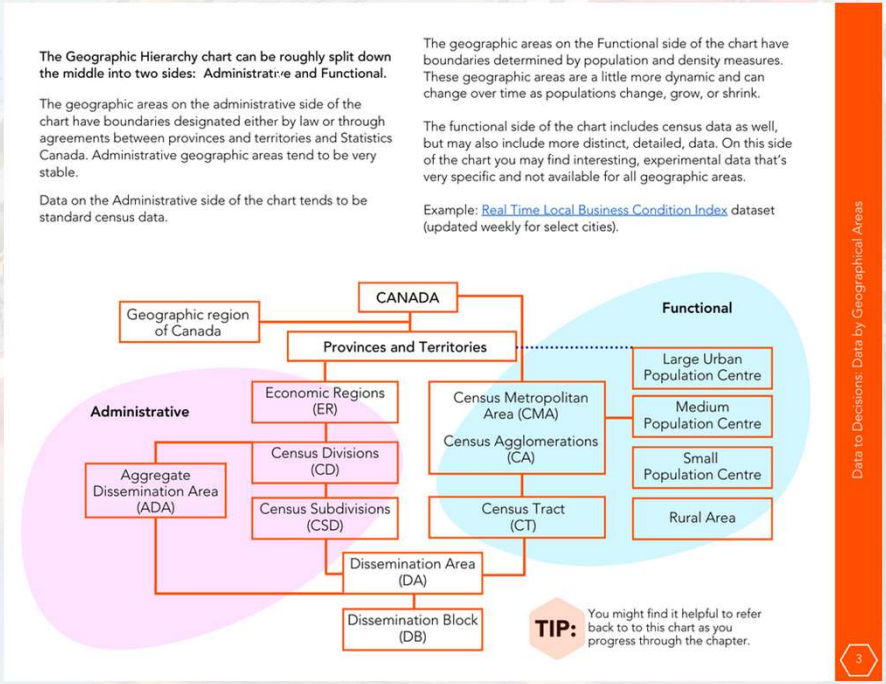


The Geographic Hierarchy chart can be roughly split down the middle into two sides: Administrative and Functional.

The geographic areas on the administrative side of the chart have boundaries designated either by law or through agreements between provinces and territories and Statistics Canada. Administrative geographic areas tend to be very stable.

Data on the Administrative side of the chart tends to be standard census data.

The geographic areas on the Functional side of the chart have boundaries determined by population and density measures. These geographic areas are a little more dynamic and can change over time as populations change, grow, or shrink.

The functional side of the chart includes census data as well, but may also include more distinct, detailed, data. On this side of the chart you may find interesting, experimental data that's very specific and not available for all geographic areas.

Example: Real Time Local Business Condition Index dataset (updated weekly for select cities).

Barriers to working with local data

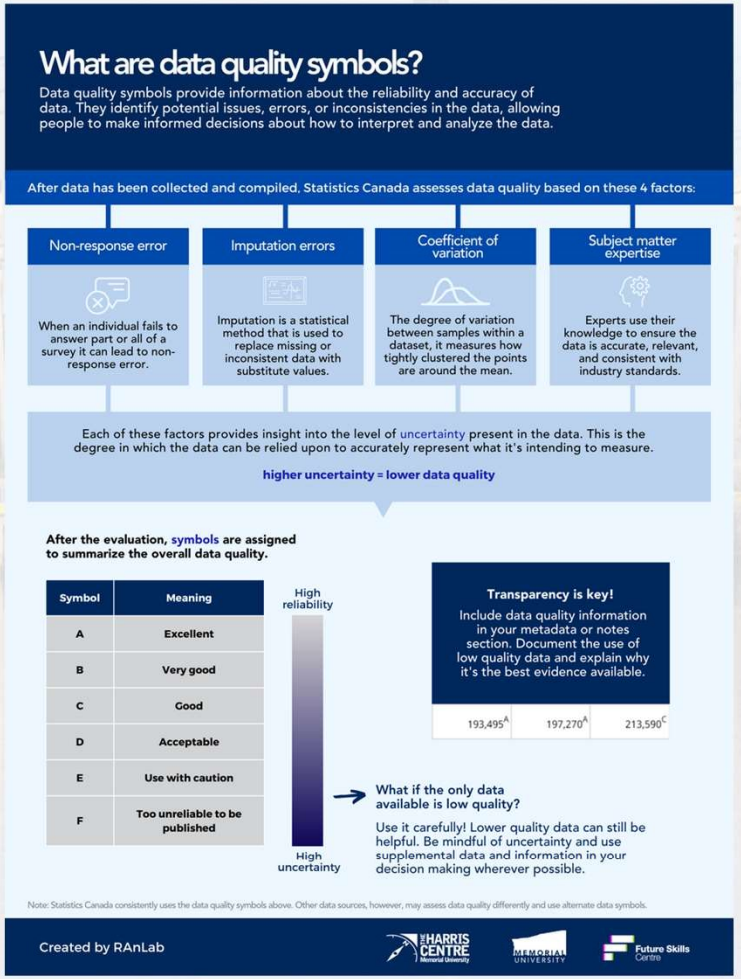
Data is local and so are the barriers.

Local challenges and barriers

- Uncertainty and reliability
- Appropriate application of statistics

Geography		Manitoba (map)				
National Occupational Classification[3]		Professional occupations in nursing [30]				
Job vacancy characteristics	Statistics	Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023
Type of work, all types[4, 5]		Number				
	Job vacancies[6]	1,400[C]	1,500[D]	1,455[D]	1,230[D]	1,450[D]
		Dollars				
	Average offered hourly wage[7]	37.45[A]	33.20[A]	38.95[A]	37.35[A]	37.05[A]

Source: Statistics Canada. Table 14-10-0328-01 Job vacancies, proportion of job vacancies and average offered hourly wage by selected characteristics, quarterly, unadjusted for seasonality



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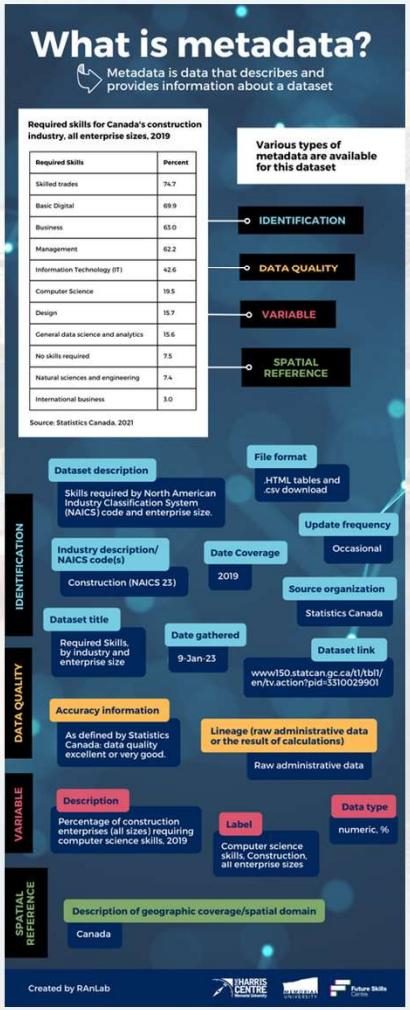

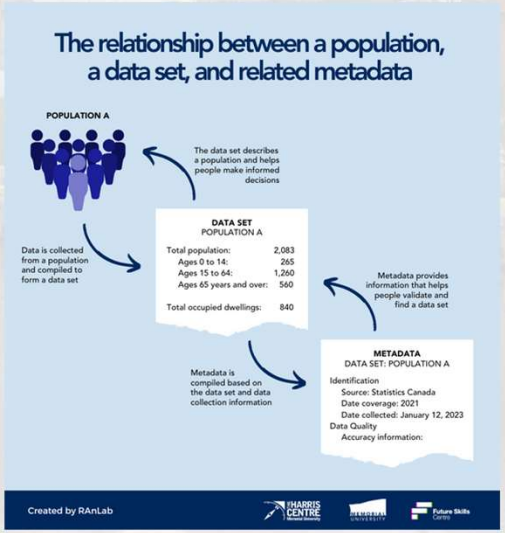

Barriers to working with local data

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- Appropriate application of statistics

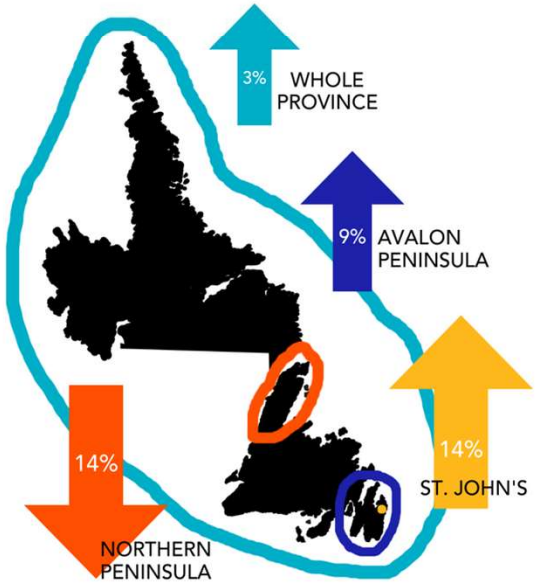
An example of ecological fallacy:

From 2006 to 2016, the province of Newfoundland and Labrador experienced slow growth, with the total population increasing only 3% over that ten-year time period.

The Avalon Peninsula, however, experienced 9% population growth over that same time frame and the St. John's population grew 14%.

Meanwhile, the population on the Northern Peninsula declined by 14%.

This example demonstrates how provincial data may not accurately reflect the more nuanced experiences of smaller geographic areas within the province.



Barriers to working with local data

Let's work through the barriers together.

What we're doing

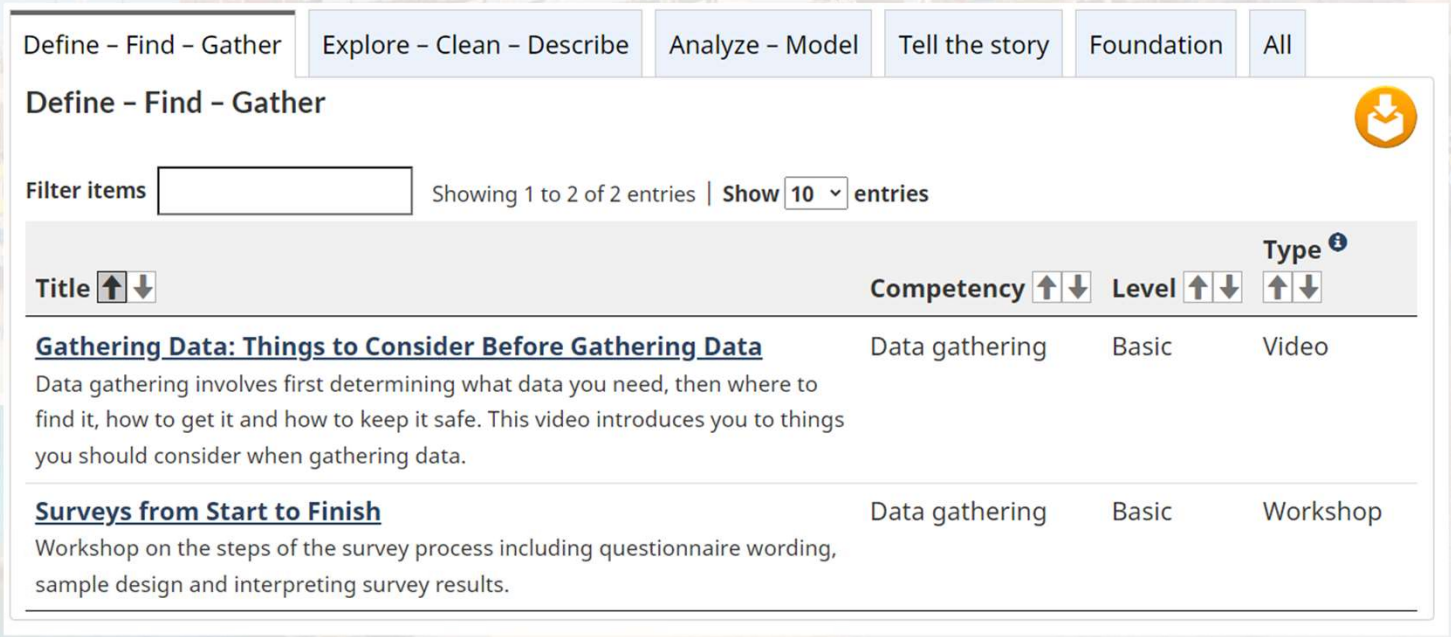
- Continuous model development
- Data literacy resources
- Partnerships and engagement
- Answering your questions!

How else can we help?

Helpful Resources

Visit www.ranlab.ca to learn more!

- Statistics Canada: Learning catalogue



Define – Find – Gather | Explore – Clean – Describe | Analyze – Model | Tell the story | Foundation | All

Define – Find – Gather

Filter items | Showing 1 to 2 of 2 entries | Show 10 entries

Title	Competency	Level	Type
Gathering Data: Things to Consider Before Gathering Data Data gathering involves first determining what data you need, then where to find it, how to get it and how to keep it safe. This video introduces you to things you should consider when gathering data.	Data gathering	Basic	Video
Surveys from Start to Finish Workshop on the steps of the survey process including questionnaire wording, sample design and interpreting survey results.	Data gathering	Basic	Workshop

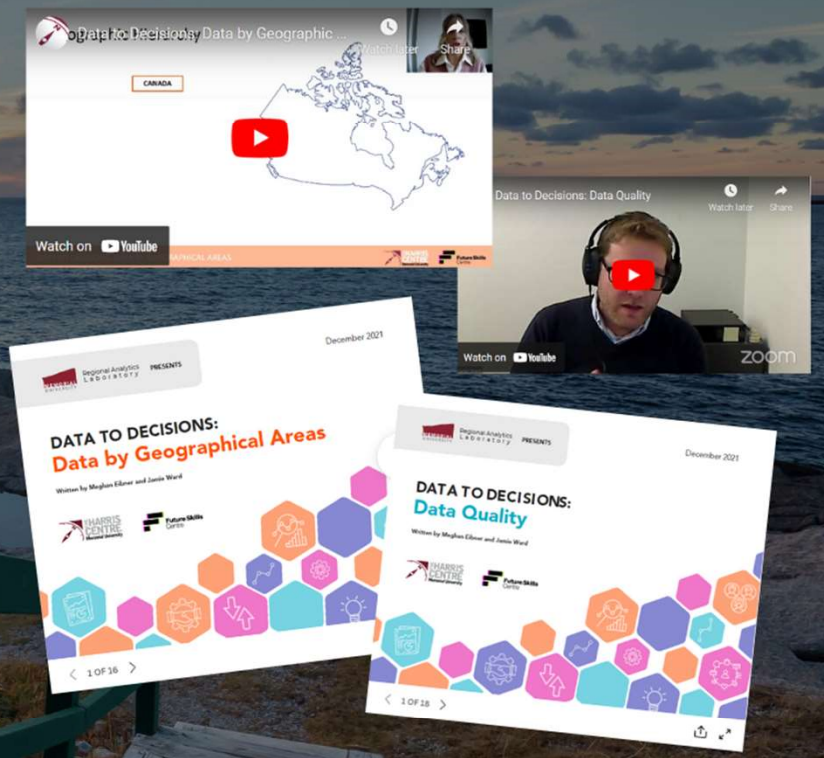
Data to Decisions

Created by the Regional Analytics Laboratory

Want to improve your data literacy skills? Data to Decisions explores 5 topics that can help you incorporate more data into your work!

- ✓ Interactive learning modules
- ✓ Video recordings
- ✓ Reference documents
- ✓ Accessible anywhere, anytime

Start now: www.ranlab.ca



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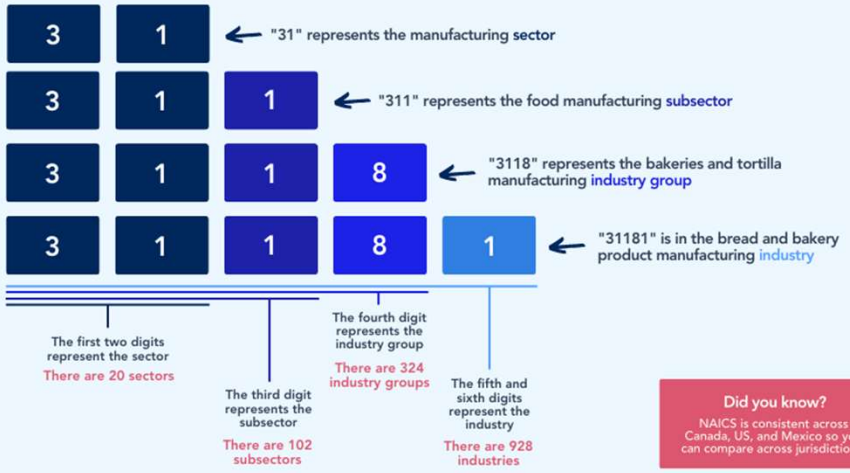
Are you wondering what NAICS means?

NAICS (North American Industry Classification System) is a system used to classify all economic activities

NAICS (2017)
North American Industry Classification System



Did you know?
NAICS is consistent across Canada, US, and Mexico so you can compare across jurisdictions!

Source: Government of Canada. 2018. "North American Industry Classification System (NAICS) Canada 2017 Version 3.0." www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=1181553

Created by RAnLab

Are you wondering what NOC means?

NOC (National Occupational Classification) is a tool used to classify occupations into a four digit code according to their broad occupational category and skill level

NOC (2016)
National Occupational Classification

Broad Occupational Category

10 skill type categories based on type of work performed

Category Examples
Management occupations (0), health occupations (3), and occupations in manufacturing and utilities (9)

Skill Level

4 categories based on education and training typically required to perform an occupation

Category Examples
Occupations usually require university education (0 or 1) and on-the-job training is usually provided for occupations (6 or 7)

NEW UPDATE
To keep up with the evolving labour market, NOC 2021 replaces "skill level" with more precise "training, education, experience, and responsibilities" categories, in addition to adding multiple new occupations

Dentist NOC code: 3113
3 indicates a health occupation
1 indicates that university education is a requirement
The last two digits are used to identify specific occupation characteristics

Source: Government of Canada. 2021. "National Occupational Classification." https://noc.esdc.gc.ca/

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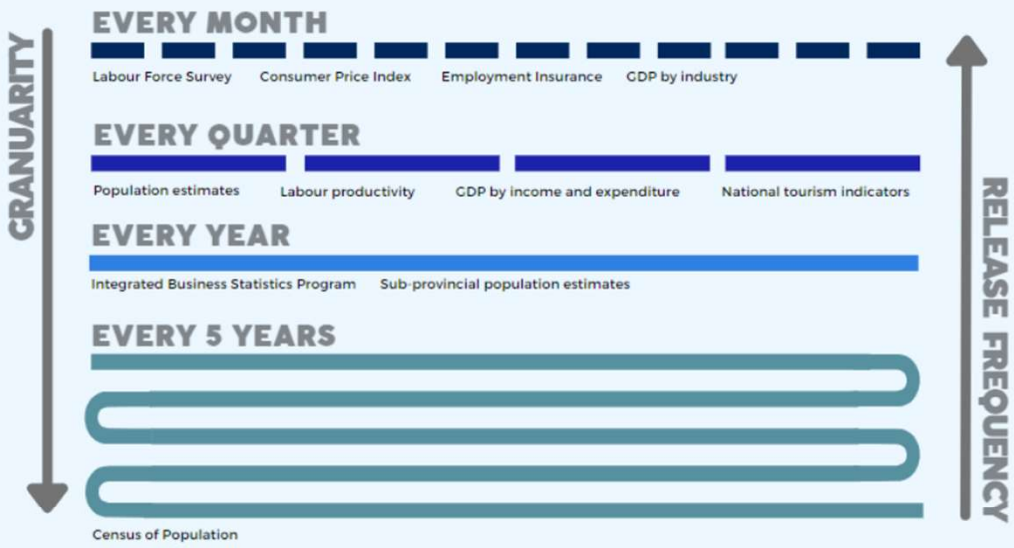
Trying to keep track of new data releases?

New datasets and information range in release frequency from real-time to multi-year release cycles. In many cases, a dataset's level of detail is inversely related to how often the data product is released.



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What are data quality symbols?

Data quality symbols provide information about the reliability and accuracy of data. They identify potential issues, errors, or inconsistencies in the data, allowing people to make informed decisions about how to interpret and analyze the data.

After data has been collected and compiled, Statistics Canada assesses data quality based on these 4 factors:

Non-response error

When an individual fails to answer part or all of a survey it can lead to non-response error.

Imputation errors

Imputation is a statistical method that is used to replace missing or inconsistent data with substitute values.

Coefficient of variation

The degree of variation between samples within a dataset, it measures how tightly clustered the points are around the mean.

Subject matter expertise

Experts use their knowledge to ensure the data is accurate, relevant, and consistent with industry standards.

Each of these factors provides insight into the level of uncertainty present in the data. This is the degree in which the data can be relied upon to accurately represent what it's intending to measure.

higher uncertainty = lower data quality

After the evaluation, symbols are assigned to summarize the overall data quality.

Symbol	Meaning
A	Excellent
B	Very good
C	Good
D	Acceptable
E	Use with caution
F	Too unreliable to be published

High reliability

High uncertainty

Transparency is key!

Include data quality information in your metadata or notes section. Document the use of low quality data and explain why it's the best evidence available.

193,495[A]	197,270[A]	213,590[C]

What if the only data available is low quality?

Use it carefully! Lower quality data can still be helpful. Be mindful of uncertainty and use supplemental data and information in your decision making wherever possible.

Note: Statistics Canada consistently uses the data quality symbols above. Other data sources, however, may assess data quality differently and use alternate data symbols.

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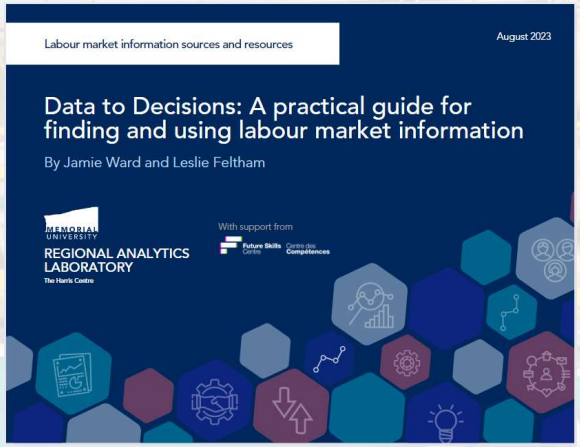
Helpful Resources

Webinar companion document: Labour market information sources and resources



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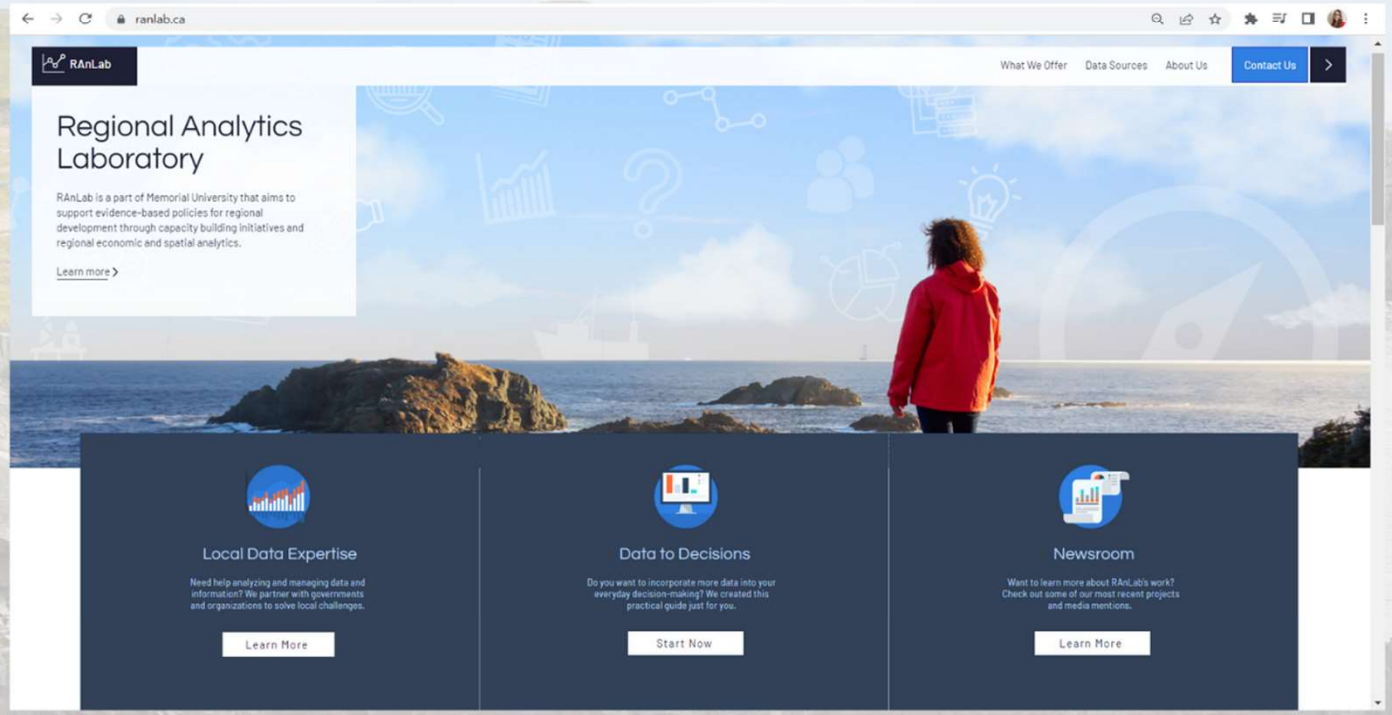

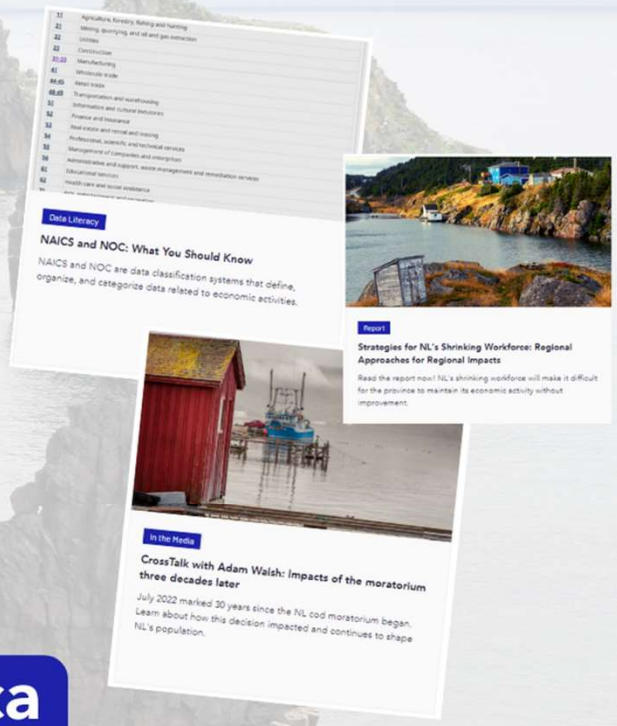

Learn more: www.ranlab.ca

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Questions?

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Watch for the companion document in your email!

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