Welcome to the Staffing Pattern-Based Ohio County Occupational Estimates.

The staffing pattern-based Ohio county occupational estimates are a unique product being offered by the Ohio Bureau of Labor Market Information to fill a void in our data products. We believe these estimates can help counties better understand their local employment situations, however, the method of making these estimates has limitations users should understand.

The Occupational Employment Statistics Program and Data
Users may be familiar with the occupational employment and wage estimates produced by the Occupational Employment Statistics (OES) program. OES produces these estimates for Ohio, the metropolitan statistical areas, the JobsOhio regions, and four nonmetropolitan areas. Those data are based on surveys received from samples of Ohio employers. The samples are stratified to ensure that geographic regions and industries are adequately represented. Excluding federal government, there are approximately 300,000 business establishments in Ohio, and OES samples about 15,000 establishments annually. Data from three years are combined to create a sample of about three million jobs and increase the accuracy of the estimates. The result are high quality occupational employment and wage estimates for the different areas in Ohio. However, despite using large samples and combining sample data from three years, there is insufficient data to make direct occupational employment estimates for individual counties.

The Staffing Pattern Method for Making County Occupation Estimates
The staffing pattern method is a different approach to estimating occupational employment in the counties. The process is easy, but it involves making assumptions between the similarity of *regional* and *county* industry employment.

A by-product of the OES program is the industry staffing patterns, which tell us which occupations are typically present in an industry and in what proportions. For example, about 30.6% of the jobs in Ohio grocery stores are for cashiers, while pharmacists account for about 1.1% of grocery store jobs. We can then use these staffing pattern proportions to estimate occupational employment at the county level. For example, if there are 200 people employed in a county's grocery stores, we would expect them to have about 61 cashier jobs (about 30.6%) and two pharmacist jobs (about 1.1%). To get estimates of the total number of cashier and pharmacist jobs in the county, we combine the cashier and pharmacist estimates from all industries in the county.

We used regional industry staffing patterns to estimate county occupational employment. This assumes the regional staffing patterns are not different than county staffing patterns if those were available, but that may not be the case. Cashiers may account for 33.5% of the jobs in grocery stores in a county instead of 30.6%; pharmacists may account for 0.7% of the jobs instead of 1.1%. We have no way of telling what the actual occupational employment proportions are in a county. Staffing pattern data are only available at the industry 'group' level,

which are groups of similar industries.[1] For example, the 'grocery stores' industry group includes supermarkets, convenience stores, and specialty food stores such as meat markets, fish and seafood stores, and more. The regional grocery store staffing pattern is based upon data from the region's mix of stores for an industry group. However, a county's industry mix at the group level may not exactly match the industry mix for the region. It is possible that the differences between a region and its counties could lead to over- or underestimates of county occupational employment or that some occupations may be incorrectly 'assigned' to a county. In general, however, we expect the staffing pattern method to give a reasonable estimate of county occupational employment that will be useful for workforce and economic development.

The occupational estimates are rounded to the nearest 10. Some estimates are not published because of business confidentiality. Those occupations are highly concentrated in industries for which employment data are not published for confidentiality reasons. Seasonal employment fluctuations are not represented in the occupational estimates. Occupations with significant self-employment may be underrepresented in these estimates. Appendix Table I in the *Ohio Job Outlook* report lists some of the most common self-employment occupations (http://ohiolmi.com/proj/Projections/Ohio_Job_Outlook_2016-2026.pdf).

The county occupational estimates **do not** include wage estimates or employment projections. Users should refer to the OES wage estimates available through LMI's Data Search Tool (https://ohiolmi.com/Home/DS_Results_OES). State and regional employment projections may be found here: https://ohiolmi.com/Home/Projections.

The tables include markers for Top Jobs, STEM occupations, and information on occupational education and training. Information about the Ohio Top Jobs list can be found here: https://topjobs.ohio.gov/wps/portal/gov/indemand/top-jobs-list/overview/overview. A list of STEM occupation can be found on ONET: https://www.onetonline.org/find/career?c=15. The U.S. Bureau of Labor Statistics information on occupational education and training needs can be found here: https://www.bls.gov/emp/tables/education-and-training-by-occupation.htm.

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[1] Establishments are classified into industries using the North American Industry Classification System (NAICS). Classification codes use a nested structure in which each additional digit provides more detail. Codes range from two to six digits. Two-digit codes are for sectors, three-digit codes are subsectors, four-digit codes are industry groups, five-digit codes are NAICS industries, and six-digit codes are national industries. For example, the code '23' is the construction industry sector, '2361' is residential building construction, and '236118' is residential remodeler establishments. Staffing patterns for the six-digit codes would provide the best fit between industries and occupations but collecting data at this level would be prohibitively expensive. Instead, occupational data are collected at the four-digit group level on the assumption that establishments within an industry group have similar staffing patterns.