INTRODUCTION
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.
<table>
<thead>
<tr>
<th>JOB QUALITY</th>
<th>JOB ACCESSIBILITY</th>
<th>CONTEXTUAL DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compensation.</strong> Are workers able to earn high wages relative to the minimum livable wage, earn benefits, and have the freedom to collectively bargain?</td>
<td><strong>Prerequisites.</strong> How high are the barriers to entry for this job compared to the average?</td>
<td><strong>Social setting.</strong> Demographic and socio-economic data on residents.</td>
</tr>
<tr>
<td><strong>Stability.</strong> How stable does this job tend to be, relative to the region?</td>
<td><strong>Demographic composition.</strong> Do the workers in this job reflect the composition of the region by race/ethnicity and gender?</td>
<td><strong>Training requirements.</strong> Typical length of on-the-job training, in addition to the typical educational and experience requirements.</td>
</tr>
<tr>
<td><strong>Opportunity.</strong> Does this job have career advancement opportunities?</td>
<td><strong>Flexible work.</strong> Are flexible work environments a frequent part of this job?</td>
<td><strong>Risk of automation.</strong> Risk of job automation based on routine vs non-routine tasks.</td>
</tr>
<tr>
<td><strong>Flexible work.</strong> Are flexible work environments a frequent part of this job?</td>
<td></td>
<td><strong>Opportunity.</strong> Job openings by occupation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Transportation access.</strong> Bus and rail transit stops as well as major roads with contextual ZIP Code data.</td>
</tr>
</tbody>
</table>
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.
HOW TO USE THE TOOL
ACCESSING THE TOOL

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.

Access the tool through CMAP’s website.
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.
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.
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.
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.
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 along 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.
Change the scope of the analysis using dropdown menus.

Adjust the weight of factors of job quality and access.

Profile of selected occupation and summary chart of all occupations. Hover for additional details.
JOB QUALITY AND ACCESS: OCCUPATION DETAILS

Registered Nurses in CMAP Region, 2022

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

Job Quality Factors Legend
- Red: Component decreases Job Quality
- Yellow: Component slightly effects Job Quality
- Green: Component increases Job Quality

Adjust Weight: Earnings Factor Important
- Hourly Earnings
  - Living Wage
  - Target Occupation Median

Adjust Weight: Career Opportunity Factor Important
- Upward Moves
- Downward Moves

Select an factors to see how an occupation compares.

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

Summary graph for all occupations. Hover over any bar for detailed data.
Change scope of the analysis, view contextual data, or filter for a city in the region.

Results summarized for the selected ZIP codes.

Hover over ZIP codes on the map for hyperlocal data. Click to filter or view additional layers.
JOB QUALITY AND ACCESS: KEY CLUSTERS

Change scope of analysis or focus on traded clusters.

Summary of key clusters in selected region by occupational quality and access. Hover for additional details.
## JOB QUALITY AND ACCESS: INDUSTRY CLUSTER APPENDIX

CMA Region Jobs, 2022

### Search clusters for specific industries

<table>
<thead>
<tr>
<th>Key Cluster Status</th>
<th>Traded vs Local</th>
<th>EDA Industry Cluster</th>
<th>Industry Name</th>
<th>CMA Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential Key Cluster</td>
<td>Traded</td>
<td>Business Services</td>
<td>Corporate, Subsidiary, and Regional Managing Offices</td>
<td>61,155</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Administrative Management and General Management Consulting Services</td>
<td>51,792</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Custom Computer Programming Services</td>
<td>38,887</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Computer Systems Design Services</td>
<td>29,858</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Engineering Services</td>
<td>21,240</td>
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<td></td>
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<td></td>
<td>Employment Placement Agencies</td>
<td>16,881</td>
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<td>Professional Employer Organizations</td>
<td>12,275</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Data Processing, Hosting, and Related Services</td>
<td>11,239</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Payroll Services</td>
<td>11,184</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>All Other Professional, Scientific, and Technical Services</td>
<td>6,729</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Architectural Services</td>
<td>8,678</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Limousine Service</td>
<td>7,478</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Process, Physical Distribution, and Logistics Consulting Services</td>
<td>6,208</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other Scientific and Technical Consulting Services</td>
<td>4,727</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Telemarketing Bureaus and Other Contact Centers</td>
<td>4,256</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other Computer Related Services</td>
<td>4,237</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Human Resources Consulting Services</td>
<td>4,131</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other Management Consulting Services</td>
<td>3,623</td>
</tr>
</tbody>
</table>
