

August 9th, 2023

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

By Jamie Ward and Leslie Feltham



**REGIONAL ANALYTICS
LABORATORY**

The Harris Centre

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Compétences



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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Leslie Feltham
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RAnLab

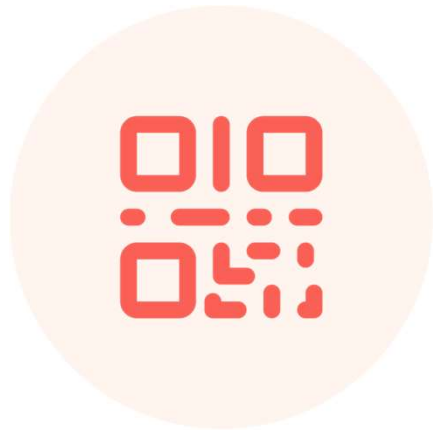


Kim Crosbie
Associate Director,
Harris Centre

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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#8923**

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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!

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?

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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.



FOUNDATIONAL



SUPPLEMENTAL

Finding and Using Labour Market Information

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

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

Finding and Using Labour Market Information

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

FOUNDATIONAL

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.

Finding and Using Labour Market Information

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

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

SUPPLEMENTAL

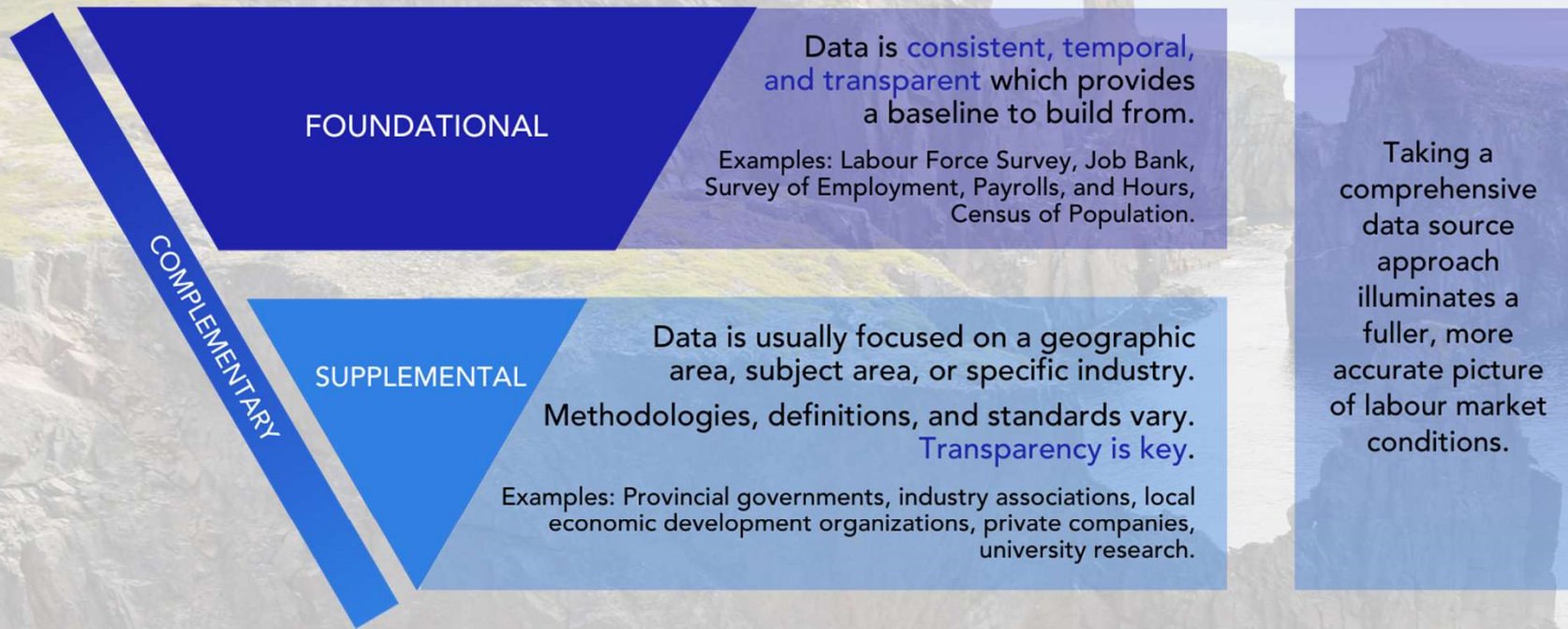
Data is usually focused on a geographic area, subject area, or specific industry. Methodologies, definitions, and standards vary. **Transparency is key.**

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.

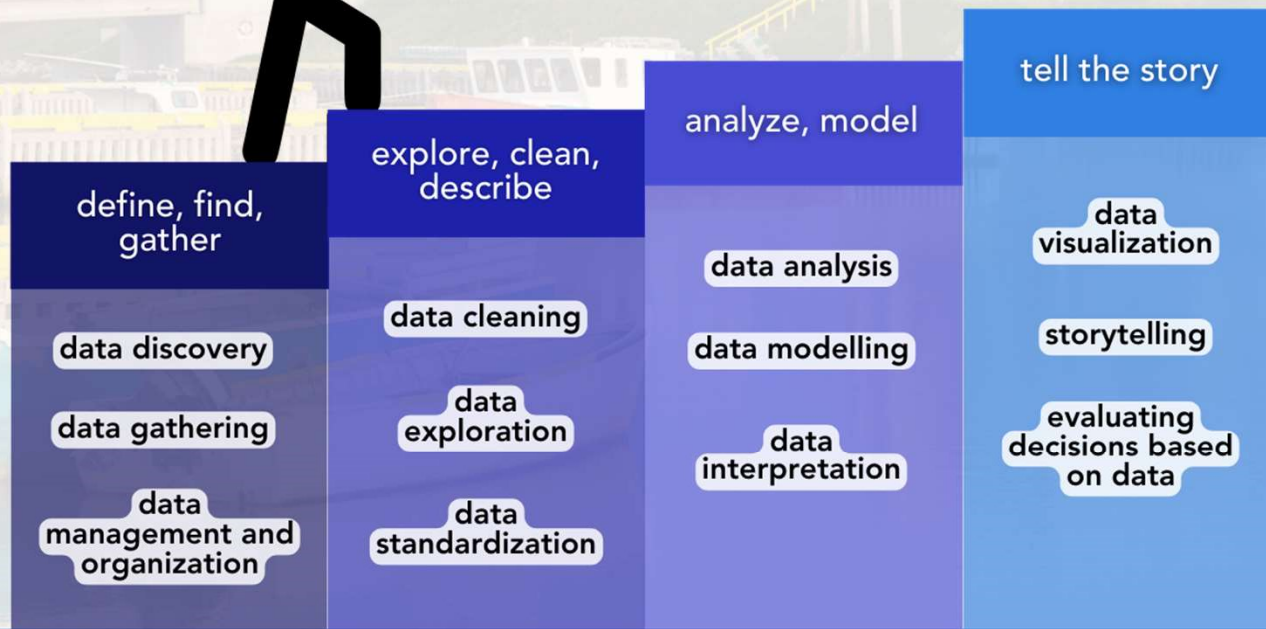


Finding and Using Labour Market Information

Using data is a process.



The Data Journey



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!

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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

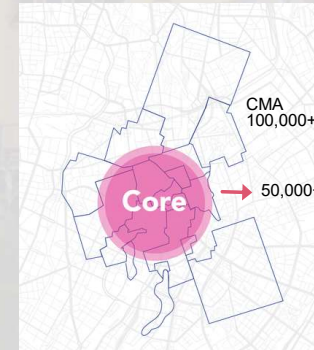
Newfoundland and Labrador is a rural province.

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+

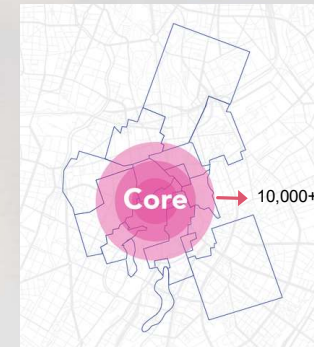


CMA's in NL (2021)

St. John's

Census Agglomeration

Core: 10,000+



CAs in NL (2021)

Grand Falls-Windsor

Gander

Corner Brook

Barriers to working with local data

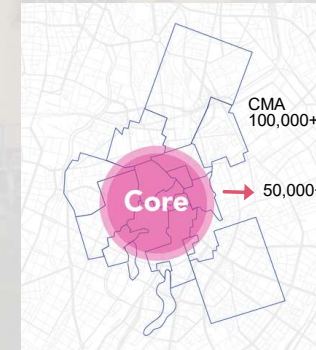
Canada has many rural communities.

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+

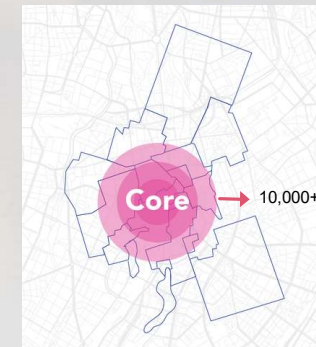


CMA's in NL (2021)

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Barriers to working with local data

Data is local and so are the barriers.

Systematic, structural knowledge can be challenging

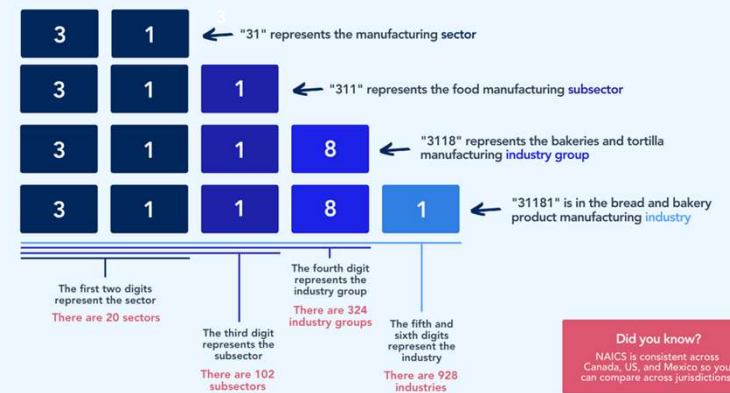
- Geography
 - Some datasets are only available for CMA and CAs
- Understanding of classifications
- Knowledge of algorithms
- Staying on top of changes (e.g. Bay Roberts CA)

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



Source: Government of Canada, 2018. "North American Industry Classification System (NAICS) Canada 2017 Version 3.0." www23.statcan.gc.ca/nmb/j3/D0/gf/Function=getV0&TYD=1181553

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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)

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

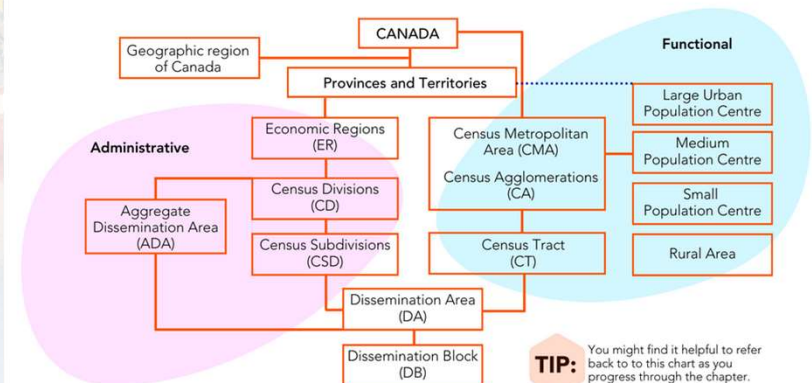
The geographic areas on the administrative side of the chart have boundaries designated either by law or through agreements between provinces and territories and Statistics Canada. Administrative geographic areas tend to be very stable.

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

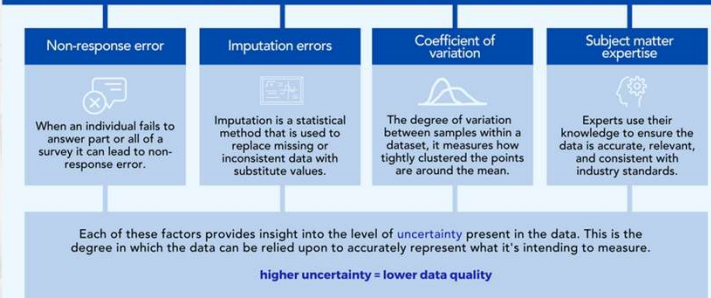
Geography		Manitoba (map)				
National Occupational Classification ³		Professional occupations in nursing [30]				
Job vacancy characteristics	Statistics	Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023
Type of work, all types ^{4, 5}		Number				
	Job vacancies ⁶	1,400 ^C	1,500 ^D	1,455 ^D	1,230 ^D	1,450 ^D
		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](#)

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:



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



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
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→ 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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Barriers to working with local data

Data is local and so are the barriers.

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What is metadata?

Metadata is data that describes and provides information about a dataset

Required skills for Canada's construction industry, all enterprise sizes, 2019

Required Skills	Percent
Skilled trades	75.7
Basic Digital	69.9
Business	65.0
Management	62.2
Information Technology (IT)	42.6
Computer Science	19.5
Design	15.7
General data science and analytics	15.6
No skills required	7.5
Natural sciences and engineering	7.4
International Business	3.0

Source: Statistics Canada, 2021

Various types of metadata are available for this dataset

- IDENTIFICATION
- DATA QUALITY
- VARIABLE
- SPATIAL REFERENCE

IDENTIFICATION

- Dataset description: Skills required by North American Industry Classification System (NAICS) code and enterprise size.
- Industry description/NAICS code(s): Construction (NAICS 23)
- Dataset title: Required Skills, by industry and enterprise size
- Date gathered: 9 Jan-23
- File format: HTML tables and csv download
- Update frequency: Occasional
- Date Coverage: 2019
- Source organization: Statistics Canada
- Dataset link: www150.statcan.gc.ca/t1/Abill/en/tv.action?pid=531002901

DATA QUALITY

- Accuracy Information: As defined by Statistics Canada, data quality excellent or very good.
- Lineage (raw administrative data or the result of calculations): Raw administrative data

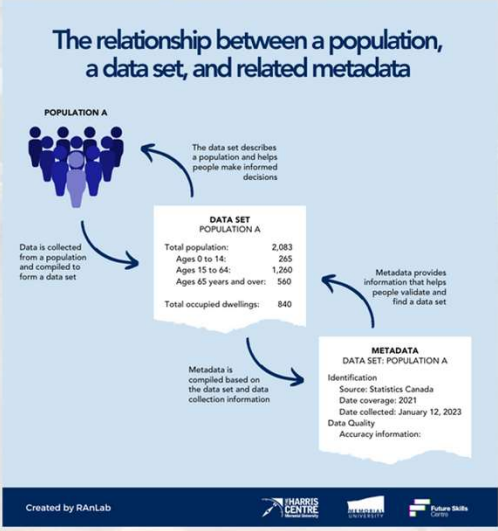
VARIABLE

- Description: Percentage of construction enterprises (all sizes) requiring computer science skills, 2019
- Label: Computer science skills, Construction, all enterprise sizes
- Data type: numeric, %

SPATIAL REFERENCE

- Description of geographic coverage/spatial domain: Canada

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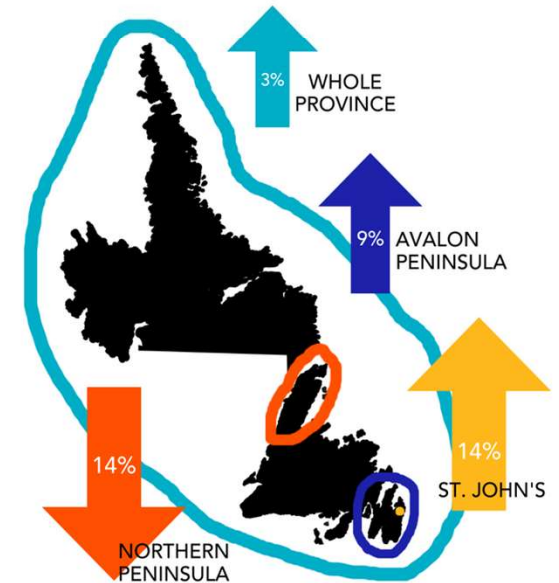
An example of ecological fallacy:

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 entries

Title 	Competency 	Level 	Type ³ 
<u>Gathering Data: Things to Consider Before Gathering Data</u> 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
<u>Surveys from Start to Finish</u> 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

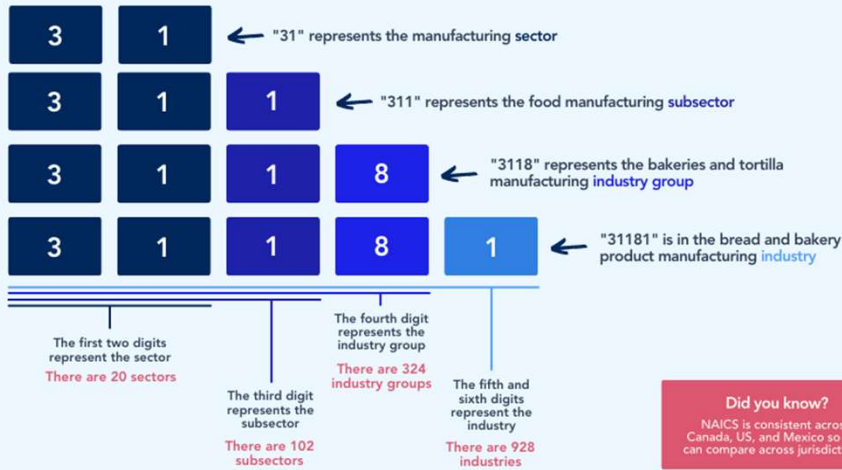
Start now: www.ranlab.ca



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NAICS (2017)
North American Industry Classification System



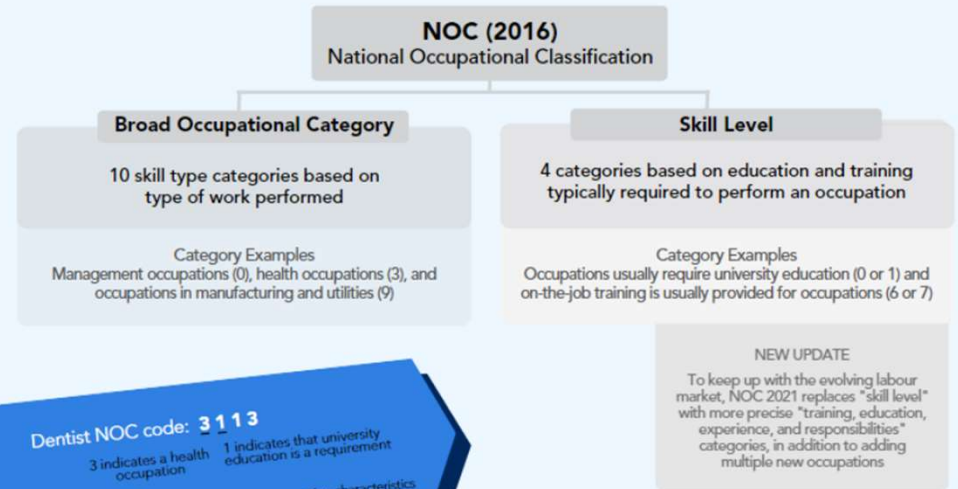
Source: Government of Canada. 2018. "North American Industry Classification System (NAICS) Canada 2017 Version 3.0." www23.statcan.gc.ca/imdb/p3TV/DQ/p7?Function=getVD&TYD=1181553

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



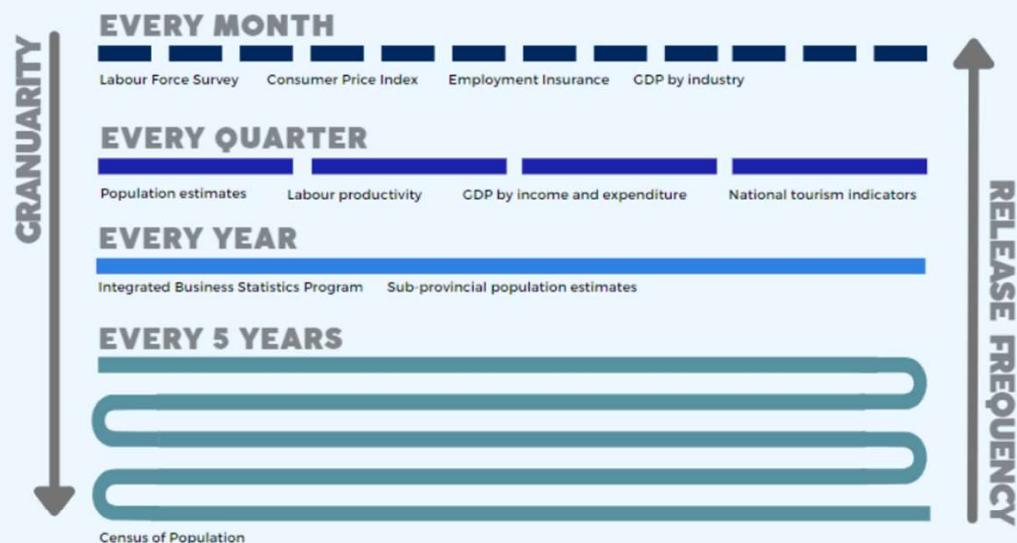
Source: Government of Canada. 2021. "National Occupational Classification." <https://noc.esdc.gc.ca/>

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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.



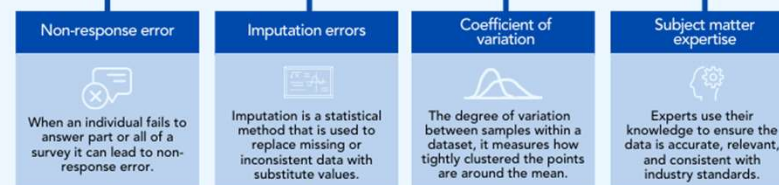
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After data has been collected and compiled, Statistics Canada assesses data quality based on these 4 factors:



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
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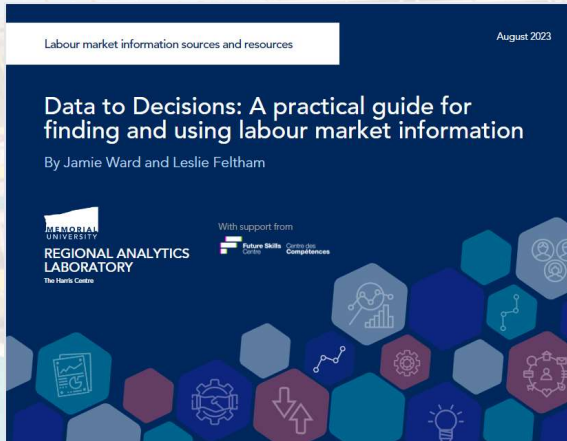
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Created by RANLab



Helpful Resources

Webinar companion document: Labour market information sources and resources



LABOUR MARKET INFORMATION SOURCES

Foundational data sources

Labour Force Survey (Statistics Canada)

key indicators:

[unemployment rate](#) [employment rate](#) [participation rate](#) [employment estimates by hours worked](#) [wage rates](#)
[employment estimates by industry and occupation](#) [establishment size](#) [job permanency](#) [union status](#)



Data is available for Canada, the provinces, the territories and a large number of sub-provincial regions.



Data is released monthly on the first Friday of the first full week of each month.



Labour Force Survey data and corresponding summary information is available on [The Daily](#) each month. Statistics Canada also has an [interactive dashboard](#) that displays Labour Force Survey data.

Data release dates

August 4, 2023
September 8, 2023
October 6, 2023
November 3, 2023
December 1, 2023
January 5, 2024
February 9, 2024
March 8, 2024

Notes

- Check out [Sources of LMI for Career Practitioners](#) by the LMIC to learn about why a career practitioner may use this data source and what to be cautious about.
- More information about the Labour Force Survey is available on the [Statistics Canada website](#).

LABOUR MARKET INFORMATION SOURCES

Foundational data sources

Job Vacancy and Wage Survey (Statistics Canada)

key indicators (monthly): [number of job vacancies](#) [proportion of job vacancies in full and part-time positions](#) [average hourly wage offered for the vacancies](#)
key indicators (quarterly): [duration of vacancies by level of education and experience](#) [duration of job vacancies](#)



Monthly data is available for Canada, the provinces, the territories and a large number of sub-provincial regions. Quarterly data also includes economic regions.

Data release dates
For monthly data, release dates are the Survey of Employment, Payroll and Hours.
Quarterly data is available in March, June, September, and December.

Notes
• Monthly data is available by industry sector and every detailed data by occupation is available quarterly.
• More information about the Job Vacancy and Wage Survey is available on the [Statistics Canada website](#).



Data is released monthly with the Survey of Employment, Payroll and Hours and quarterly by year.



Job Vacancy and Wage Survey data and corresponding summary information is available on [The Daily](#), each month and quarter. Look for the title "Payroll employment, earnings and hours, and job vacancies" for the monthly release.

LABOUR MARKET INFORMATION

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

LMI includes data about job vacancies, wages, employment trends, and skills required for specific occupations. LMI data such as these are 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

Geography and industry data classifications are essential for effectively using labour market data. The North American Industry Classification System (NAICS) and the National Occupational Classification (NOC) are data classification systems that help to define, organize, and categorize data related to economic activities.

Data classification
Data classification is a way to define, organize, and categorize data so that it is easier to store, use, and use in the future. Classification systems usually assign specific codes based on the level of hierarchy within the classified categories.



What We Do

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

ranlab.ca

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Regional Analytics Laboratory

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

[Learn more >](#)

Local Data Expertise

Need help analyzing and managing data and information? We partner with governments and organizations to solve local challenges.

[Learn More](#)

Data to Decisions

Do you want to incorporate more data into your everyday decision-making? We created this practical guide just for you.

[Start Now](#)

Newsroom

Want to learn more about RAnLab's work? Check out some of our most recent projects and media mentions.

[Learn More](#)

[Learn more: www.ranlab.ca](http://www.ranlab.ca)

01	Agriculture, forestry, fishing and hunting
21	Mineral, quarrying, and oil and gas extraction
22	Utilities
31	Textile, apparel, and leather goods
32	Chemical and allied products
33	Food, beverage, and tobacco products
34	Textile, millinery, and leather goods
35	Transportation and equipment
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Data Library

NAICS and NOC: What You Should Know

NAICS and NOC are data classification systems that define, organize, and categorize data related to economic activities.

Report

Strategies for NL's Shrinking Workforce: Regional Approaches for Regional Impacts

Read the report now! NL's shrinking workforce will make it difficult for the province to maintain its economic activity without improvement.

In the News

CrossTalk with Adam Walsh: Impacts of the moratorium three decades later

July 2022 marked 30 years since the NL cod moratorium began. Learn about how this decision impacted and continues to shape NL's population.

slido



What would you like to learn about next from RAnLab?

① Start presenting to display the poll results on this slide.

Questions?

Email us: ranlab@mun.ca

Watch for the companion document in your email!



REGIONAL ANALYTICS
LABORATORY

The Harris Centre

