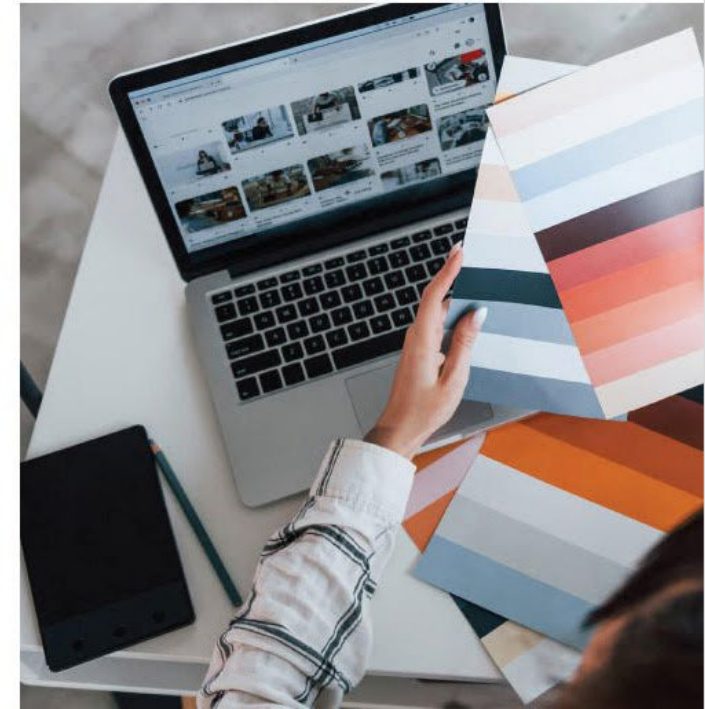


DECEMBER 2023

JOB QUALITY AND ACCESSIBILITY TOOL

USER REFERENCE GUIDE



Chicago Metropolitan
Agency for Planning



STRATEGIES

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INTRODUCTION

ABOUT THE JOB QUALITY AND ACCESSIBILITY TOOL

TIP Strategies (TIP), an economic development consulting firm based in Austin, Texas, prepared an *Inclusive Growth Analysis* for the Chicago Metropolitan Agency for Planning (CMAP) in September 2022. This analysis provided in-depth recommendations at the intersection of traded sectors and economic growth, with the goal of increasing regional competitiveness and economic mobility. TIP also debuted the first version of the *Job Quality and Accessibility Tool* (the tool) with the report, providing an interactive, data-based resource for decision-making.

Feedback from initial users led CMAP and TIP to release a new version of the tool in 2023 that includes the following:

- ▶ Refreshed data (when available).
- ▶ New factors associated with job quality (such as job openings) and accessibility (such as benefits or career advancement).
- ▶ Contextual information on the potential impact of automation, remote work, and transportation.
- ▶ Visualization update to make the tool easier to understand for the professional and casual user.

The goal of this user guide is to provide an easy-to-use reference that explains how to use and interact with the tool. The tool's release was also accompanied by additional supporting materials, including a methodology document and video training module.

WHY USE THE JOB QUALITY AND ACCESSIBILITY TOOL?

- ▶ Create connections between the work of EDOs and workforce development organizations.
- ▶ Leverage target industries to promote equitable growth and opportunity.
- ▶ Increase understanding of job quality and accessibility by industry, occupation, and geography.
- ▶ Apply data to decision-making.



JOB QUALITY AND ACCESSIBILITY TOOL CONSIDERATIONS

JOB QUALITY

- ▶ **Compensation.** Are workers able to earn high wages relative to the minimum livable wage, earn benefits, and have the freedom to collectively bargain?
- ▶ **Stability.** How stable does this job tend to be, relative to the region?
- ▶ **Opportunity.** Does this job have career advancement opportunities?

JOB ACCESSIBILITY

- ▶ **Prerequisites.** How high are the barriers to entry for this job compared to the average?
- ▶ **Demographic composition.** Do the workers in this job reflect the composition of the region by race/ethnicity and gender?
- ▶ **Flexible work.** Are flexible work environments a frequent part of this job?

CONTEXTUAL DATA

- ▶ **Social setting.** Demographic and socio-economic data on residents.
- ▶ **Training requirements.** Typical length of on-the-job training, in addition to the typical educational and experience requirements.
- ▶ **Risk of automation.** Risk of job automation based on routine vs non-routine tasks.
- ▶ **Opportunity.** Job openings by occupation.
- ▶ **Transportation access.** Bus and rail transit stops as well as major roads with contextual ZIP Code data.

MEASURING JOB QUALITY & ACCESSIBILITY

Methodology Overview

JOB QUALITY SCORE



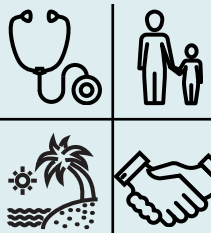
Earnings

The regional hourly earnings of an occupation at five percentiles are compared to the region's selected minimum living wage. Percentiles that are at or above the living wage increase the quality score and vice versa. Each comparison is weighted by how many workers the earnings percentile represents.



Career Opportunity

Each occupation has up to 10 related occupations that are most similar based on what people in the occupations do, what they know, and what they are called. For each of these related occupations, we compare the five earnings percentiles and determine if the occupation provides an upward or downward change in earning potential. An occupation with more upward related occupations increases the quality score, and vice versa.



Benefits & Unionization

An occupation that tends to have more employers who provide healthcare, childcare, or leave benefits than the average increases the quality score and vice versa. While not an employer-provided benefit, an occupation that tends to have above-average union membership rates also increases the quality score and vice versa.



Stability

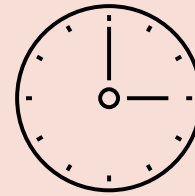
Regional unemployment and turnover help measure an occupation's relative stability. If an occupation tends to have lower unemployment and turnover rates than the regional average, then it receives a higher quality score and vice versa.

JOB ACCESSIBILITY SCORE



Education

The typical education required for an occupation is compared to the average educational requirements of all occupations. If higher education (a Bachelor's degree or higher) tends to be required more often than the average, the occupation receives a lower access score, while an occupation with lower education requirements than the average would have a higher access score.



Experience

Experience is included in a similar method to education. If more experience (2 years or more) tends to be required more often than the average, the occupation receives a lower access score, while an occupation with lower experience requirements than the average would have a higher access score.



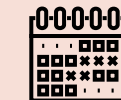
Demographic Composition

To account for historical and existing biases in job access based on race, ethnicity, and gender, this analysis compares an occupation's demographic composition to that of the overall workforce of the region and the working-age population. If an occupation is more dissimilar from the regional population than the overall workforce, it receives a lower access score and vice versa. This measure of similarity is applied the same to all demographic groups.



Structure & Flexibility

An occupation that allows employees to work from home, affords more flexibility in day-to-day activities, has a dependable schedule, and demands fewer weekly hours than the average occupation has a higher access score than the contrary.



The background is a solid orange color with several overlapping, semi-transparent orange shapes. On the left side, there is a large, light-orange circle that overlaps a darker orange circle. Below these, there are several overlapping rectangular and triangular shapes in various shades of orange, creating a layered, geometric effect.

**HOW TO
USE THE TOOL**

ACCESSING THE TOOL

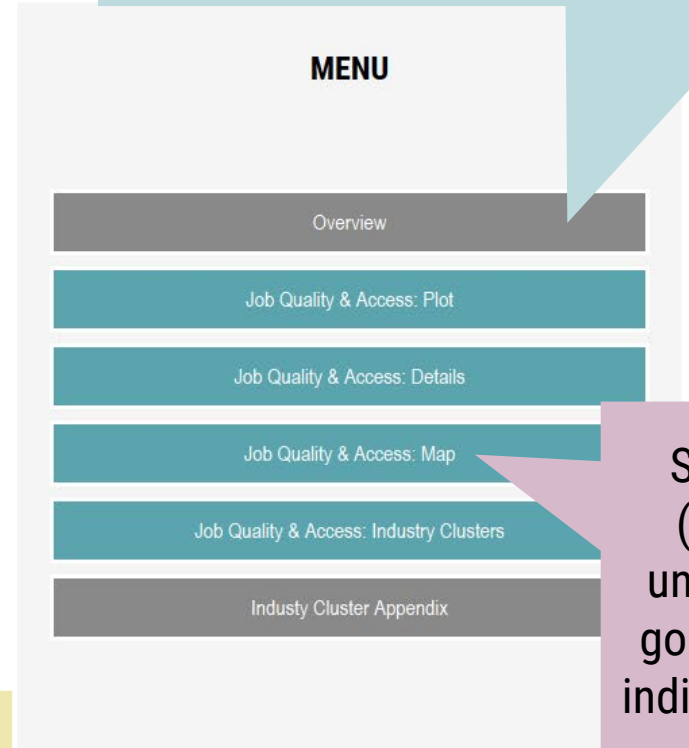
CHICAGO METROPOLITAN AGENCY FOR PLANNING

JOB QUALITY AND ACCESS



Access the tool through CMAP's website.

Select 'Overview' from the MENU to learn more about the features of the tool. There is also a navigation bar at the left of each page with this option.



Select a topic (colored bar) under 'MENU' to go directly to the indicated analysis.



USER QUICK
Navigate
vis
navigate
Each chart h
chart element. Series in a chart may be highlighted or emphasized by clicking on an element in the chart or in the corresponding legend. Many charts also have interactive filters in the form of drop-down menus or sliding bars to change which geographies, occupations, or other metrics are displayed. Use the side menu on the left of each page for more information. For best results, view fullscreen on a desktop or laptop computer using a 100% scale resolution.

SOURCES:
US Bureau of Labor Statistics (BLS): Lightcast 2023.3—OCEW Employees, Non-OCEW Employees, and Self-Employed, Current Population Survey (CPS), Annual Social and Economic Supplement (ASEC) and Basic Monthly Surveys in 2022, National Compensation Survey 2022; US Census Bureau: American Community Survey 2021 5-year aggregate sample, Population Estimates Program 2022 Vintage; US Department of Labor: Employment and Training Administration, Occupational Information Network (O*NET) version 28.0; Massachusetts Institute of Technology: Glasmeier, Amy K., Living Wage Calculator; US Economic Development Administration (EDA): Institute for Strategy and Competitiveness, Harvard Business School; Illinois Department of Transportation (IDOT); City of Chicago: Chicago Transit Authority, Commuter Rail (Metra) and Suburban Bus (Pace) Divisions of the Regional Transportation Authority; TIP Strategies, Inc.

INSTRUCTIONAL GUIDE

Navigation and Informational Icons



At the top left of each page is an icon of three dots that returns to the menu page. You can navigate between pages by clicking the tabs at the top of the window or by returning to the menu and using the navigation buttons on that page.



Below the menu icon is an icon for instructions and information on each page. Clicking this button will show an overlay on the page with information about the different sections of the page and their functions. This includes information on filters and search fields, but also brief descriptions of each chart and any interactivity between chart elements on the page. Click again to hide the overlay.



At the bottom left of the navigation and help pane is a button to reveal the data sources used on the page. All data sources are listed on the menu page but are also repeated on each page with only the relevant sources included. Click again to hide sources from view.



Below the sources icon is a download icon. Clicking this will open the option to save the current view to a downloadable PDF. You have the option to print the entire view or just one selected chart on the page.

INSTRUCTIONAL GUIDE

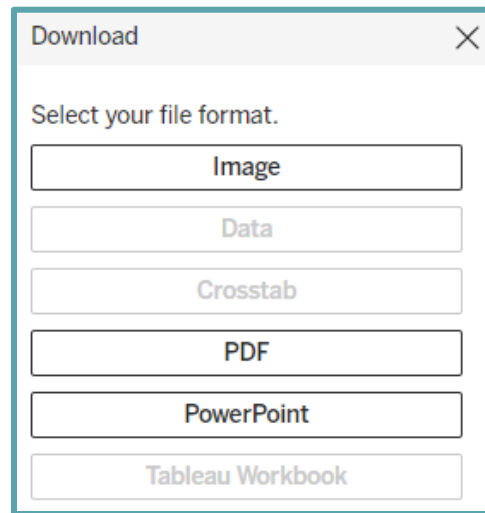
Downloading or Saving Views and Pages



Option 1. This download icon is on the left of each page. Clicking this button will open the option to save the current view to a downloadable PDF. You have the option to print the entire view or just one selected chart on the page.



Option 2. This row of four icons is on the top of each page. Clicking the third icon, a box with an arrow, will create the pop-up window you see below. You have the option of downloading the page view as an image format, PDF, or PowerPoint slide.



INFORMATIONAL GUIDE

Key Concepts

Job Quality. This analysis measures job quality by comparing a set of factors related to compensation and benefits, job stability, and the opportunity for career advancement. In general, each factor includes data on an individual occupation in a region and compares it to the average or a baseline metric. The implication of each factor's relationship to the baseline has a different effect on quality. In some cases, such as earnings, having a higher value means higher job quality. In other cases, such as for the measures of stability (unemployment and turnover rate), a value above the baseline means lower job quality. The Occupational Details page reveals these relationships for each occupation and how they compare to the baseline.

Job Access. This analysis measures job access by comparing a set of factors related to education and experience requirements, demographics of the workforce, and the structured or flexible nature of the job. As with job quality, each factor includes data on an individual occupation in a region and compares it to the average or a baseline metric, and the implication of each factor's relationship to the baseline have different effects on access. The Occupational Details page reveals these relationships for each occupation and how they compare to the baseline.

INFORMATIONAL GUIDE

Key Concepts (continued)

Occupations vs Industries. This analysis primarily uses occupations to describe individual jobs. Occupations are defined by the set of tasks a worker does in a job. Because an occupation is defined by tasks, not by the products or services being provided, we can usually find workers in an occupation across several industries. This worker-focused approach to defining a job offers rich occupation-based data that cuts across industries. Industries, on the other hand, are defined by their outputs—the categories of goods and services the enterprise provides. Industry clusters are examined in the last section of the analysis.

Jobs vs Resident Workers vs Openings. Three metrics related to employment are used throughout this analysis. Jobs refers to employment in a region based on where the employer is located. Resident workers is based on where the worker lives and refers to the residents of a region who are employed. Openings is not an employment metric but instead refers to the number of job openings (based on where the job is located) in a region—this approach helps to gauge regional demand.

INFORMATIONAL GUIDE

Key Concepts (continued)

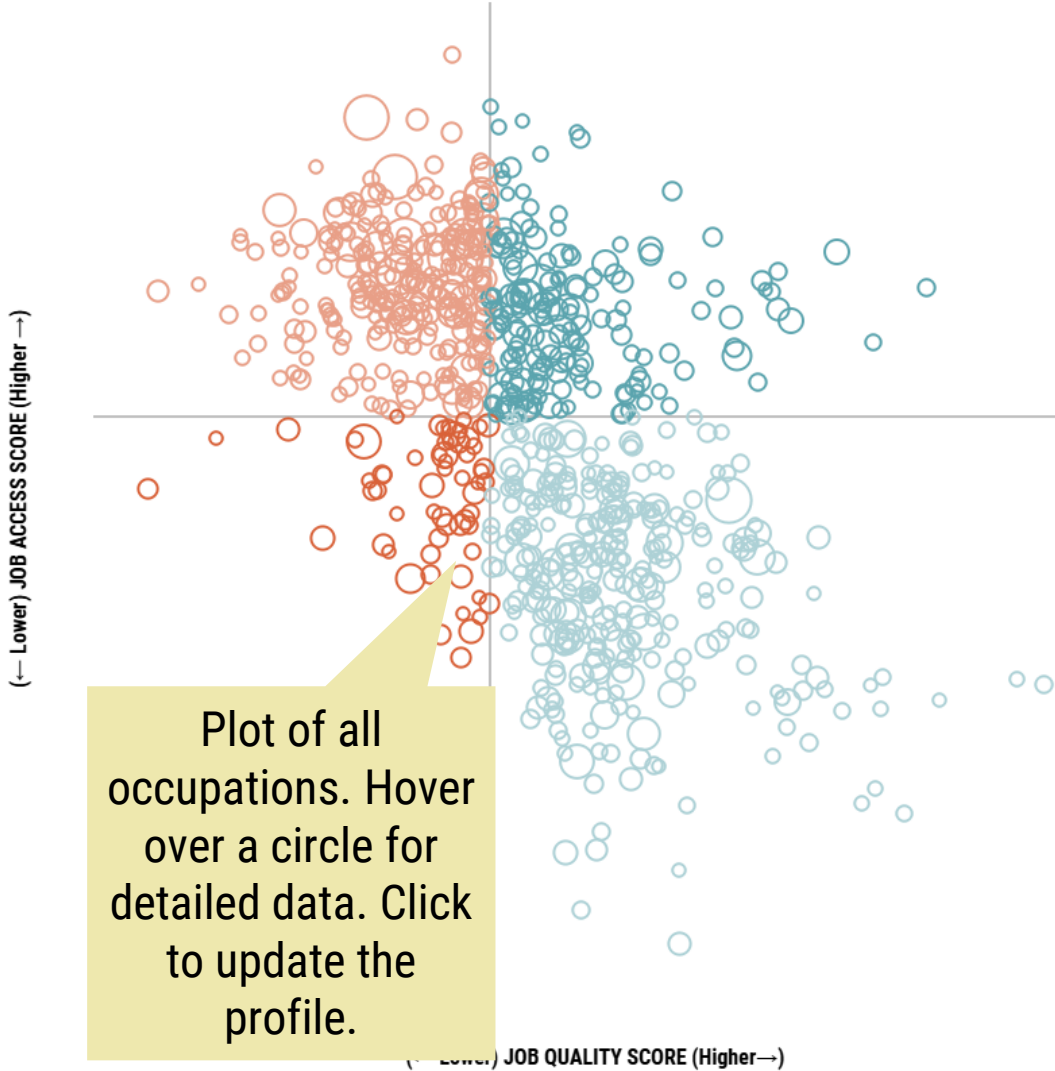
Factor Weights. Both scores for job quality and access are set to default to an approximately equal weighting among the factor concepts by default. However, the importance of different factors can be customized by the user. Raising a factor's weight will increase the importance of that factor in the score calculation. Occupations that score better will receive higher scores, while occupations that score poorer will receive lower scores.

Living Wage. The earnings factor of job quality compares an occupation's earnings in a region to that region's living wage. Our living wage data come from [MIT's Living Wage Calculator](#), which estimates "what one full-time worker must earn on an hourly basis to help cover the cost of their family's minimum basic needs where they live while still being self-sufficient." Different household structures have different living wages. For instance, a single adult living alone has a lower living wage threshold to meet their basic needs compared to a household with multiple children. Living wages also change by region with variations in cost-of-living.

JOB QUALITY AND ACCESS: OCCUPATION PLOT

JOB QUALITY AND ACCESS | OCCUPATION PLOT

CMAP Region, 2022



Plot of all occupations. Hover over a circle for detailed data. Click to update the profile.

SELECT REGION CMAP Region	SELECT LIVING WAGE Two working adults with two children
SEARCH OCCUPATION GROUPS No items highlighted	SELECT OCCUPATION Registered Nurses

Change the scope of the analysis using dropdown menus.

Adjust Job Access Factor Weights

Adjust Job Quality Factor Weights

Adjust Weight: Education Factor Important	Adjust Weight: Experience Factor Important
Adjust Weight: Sex and Gender Factor Important	Adjust Weight: Race and Ethnicity Factor Important
Adjust Weight: Work from Home Factor Important	Adjust Weight: Work Structure Factor Important

Adjust the weight of factors of job quality and access.

Registered Nurses Profile

Typical Entry-Level Education:	Bachelor's degree
Typical Work Experience Required:	None
Typical On-The-Job Training:	None
Automation Index:	Low risk

Quality and Access Summary

Higher quality, more accessible	Higher quality, less accessible	Lower quality, more accessible	Lower quality, less accessible
22.0%	36.5%	36.3%	5.2%

Profile of selected occupation and summary chart of all occupations. Hover for additional details.

JOB QUALITY AND ACCESS: OCCUPATION DETAILS

JOB QUALITY AND ACCESS | OCCUPATION DETAILS

Registered Nurses in CMAP Region, 2022

SELECT REGION CMAP Region	SELECT LIVING WAGE Two working adults with +	
SELECT OCCUPATION Registered Nurses	SELECT MEASURE Job Quality	SELECT FACTORS Earnings & Career Opportu..

Select an factors to see how an occupation compares.

Registered Nurses Profile

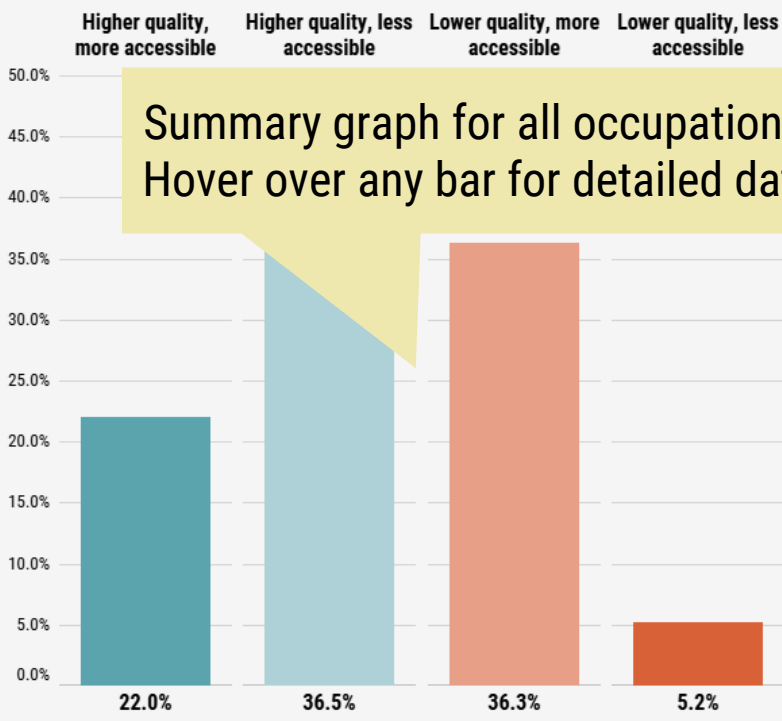
Higher quality, less accessible

- Typical Entry-Level Education: Bachelor's degree
- Typical Work Experience Required: None
- Typical On-The-Job Training: None
- Automation Index: Low risk

Job Quality Factors Legend

Red: Component decreases Job Quality Yellow: Component slightly effects Job Quality Green: Component increases Job Quality

Quality and Access Summary

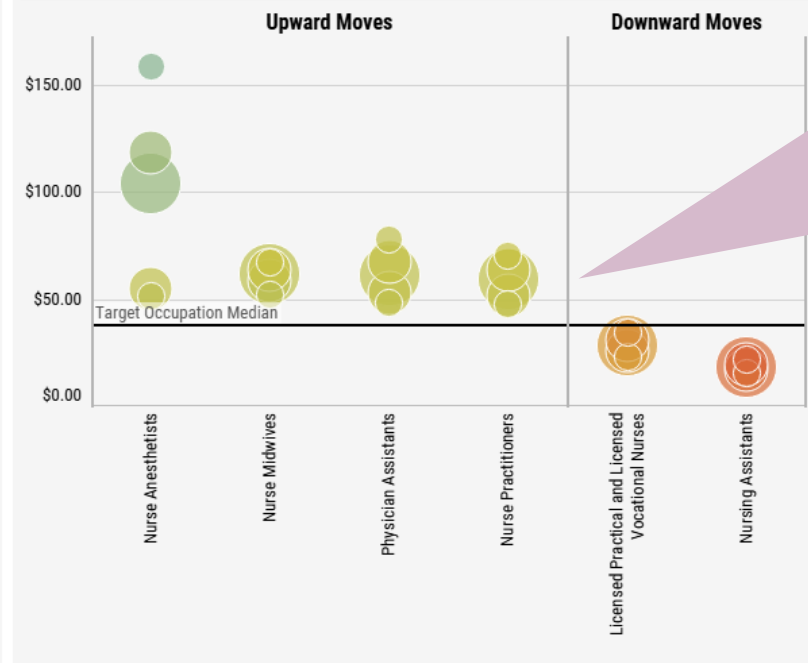


Summary graph for all occupations. Hover over any bar for detailed data

Adjust Weight: Earnings Factor Important



Adjust Weight: Career Opportunity Factor Important



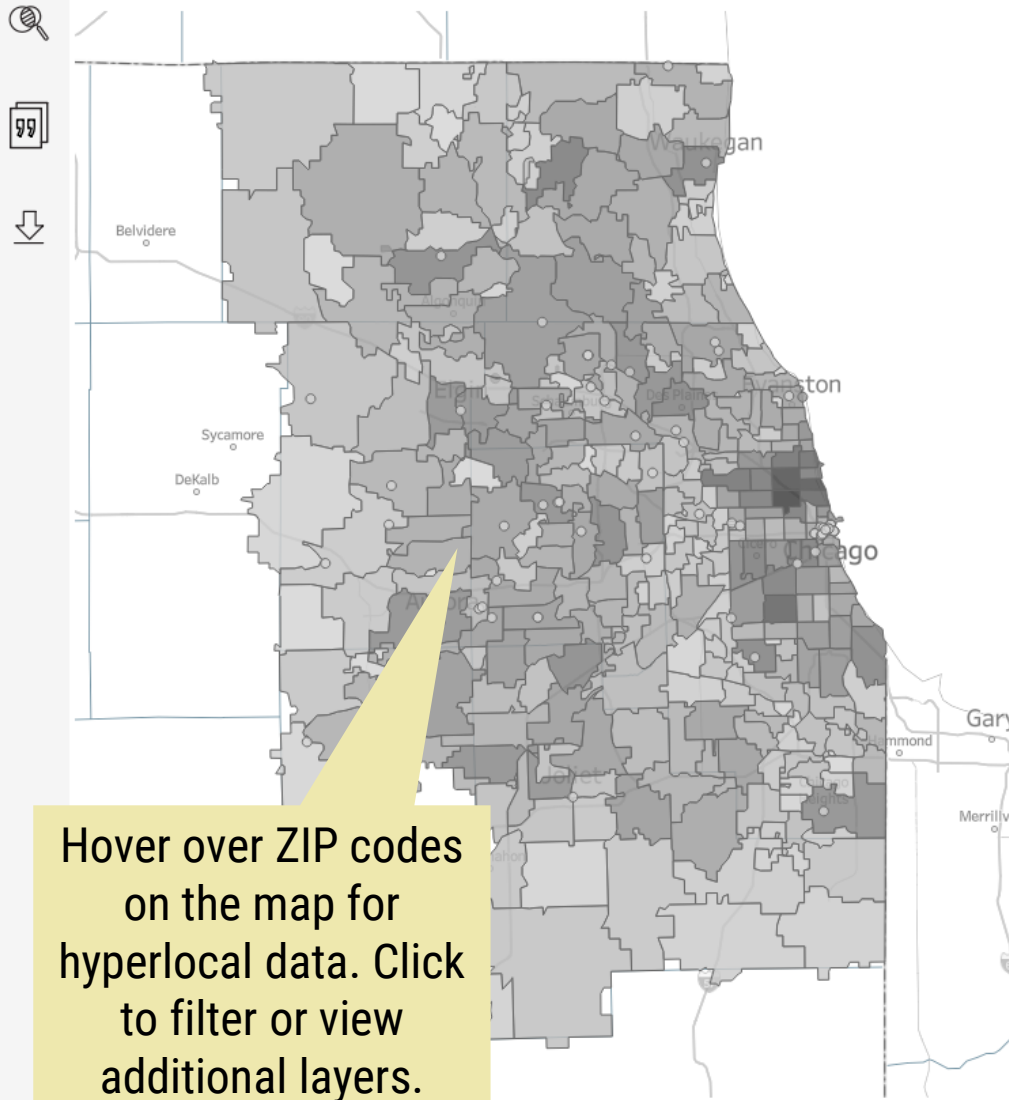
Results summary. Hover over the chart for additional occupational details.

JOB QUALITY AND ACCESS: OCCUPATION MAP

Change scope of the analysis, view contextual data, or filter for a city in the region.

JOB QUALITY AND ACCESS | OCCUPATION MAP

CMAP Region, 2022



Hover over ZIP codes on the map for hyperlocal data. Click to filter or view additional layers.

SELECT REGION CMAP Region	SELECT CONTEXT Demographics: Age	SELECT CITY All
-------------------------------------	--	---------------------------

Laborers & Freight, Stock, & Material Movers, Hand Profile

Lower quality, more accessible

Typical Entry-Level Education:	No formal credentials
Typical Work Experience Required:	None
Typical On-The-Job Training:	Short-term training
Automation Index:	Very high risk

386 Selected ZIP Codes in CMAP Region, 2022
Top 10 largest occupations by number of resident workers

	Resident Workers	Jobs	Openings
Laborers & Freight, Stock, & Material Movers, Hand	143,291	154,295	24,329
General & Operations Managers	131,590	140,281	13,100
Retail Salespersons	88,454	93,490	13,859
Home Health & Personal Care Aides	85,188	91,217	17,605
Registered Nurses	83,985	87,656	5,694
Office Clerks, General	82,390	85,785	10,965
Customer Service Representatives	80,169	84,031	11,991
Fast Food & Counter Workers	78,430	81,674	19,358
Cashiers	76,317	79,545	15,084
Janitors & Cleaners, Except Maids & Housekeeping Cleaners	67,504	70,463	10,695

Demographics: Age		
Context for total population		
Age		
Under 15		18.7%
15 to 24		12.9%
25 to 34		14.4%
35 to 44		13.6%
45 to 54		13.1%
55 to 64		12.8%
65 and over		14.6%

Transit Stops		
	Bus Stops	Train Stations
Chicago Transit Authority (CTA)	6,105	144
Metra Commuter Rail		237
Pace Suburban Bus	9,053	

Results summarized for the selected ZIP codes.

JOB QUALITY AND ACCESS: KEY CLUSTERS

JOB QUALITY AND ACCESS | KEY CLUSTERS

CMAP Region, 2022

SELECT REGION

CMAP Region

SELECT TRADED VS. LOCAL

All

Traded

Local

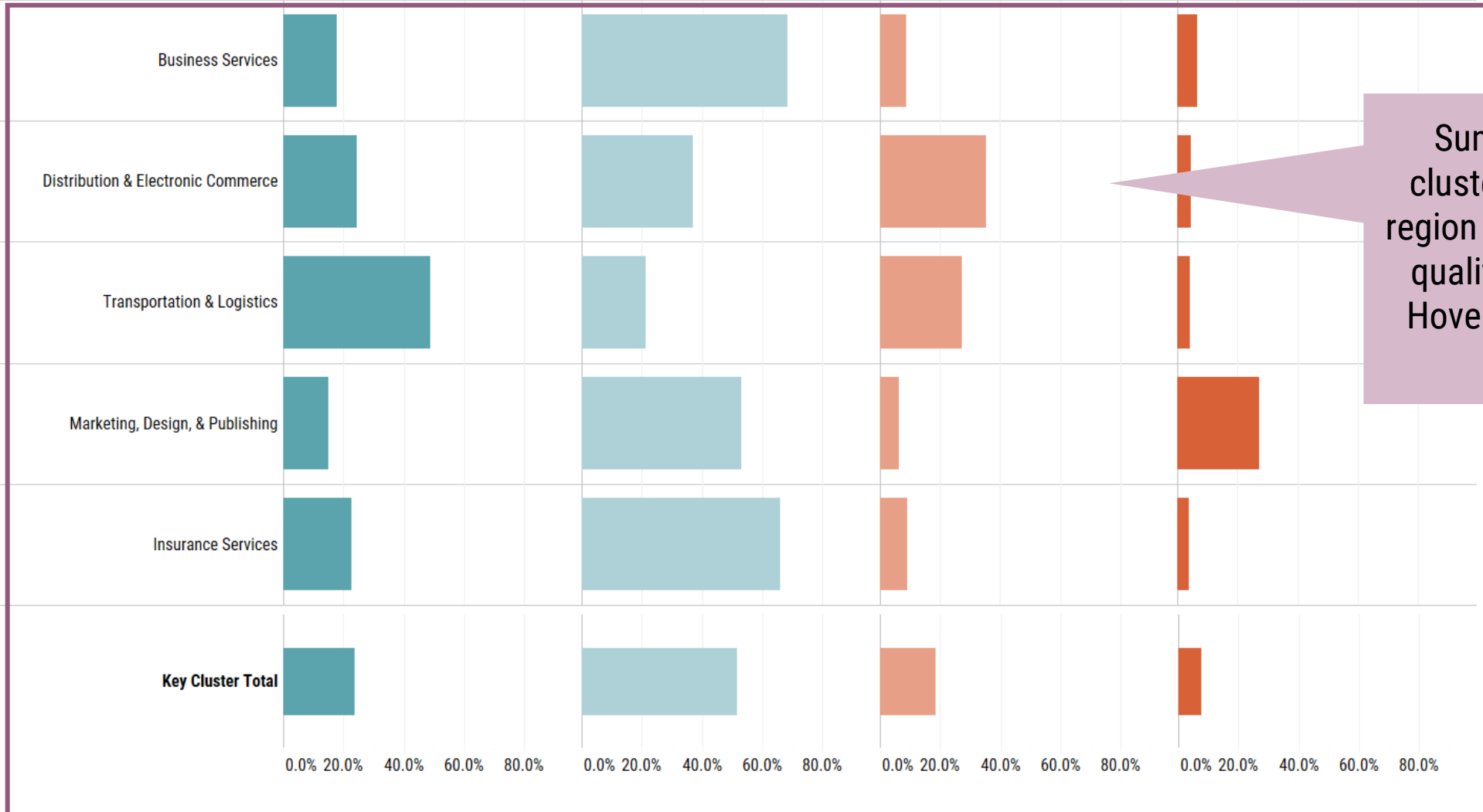
SELECT CLUSTER CHART

Key Clusters: Overview

Key Clusters: Quality & Access

Change scope of analysis or focus on traded clusters

EDA Industry Cluster Higher quality, more accessible Higher quality, less accessible Lower quality, more accessible Lower quality, less accessible



Summary of key clusters in selected region by occupational quality and access. Hover for additional details.

JOB QUALITY AND ACCESS: INDUSTRY CLUSTER APPENDIX

Search clusters for specific industries

JOB QUALITY AND ACCESS | INDUSTRY CLUSTER APPENDIX

CMAP Region Jobs, 2022

SELECT REGION CMAP Region	SELECT TRADED VS. LOCAL <input type="radio"/> All <input checked="" type="radio"/> Traded <input type="radio"/> Local	SELECT INDUSTRIES All
-------------------------------------	---	---------------------------------

Key Cluster Status	Traded vs Local	EDA Industry Cluster	Industry Name	CMAP Region
Potential Key Cluster	Traded	Business Services	Corporate, Subsidiary, and Regional Managing Offices	61,155
			Administrative Management and General Management Consulting Services	51,792
			Custom Computer Programming Services	33,887
			Computer Systems Design Services	29,858
			Engineering Services	21,340
			Employment Placement Agencies	16,881
			Professional Employer Organizations	12,275
			Data Processing, Hosting, and Related Services	11,233
			Payroll Services	11,184
			All Other Professional, Scientific, and Technical Services	9,729
			Architectural Services	8,678
			Limousine Service	7,478
			Process, Physical Distribution, and Logistics Consulting Services	6,200
			Other Scientific and Technical Consulting Services	4,727
			Telemarketing Bureaus and Other Contact Centers	4,256
			Other Computer Related Services	4,237
			Human Resources Consulting Services	4,131
			Other Management Consulting Services	3,623

Results summary. Hover over the number of jobs in the right-side column for additional cluster information.

Sources: US Bureau of Labor Statistics (BLS), Lightcast 2023.3–QCEW Employees, Non-QCEW Employees, and Self-Employed; US Economic Development Administration (EDA), Institute for Strategy and Competitiveness, Harvard Business School; TIP Strategies, Inc.



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