CFAES

Agricultural, Environmental, and Development Economics

What Skills Does Ohio Need?

Dr. Yao Wang

July 2025 | Q32025

THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

What Skills Does Ohio Need?

Different occupation requires different skills

Ohio's labor market is dynamic but remains highly segmented. Figure 1 illustrates sectoral job-to-job transitions in Ohio in 2023, with each square representing the volume of worker movement between two industries. Darker colors indicate a higher number of transitions. The darkest areas appear along the diagonal, showing that most workers change jobs within the same industry. In contrast, movement across sectors is relatively rare. This pattern reveals a key challenge: if Ohio workers are to navigate economic shifts and seize new opportunities—such as those generated by major investments from companies like Intel and Honda—they might not be able to move across sectors.

Why is sectoral job hopping so difficult? One of the biggest reasons is that different sectors and occupations require distinct skill sets, many of which are not easily transferable. As a result, workers may be well-prepared for roles in one sector but face major barriers when trying to enter another. To better prepare workforce development to meet the challenges and opportunities of economic development in Ohio, we need a clear understanding of which skills are in demand.

Figure 1: Sectoral Job-to-Job Transitions in Ohio, 2023.
Note: Sector names are abbreviated for space. Full names include Agriculture, Mining, Utilities, Construction, Manufacturing, Wholesale, Retail, Transportation, Information, Finance, Real Estate, Professional Services, Management, Administrative Services, Education, Health Care, Arts & Entertainment, Accommodation & Food, Other Services, and Public Administration. Source: Author's calculations using data from the U.S. Census Bureau's LEHD Job-to-Job Flows dataset (U.S. Census Bureau, n.d.).

The Skill Composition of Ohio's Workforce, 2024

To analyze the skill composition and demand in Ohio, I draw on the Employment Projections (EP) program developed by the U.S. Bureau of Labor Statistics (Dey, Hopson, Krutsch, Miller, & Nguyen, 2024). The EP program integrates data from multiple sources—including the Occupational Information Network (O*NET)—and employs factor analysis alongside cognitive testing to identify 17 core skill categories. For each occupation, the program provides a score, ranging from 1 to 5, to indicate the importance of these skills. The identified skills include *adaptability, computer and IT skills, creativity, critical thinking, customer service, detail orientation, fine motor skills, interpersonal skills, leadership, mathematics, mechanical*

skills, physical stamina, problem solving, project management, science, communication (speaking and listening), and literacy (reading and writing). By weighting these skill ratings by Ohio's occupational structure, we can estimate the overall skill profile of the state's workforce. Figure 2 presents a ranking of these skills by their average importance in Ohio in 2024.

Four skills stand out as especially critical. ***Adaptability***—the ability to learn new information, remain composed during change, and apply knowledge effectively. This is a skill particularly important in education, healthcare, and social services occupations. ***Detail orientation***—the ability to pay close attention to small particulars when completing tasks or projects. This is especially critical in healthcare and legal occupations, where accuracy and precision are essential. ***Problem solving and decision making***—the ability to analyze complex issues, evaluate information, and make sound judgments. This skill is highly valued in management, legal, and community service occupations. ***Interpersonal skills***—the ability to demonstrate empathy, communicate with tact, and collaborate effectively. This is a core skill in service-based occupations and team-oriented work environments. These findings are consistent with the fact that healthcare practitioners, educators, and office and administrative support workers make up some of the largest occupational groups in Ohio's workforce.

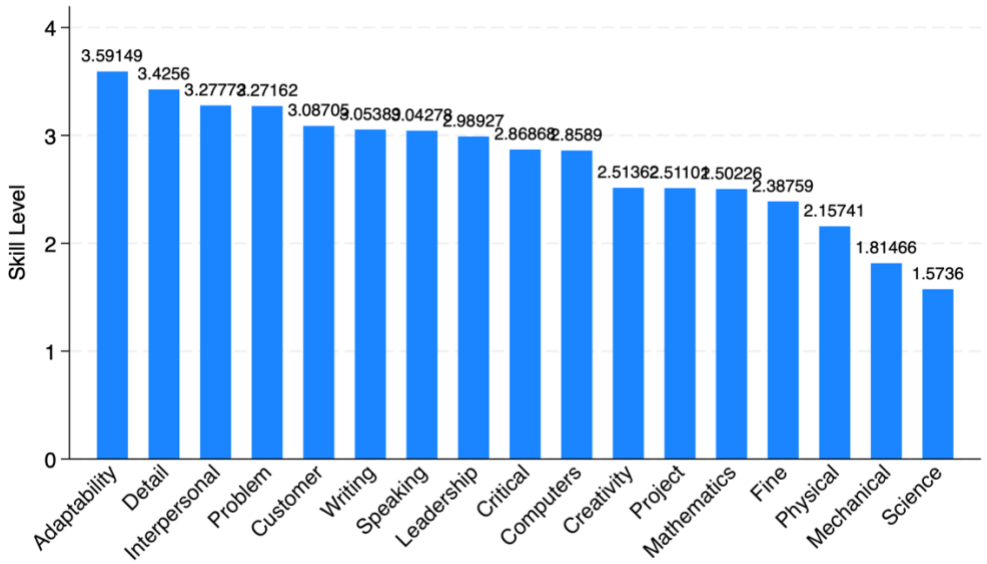

Figure 2: Skill Rankings in Ohio's Workforce, 2024.
Note: *Average skill level weighted by occupational composition. Higher values indicate greater demand in the current labor market. Source: Author's calculations using data from Employment Projections Skills Data (Dey, Hopson, Krutsch, Miller, & Nguyen, 2024) and Occupational Employment and Wage Statistics: May 2024 (U.S. Bureau of Labor Statistics, 2024a).*

Skill Growth in Ohio, 2019-2024

As Ohio's economy evolves, so does the skill demand across its workforce. By combining occupational growth data from 2019 to 2024 with the Employment Projections (EP) skill framework, we can track which skills have become more important—and which have declined in demand. Figure 3 shows the percentage change in skill scores from 2019 to 2024 in Ohio. The findings reveal a clear pivot toward more cognitive, organizational, and strategic skill sets.

The skills with the highest growth in Ohio over this period are ***project management***, ***leadership***, and ***science***. Project management—the ability to coordinate tasks, resources, and people toward specific goals—grew faster than any other skill, likely reflecting the rising complexity of work environments across industries. Similarly, leadership skills saw increasing demand, particularly as workplaces placed more emphasis on teamwork, mentoring, and strategic planning. Growth in science skills suggests a heightened need for workers who can apply scientific reasoning to problem-solving, especially in sectors such as healthcare, advanced manufacturing, and environmental services.

Other cognitive and communication-intensive skills, including ***critical and analytical thinking***, ***problem solving***, and ***writing***, also experienced strong growth. These skills are foundational to occupations that require judgment, evaluation of complex information, and clear written communication. Modest increases in demand for computer and creativity skills further point

to growing reliance on digital tools and innovation across sectors.

In contrast, several physical and precision-based skills declined. ***Fine motor skills***—which involve precise hand and finger coordination—saw the sharpest drop, likely due to increased automation in manufacturing and production-related jobs. Similarly, ***physical strength and stamina***, ***mechanical*** skills, and ***detail orientation*** all declined. These trends reflect both structural shifts away from manual-intensive jobs and the growing use of technology to perform repetitive or physically demanding tasks.

Even widely valued skills such as ***interpersonal communication***, ***customer service***, and ***adaptability*** declined slightly. This may reflect slower growth in service-sector jobs or the rise of remote work technologies that reduce face-to-face interactions. Still, these skills remain highly ranked in overall importance (as shown in Figure 2), underscoring their continuing relevance even if their relative share has decreased.

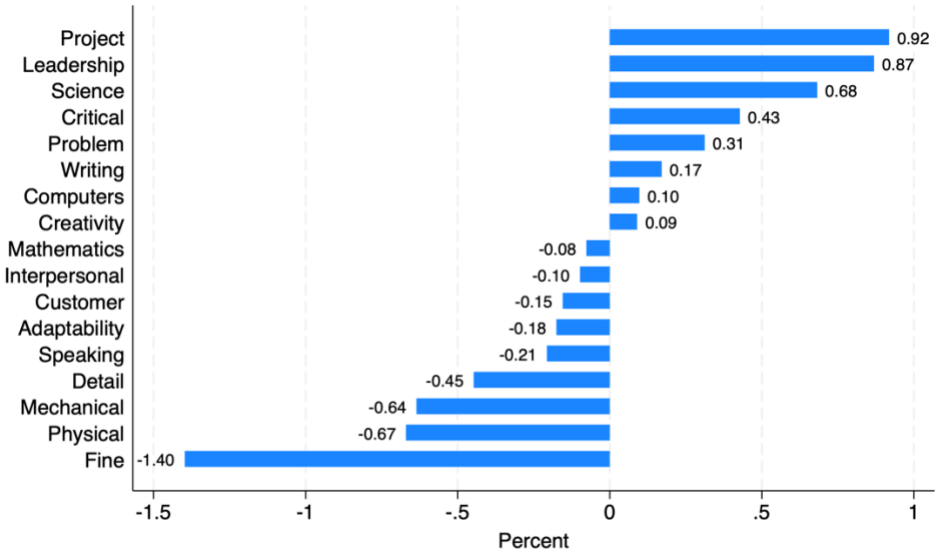

Figure 3: Skill Growth in Ohio's Workforce, 2019–2024.
Note: *Based on occupational employment trends and skill composition by occupation from 2019-2024. Positive values indicate increasing demand; negative values reflect declining demand. Source: Author's calculations using data from Employment Projections Skills Data (Dey, Hopson, Krutsch, Miller, & Nguyen, 2024), Occupational Employment and Wage Statistics: May 2024 (U.S. Bureau of Labor Statistics, 2024a), and Occupational Employment and Wage Statistics: May 2019 (U.S. Bureau of Labor Statistics, 2019).*

Policy Implications

Ohio's labor market shows strong signs of internal dynamism, but limited mobility across industries. Workers tend to remain within the same sector when changing jobs, in part because the skills required in one occupation often do not translate easily to another. This presents a barrier to economic adaptability, especially as Ohio attracts new investment in advanced manufacturing, technology, and infrastructure. Enabling workers to pivot into high-growth sectors will require targeted skill-building initiatives that prepare them for jobs beyond their current industry.

Recent trends in occupational growth reveal a rising demand for skills such as project management, leadership, scientific reasoning, and critical thinking. These are capabilities often underdeveloped in traditional vocational training but essential for thriving in modern, knowledge-intensive workplaces. To meet this demand, investment in education and workforce programs that go beyond technical skills and emphasize transferable competencies like decision making, team coordination, and innovation could be highly valued. Community colleges, regional workforce development boards, and employer-led training partnerships can be key platforms for delivering these programs.

At the same time, the declining demand for manual and precision-based skills—such as fine motor coordination, physical stamina, and mechanical knowledge—signals the need to support reskilling efforts for workers in shrinking occupations. Workforce policy could focus on transition pathways for these individuals, especially in regions that depend on manufacturing and physical labor. Ensuring that skill development opportunities are accessible to rural communities and historically

underserved populations will also be critical for promoting inclusive growth and economic resilience across the state.

References

Dey, M., Hopson, A., Krutsch, E., Miller, M., & Nguyen, A. (2024, October). A new data product for occupational skills: Methodology, analysis, and a guide to using the Employment Projections skills data. Monthly Labor Review. U.S. Bureau of Labor Statistics. https://doi.org/10.21916/mlr.2024.19

National Center for ONET Development. (2025, July 13). ONET OnLine. https://www.onetonline.org/

U.S. Bureau of Labor Statistics. (2019). Occupational Employment and Wage Statistics: May 2019 national occupational employment and wage estimates. U.S. Department of Labor. https://www.bls.gov/oes/current/oes_nat.htm

U.S. Bureau of Labor Statistics. (2024a). Occupational Employment and Wage Statistics: May 2024 national occupational employment and wage estimates. U.S. Department of Labor. https://www.bls.gov/oes/current/oes_nat.htm

U.S. Bureau of Labor Statistics. (2024b). Employment Projections: Overview and highlights, 2022–32. U.S. Department of Labor. https://www.bls.gov/emp/

U.S. Census Bureau. (n.d.). Job-to-Job Flows Explorer. Longitudinal Employer-Household Dynamics Program. Retrieved March 13, 2025, from https://j2jexplorer.ces.census.gov/

Dr. Yao Wang is an Assistant Professor of Regional Economics in the Department of Agricultural, Environmental, and Development Economics. Her research lies at the intersection of urban and development economics, with a particular focus on how regional policies shape economic development and welfare outcomes. She earned her Ph.D. in Economics from Syracuse University.