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LABOUR MARKET INFORMATION COUNCIL

Sources of LMI for Career Practitioners

Labour Force Survey

The **Labour Force Survey (LFS)** is the timeliest official source of LMI in Canada. The LFS is released the first Friday (of a full week) each month with results for preceding month. It contains broad stroke information on employment, unemployment, wages, average hours worked, and retirement. Recently, Statistics Canada added **an interactive tool** to make exploring results from this large survey more accessible.

WHY A CAREER PRACTITIONER MIGHT USE IT

• The interactive tool can give you a sense of the current employment and unemployment rates in your province and territory.

• Clicking on your province/territory on the interactive map allows you to see the main sectors/ industries in your area.

WHY WE USE IT

• The LFS is the premiere source of LMI because of its consistency over time (starting in 1976) and its timeliness

• The LFS unemployment rate estimate is the official one used in a variety of government programs (e.g., Employment Insurance)

• The LFS surveys 60,000 households every month, and therefore has lots of granular information such as detailed age groups, occupation, and industry breakdowns.

WHAT WE'RE CAUTIOUS ABOUT

• Despite being a very large household survey, the LFS is very noisy – data for one month should be taken with a grain of salt. Averages over 3 or 12 months are much more reliable

Student and Apprentice earnings from ELMLP

The Education and Labour Market Education Platform (ELMLP) is **a newly released set of administrative data** that links tax files to student records from colleges and universities and to the records of people who undertake apprenticeship training (further details **here**). That has been released is available on LMIC's **Student Earnings dashboard** and on Statistics Canada's **interactive tool** on labour market outcomes of graduates.

WHY A CAREER PRACTITIONER MIGHT USE IT

• Shows a client/student what they can expect in terms of salary after graduation based on their field of study and education attainment level. The LMIC dashboard and Statistic Canada interactive tool have similar sets of information.

WHY WE USE IT

• The ELMLP offers near-universal coverage of graduates from higher education and those who complete apprenticeship training

• The link to tax files means the annual earnings information is extremely reliable.

WHAT WE'RE CAUTIOUS ABOUT

• Tax files lack information on occupation, so we don't know in what fields people work or if they change jobs during the year.

• Tax files report only earnings, not salary and wages. If someone stops working to take care of a child or due to an injury, we cannot observe this, but their earnings will be lower than otherwise (even though their salary/wage is unchanged).

Job Bank

Job Bank is an employment service delivered by Employment and Social Development Canada (ESDC). Employers posting jobs on Job Bank cannot use free text; instead, they must select the occupation (NOC) to be filled and respective work requirements from a pre-defined list. Job Bank provides regular analyses of its data. It includes a **job search tool**, a **career planning tool** (with career quizzes and tests), and **occupational profiles and outlooks**.

WHY A CAREER PRACTITIONER MIGHT USE IT

• Job Bank contains the most accessible and useable LMI produced by the Federal Government.

• It provides information related to most of the employability dimensions and there fore can be a good starting point of research for many questions related to career exploration, skill requirements and learning programs and career growth options.

WHY WE USE IT

• The Job Bank's data is extremely reliable. Employers are vetted by ESDC and the information is structured from the very start

• Job Bank caters to a different segment that is often underrepresented on other job posting sites. Specifically, Job Bank captures more temporary jobs and manual labour positions. This is because employer access to certain ESDC programs (e.g., the Temporary Foreign Worker program) requires that they use the Job Bank.

WHAT WE'RE CAUTIOUS ABOUT

• Job Bank represents only about 10 to 15% of online job postings, meaning a large number of job posting information is missing.

Vicinity Jobs Data Hosted on LMIC's website
(forthcoming)

The online job postings data provided by Vicinity Jobs, a Canadian Big Data analytics and Internet search technologies company, are used to populate the information on the LMIC Job Posting Dashboard. Vicinity Jobs collects and analyzes job postings found on various web sites and link each posting to a unique occupation and unique set of work requirements. Work requirements – of which there are over 4,000 – are defined by Vicinity's proprietary taxonomy for categorizing free text descriptions in online job ads. Work requirements refer to details that employers include within each job posting.

WHY A CAREER PRACTITIONER MIGHT USE IT

• This site will offer near-real time information on available jobs and their work requirements.

WHY WE USE IT

• The data offer an expansive set of near-real time information on online job postings and their work requirements.

• Vicinity Jobs thoroughly cleans (including the removal of duplicate job postings) and structures the data to ensure it is as reliable as possible

WHAT WE'RE CAUTIOUS ABOUT

• The data may be skewed towards certain industries, occupations, regions, firm size, and education level requirements that are more or less likely to post job vacancies online.

• Many employers hire internally or through informal means such as word of mouth. These sources of employment demand cannot be captured in online job posting data.

WorkWords: LMIC's online lexicon for labour market terms and concepts

LMIC's **WorkWords** is an online labour market encyclopedia that provides definitions of key labour market terms, data, uses, and concepts.

WHY A CAREER PRACTITIONER MIGHT USE IT

• This tool will improve the clarity surrounding key labour market information terms so Canadians can make more informed decisions. Each entry contains three sections: (1) Definitions and sources, (2) Data access, and (3) Applications.

• In addition to explanations, each entry contains recommendations on best-practices on the use and interpretation of key LMI topics.

WHY WE USE IT

• WorkWords is the result of thorough research, which consists of academic literature reviews, white papers, and direct consultations with LMI experts across Canada. Each entry has been through a rigorous internal and external peer review process, which ensures the information is relevant, accurate, precise, and conforms to best practices in the use of LMI.

WHAT WE'RE CAUTIOUS ABOUT

• Data sources change over time. While this resource is an ever-green project that will be updated as new information becomes available, the case could arise that a recommended resource becomes deprecated or obsolete before the entry can be updated.

Ontario Labour Market Website

Ontario's **labour market website** is a user-friendly website that serves as a one-stop location for connecting users to tools, data and analysis for career exploration. The website features 500 job profiles to help learners and job seekers explore their first or next career, and identify opportunities for relevant education, training and re-skilling.

The website also provides links to other resources, including the **Ontario Job Bank**. Job seekers can use Job Bank to search for full-time or part-time employment anywhere in Ontario – or across Canada.

WHY A CAREER PRACTITIONER MIGHT USE IT

• The website provides 500 job profiles which allows users to easily search for an occupation of interest. Each profile includes the education and training pathways for working in the job, how much people make, how many people are employed in the job, where the jobs are located across Ontario, the main duties and responsibilities of the position and the main skills requirements identified by employers for working in the job.

• The site also provides a link to Ontario Job Bank, which matches jobseekers with employers. Job Bank provides flexible search and job matching features to help people find work and makes it easier for employers to recruit the workers they needs.

WHY WE USE IT

• With many resources and tools available, it is often hard to know where you can find credible and reliable information. The Ontario government provides labour market information based on data from Statistics Canada, Canadian Occupational Projection System and Burning Glass Technologies (job postings service provider).

• Burning Glass Technologies is a service provider similar to Vicinity Jobs.

WHAT WE'RE CAUTIOUS ABOUT

• Like other jurisdictions, the information is based on data that was collected before the COVID-19 pandemic. Future updates of the website will reflect these impacts with more up-to-date data.
• Cautions for Burning Glass Technologies data are similar to Vicinity Jobs data.

ESDC's Skills and Competencies Taxonomy

Employment and Social Development Canada's (ESDC) new **Skills and Competencies Taxonomy** is a hierarchical classification of hundreds of occupational descriptors used in the labour market to describe job requirements and/or individuals' personal characteristics. Each descriptor is associated with one of the seven main categories of the Taxonomy (skills, personal abilities and attributes, knowledge, interests, work context, work activities, or tools and technology.

WHY A CAREER PRACTITIONER MIGHT USE IT

• The taxonomy was constructed based on ESDC internal products, including the Career Handbook, Skills and Knowledge Checklist, and the Essential Skills Profiles, as well as the US O*NET system.

• It provides a consistent and systematic terminology for referring to skills and other job-worker characteristics in the Canadian context.

WHY WE USE IT

• It provides consistent and systematic terminology for referring to skills and other job-worker characteristics that helps to facilitate a Pan-Canadian dialogue on skills.

• It will soon link the skills required by National Occupational Classification (NOC), which is the statistical framework for all data collection and reporting in Canada.

WHAT WE'RE CAUTIOUS ABOUT

• This is a relatively new product that is being updated through continued stakeholder consultations, as such, strategies for linking skills to NOC are still ongoing.

• The skills in the hierarchy use standard terminology, which does not necessarily reflect the way employers describe their skill requirements.

O*NET (US Occupational Information Network)

O*NET is a US online database that provides standardized information about the characteristics of jobs and workers in the United States. It functions primarily to support individuals in making career and educational decisions, and to provide tools to create and maintain a globally competitive workforce.

WHY A CAREER PRACTITIONER MIGHT USE IT

• O*NET includes a suite of job selection tools (geared toward job seekers and students) and career assessment tools (geared toward career practitioners):

O*NET JOB SELECTION TOOLS

• **my next move** – an interactive tool for individuals to learn more about their career options
• **occupation search** – a career exploration search tool
• **my skills, my future** – finds career matches for workers based on current or past jobs

O*NET CAREER ASSESSMENT TOLLS

• **interest profiler** – measures work-related interests (paper/pencil and web versions available)
• **work importance locator** – measures that is important to a person on the job (paper/pencil and web versions available)
• **ability profiler** – measures a person's abilities (paper/pencil version only)

WHY WE USE IT

• The US O*NET database represents one of the world's largest, most comprehensive, widely used public repositories documenting detailed job–worker characteristics. This includes, among others, importance and complexity measures for 35 skills across 968 occupations.

• O*NET was designed — and subsequently revised — based on feedback from many experts: occupational and job analysts, statisticians, industrial and organizational psychologists, and other labour market and human resources experts (National Research Council, 2010). As a result, O*NET represents a massive undertaking with a strong theoretical and empirical foundation.

WHAT WE'RE CAUTIOUS ABOUT

• O*NET represents the US labour market. Data come from US job incumbents and job analysts operating in a US framework. While some occupations can be characterized as "continental" in nature, there are differences between the US and Canadian occupational structures.

• Data is not timely. O*NET data is updated on a continuous basis over a fiver-year cycle for those occupations identified as in-demand. For other occupations, however, there is no set timeframe for updates.

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Training for Career Practitioners

SELF-PACED ONLINE

Using LMI in Career Service Delivery

https://voco.myabsorb.ca/#/public-dashboard

INSTRUCTOR-LED ONLINE

Researching Trends, Career Information, and Employment Possibilities on the LearnOnline Moodle platform

https://www.lifestrategies.ca/

IN-PERSON / MULTIPLE MODALITIES

Visit

http://cccda.org/wp-content/uploads/2011/10/Accredited-Programs-by-Modality-13-12-17.pdf

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LMIC's Tips and Traps for Using LMI

TIPS

NOC ARE LINKED TO REAL JOB TITLES

The National Occupational Classification (NOC) system is the official way job information is organized in Canada – and the names of many of the occupations seem disconnected from the real world.

Both Employment and Social Development Canada (**ESDC**) and **Statistics Canada** have lists of example job titles for every detailed occupation. For example, NOC 5121 is named "Authors and Writers", but you can see **here** that this includes job titles like "Advertising copywrite", "Novelists", "Speech writer", etc. Similarly, NOC 8421, "Chain saw and skidder" operators **includes** titles such as "Bucker", "Faller", "Feller", "Grapple skidder operator".

The profiles can help you associate real-world job titles with the way statistical information is structured, so you can find reliable information related to average earnings, hours worked or employment levels for the jobs in question.

THE RULE OF 2,000

Most people **want to know** what how much they can earn in different jobs. Different sources of information report earnings in different ways, but typically we see either annual salary or hourly wage.

To convert form hourly wage to annual salary simply, you can use the rule of 2,000. Double the wage and add 3 zeros. To go from annual salary to hourly wage do the reverse (drop 3 zeros and divide by 2).
This quick and dirty calculation works by assuming someone works 40 hours a week and 50 weeks a year, meaning the hourly wage worker has 2 weeks of unpaid leave during the year.

SEASONAL ADJUSTMENTS FOR ANY SEASON

Lots of labour market information is presented as "seasonally adjusted" data – this includes the headline unemployment rate and monthly changes in employment reported in the media.
Seasonally adjusted data is useful when you want to look at long-run trends. This is because the adjustment smooths out regular, known fluctuations such as few construction jobs in the winter compared to summer, fewer workdays in February versus other months, and the jump in retail employment during the Christmas shopping season.

Raw or non-seasonally adjusted data might also be useful. If you're interested in knowing what the real change in, say, employment or average wages from one month to the next then the unadjusted value is more relevant. Bear mind that unadjusted LMI will be more volatile and, even though its raw, its still a just an estimate of what's really happening.

KNOW YOUR SAMPLE SIZE

There will always be data limits – and that is okay. The key limiting factor is always the number of underlying observations (e.g., sample size). This is true of survey data and administrative data like tax files.

For example, the Labour Force Survey (LFS) reports employment information by occupation or by industry – but not both. In principle, it is possible to cut the LFS data by both industry and occupation (and region, and gender, etc.) but the smaller the groups the less reliable any information is.
You do not need to know the exact sample size of data – but for reference, the LFS surveys 60,000 households each month. But when looking for new sources of LMI, be wary of data providers with extremely detailed information – ask where the data comes from and what the underlying count or sample size is.

MANY SHAPES AND SIZES OF GEOGRAPHY

Canada is organized into many different geographic categories, all of which are build up from the **Census Dissemination blocks** (of which there are nearly half a million areas). You will never get information at this level – the sample sizes are too small.

These blocks get rolled up into two parallel tracks. Track one includes Census Subdivisions Divisions (CSD), Census Divisions (CD) and Economic Regions (ER). Lots of official data is reported at the ER level. The 76 Economic Regions in Canada are geographically exhaustive meaning every square metre of the country is captured in them. As you can image there are large, unpopulated ERs (e.g., Yukon is an Economic Region) and small, populous ones (Toronto ER includes about 6.5 million people). Note that Economic Regions roll up to the provincial/territorial level, and therefore no ER crosses a provincial border.

The second track of information rolls up into towns and cities. Big cities (with over 100,00 people living in the core) are called Census Metropolitan Areas (CMA) and mid-size cities (with between 10,000 and 100,000 people in the core) are called Census Agglomerations (CA). There are 35 CMAs and 114 CAs. These cities are not geographically exhaustive but about 83% of Canadians live in one of these locations. Unlike Economic Regions both CMAs and Cas can cross provincial boundaries (e.g., Ottawa-Gatineau is a CMA).

Statistics Canada has a very useful tool (**here**) to look up a city, town or region name and find out what geographic classification is falls into.

TRAPS

BEWARE OF FORECASTS

Forecasting employment levels by occupation is very common – usually called an "occupational outlook". Forecasting in general is incredibly difficult to do well (read: with accuracy) and bit shocks cannot be reliably predicted – think about the outlook for jobs in finance in years before the global financial crisis, or the oil & gas sector before the price of oil collapsed in 2014.

That said, forecasts or long-run persistent trends can and do offer useful insights. We know, for example, baby boomers are starting to retire and there are few young cohorts to replace them – so forecasts of growing employment in health care are pretty reliable.

Being wary means: don't expect great accuracy from big, multi-year forecasts. Oftentimes, simply looking at the recent trends (e.g., the past 5 years) is good enough to get a general sense of future employment prospects.

NO ONE AGREES ON HOW WE SHOULD MEASURE LABOUR MARKET SHORTAGES

Labour shortages and skills shortages are a hot topic these days, but there is a lot of disagreement about how they should be identified and measured. Media reports of shortages typically rely on two sources: (1) employers struggling to hire; and, (2) differences between forecasts of future supply and demand in an occupation. If employers are reporting difficulty finding people to hire, then regardless what one calls it, that is a decent indication of opportunities for job seekers. If, on the other hand, the reason for reporting a shortage is because of forecasts, then its less clear if there are opportunities for job seekers (see also Trap #1).

ONLINE JOB POSTING DATA MISSES IMPLICIT REQUIREMENTS

When exploring information obtained from online job postings be aware that employers often leave out key requirements – assuming the skills, knowledge or tool to be used is obvious. For job posting data such as LMIC's Job Posting Dashboard, the work requirements implicitly sought cannot be captured by the software that collects and analyzes the raw text in job ads.

This same warning applies to the direct review of job postings on behalf of clients. The employer might expect the candidate to use Microsoft Excel but not mention it in the job posting. There is no easy solution to employers' omission of particular work requirements but being aware of this gap in information is important.

THE LEVEL OF SKILLS REQUIRED IS DIFFICULT TO KNOW

Whether you are using data sourced from online job postings or a formal taxonomy of skills (e.g., **the US O*NET system** or **ESDC's Taxonomy**), there are important limits to knowing the depth of skills required in any particular job.

First, online job postings data can report only report on the frequency that a skill (or other work requirement) is mentioned in job postings. The fact that Microsoft Excel is mentioned very frequently says absolutely nothing about how this program is to be used (e.g., advanced pivot tables, data visualizations, tracking budgets, or basic familiarity etc.)

Second, formal **taxonomies can be linked to occupations** and, in so doing, rate the complexity of the skills required. Such details offer important insights, but the information stays at the level of the occupation – it does not vary by employer or location.

SOMETIMES THE GENERAL IS BETTER THAN THE SPECIFIC

Everyone wants very **local, granular** labour market information, but sometimes bigger is better. Although small sample sizes (see above) might limit what is available, that doesn't mean the most local, granular data available is best.

Take, for example, **average wages by occupational group** reported in the Labour Force Survey (LFS). The data are available but because of the small number of observations they are very noisy – meaning each month's wage estimate jumps up and down a lot. The larger the group, the less noisy – and more reliable – the information. So, think about what dimensions don't need to be very detailed for your purpose and aggregate across those categories. Continuing the wage example, if you really need to occupation-level information maybe you don't need it by month, in which case using annual wage data by occupation (available **here**) will better: By aggregating across 12 months you'll significantly reduce the volatility (noisiness) of the information and have much more reliable observations.