

MODULE 2:

Identifying Workforce Assets and Needs

Labor Market Information Resource Guide



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Overview

When used properly, Labor Market Information (LMI) makes important contributions to regional and community workforce development efforts. LMI allows community leaders to make decisions based on facts rather than anecdotes, and this in turn can strengthen their workforce planning and program design efforts. Moreover, this information can help stakeholders craft the compelling and diverse messages needed to recruit supporters and encourage learners to participate in their initiatives.

Within the context of the broader FORWARD curriculum, the information presented below prepares extension educators to find and use the LMI necessary to create effective and impactful workforce initiatives and programs. In some instances, the extension educator may rely on a more experienced partner to gather and analyze these data and information. However, a greater knowledge and awareness about LMI can enable extension educators to ask better questions about the data and information they need for their community's workforce initiatives. Moreover, this foundational knowledge will also enable stakeholders to become better consumers of the information.

This module shows extension educators—and other regional and community leaders and actors—how to incorporate these data into their workforce development and career pathway efforts. It also lists publicly available data sources that can help answer key questions about a region's labor supply and demand. For each data variable, the material below identifies an appropriate data source, what that data covers, as well as key issues that data users must understand to use the data properly. These summaries also include links to each data source and an update schedule so users can use the most current data.

Learning Objectives

The information presented below will allow extension educators, and other regional leaders and stakeholders to:

- Use labor market information to answer important questions about their community and/or region's workforce development needs, assets, and issues;
- Identify different sources of labor market information and the questions they answer;
- Incorporate qualitative data into their regional workforce analysis in order to offer a more complete picture of workforce needs and assets; and
- Understand how to use these data sources and information build consensus about the community and/or region's workforce priorities and inform their community's workforce strategies and programs.

Introduction

Labor Market Information (LMI) is a critical tool for helping students, job seekers, employers and local leaders effectively navigate their local labor market. LMI is the body of information that deals with the functioning of labor markets and the determination of the supply of, and demand for, labor. It allows us to better understand employment and unemployment trends, average wages and income, population and demographic characteristics, the nature of economic activities and the types of workers needed to perform these activities, and how the demand for workers will change in the future.

There are several broad LMI user groups, and each group has distinct and specific LMI needs¹, including:

- **Students and jobseekers** use these data to find and select career and job opportunities;
- **Employers** use LMI to understand local prevailing wages for a given occupation;
- **Counselors** need this information to place students and workers in jobs and careers;
- **Education and training providers** use LMI to help determine the courses and programs they offer, and
- **Community leaders** use LMI to inform investment decisions regarding to workforce training and economic development investments.

Responding to this diversity of needs, therefore, requires a wide array of LMI resources. Several federal and state statistical agencies produce much of the publicly available LMI resources. The most prominent agencies include:

- **The U.S. Bureau of Labor Statistics (BLS):** BLS ‘Counts the Jobs’ and is the most prominent LMI provider. BLS produces national, state and sub-state employment and unemployment data, as well as employment and wage data for different industries and occupations. These data allow labor market actors to better understand their labor market and make critical decisions about their careers or their businesses.
- **State LMI agencies:** State LMI agencies² produce state and local labor market statistics in cooperation, and under the guidance of, BLS and the U.S. Employment and Training Administration (ETA). As a result, much of the data published by BLS is the same as what state LMI agencies publish. Since they have a more localized customer base, state LMI agencies also publish data that better meet the needs of their state and local customers (e.g., publishing data for locally-relevant geographies like workforce development board service areas). As part of their cooperative agreement with ETA, these agencies also develop short- and long-term employment projections.
- **The U.S. Census Bureau:** The Census Bureau is primarily known for ‘Counting the People’ through programs like the Decennial Census, Population and Housing Estimates, and the American Community Survey (ACS). These programs are critical for understanding regional growth or decline, as well as key population and labor force demographic characteristics. In addition to the population-oriented programs, the Census Bureau’s economic programs also make important contributions with regards to county business patterns, exports, or business formations.
- **The U.S. Bureau of Economic Analysis (BEA):** BEA notably ‘Counts the Money’ and is a leading information source on Gross Domestic Product or Incomes. BEA’s regional data can show, for instance, how wages have changed over time or how many jobs are wage and salary jobs and how many are sole proprietorships.

It is important to note that these agencies are not the only source of LMI. Other federal and state agencies publish useful and relevant data that can further understanding of state and local labor markets. For instance, the U.S. Department of Education and state departments of education often publish useful information on secondary and post-secondary degree completers which can shed light on the supply of workers in different fields.

Moreover, several data aggregators offer tools that make it easier for users to find the data necessary to answer their questions. Similarly, a number of proprietary data providers offer—for a fee—labor saving tools as well as modeled data

¹ LMI Institute. (2012) ‘[Labor Market Information Customers and Their Needs](#).’ Arlington, VA: LMI Institute.

² The LMI Institute provides a directory of all state LMI Agencies: <https://www.lmiontheweb.org/what-we-do/agency-directory/>

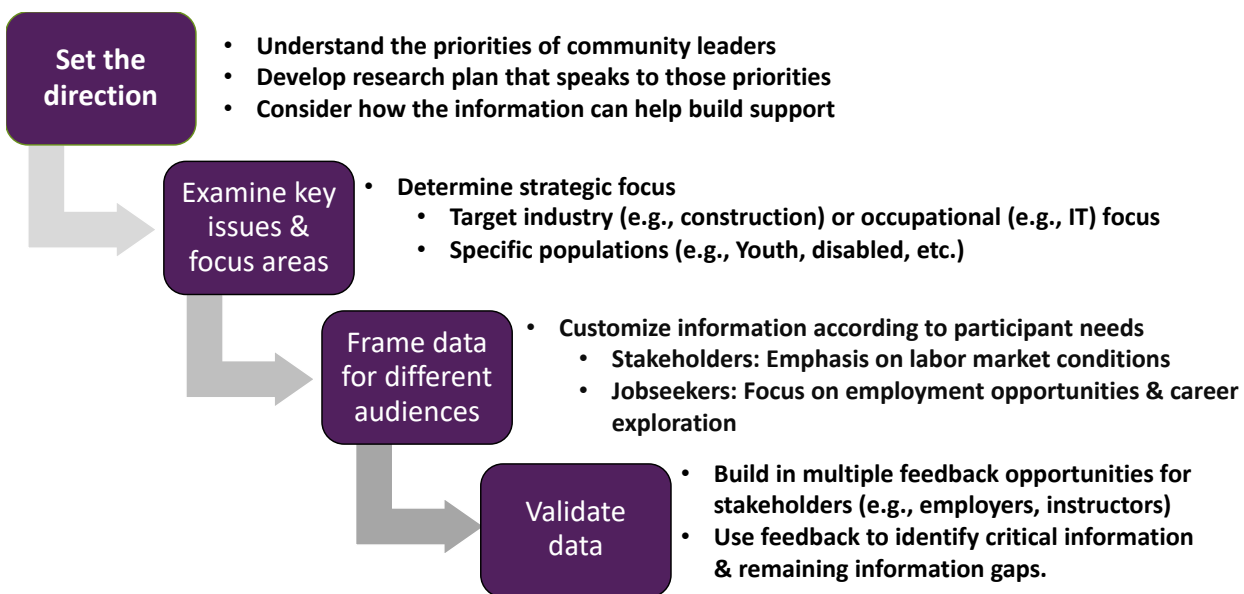
that allows for more detailed analysis than what is available through public sources. Also, qualitative data (e.g., focus groups, interviews, etc.) can supplement and complement these data; combined they can paint a more detailed and complete picture of regional labor markets and give workers, employers and community leaders a more solid understanding that can inform their workforce development efforts.

Assembling information to support community workforce initiatives

The information sources described in this module can enable regional and community stakeholders to paint a more complete picture of their local labor market’s available opportunities. These data can, for instance, help map career pathways for in-demand occupations, identify ‘entry points’ for starting careers, and showcase the education and training requirements for each level. These pathways can also help education and training providers develop programs to facilitate educational “on ramps and off ramps”. In short, they show the connected nature of different occupations and the range of career options available to students and workers.

However, establishing career pathways requires more than information. Rather, these programs also require collaborative action that draws on a variety of stakeholder groups. Weaving together and packaging the requisite information necessary to build this support requires several steps with each drawing upon, and catering to, different groups. This section describes the steps (highlighted in Figure 1) necessary to pull this information together so that it can effectively meet the needs of the initiative.

Figure 1. Assembling information to support community workforce initiatives



Set the direction

Before starting any career pathways initiative, program organizers must first understand the community’s workforce priorities. For instance, community leaders may prefer to focus their efforts on jobs that pay good wages, or are in-demand across multiple industries, or create opportunities for disadvantaged populations. These priorities are key to shaping the research agenda, and for engaging and recruiting key stakeholders to participate in any community or regional effort.

Ideally, these priorities will reflect labor market challenges. For instance, if the region’s population is shrinking and is characterized by significant out-migration (See Section 1b below), then workforce efforts might emphasize connecting younger workers to jobs and pathways that may help retain those regional workers. Similarly, if disadvantaged groups are underrepresented in certain activities (e.g., construction, manufacturing) then programs focused on diversity and inclusion might design ways to get workers from these communities into those fields (Sections 1e and 3b).

Labor Market Information can be used to articulate the scale and scope of these issues. They can be used to make compelling arguments for addressing these issues and therefore building a coalition of support to move the initiative forward. In some instances, state or regional actors may have gathered similar information or research and drawing on this pre-existing information can either save resources or speed up the process. For example, a state LMI agency may have already examined an industry's workforce needs in which case local actors just need to make sure they have enough local context to move forward. Similarly, organizers should also be aware of any similar programs already underway in the community, or underway in neighboring communities. This can help avoid redundancy, or perhaps presents opportunities to scale up existing efforts through greater collaboration.

Examine key issues and focus areas

Community initiatives are often most successful if they maintain a strategic focus rather than trying to be everything to everyone. This focus may reflect the community's priorities, but it might also simply come from the interests expressed by a group of engaged employers—a coalition of the willing—who have an interest and desire to take collective action to meet their specific workforce needs. Regardless, these focus areas may dictate the information needs necessary to support the initiative moving forward.

- Efforts that focus on *targeted industries* such as manufacturing, construction or healthcare will need to know the size and scale of the industry (Section 3a), the demographics of that industry (Section 3b), as well as an understanding of the staffing patterns within that industry to identify prominent occupations (Section 4b) and what is required of workers in those occupations. Additionally, employer input (Section 6a) will be necessary to better understand unique local needs as well as to help identify any mission critical occupations.
- Efforts placed on *selected occupational groups or fields* (e.g., IT, maintenance) will need information about occupational requirements (Section 4d) and wages (Section 4a), which industries and employers are most likely to employ these types of workers (Section 4b), and which local education and training providers prepare people to enter these fields (Section 5a).
- Other efforts may focus on *specific populations*, such as disadvantaged, underrepresented, disabled or youth workers. In these instances, it is important to fully understand the size of the group and how and in what ways are they currently participating in the local labor force (Section 1c to 1g). Industry demographics (Section 3b) can help identify where different types of workers—be they of a specific age demographic, gender, or race and ethnicity—are currently working and where they might be underrepresented.

Different Types of Community Workforce Priorities

- **Good paying jobs** are those that pay above the median wage, or a family-sustaining wage; if not placing people in these jobs, these efforts may look to start people in career pathways that relatively quickly can lead them to these good paying jobs.
- **Middle-skill jobs** typically require more than high school, less than a 4-year degree, and some OJT. These jobs are commonly found in sectors such as manufacturing, construction, or healthcare.
- **Pathway jobs** are steppingstones to other higher-paying jobs. Identify jobs, provided workers access incremental education and training.
- **High demand jobs** are those that have grown, and are projected to grow, in the future.
- **Cross-cutting occupations** are those that are in-demand across multiple industries. These might include maintenance and repair or information technology occupations.
- **Uniquely competitive occupations** are those that are relatively concentrated in your region and critical to activities that provide the region with a unique competitive advantage (e.g., Cybersecurity in Northern Virginia, Furniture in Western North Carolina).
- **Diversity and inclusion efforts** may involve either supporting the types of jobs that employ people of different ages, genders, races, and ethnicities, or placing people in jobs where they may be relatively underrepresented.

Combined, this information can inform the design and direction of efforts to create employment and career pathways programs. It not only helps to identify potential opportunities, but also highlights the types of employers that organizers must engage to support the effort. For instance, if the initiative focuses on increasing youth employment opportunities

and the data show that most workers aged 14-18 work in retail and food service then it might merit engaging employers from those sectors.

Frame data for different audiences

Once the relevant information has been gathered to support the initiative, it is important to remember that information needs vary by the audience. As illustrated in Figure 2, the needs of community stakeholders (e.g., extension educators, economic and workforce development professionals, community leaders) and jobseekers (e.g., students, dislocated workers) differ. For instance, many stakeholders require a wider array of labor market information that considers both issues of labor supply and labor demand. Conversely, jobseekers will want information that pertains primarily to what will help them find work or explore careers.

This distinction should also be clear when presenting the information to these different groups. For stakeholder groups, the LMI can increase their understanding of regional workforce opportunities and challenges or help them tell a compelling story to build support (financial or otherwise) for their efforts. This can be accomplished through reports, presentations, or targeted infographics. Jobseekers likely need more targeted information that lay out career pathways, set expectations about the wages and demand for potential jobs, or at the very least direct them toward resources that can aid their job search and career exploration.

Figure 2: Data relevance by user group

Data Type	Data Element	Extension Educator	WF-ED Professional	Community Leader	Educators & Counselors	Employers	Jobseekers
Population Trends & Characteristics	1a. Population trends	Use often	Use often	Use often	Use often	Use often	Use often
	1b. Components of population change	Use often	Use often	Use often	Use often	Use often	Use often
	1c. Age characteristics	Use often	Use often	Use often	Use often	Use often	Use often
	1d. Gender composition	Use often	Use often	Use often	Use often	Use often	Use often
	1e. Racial and ethnic diversity	Use often	Use often	Use often	Use often	Use often	Use often
	1f. Per capita income	Use often	Use often	Use often	Use often	Use often	Use often
	1g. Poverty	Use often	Use often	Use often	Use often	Use often	Use often
Labor Force Trends & Characteristics	2a. Labor force size	Use often	Use often	Use often	Use often	Use often	Use often
	2b. Unemployment	Use often	Use often	Use often	Use often	Use often	Use often
	2c. Labor force participation rate	Use often	Use often	Use often	Use often	Use often	Use often
	2d. Educational attainment	Use often	Use often	Use often	Use often	Use often	Use often
	2e. Commuting patterns	Use often	Use often	Use often	Use often	Use often	Use often
Employment Drivers	3a. Current industry demand	Use often	Use often	Use often	Use often	Use often	Use often
	3b. Industry demographics	Use often	Use often	Use often	Use often	Use often	Use often
	3c. Measuring entrepreneurship	Use often	Use often	Use often	Use often	Use often	Use often
Occupational Demand	4a. Occupational employment and wages	Use often	Use often	Use often	Use often	Use often	Use often
	4b. Industry staffing patterns	Use often	Use often	Use often	Use often	Use often	Use often
	4c. Occupational projections	Use often	Use often	Use often	Use often	Use often	Use often
	4d. Occupational requirements (O*Net)	Use often	Use often	Use often	Use often	Use often	Use often
	4e. Online job postings	Use often	Use often	Use often	Use often	Use often	Use often
Filling Needs	5a. Post-secondary completers	Use often	Use often	Use often	Use often	Use often	Use often
	5b. Professional credentials	Use often	Use often	Use often	Use often	Use often	Use often
Other sources	6a. Focus groups and interviews	Use often	Use often	Use often	Use often	Use often	Use often
	6b. Other data resources	Use often	Use often	Use often	Use often	Use often	Use often

Use often

Use sometimes

Use rarely

Validate data with appropriate stakeholders

Throughout the process, program organizers should build in opportunities to validate all this information with employers and relevant training providers (i.e., community college instructors) to make sure the information developed reflects the on-the-ground reality in their region. This process is also important for determining which information is critical for advancing the effort and identifying any remaining information gaps. Throughout the process, always build in opportunities for new information and feedback loops. This feedback can strengthen these initiatives and shape how

they need to evolve over time. Over the medium- and longer-term the challenges that regions and community face change. Establishing these feedback loops, can allow program organizers to adapt to changing labor market challenges or shifting regional concerns and priorities.

About this guide

This guide provides a resource to help find the information needed to support this process, and in doing so strengthen community efforts to address its pressing workforce challenges. These efforts — funded by the Ascendium Education Group and managed by the Association of Public and Land-Grant Universities (APLU) and the North Central Regional Center for Rural Development at Purdue University — will create a rural workforce engagement model for Cooperative Extension to implement. As a result, extension educators will work with their communities to design rural career pathways that meet both their communities' specific needs, and particularly the needs of rural low-income and non-traditional learners. The data resources highlighted here are critical for informing the design and implementation of those efforts.

These workforce efforts typically involve a wide variety of community members — including community leaders (be it extension educators, workforce or economic development leaders, counselors, educators (secondary or post-secondary), employers and jobseekers (both incumbent/displaced or students)—all of which play different roles. Each group needs LMI to inform their efforts to create community prosperity, find the workers they need, or select the right job or plan for the right career. Given their various roles, these different groups have different information needs but they all must have a grounded and solid understanding of the regional workforce.

Not all of the information presented in this guide will be directly relevant to every reader, either in their day-to-day job or in their participation in regional workforce initiatives. Figure 2 shows the data elements covered in this manual, and the frequency with which different user groups should look to use these data. For instance, community leaders who need to understand their local labor market conditions may focus primarily on sections 1 and 2. By contrast, readers assembling information to support jobseekers (or are jobseekers themselves) may prefer to jump ahead to sections 3 and 4 that highlight data resources that aid in finding employment opportunities and undertaking career exploration. This guide, therefore, represents a resource guide that explains and provides links to information that can help users answer their key labor market questions. It contains three broad sections:

- Resources for understand labor supply
- Resources for identifying labor demand
- Assembling information to support community workforce initiatives

For each labor supply and demand variable, we highlight why that variable matters and labor market questions it can help answer. We also identify who produces these data and any key considerations for which users must be aware of when using them. As noted earlier, these data will not answer every question but will nevertheless help community leaders ask better questions. As a result, this guide also discusses how more qualitative methods (e.g., focus groups, interviews) can be used to deepen understanding about regional workforce dynamics.

Although primarily intended as a resource for extension educators, this guide can benefit anyone looking to build their data literacy. In doing so, they can develop more strategic, and data-driven programs and initiatives. Recognizing that many organizations face resource constraints, particularly in rural areas, this guide emphasizes free, publicly available data sources over more expensive proprietary data sources. Nevertheless, publicly available data sources can provide sufficient information to allow users to ask better questions and identify areas that require additional research.

In addition to this written guide, we have also produced a PowerPoint file summarizing this information. This file also includes sample charts that show how these data might be used to convey this information. Similarly, we have also developed an Excel file containing the actual data and associated charts. This Excel file includes examples from regions across the nation, and users can use this file as a resource for pulling together data and charts for their own region. The section numbers used are consistent so as to connect the materials in this guide with the PowerPoint and Excel workbook.

Sources of Labor Supply

Sections 1 and 2 below focus on data sources that will allow readers to better understand the population and labor force trends and characteristics that shape the supply of labor in their region or community. Broader demographic factors can dictate the availability of labor within a given place. Finding workers is likely easier in places with growing populations and a relatively high proportion of prime working age residents. The regional and/or organizational goals will dictate the relevance of each of these variables, but these data can effectively illustrate some of the labor force challenges and/or opportunities that regions face.

1. Population trends and characteristics

Population trends show whether regions are on a trajectory of growth or decline. At the most basic level, these trends reflect the overall size of the area labor force. Growing places tend to have more workers and more need for workers, while declining places may have more difficulty meeting their labor force needs. Moreover, what the population looks like with regards to age and diversity can dictate the regional availability of workers. For instance, places with a large proportion of prime age workers are likely to have a larger labor pool from which to pull. Similarly, relative measures of regional wealth (e.g., per capita income, poverty) can provide a sense of how well the economy works, in aggregate, for the region's population.

Section 1 will introduce you to resources that will help you answer questions such as:

- How do demographic trends influence the regional labor supply?
- What does my potential labor pool look like?
- How does the regional standard of living compare to other regions, or the nation?

1a. Population change

The pace at which places gain or lose population can tell a great deal about their overall economic health. Counties or regions that grow faster than their respective state or the nation likely generate sufficient economic opportunities to attract new residents and retain existing residents. Growing populations also lead to more potential customers and workers for area businesses, and expanding tax revenues to support public services and local schools. Conversely, places with shrinking populations are more apt to struggle economically, as workers may pursue employment opportunities elsewhere and diminished tax bases may disrupt public services and raise the threat of consolidated schools.

Data from the U.S. Census Bureau's Population Estimates Program can answer questions about the direction and pace of regional population change. This program annually estimates the population for states, counties, and incorporated places (e.g., cities, towns, boroughs, etc.).³ Using information related to births, deaths, federal tax returns, Medicare enrollment, and immigration, these estimates provide an annual update to the decennial census' base counts. They cover population changes that occur between July 1 and June 30—the 2021⁴ vintage estimates the population change between July 1, 2020 and June 30, 2021. These data are crucial for understanding the scale and pace of population change. Moreover, they also play a key role in many federal funding allocation decisions.

Source: U.S. Census Bureau, [Population Estimates Program](#)

Update schedule: These data are released annually, typically during the second quarter of the year. The U.S. Census Bureau provides a [release schedule](#) for the exact release date.

³ Although the estimates are not a head count like the Decennial Census, they are produced annually and allow us to see intercensal trends and the components of population change. They use the Decennial Census as benchmark, so the 2010 and 2020 estimates are very close to the Census population counts.

⁴ With each annual release, the Population Estimates Program revises and updates the entire time series back to the previous Decennial Census.

1b. Components of population change

Aggregate population trends tell part of the story, but several underlying factors can further explain population growth or decline. At the most basic level, two primary factors—migration and natural change—dictate the trajectory of an area's population.

- **Migration (domestic and international):** Positive net migration (i.e., more people moving-in than moving-out) shows that places can attract new residents by creating attractive employment opportunities and/or offering an appealing quality of life. Net out-migration may result from an insufficient number of high-quality job opportunities to attract new residents and/or retain existing workers and residents.⁵
- **Natural Change (births minus deaths):** An area's age profile often determines natural change. For instance, places with a relatively greater share of people in their prime child-bearing years will likely experience greater natural increase than places with relatively older populations. Places with negative natural change often have relatively older populations. Other factors that may influence natural change include life expectancy and access to healthcare, amenities for retirees, and regional cost of living, among other factors.

Once again, the U.S. Census Bureau's annual population estimates show the components of population change at the state and county level. Examining these trends over time can illustrate why a region's population may be growing or declining. Inadequate job opportunities may lead to net out-migration, likely of prime working age adults, which in turn can lead to a disproportionately older population. By contrast, places with an abundance of employment opportunities may experience net in-migration of younger workers and people likely to have families. In these instances, a place may grow through both migration and natural increase.

Source: U.S. Census Bureau, [Population Estimates Program](#)

Update schedule: These data are released annually, typically during the second quarter of the year. The U.S. Census Bureau provides a [release schedule](#) for the exact release date.

1c. Age characteristics

There has long been a recognition that the aging of the baby boom generation will create significant workforce challenges. As the baby boom generation is now retiring and the millennial generation is fully in the labor force, many places experience difficulty finding workers in part because there are fewer workers to find. The age of a region's population, therefore, is a critical element for understanding the overall labor supply.

Examining the relative size of several key age cohorts can help show the potential number of workers. For instance, if a region has a large share of prime working age people (ages 25 to 54), relative to the state or the nation, then it likely has a strong pool of potential workers from which to pull. Similarly, if there are relatively large share of workers aged 25 to 34 than the region is probably an attractive place for younger people to live and work.

By contrast, regions with disproportionately older populations may face some workforce challenges, as there may not be enough people of working age to meet labor demand of area employers. Moreover, older residents are likely not starting families so there will not be enough young workers to replace those that are retiring. Comparing the share of the population aged 55 to 64 (pre-retirees) to those aged 15 to 24 (new workers), may provide some indication about a region's ability to replace the workers aging out of the workforce. This lack

⁵ These data only speak to the volume of migration, not the direction. There are a variety of sources that address the directionality of migration flows. For instance, the U.S. Census Bureau's [Flows Mapper](#) (based on an American Community Survey question about where residents lived in the previous year) highlights some of these trends. Similarly, the IRS publishes [migration data](#) showing where people filed one year and where they filed the next. The U.S. Postal Service has data showing change of address information, although access to that data requires a Freedom of Information Act (FOIA) request. Several national moving companies (e.g., [United Van Lines](#)) publish customer surveys that show where and why their customers were moving, although these surveys often do not provide much geographic detail beyond the state level.

of working aged residents may be most pronounced in places that are able to attract retirees, where there are growing populations but not necessarily a growing labor force.

Information about population ages are available through the U.S. Census Bureau’s population estimates and the American Community Survey (ACS). The annual population estimates provides these data—by 5-year age cohorts—annually as detailed as the county level. The American Community Survey’s 5-year estimates provide this information at a more detailed geographic level and several additional age cohorts (e.g., Under 18, 18 to 24, 62 and older). However it is important to remember that the ACS is survey data, so users must be mindful of the margins of error particularly when working in relative smaller geographies (e.g., census tracts) or more rural areas. If the currency of the data is a more pressing factor, the ACS also provides 1-year estimates for larger geographies. Figure 3 describes the best uses for the 1- and 5-year estimates.

Source: U.S. Census Bureau, [Population Estimates Program](#); The ACS subject table on Age and Sex (S0101) is available through [data.census.gov](#).

Update schedule: The estimates data are released annually, subsequent to the population estimates discussed above. The U.S. Census Bureau provides a [release schedule](#) for the exact release date. The Census Bureau typically releases its 5-year ACS estimates in December.

Figure 3: Which ACS Estimates should you use?

1-year estimates	5-year estimates
<ul style="list-style-type: none"> • 12 months of collected data • Data for areas with populations of 65,000+ • Smallest sample size • Less reliable than the 5-year • Most current data 	<ul style="list-style-type: none"> • 60 months of collected data • Data for all areas • Largest sample size • Most reliable • Least current data
Best used when:	Best used when:
<ul style="list-style-type: none"> • Currency is more important than precision • Analyzing large populations 	<ul style="list-style-type: none"> • Precisions is more important than currency • Analyzing small populations • Examining tracts and other smaller geographies because 1-year estimates are not available
<p>When using ACS data:</p> <ul style="list-style-type: none"> • Be mindful of the margins of error, which are particularly relevant when analyzing smaller populations. • Remain consistent when making comparisons (e.g., compare 5-year estimates to 5-year estimates, not 5-year to 1-year). 	

Source: <https://www.census.gov/programs-surveys/acs/guidance/estimates.html>

1d. Gender composition

In most instances, places have relatively balanced populations in terms of gender. Where there is a gender imbalance, there may be something about the economy and the available employment opportunities causing this imbalance. For instance, there is a disproportionately large number of men in parts of Alaska or Williams County, ND which have large extractive economies. In places where there may be a relatively larger share of women, the availability of childcare options may influence that ability of working age women to fully participate in the workforce.

Both the U.S. Census Bureau's population estimates and the ACS provide data on gender breakdown of the population. The annual population estimates provides these data to the county level, whereas the ACS' 5-year estimates provides data at more detailed geographies (e.g., census tracts). As always, ACS data users must be mindful of margins of error when using data that cover small geographies or rural locations.

Source: U.S. Census Bureau, [Population Estimates Program](#); The ACS subject table on Age and Sex is available through [data.census.gov](#).

Update schedule: The estimates data are released annually, subsequent to the population estimates discussed above. The U.S. Census Bureau provides a [release schedule](#) for the exact release date. The Census Bureau typically releases its 5-year ACS estimates in December.

1e. Racial and ethnic diversity

A region's racial and ethnic composition can influence work place strategies and cultures. These data help quantify the region's racial and ethnic composition and how it is changing over time. Comparisons with other regions, the state, and the nation, can further illustrate the region's relative diversity. Rapid growth rates of individual ethnicities can significantly change a region's racial or ethnic composition.

As ethnicities change, there may be an additional need to meet the needs of residents who do not speak English as their first language. Specifically, communication issues between supervisors and workers may arise between those speaking different languages. Additionally, developing training and education that is culturally and language appropriate may become a more important priority for the region's employers and training providers. Garnering broad community support for any kind of regional initiative also requires representative participation. Therefore, for any regional initiative to succeed, the people leading and participating in that initiative should reflect the community they serve.

As with age and gender, the U.S. Census Bureau's population estimates and the American Community Survey (ACS) provide data on the population's racial and ethnic composition. The population estimates provide these data at the county level, and ACS' 5-year estimates provides data at even more detailed geographies.

Source: U.S. Census Bureau, [Population Estimates Program](#); The ACS subject tables on Race and Ethnicity are available through [data.census.gov](#).

Update schedule: The estimates data are released annually, subsequent to the population estimates discussed above. The U.S. Census Bureau provides a [release schedule](#) for the exact release date. The Census Bureau typically releases its 5-year ACS estimates in December.

1f. Per capita income

Per Capita Income (PCI) provides an aggregate measure of the region's standard of living. It is derived by dividing the region's total personal income by the total number of residents. These measures make possible regional comparisons of wealth to the nation, state, or other regions. Changes in PCI can show whether a regional economy is growing or shrinking over time.⁶ Rising PCI often reflect a strengthening economy, particularly if they are rising faster than the state or nation. Increased regional wealth means that there is more money available to be spent on retail, local services, or housing, which in turn can lead to more jobs and an expanded tax base through increased sales or property tax receipts. It should be noted that these measures do not speak to the region's income distribution. Personal income includes all forms of income including: wages and salaries, proprietor incomes, ownership of financial assets, and government transfer payments, among others. The U.S. Bureau of Economic Analysis (BEA) produces data on PCI for counties, states, and the nation. Their estimates measure pre-tax income.

⁶ When looking at PCI over time, it is vital to remember to use 'constant' or 'real' dollars where values have been adjusted for inflation. The U.S. Bureau of Labor Statistics provides an easy to use [inflation calculator](#). Additionally, the U.S. Bureau of Economic Analysis often publishes some of their data-sets using 'chained' dollars, which are inflation-adjusted values set to one year (e.g. 2012 dollars).

It is important to note that PCI is not the only available measure of regional wealth. The U.S. Census Bureau's Small Area Income and Poverty Estimates (SAIPE) program provides aggregate measures of Median Household Income for counties, states, and the nation. MHI estimates often can be more helpful in evaluating a region's economic health, as it is less affected by outlying incomes (e.g., several individuals with very large incomes). Additionally, the American Community Survey also provides estimates by different characteristics such as race and ethnicity, and family type (e.g. children or no children) among others.

Source: U.S. Bureau of Economic Analysis, [Regional Economic Accounts](#); U.S. Census Bureau, [Small Area Income and Poverty Estimates](#); The ACS subject tables on household income are available through [data.census.gov](#).

Update schedule: BEA releases its annual Local Area Personal Income data in November; The Census Bureau typically releases its 5-year ACS estimates in December.

1g. Poverty

Regional poverty rates reflect how well the economy works for the entire population. In regions with high poverty rates, many residents are unable to meet their basic needs. In such instances, this may mean that there is an insufficient number of employment opportunities for some populations, or large segments of the population are — for a wide array of reasons — unable to take advantage of the available opportunities. Poverty is often structural in nature, so over time high poverty places tend to remain high poverty places. Poverty rates provides some indication about the extent to which communities require various public assistance programs, or their eligibility for state and federal assistance that may support their workforce training and development activities.

The U.S. Census Bureau's SAIPE program provides annual model-based poverty estimates for states, counties and school districts. In addition to estimating the number and share of the population living in poverty, the SAIPE program also provides estimates for median household income, and poverty estimates for children (ages 0-17 and ages 5-17 in families). Poverty estimates for children aged 0-4 are available at the state and national level. Below the county level, the SAIPE program also estimates the number of relevant children (aged 5 to 17 years old) in poverty who are related to the householder for every school district in the country.

Source: U.S. Census Bureau, [Small Area Income and Poverty Estimates](#).

Update schedule: Annual estimates are released in December. For instance, The Census Bureau plans to release the 2021 SAIPE data in December 2022.

2. Labor force trends and characteristics

Broad population trends have long-term implications for the regional workforce, and allow us to get a sense of the potential workforce and how these trends are changing over time. Trends such as labor force growth can dictate the overall availability of workers, the unemployment rate provides a sense of the number of people looking, but unable to find work, and labor force participation rates indicate the extent to which adults are active in the labor force.

In addition to the general availability of workers, additional factors such as educational attainment speak to the relative capacity of the regional workforce. Similarly, commuting patterns illustrate how wide a net employers might cast to meet their workforce needs. Combined, these trends can help paint a broad picture of the regional labor market's overall health.

Section 2 will introduce you to resources that will help you answer questions such as:

- How many potential workers are there overall?
- How many workers are able to find work?
- How well educated is the workforce?
- Where do people work relative to where they live, or how far are people willing to go to find work?

2a. Labor force size

The U.S. Bureau of Labor Statistics defines the labor force as “all people age 16 and older who are classified as either employed and unemployed.”⁷ This includes those with full-time jobs, part-time jobs, and the unemployed who are actively looking for a job. The labor force does not include full-time students who do not hold a job, stay at home parents, or discouraged workers who have stopped looking for work. There are several different ways to use these data to gauge the relative strength of the regional labor force. Although affected by seasonality, comparing the labor force to the same month in the prior year shows labor force performance on a year to year basis and the extent to which is growing or shrinking. Additionally, comparing regional labor force growth to that of neighboring, similar or competing labor markets can highlight its relative strength.

The Bureau of Labor Statistics (BLS) Local Area Unemployment Statistics produces the country’s official monthly estimates of employment and unemployment for subnational areas (e.g., state, county, etc.).⁸ Much like the Current Population Survey, LAUS uses a ‘household’ concept of employment in that it counts people based on where they live.⁹ The American Community Survey also published data pertaining to labor force characteristics. LAUS data are timelier since they are produced monthly, while the ACS data allows for more breakdowns by social, economic or demographic characteristics. The methods in producing these data differ, so that creates somewhat different responses.¹⁰

Source: U.S. Bureau of Labor Statistics, [Local Area Unemployment Statistics](#); The ACS subject table on labor force and labor force participation is available through data.census.gov.

Update schedule: BLS publishes LAUS statewide estimates roughly 3 weeks after the reference month, and sub-state data 4–5 weeks following the reference month. The Census Bureau typically releases its 5-year ACS estimates in December.

2b. Unemployment

Unemployment is another common measure of labor market strength. Workers in regions with higher unemployment rates may experience greater difficulty in finding work, as employment opportunities may be more limited in number. In places with lower unemployment rates, workers who want to work are more likely able to find work. It is important to understand what the unemployment rate measures and does not measure. The unemployment rate is the percentage of people without work, but who are currently looking for work. Those who are not employed but not currently seeking paid work (such as homemakers and discouraged workers) are not considered unemployed, and therefore not included in the unemployment rate.

The underlying data were drawn from the BLS LAUS program which produces the monthly unemployment rate.¹¹ It measures the total unemployed as a percent of the civilian workforce. It basically includes all people who either have work, or are actively seeking work. It does not include discouraged workers who have fallen out of the workforce. It is important to note that this measure of unemployment rates also does not include longer-term unemployed (or discouraged workers) that have fallen out of the labor market. As with the labor force data mentioned above, these unemployment data use the household definition of employment.

⁷ The U.S. Bureau of Labor Statistics’ definition of Labor Force: <https://www.bls.gov/cps/definitions.htm#lfconcepts>

⁸ The national estimates are produced through the [Current Population Survey](#). The CPS is a household survey conducted by the U.S. Census Bureau for BLS.

⁹ The ‘Establishment’ concept of employment counts people where they work. Other measures of employment, such as the Quarterly Census of Employment and Wages, are based on place of work.

¹⁰ For more information about the differences between LAUS and ACS, see: <https://www.bls.gov/lau/acsqa.htm>

¹¹ The most commonly reported measure of unemployment is the U3, which measures the number of unemployed people in the labor market who are actively seeking employment. There are other, broader measures of unemployment. For instance, the U-6 is a broader measure of unemployment that includes discouraged workers and includes some workers working part time for economic reasons (working periodically but who cannot find full-time work). These data, however, are not available at the sub-state level. More information is available from the U.S. Bureau of Labor Statistics.

When examined over time and compared to other places, the unemployment rate can indicate the extent to which your region's unemployment rate¹² follow or diverge from broader state and national economic cycles. Therefore, the national and state unemployment rates can provide useful benchmarks when presenting these data. Looking at unemployment as a trend, rather than a point in time, can also help illustrate the region's economic trajectory. It is important to note that at the sub-state level, the unemployment data provided by BLS LAUS are not seasonally adjusted. As a result, it is important to understand the seasonality of employment, which is why month over year change (e.g., September 2022 v. September 2021) are often more appropriate than month to month changes.

Source: U.S. Bureau of Labor Statistics, [Local Area Unemployment Statistics](#)

Update schedule: These data are updated monthly.

2c. Labor force participation

The labor force participation rate shows the percentage of working-age adults (usually defined at those 16 years and over) participating in the labor force. Those who are currently employed and those who are unemployed, but actively seeking work are considered part of the labor force. These data help gauge the region's capacity to meet the demand for labor. Low labor force participation rates may indicate that the region may experience difficulty meeting its overall demand for labor, or that an insufficient number of work opportunities causes large numbers of discouraged workers to fall out of the workforce and stop actively looking for work. Additionally, several demographic trends can influence labor force participation. For instance, younger, more educated, and more expensive places tend to have higher labor force participation rates. By contrast, places with relatively older populations have lower labor force participation.

Nationally, the labor force participation rate has grown dramatically over the past 50 years, as large numbers of women entered the workforce. However, labor force participation has started to decline as the population ages and baby boomers leave the workforce. Other factors such as whether or not young adults pursue post-secondary education or enter the workforce, parents electing to work or stay home and raise children, or the participation in the informal economy, can also influence the overall labor force participation rate.¹³

ACS data on labor force characteristics includes information about labor force participation. These data not only show the region's overall labor force participation rate, but also the rates for key demographic groups (e.g., women, youth, etc.). ACS data users must be mindful of margins of error when using data that cover small geographies or rural locations. This is especially true when focusing on specific demographic groups (e.g., people aged 16 to 19 compared to the entire population), as the smaller the group the larger the margins of error.

Source: U.S. Census Bureau, [American Community Survey](#). The ACS subject table on labor force and labor force participation is available through data.census.gov.

Update schedule: The 5-year ACS estimates are released annually in December.

2d. Educational attainment

Educational attainment data show the relative intellectual capacity of the region's adult population, and therefore can be considered a proxy for workforce quality. The educational attainment data presented here show the highest level of education completed by adults aged 25 and older (educational attainment is more fluid

¹² Unless your region is a predefined region (e.g., a metropolitan statistical area), you will have to calculate your own regional unemployment rate. If, for instance, you are working with a 4-county region and want to calculate the regional unemployment rate, then you would need to sum the total number of unemployed people in the four counties and divide by the total number of people in the four county labor force.

¹³ It should be noted that the incarcerated population also counts in the total population number, so rural counties with a substantial institutionalized population are likely to have significantly lower labor force participation rates.

for people younger than 25). As with other measures, it is important to benchmark these data to the state or nation. Answering the ‘compared to what?’ questions can provide vital context and show whether the regional educational attainment rate is above or below average.

These data can help regional stakeholders prioritize their workforce development efforts. Areas with relatively low levels of educational attainment (e.g., disproportionate shares of adults with High School degrees or less) can strengthen the existing talent base by creating more opportunities to pursue additional education. This may involve creating programs to encourage people without high school degrees to complete GEDs, or promoting dual credit programs that make it easier for high school graduates to complete 2-year degrees or certificates, or connecting community college graduates to 4-years institutions. Additionally, the region might focus their economic development activities around creating more knowledge-intensive jobs as a way to attract more highly educated residents.

Much like the labor force participation indicators described above, educational attainment indicators also utilize the U.S. Census Bureau’s American Community Survey. Benchmarking these data to other places can help set reasonable goals. Also, comparing the educational attainment rates of different populations can also inform any strategies that focus their efforts on the groups with the greatest needs.

Source: U.S. Census Bureau, [American Community Survey](#). The ACS subject table educational attainments are available through [data.census.gov](#).

Update schedule: The 5-year ACS estimates are typically released annually in December.

2e. Commuting patterns

The distance people are willing to travel to work can greatly influence the overall supply of available workers. Generally speaking, people will travel farther distances and endure longer commutes for higher quality jobs or if there are limited local employment opportunities. If a region generates a lot of quality jobs, it will attract more in-commuters, but a lack of jobs will lead people to travel outside the community for work. Regions that attract more workers than they lose are job centers, while the opposite is true for bedroom communities. Moreover, job centers are more likely to have activities that contribute to the region’s overall economic base, while employment opportunities in bedroom communities are more apt to be locally-serving.

Commuting data can show the extent to which workers work and live in the same region. These data can help show the extent to which a region can generate sufficient job opportunities for its resident population or how those communities are functionally connected to neighboring areas. In a sense, commuting regions can show where there is a ‘natural’ economic region. This information, in turn, can inform workforce planning efforts by highlighting where there might be potential partners experiencing similar workforce concerns.

Commuting data are available through the Longitudinal Employer-Household Dynamics (LEHD) program, which is a partnership of the U.S. Census Bureau and state Labor Market Information (LMI) agencies.¹⁴ Specifically, these data are available through the LEHD program’s [OnTheMap](#) application. This application uses both firm- and person-level data, so that it can link workers to their employers. Based on where workers live or work, this tool allows users to consider the distance¹⁵ and direction that workers travel, the commuting flows between places, and the overall inflow and outflow in a given areas.

These most recent available data are for 2019 (in September 2022). However, at the regional level the extent to which workers work and live in the same region tends to be relatively stable over time. Unless you are analyzing an extremely fast-changing region, the most recently available data should provide the necessary information.

¹⁴ To identify your state’s LMI agency, see here: <https://www.bls.gov/bls/ofolist.htm>

¹⁵ Depending on the local context, some circumspect should be used when considering the share of workers traveling more than 50 miles. Since these data match home addresses to establishment addresses, it may include for instance, telecommuters or university students who work where they go to school but maintain their home address as their permanent address.

Source: U.S. Census Bureau, [OnTheMap](#)

Update schedule: These data are released on a less regular basis than other Census products. Notification of impending releases will be provided on the [LEHD announcement page](#).

Telling the story of your available workforce

These data are important for setting expectations, understanding broader challenges and issues, gauging the overall health of the region and its labor force. Some of these data will be more effective and compelling in helping you tell your region's story, identifying key challenges or calling people to action. These data can also help you gauge the general health of the regional labor force and whether or not your region is on growth or decline trajectory.

Specifically, the data reviewed above can help you answer help you answer some key regional labor force questions.

- Are people moving to, or leaving, your region?
- What share of your population is of prime working age? Is that share growing or declining?
- How active are people in your regional labor force?
- Are there a significant number of people who want to work but cannot find a job?
- Is your region growing in wealth? How does this growth compare to the state or nation?
- How educated is your region's population? How does that compare to competing regions?
- What does your community's labor shed look like? Are you a job center or more residential in nature? From where does your region draw workers?

These data will not provide you with all the information you need to fully understand your region's labor supply. However, they will enable you to ask better questions so that subsequent research will allow you to dig deeper into regional priorities. These data also only tell part of the story, and the next section highlights data sources necessary to more fully understand the needs of local employers and the opportunities available to workers.

Sources of Labor Demand

This section identifies LMI sources that show where the demand for labor exists. Efforts to understand worker demand focus less on who is in the workforce, and more on what employers need these workers to do. These demand analyses typically use data pertaining to employment or skills to demonstrate employer need and worker opportunity. Historical data show the changing regional demand for labor, while employment projections offer some indicator of how that demand will change in the future.

Job seekers—including both incumbent workers and students—can use this information to identify in-demand career opportunities and better set their expectations about the typical education and training and compensation associated with those opportunities. Moreover, it can further help regional employers better understand the labor market and help guide educational institutions in planning relevant curriculum. After working through this section, readers will know the data sources that show which types of businesses need workers, and the types of workers those businesses need both now and in the future.

3. Employment drivers

Trends in industry employment provide a basic starting point for understanding the local or regional economy. Different industries make different contributions to the regional economy, and therefore dictate where different opportunities may arise. Broadly speaking, there are two different types of industries—export industries and locally-serving industry.

- **‘Export’ or ‘economic base’** industries sell their products and services beyond the local market and *therefore bring new money into the community*. These industries include activities such as manufacturing, tourism, mining, some hospitals (that is, those that attract patients from outside the region by providing unique or specialized treatments), shopping malls that attract customers from outside the region, the pensions that retirees may bring to the region (from past saving or from government transfers).
- **‘Locally-serving’** industries, such as retail, most restaurants, primary and secondary education, government services, and other local services, primarily rely on money that is recycled within the community. Changes in a region’s population primarily drives growth in these industries; a growing population will generate more demand for more grocery stores, more schools, more barber shops, etc.

Section 3 will introduce you to resources that will help you answer questions such as:

- What industries employ workers in my region?
- What wages do they pay?
- How has industry employment changed over time?
- What industries employ younger people or people of color?
- How many people in my region “make their own job” and what kind of business are they in?

Understanding the distinction between export and locally-serving industries can help interpret broader industry trends and provide insight into what drives the regional economy and how other factors (e.g., population growth) may affect the nature and quality of available job opportunities. This section will cover where to find industry employment data and how it is structured, data sources about industry demographics, as well as sources that show the nature and extent of entrepreneurial activity that exists outside traditional wage and salary employment.

3a. Current industry demand

Employment by economic sectors provides some basic insight into a region’s economic structure, and as a result an indication of where there is a demand for labor. For community leaders it is important to understand what their region makes, where they might have some kind of regional advantage, and which industries create wealth in the community. For job seekers, industry employment data can show—at the broadest level—where employment opportunities exist. Several different federal statistical agencies produce employment data, with the most common being the U.S. Bureau of Labor Statistics’ Quarterly Census of Employment and Wages (QCEW).

QCEW draws upon the information contained in the administrative records of the Unemployment Insurance (UI) program. Therefore, these data count all the jobs found in firms that participate in the UI program and exclude, for instance, self-employed workers or members of the armed forces. The QCEW covers most of the jobs found in industries such as manufacturing but this coverage may not be as complete in industries like Real Estate that have relatively larger numbers of self-employed workers.¹⁶ Moreover, BLS must suppress employment data if those data can potentially reveal an individual employer's identity. This most frequently occurs when much of the employment in a given industry or sector, and in a specific locality, can be attributed to one large employer. Data suppression is quite frequently a challenge in rural areas, where there are limited numbers of employers or where one large employer might represent a disproportionately large share of employment.¹⁷

BLS and state LMI agencies publish industry employment data using the North American Industry Classification System (NAICS). NAICS works by using a hierarchical number system that assigns a six-digit code to every business establishment. Figure 4 shows how to read NAICS codes. The first two digits designate the broadest level (the economic sector), and then the industry becomes more detailed as numbers get added to each NAICS code. These data can provide a regional economic snapshot by showing employment by sector, which when examined over time show the region's changing economic structure. For example, the data may show growing demand in healthcare and education but job losses in the region's manufacturing sector. In such an instance, community leaders need to both prepare future workers to meet the demand of growing sectors, while simultaneously identifying ways to transition workers from declining sectors to emerging job opportunities.

Figure 4: How to read North American Industry Classification System (NAICS) codes

NAICS Level	Example	
	NAICS Code	Description
Sector	31-33	Manufacturing
Subsector	311	Food Manufacturing
Industry group	3115	Dairy Product Manufacturing
Industry	31151	Dairy Product (except Frozen) Manufacturing
U.S. Industry	311513	Cheese Manufacturing

Source: <https://www.census.gov/naics/>

These data can therefore help community leaders to focus their workforce efforts, or help job seekers identify areas of growing or declining opportunities. That said, it is important to note that just because industries may experience declining aggregate employment does not mean that they do not have opportunities. As a result, it is important to incorporate other sources of information (e.g., other data, company interviews) in order to better understand these trends.

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages. QCEW data are also available through State LMI agencies.

Update schedule: QCEW data are released quarterly, with final annual data released in September.

¹⁶ <https://www.bls.gov/cew/questions-and-answers.htm>

¹⁷ Information about data suppression and disclosure can be found on the [BLS website](#) (see question 13).

Why are some of the QCEW for my county suppressed?

The U.S. Bureau of Labor Statistics suppresses some industry employment data to protect employer confidentiality. You will most likely encounter data suppression when you are looking at small geographic areas—both in terms of a unit (e.g., county) and size—and at employment in more detailed industries (e.g., pharmaceutical manufacturing v. the entire manufacturing sector).

In order to protect employer confidentiality, BLS follows the ‘80/3 rule’ when publishing the Quarterly Census of Employment and Wages (QCEW). This means that BLS suppresses data when:

- One firm accounts for more than 80 percent of the area’s employment in a given region, and/or
- There are fewer than three establishments in a given industry in a given place.

As a result, data suppression is most likely to occur in rural places where there is one dominant employer. In these instances, data users can shift to using the data that are published at greater levels of aggregation such as bigger geographies (e.g., MSAs) or less detailed NAICS industries. It should also be noted that just because the employment is not published does not mean that it does not exist. Local knowledge can sometimes be used to fill in the blanks.

For more information:

- [The Indiana Business Research Center](#)
- [U.S. Bureau of Labor Statistics](#)

3b. Industry demographics

Industry demographics allow us to better understand who benefits from different types of economic and workforce development strategies. For instance, strategies designed to grow manufacturing or construction industries will generally create a disproportionate amount of employment opportunities for male workers. By contrast, efforts to expand the healthcare workforce will likely create a disproportionate number of opportunities for women.

Examining the racial and ethnic composition of different industries can show how representative the industry’s workforce and the extent to which workers from racial or ethnic minorities are able to access jobs in these industries. Similarly, if your region wants to create youth employment opportunities, these data can highlight which industries are most likely to employ young people. Understanding these demographic differences can help regional stakeholders develop strategies that assist those groups of workers hurt by decline in a given industry, or who have been excluded from different industries. This information can therefore help to target specific groups for training and/or employment services. Moreover, understanding the age composition of a given industry can indicate which industries will most likely be hurt by impending retirements.

The Quarterly Workforce Indicators, which are another product of the Census LEHD program, provides data describing the demographic characteristics of an industry’s workforce. These data are available—for age, gender, educational attainment and race and ethnicity—at the state, regional¹⁸, and county level¹⁹. These data are available quarterly, and can be accessed through the [QWI Explorer](#), or by using the [LED Extraction Tool](#) which allows for more extensive data downloads. These data can be used to compare the demographic composition of different industries within a single region, or they enable comparisons of a region’s industry to competing regions, or the state or nation.

Source: U.S. Census Bureau, [Quarterly Workforce Indicators](#)

Update schedule: QCEW data are released quarterly, with a 9-12 month lag. Since these data are submitted and processed on a state-by-state basis, the data are available on a rolling basis so that smaller states data may be available before larger state.

¹⁸ Since the QWI are a product of partnerships between the Census Bureau and individual state LMI agencies these regional groupings include workforce areas (which include the service area of local workforce boards, or groups of workforce boards). They also include Metropolitan Statistical Areas, but only the counties contained within one state. As an example, determining the demographics of the Kansas City region’s manufacturing sector would require pulling data from both Missouri and Kansas.

¹⁹ It should be noted that as of January 2023, four states (AK, AR, MI, MS) are no longer participating in the Local Employment Dynamics Partnership. As a result, these states are not currently producing updated data. For more information, refer to the U.S. Census Bureau’s LEHD website: https://lehd.ces.census.gov/state_partners/

3c. Measuring entrepreneurship

Wage and salary jobs are not the only source of employment, or the only way workers can earn a living. Entrepreneurship offers another avenue for workers to either create their own job, or generate additional sources of supplementary income. The U.S. Bureau of Economic Analysis publishes data that show the number and proportion of workers generating income from self-employment or [proprietorships](#).²⁰ These data are based on information that the BEA receives from the U.S. Internal Revenue Service.

These data reflect the willingness of area workers to take some of the risks associated with self-employment. It may also show how entrepreneurial workers are likely to be in their work habits. It should be noted that often rural counties have some of the greatest proportion of sole proprietors in their total workforce. This is due to the fact that in rural places there are insufficient numbers of wage and salary jobs, and as a result, workers have to create their own jobs; it is entrepreneurship out of necessity, more so than innovation. It may also be due to low wages forcing workers to generate a second source of income.

Gauging a region's level of entrepreneurship can inform community efforts to promote entrepreneurial ventures. However, potential entrepreneurs or self-employed workers need to understand the nature of these activities. The U.S. Census Bureau's nonemployer statistics help answer some of these questions. Nonemployers are businesses with no paid employees and receipts greater than \$1,000 per year. Nonemployer establishments cover a wide range of activities including young enterprises looking to grow, "gig" workers, lifestyle entrepreneurs, or individuals just looking to earn supplemental income.

The nonemployer statistics show which industries offer individuals opportunities—according to their NAICS designation—to earn extra income or create their own jobs. These data can be interpreted in a number of ways. For instance, the data may reflect that in more recreational areas there are more opportunities to generate additional income from retail or real estate-related endeavors. The data may also show that there are potential business opportunities in areas that are underrepresented. Regardless, this information can help paint a rough picture of what the region's entrepreneurial landscape looks like.

Source: U.S. Bureau of Labor Statistics, [Regional Employment Data](#); U.S. Census Bureau, [Nonemployer Statistics](#)

Update schedule: BEA's regional data are updated annually in November, or roughly 11 months after the reference year. The U.S. Census Bureau updates its Nonemployer Statistics in the summer, approximately 17 months after the reference year.²¹

4. Understanding occupational demand

The industry data described above show aggregate demand for workers, and where the region anticipates growth or maintains a competitive edge. Industry data give us a broad sense of what regions make, but occupational employment data and projections allows us to understand what workers do, and what regional employers will need them to do in the future. Using these data requires, first and foremost, an understanding of the Standard Occupational Classification (SOC) System. The SOC System classifies all occupations in the

Section 4 will introduce you to resources that will help you answer questions such as:

- What are the most common occupations in my region?
- What do these different occupations pay?
- What industries are most likely to employ workers in these occupations?
- Which occupations are projected to grow in the future?

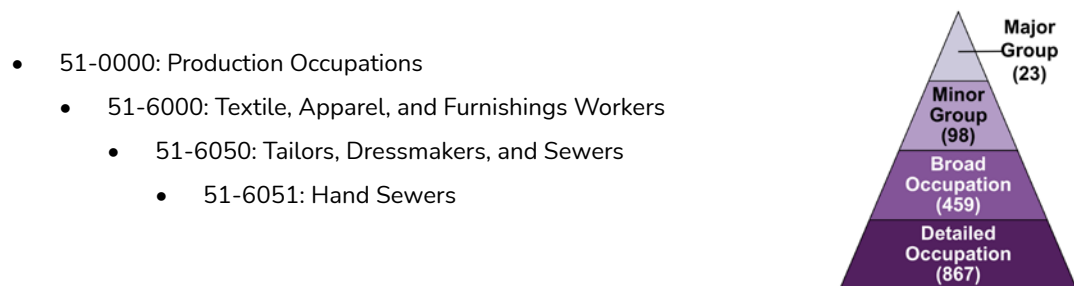
²⁰ Sole proprietorships comprise all entities that are required to file IRS Schedule C (Profit or Loss from Business) or Schedule F (Profit or Loss from Farming); these entities do not have employees.

²¹ 2019 is the most recently available year for the nonemployer statistics, as the pandemic created challenges for data collection and processing.

economy—including private, public, and military occupations—based on job duties, skills, education and/or training. These occupations are periodically updated to incorporate new or emerging occupations.²²

The SOC System is a hierarchical system (like the NAICS system for industry data), and the 2018 SOC system includes 23 major groups, 98 minor groups, 459 broad occupations, and 867 detailed occupations. Figure 5 provides an example of how these occupations are structured. The U.S. BLS provides more detail about the SOC system in the [2018 SOC User Guide](#). Moreover, the BLS' Occupational Outlook Handbook includes detailed information about these occupations such as the nature of work, required training and education, common employing industries, and the future outlook for each occupation.

Figure 5: Organizing Occupations: The Standard Occupational Classification (SOC) System



By the end of this section, readers will better understand sources of occupational data and how these data can help inform regional workforce training and development efforts. This section first describes the basic occupational employment and wage data that can identify in-demand jobs and set expectations about wages. It then shows how staffing patterns connect industries to occupations through staffing patterns. These staffing patterns can help illustrate how the demand for different occupations vary by industry. Similarly, occupational projections show how those needs are likely to change in the future, and the typical education, skills and experience levels required for different occupations. This information can enable both job seekers (e.g., students, incumbent and dislocated workers) as well as key stakeholders (e.g., educators, counselors) to map out potential career pathways.

4a. Occupational employment and wage statistics

The U.S. Bureau of Labor Statistics' Occupational Employment and Wage Statistics (OES) are critical resources for understanding labor demand and is the primary public source of wage information. BLS releases these data annually and they are based on information collected from 1.2 million establishments over a three-year period. Given the need for an appropriate sample size, OES data are not available for very detailed geographies. Rather, BLS releases these data for the nation, states, metropolitan statistical areas, as well as regional non-metro areas. In some instances, state Labor Market Information agencies (which produce these data as part of a cooperative agreement with BLS) may publish data for different geographic regions, such as workforce development board service areas.

These data are useful for job seekers, employers and community leaders. They can help measure the relative demand for different occupations since they show the region's most common occupations and which occupations are growing or declining. As a result, they can help jobseekers identify potential areas of opportunity and show employers and community leaders where there is regional demand for workers.

Wage data helps employers compare the wages they offer relative to the prevailing regional wage in an occupation. For workers, these wages can help set expectations for what they can earn in different jobs. This

²² For instance, the 2010 SOC system added 'green' occupations such as Solar Photovoltaic Installers and Wind Turbine Technicians; the most recent 2018 SOC system added occupation such as Database Architects, Project Management Specialists, and Data Scientists.

information can help new workers select careers or incumbent workers make decisions about shifting jobs. For other key regional stakeholders (e.g., economic and workforce developers, post-secondary educational leaders), information about wages and occupation growth trends can help identify the jobs that present the best quality job opportunities.

As part of the OES, BLS publishes data on the mean and median wages for each occupation, as well as wages at the 10th, 25th, 75th and 90th percentiles. Wages at the different percentiles show the range of what employers are willing to pay for workers in these occupations. While it is most accurate to state that these data reflect the pay offered by high paying employers and low paying employers, they can also be used as a proxy for understanding potential wages for entry-level workers and for experienced workers in a given occupation.

Source: U.S. Bureau of Labor Statistics, [Occupational Employment and Wage Statistics](#); [State Labor Market Information agencies](#).

Update schedule: OES data are released annually in the spring.

4b. Industry staffing patterns

Different industries hire different types of workers, so occupations are distributed unevenly throughout the economy. The [national industry-occupation staffing matrix](#) can be used to better understand the relationship between industry employment and occupational employment. The staffing pattern matrix shows the occupational composition of a wide array of detailed industries. With this information, we can understand how growth or decline in a given NAICS industry will change the nature of occupational demand.

These estimates—particularly the [reverse staffing patterns](#)—can also be useful for job seekers or career counselors because they can show what industries are most likely to employ people in a given occupation. This can allow jobseekers to identify the range of industries where employers may demand workers in their desired occupation. This information can also prove useful for economic and workforce development practitioners. For instance, these data can provide a rough estimate of firm staffing needs. If a 200 person [automotive parts manufacturer](#) opens in a region—according to the national staffing matrix—we can assume that this manufacturer will need to roughly 10 maintenance and repair workers.

These data can also support broader cluster or sector strategies by showing the labor force needs of individual, regionally-important industries and informing how regions can help them meet their unique workforce needs. As a simple example, the staffing patterns show us that 90% of all veterinary technicians work in the veterinary services industry. Supporting that industry, therefore, requires creating a talent pipeline to meet the need for those workers. By contrast, 7% of all heavy and tractor-trailer truck drivers work for manufacturing firms. So in order to meet their needs, manufacturers must compete with other industries (e.g., distribution, construction, agriculture, etc.) to hire truck drivers. Also by identifying industries that hire significant numbers of (in this example) truck drivers, local leaders can better identify potential private sector employers who may be willing to participate or contribute to these kinds of local initiatives.

In addition to the national staffing patterns, U.S. BLS also provides [state-level, industry-specific staffing patterns](#). These estimates can prove useful for states that have somewhat unique activities. For instance, cybersecurity is a prominent activity in the Washington, D.C. area due to the large amount of government and defense contracting. Nationwide, Information Security Analysts make up 1.5% of the national Computer Systems Design Industry (NAICS 5415) but in Maryland (4.6%), Virginia (4.5%), and the District of Columbia (3.9%) workers in these occupations represent a larger share of this industry's overall workforce. It is important to note, however, that the workforce needs of different firms and industries vary between and within industries. As a result, researchers should seek employer input to validate these estimates.

Source: The [National Industry-Occupation Staffing Matrix Data](#) are part of the U.S. Bureau of Labor Statistics [Employment Projections Program](#).

Update schedule: U.S. BLS national pprojections data are released annually in September.

4c. Occupational projections

Industry and occupational employment projections demonstrate the changing nature of the labor demand, highlighting future opportunities for job seekers and areas of need for employers. The U.S. Bureau of Labor Statistics develops [annual, 10-year national industry and occupational employment projections](#). The BLS—and state-produced—projections provide critical information about expected net employment change by both industry and occupation, average annual openings, and the typical education and experience requirements for different occupations. Combined, these projections support career exploration and counseling, as well as broader regional workforce planning.

In addition to BLS's national employment projections, state LMI agencies produce bi-annual state and sub-state projections. The sub-state projections are selected by states in ways to best meet their customer's needs. These geographies are typically metropolitan statistical areas or the service areas of workforce development boards. For both local leaders and local jobseekers these sub-state projections are likely to be the most relevant for the types of questions they need answered.

At the most basic level, these employment projections show net employment change within specific industries or occupations. As a result, they help job seekers, counselors, or community leaders identify industries and occupations with a bright outlook. Job seekers may prefer to move into growing careers and fields and the community's economic and educational leaders can work to ensure that institutions are prepared to meet that demand. For instance, projected growth in healthcare may encourage students to pursue careers in nursing or allied health professions. Similarly, the scale of change may inform the efforts of area community colleges to meet the projected demand.

That said, net change alone does not present a complete picture of where future employment opportunities may lie. Industries projected to lose net employment nevertheless possess quality employment opportunities. The BLS employment projections, however, also provide information about the number of replacement jobs (created by retirements or people leaving jobs) and that can better indicate the scale of opportunities available within a given industry or occupation. The average number of replacement jobs therefore provide an important complement to the net new job data.

Within the occupational employment projections, the BLS highlights the typical education (e.g., high school or less, 2-year degree, bachelor's degree, etc.), experience (e.g., none, less than 5 years, more than 5 years) and on-the-job training (e.g., short-, moderate-, long-term, apprenticeship) required for every occupation.²³ Whereas the projections of average job growth or openings highlights where opportunities are likely to exist, these categories show for whom these opportunities are available. These data can help set expectations for job seekers as they choose their careers, help counselors map out career pathways to guide students, and allow community leaders to determine how well their region's supply of workers aligns with the projected needs of employers.

These different elements—net job change, replacement jobs, and typical education and training requirements—tell different parts of a larger story. As will be shown below, they are also not the only source of information for better understanding individual occupations. That said, these data in aggregate can provide a much more robust picture of a region's future workforce needs. In some places, the state LMI agency uses these inputs to further aid career exploration.²⁴

²³ The categories are defined on the [BLS website](#).

²⁴ As noted above, the contents (e.g., geographic and industry detail; value-add analysis) of these projections varies from state to state. Links to each state's employment projections are available through the [Projections Managing Partnership](#).

For instance, Missouri assigns A to F career grades to the nearly 800 occupations, based on factors such as job openings, growth and average wages. Additionally, they use the typical educational requirements for occupation to designate jobs as ‘Now’, ‘Next’ or ‘Later’ which speak to the amount of preparation people need to enter these occupations. Now occupations are those that do not require much by way of post-secondary education and experience. Next occupations are often more middle-skill occupations, and later occupations are those that typically require at least a 4-year degree. Job seekers, particularly younger workers, can use these designations to look at what now occupations can lead to occupations offering more opportunities and potential greater salaries.

Even if your state LMI agency does not provide this additional value-added information, basic filtering and sorting this information in a spreadsheet (e.g., MS Excel) should yield usable information to help identify relevant occupations. Individual priorities will drive some of these activities. Some users may look for jobs that provide the most opportunities, while others may be focus on, for instance, only middle skill (i.e., those requiring more than high school but less than a 4-year degree).

It is important to recognize that these projections are exactly that. No one has a crystal ball, so these projections are an educated guess about future workforce needs. Moreover, these projections are based on past trends so they cannot predict future shocks (e.g., recessions, pandemics, local closings, important technological changes, etc.). National projections are updated every year, while state projections tend to be updated every two years, so it is important to use the most recently released projections.

Source: U.S. Bureau of Labor Statistics, [Employment Projections](#); [State LMI agency projections](#)

Update schedule: National projections are updated every year, while state projections tend to be updated every two years.

4d. Occupational requirements

In order to select and then prepare for a future career, students and workers need to better understand the types of knowledge and skills those occupations require. The [O*Net database](#) contains standardized and occupation-specific descriptors for over 1,000 occupations. This publicly-available database contains input from employers and workers in each occupation. It is a database that is continually being updated, as over 100 occupations are updated each year so the database is completely refreshed every 8-10 years; fast changing occupations are updated more regularly.²⁵

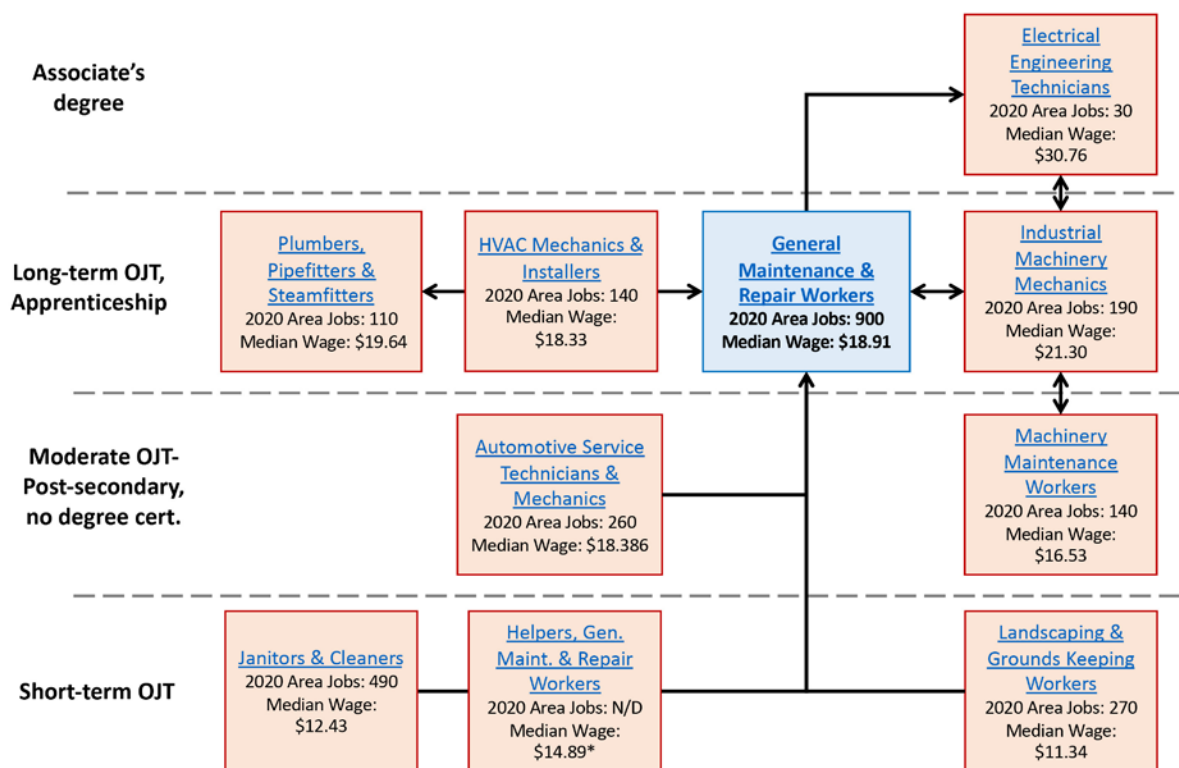
The O*Net database is particularly useful and relevant for students and job seekers exploring for, or looking to shift, careers. Through O*Net, they can learn the characteristics of different occupations, including the typical education and experience required for each occupation; regular tasks that workers in these occupations need to perform; common tools and technologies (e.g., machines or software packages); and the types of required knowledge, skills and abilities necessary to succeed in these occupations. The O*Net database also includes additional information about, for instance, the occupation’s relative ‘greenness’, its outlook for growth, and the extent to which it is automated.

Using this information, the O*Net database provides a set of occupations requiring similar education, tasks, knowledge, skills and abilities. Connecting this information to other sources—like the Occupational Employment and Wages Statistics and the Occupational Employment Projections—can allow people to begin constructing basic career pathways or career lattices. Figure 6 provides an example of what this might look like for General Maintenance and Repair Workers (SOC 49-9071) in the Rocky Mount, NC MSA (Edgecombe and Nash Counties). These diagrams can show occupations that might prepare people to enter maintenance occupations, even if they lack the experience. It also shows other related occupations that might present growth

²⁵ The survey devices underlying this database can be found in the [O*Net Resource Center](#).

opportunities if workers pursue additional training and experiences.²⁶ These types of diagrams do not provide all the answers, but nevertheless can help frame someone’s career exploration activities.²⁷

Figure 6: Career Pathways for General Maintenance & Repair Workers in the Rocky Mount, NC MSA



* State Median Wage

Source: O*Net; Federal Reserve Bank of Philadelphia Occupational Mobility Explorer, BLS 2020 Occupational Employment & Wage Statistics

In addition to the information contained within the database, O*Net also offers several other tools to support career exploration. This includes the [MyNextMove](#) career exploration tool that allows users another avenue for exploring the O*Net database. Most notably, MyNextMove includes an interest profiler, which asks a series of questions to gauge a person’s interests and work experience and those answers are then subsequently used to offer personalized career suggestions. The MyNextMove career exploration tool is primarily intended for students and people looking to enter the workforce. There is also a tool available—[MyNextMove for Veterans](#)—that allows transitioning military to explore potential career opportunities in the civilian workforce.

Source: The [O*Net database](#) is financially supported by a grant from the U.S. Department of Labor’s Employment and Training Administration.

Update schedule: The O*Net database is updated on a rolling basis, with fast-changing occupations updated more regularly.

²⁶ The Philadelphia Federal Reserve Bank recently constructed an [Occupational Mobility Explorer tool](#), which was intended to help people transfer from one occupation to another. That tool not only draws upon O*Net, but also several other public (e.g., OES, Occupational Projections) and Proprietary (e.g. Burning Glass Technologies analysis of online job advertisements) data sources. Data are available for the 33 largest U.S. metros, but much of this information is likely applicable to smaller places as well. This tool, and information about how it was constructed, can be found here: <https://www.philadelphiafed.org/surveys-and-data/community-development-data/occupational-mobility-explorer>

²⁷ A number of states have invested in similar and/or supporting research in order to map career pathways. These efforts are most commonly done through the state labor market information agency or state departments of educations. As a result, the organizers of local career pathways efforts should check with the state agencies to see if their state has these resources available.

4e. Online job postings

Over the past 15 to 20 years, online job postings have become an increasingly important source of labor market information. Lots of information can be discerned from these job postings, such as what occupations are employers looking to fill and what are the in-demand skills and certifications. Several proprietary data vendors (e.g., Lightcast—formerly EMSI Burning Glass, Chmura Economics) work to aggregate the data available in job postings and in doing so have created ‘Real-Time LMI’. Real-Time LMI uses web technologies to scrape information from the websites of job boards (e.g., Monster, Career Builder), government agencies (e.g. USAjobs.gov), newspaper ads, and corporate websites.

Once aggregated and organized, these data can show how many job adverts are posted by regional employers, the types of firms and industries currently hiring, and the education, skills, and certifications these employers seek. Real-time LMI vendors gather these data daily (hence “real-time”), so they can provide more current data than more traditional LMI sources where there are months or yearlong lags between the data’s collection and its publishing.

While these data can provide significant insight, it is important for users to understand the caveats that come with using these data. For instance, Real-Time LMI users must understand that these data measure online job advertisements, not actual jobs. So one job advertisement may represent multiple jobs or no jobs. Similarly, employers in some industries (e.g., IT, Healthcare) are more likely to advertise online than others (e.g., agriculture, construction). Moreover, subscriptions to these data tools can prove expensive and outside the budget for many. Many state LMI agencies have subscriptions to these tools, and many will often provide summaries of the in-demand jobs or skills sought by the state or region’s (e.g., MSA or Workforce Board service area) employers. As a result, it is important to check with your state’s LMI agency to see if they have access to these data, what they provide and if they can do a customized search that may inform your specific effort.

If access to proprietary job postings data proves unavailable or unaffordable, then the National Labor Exchange (NLx) can offer some basic access to online job postings.²⁸ The National Labor Exchange aggregates state job posting banks and then augments those postings with additional sources (e.g., CareerBuilder, Indeed, ZipRecruiter). Although this does not provide the analytical tools available through proprietary data vendors, it does allow users to see what types of jobs in a given occupation are available in their region. These postings are by no means a definitive measure of local occupational demand, but they can give job seekers and relevant stakeholders (e.g., counselors) a basic understanding of what area employers are looking for from applicants.

Source: The [National Labor Exchange \(NLx\)](#) is supported by the Direct Employers Association (DE) and the National Association of State Workforce Agencies (NASWA). Through its API, it provides content for federal resources such as [CareerOneStop](#), [MyNextMove](#), and [MySkillsMyFuture](#).

Update schedule: NLx is updated continuously.

5. Filling needs

This section discusses data resources that can direct both jobseekers and regional stakeholders to identify the education and training resources that prepare people for in-demand occupations. Most notably, it will highlight post-secondary completion data that can show, among other things, a region’s capacity to meet the demand in specific fields. Additionally, this section will highlight resources that allow jobseekers to identify professional credentials that are commonly required for different

Section 5 will introduce you to resources that will help you answer questions such as:

- How many people completed relevant degrees and completions from area post-secondary institutions?
- What are the relevant credentials for a given occupation?

²⁸ Access to the NLx search tool is available through “Find Jobs” button on O*Net’s individual occupation summary reports.

occupations. Both are critical pieces of information for helping jobseekers and stakeholders determine how to move people through careers and for determining where regional gaps may exist.

5a. Post-secondary completers

Most occupations require some amount of postsecondary experience, training, or education. Understanding the region's postsecondary offerings allows jobseekers to identify where they can get the education they need, helps employers find potential workers and training resources, and enables community leaders to better gauge the region's capacity to meet the demand for critical occupations. Information about program completers is available through the US Department of Education's Integrated Post-secondary Education Data System (IPEDS).²⁹ Public and private post-secondary institutions submit an array of institutional data (e.g., enrollments, completers, student demographics) and those data are subsequently organized and published in IPEDS.

Program completer data are the most relevant as these data can show which institutions have relevant programs and the scale of those programs. Completer data are organized by Classification of Instructional Programs (CIP) codes. CIP codes help organize completions by field of study—and like NAICS and SOC codes—these data are available at varying levels of aggregation (e.g., 01-Agriculture, Agriculture Operations and Related Sciences; 01.09-Animal Sciences; 01.0905-Dairy Science). Understanding these programs allows a region to identify its training strengths and where there may be training gaps. It can also provide some indication which programs are likely to be affected by projected demands in specific occupations and will need to increase the number of graduates in order to provide the region with a sufficient number of workers.

As with all data, IPEDS completer data comes with several caveats. First, the program codes are assigned by each individual institution's office of institutional research and this can create some inconsistencies. For instance, one institution may classify its Construction Management program as 'Construction Management' (CIP 52.2001), but other institutions may not be as specific and list it under Business Administration, Management and Operations (CIP 52.02). As a result, it is always good practice to double check the information. Second, these data help show the extent to which area institutions can help meet employer needs to fill in-demand jobs, but not all jobs are filled by recent area graduates. Jobs can be filled by internal candidates, people working elsewhere in the region, or in-migrants moving to the region. Similarly, not all completers end up working in their field of study. As a result, it is misguided to measure gaps by subtracting the number of completers from the projected demand.

As part of the U.S. Department of Labor funded [Workforce Data Quality Initiative](#), several state LMI agencies are creating longitudinal data systems that track the employment outcomes of program completers. These initiatives look to connect administrative databases to better track the employment outcomes of post-secondary program completers. In Missouri, for instance, the [Missouri Scoreboard](#) tracks both how many people complete programs at post-secondary institutions and how many of those completers end up working in their field of study and their wages. This information can benefit students as it can show them how much they can expect to earn upon completing their program. It also helps employers because it can show them where graduates are completing relevant programs and what they should expect to pay them when they enter the workforce. Not all state LMI agencies participate in these types of data programs, so once again it is important to check with your state's LMI agency to learn about what is available.

Source: U.S. Department of Education, National Center for Education Statistics, [Integrated Postsecondary Educational Data System \(IPEDS\)](#)

Update schedule: Institutions submit data to IPEDS annually, but [IPEDS releases](#) different data elements in three periods each year.

²⁹ Relative to other websites, the IPEDS data interface is not the most user-friendly. Among the IPEDS tools, the College Navigator is one of the easiest to use; this is particularly true if you are looking for information from a single institution. Some proprietary data vendors (e.g., Lightcast—formerly EMSI Burning Glass) make accessing these data easier, but that requires paying a subscription. Developing a relationship with your local institution's office of institutional research represents another possible strategy for gaining access to this type of information.

5b. Professional credentials

Most jobs do not require a post-secondary degree, but many jobs—particularly middle-skill jobs—often require workers to attain some kind of professional credential. Industry-recognized credentials are important tools for employers because it helps them better understand what workers know how to do because workers must demonstrate a defined set of skills before receiving the credential. By contrast, it may be less clear to employers what workers know how to do when they complete a degree program. However, not all credentials are the same and many of these differences arise from the type of organization awarding that credential. Beyond degrees, the primary type of credentials include certificates, certifications, and licenses.³⁰

- **Certificates** are awards conferred by post-secondary institutions that show completion of a non-degree program of study.
- **Occupation certifications** are awarded by industry or professional associations. Individuals receiving certifications must demonstrate a designated set of knowledge, skills and abilities.
- **Occupational licenses** are awarded by state licensing boards. They are granted when workers demonstrate that they meet state standards for that occupation. Receiving the appropriate license allows workers to practice specific occupations or vocations (e.g. teachers, nurses, surveyors, etc.) within that state.

The requirements for certificates, certifications and licenses vary between state and employer; understanding these credentials is critical for entering or advancing within a given occupation. Moreover, understanding these differences can help jobseekers and counselors more effectively find the right credential for their situation. O*Net provides tools for users to find the relevant certifications or license requirements for each occupation. Given the variance in these requirements, the information from O*Net may not provide definitive answers. As a result, jobseekers will need to gather additional information from job counselors, employers, or just people with deeper industry knowledge more generally.

Source: The [O*Net database](#) is financially supported by a grant from the U.S. Department of Labor’s Employment and Training Administration.

Update schedule: The O*Net database is updated on a rolling basis, with fast-changing occupations updated more regularly.

6. Integrating other sources

This guide has primarily focused on publicly available LMI. These sources, however, are not the only resources for answering your region’s critical labor market questions. This section will review other information resources. For instance, qualitative sources of information (e.g., focus groups, key informant interviews) can prove useful for interpreting and validating the findings from more quantitative analysis. In addition, the data resources described above have emphasized free, publicly available sources. There are also a number of resources that aggregate many of these data so it is a bit easier to assemble. As a result, this section will also review how data aggregators and proprietary data vendors can help answer labor market questions and some of the caveats that come with using those sources.

Section 6 will help you:

- Think through the benefits of qualitative research, and better understand the caveats associated with this research.
- Become more familiar with other data resources (e.g., proprietary sources, data aggregators) that can help you answer many basic labor market questions quickly.

³⁰ Credential Engine. (2021). [Counting U.S. postsecondary and secondary credentials](#). Washington, DC: Credential Engine.

6a. Focus groups and interviews

Quantitative data resources are very useful for identifying patterns, but more qualitative research (e.g., focus groups, key informant interviews) can uncover the processes that influence those patterns. As a result, this kind of input is essential for any efforts to fully understand the region's workforce needs. Any efforts to understand the local labor market and/or identify and map career pathways should include seeking input from key informants and subject matter experts such as employers and education and training providers.

These informants can help interpret and validate the quantitative research findings. For instance, local employers can help explain the extent to which their experiences in finding different types of workers or their specific skill needs, align or diverge from the regional or national trends emerging from the data. They can also explain how area training providers might better align their curriculum with the need of the region's employers. Similarly, educators or training providers can shed light on the extent to which student interest mirrors industry demand.

These meetings, therefore, will allow you to more fully understand the issues and challenges that employers face. These meetings also enable us to highlight workforce issues not readily apparent in the data and better interpret and validate the quantitative research findings. For instance, they can also help to identify what are the 'mission-critical' jobs and skills—those that are relatively few in number, but vital for the firm to fill in order to operate.

Focus groups that involve groups of similar employers are often a way to gather a lot of information relatively quickly and can show whether there is a consensus amongst employers about the region or industry's critical workforce issues and needs. There may be some instances, however, where one-on-one interviews may prove more effective because some employers may not feel comfortable sharing information about their business around other similar or competing employers. Regardless, an ancillary benefit of this kind of employer or stakeholder engagement is that they can give you a sense of which employers might be willing to participate in your regional initiative. In short, they provide an opportunity to identify potential partners or collaborators.

Although employer input can be very informative, there are several important caveats to keep in mind. First, the information you collect may prove anecdotal. Employers may either view their experiences as being uniquely specialized or they may view their unique experiences as representative of their industry or the region as a whole. As an illustration, consider discussions about wages. An area manufacturer may claim that they may experience difficulty filling the 'good' welding jobs they offer, but if that manufacturer is only paying \$14 per hour and the regional wage data (See section 6a above) show that the median wage for welders is \$20 per hour then it should not necessarily be taken at face value that the manufacturer is indeed offering 'good' jobs.

The researcher must therefore determine how unique or representative these experiences are by comparing them to available data or speaking to enough employers so that they have an adequate sample size. Often representatives from organizations that work with a lot of employers (e.g., chambers of commerce, industry associations) can provide useful context and insight about the representative nature of a company's experience. That said, their knowledge also tends to be secondhand knowledge and they may also have inherent biases (e.g., Chambers of Commerce and economic development organizations often prioritize the experiences of employers, labor unions the experiences of workers, etc.) so perspectives should also be taken into consideration.

It is also important to remember that a person's position influences their perspective. When seeking employer input, the company's HR manager may offer better insight about their hiring and training issues than the CEO because they often are more directly involved in these efforts. Speaking to multiple people in company may prove useful, but given people's time constraints that is not always easy or possible. It is also important to note that employers often speak from the perspective of what is good for their individual business, not necessarily what is good for individual workers. These are important contextual considerations—they do not invalidate the employer's input, but rather they are just additional factors worth considering.

The qualitative information gathered through focus groups or key informant interviews can also be used to communicate the findings more effectively. This information can help ‘put a face’ on the data, and in doing so make the analysis more compelling. This not only can help build greater understanding of the issues, but can also build greater support from the subsequent workforce development activities. They can also be used to help justify why and how the community is undertaking specific workforce development strategies.

6b. Other data resources

Much of this guide focused on identifying publicly available data resources, but as noted earlier these are not the only available sources of LMI. Many state LMI agencies or other workforce intermediaries (e.g., community colleges) may produce special reports or conduct employer surveys that can provide helpful information. As a result, it is important to familiarize yourself with what, and how regularly, these different state and regional workforce actors produce. Moreover, there are also a wide variety of other tools for getting the labor market information you need. This section reviews two types of these data resources—data aggregators and proprietary data vendors.

Data aggregators

Accessing the data described above requires navigating the websites of each data provider. In order to ease access to publicly available data, several agencies, organizations and institutions have created online tools that aggregate these data. Depending on the nature of the request, these data aggregation tools can make gathering this information more efficient. Some of the more prominent data aggregation tools include:

- [StatsAmerica](#) is a data aggregation tool developed and maintained by Indiana University’s Indiana Business Research Center. It is supported by the U.S. Economic Development Administration, in part to make it easier for regional planning organizations to complete their Comprehensive Economic Development Strategies. Nevertheless, StatsAmerica is a useful resource for a wide array of users, particularly those interested in county or regional economic and demographic trends. It provides tools that allow for side-by-side profiles of states, counties, towns, and customized regions (groups of counties). It also has tools for measuring innovation and distress, as well as links to a myriad of economic development resources.
- The Federal Reserve Bank of St. Louis’ [Federal Reserve Economic Data \(FRED\)](#) is an online database that provides time series data from thousands of economic data series. It offers a relative quick and easy method for accessing data showing how a county’s unemployment or labor force numbers have changed over time. Users can download charts and the corresponding data. There are several additional tools that allows users to create and share maps made from FRED data.
- The [U.S. Census Bureau’s Quickfacts](#) tool allows users to access basic census data (including demographic, housing, education, economic, transportation, and business variables) in a quick and efficient manner. Moreover, Quickfacts lets users make side-by-side comparisons of their county or community to other counties, their state, or the nation. This tool allows users to access many of the labor supply variables described above.
- Some organizations and institutions develop value-added tools that use data to help users better understand a specific issues. There are a wide variety of these tools available, but several relevant examples include:
 - The Rural Innovation Center’s [Tech Talent Tracker](#) gives users the information they need to better understand their county’s digital economy. For example, it includes information about employment in digital jobs, computer science graduates, and broadband usage among others.
 - The [MIT Living Wage Calculator](#) enables users to better understand what workers need to make in order to support themselves and their family. Different estimates are available based on family situation and type (e.g., single or double earner household, no children or children, etc.). This tool provides a useful reference point for helping workers get into jobs that actually allow them to meet their basic needs.

With all these resources it is important to make sure you know the source data. In many instances, these data aggregators pull from many of the same data sources discussed above so all the same caveats apply. Moreover, depending on the manner in which these aggregators assemble their data there may be an additional time lag between the time the data are collected and the time the aggregation site is updated. So if data currency is a priority, then it may prove useful to check what data are available from the original data providers to ensure you have the more recent data available.

Proprietary data vendors

In addition to the publicly-available data sources reviewed above, there are also a number of proprietary data sources that can further aid labor market analysis. Vendors of these proprietary data are value-added disseminators of LMI. Using public data sources as inputs, these data vendors often sell modeled employment estimates. These estimates help users overcome data suppressions and provide users with employment data that is more detailed in terms of geographies, industries, and occupations.³¹ They may also use information from the Census Bureau to provide additional demographic data. One of the common selling points for subscribing to one of these proprietary data sources is that the vendors allow customers to access user-friendly and labor-saving tools thereby allowing them to access the information more quickly and efficiently. Over the past fifteen years, data vendors have also developed tools to access 'Real-Time' LMI (job postings data, discussed in greater detail above).

Unlike free publicly-available data, these proprietary sources can prove expensive or beyond the budget of many potential users. However, several caveats apply for users with access to these proprietary sources. There are some 'black box' elements to these proprietary data sources, users must familiarize themselves with the basic inputs and methods the vendor uses to generate these data.³² These caveats are important for user to accurately interpret the data and then subsequently explain it to their constituents. Whether it is public data or proprietary data, users need to know the strengths and weaknesses of the data they use. Where possible, it is also beneficial to periodically compare vendor data to similar public sources to ensure quality (the latter of which is usually a key input for the former).

³¹ This can be important if users want to find data, for instance, for their organizations specific service area as these service areas often do not align with the pre-defined geographies (e.g., MSAs) used by public data agencies.

³² As an earlier example related to Real-Time LMI showed, this may mean being clear about what the data show (online job postings) and what they do not show (actual jobs), or recognizing that some firms and industries are more likely to advertise online than others and how that may skew the results.

Concluding Thoughts

All communities have unique needs based on the nature of their workforce and the needs of their employers. The data sources described above can assist extension educators, and other community leaders more generally, to identify and design pathways that meet both the specific needs of their communities and particularly the low-income and non-traditional learners entering the labor force. No one data source will answer all the questions that arise, so fully informing these efforts requires use of multiple data sources. For instance:

- The characteristics of the local labor force partially determines regional priorities. For instance, places with chronic poverty and low educational attainment rates may have different needs and pose fewer opportunities than fast growing places. Therefore, examining the supply of workers allows for deeper understanding of local context.
- Identifying the industries driving regional growth and employment generation leads to broad insights into the nature and extent of the opportunities available to local workers. Manufacturing-oriented regions often need workers with mechanical and technical skills, which more recreational regions tend to need workers to fill more service-oriented and seasonal jobs.
- Understanding industry demand allows jobseekers to more effectively select occupations that present attractive career opportunities within the context of their local economy. By matching their personal qualifications to the typical requirements of these occupations, job seekers can begin to determine an entry point for potential careers. Similarly, incumbent workers can use the information about occupational requirements to find occupations that need workers with similar knowledge, skills and abilities, but tend to offer better career opportunities or pay.
- The ability to locate regional education and training resources can help workers better access the programs they need to prepare for, or advance in, potential careers. Many careers require some form of credential rather than a degree, so identifying and then pursuing these credentials can help workers secure and maintain their jobs.

Standing up programs that move disadvantaged, low-income, and non-traditional learners into promising careers often requires a coalition of employers, counselors, and community leaders. These different groups all have different priorities and therefore different data needs. Although LMI can be utilized to answer many of the relevant questions that arise, these data do not provide all the answers. Rather, they can help organizers to ask better questions and identify areas where they need additional information. It should also be noted that this kind of labor market research should not occur in a vacuum. Organizers should actively engage other partners (e.g., employers, community leaders, subject matter experts, etc.) to help interpret and validate the information and findings.

Your state's labor market information agency will be a critical resource for accessing and using much of the data presented above. These agencies have people who can help answer any LMI questions that may arise and will likely be aware of any additional resources that may be helpful. Therefore, developing relationships with people in these agencies can prove useful for both current and future endeavors. In addition to LMI agencies, other organizations like economic development organizations, planning commissions, and workforce boards sometimes engage in labor market research. As a result, these organizations can help support this kind of applied research, or at the very least they may be a local resource available to answer questions as they arise.