

Overview of Targeted Industry Clusters

In the fall of 2013 the PA Center for Workforce Information & Analysis at the PA Department of Labor & Industry updated the definition of the industry clusters that serve as the basis for data-driven workforce development policies. A report from the PA Department of Labor & Industry describing the clusters at the state level is available. This report looks at the industry clusters in Philadelphia County¹.

This report presents an overview of employment trends across industry clusters in Philadelphia. We examine how the clusters have changed since 2007, the year before the Great Recession had an impact. Then, we examine the composition of industry clusters by size of businesses and highlight clusters with the largest share of smaller businesses. The section of worker demographics shows the composition of industry clusters by gender, age, and education. Finally, we look at the major occupations that support industry clusters.

What is an industry cluster?

An industry cluster includes industries closely linked by common products, labor pools, technologies, supplier chains and training needs. They take on strategic importance for long-term economic planning as changes that benefit one industry will generally impact other industries in the same cluster. Clusters play an important part in the work of Industry Partnerships. Industry Partnerships are regional employer-led collaborative efforts designed to improve the competitiveness of clusters through sharing of training resources, and designation of High Priority Occupations. High Priority Occupations are job categories that are in demand by employers, have higher skill needs and are most likely to provide family-sustaining wages.

How are clusters different from industries?

Industry clusters are comprised of industries that are each assigned a specific six-digit North American Industry Classification System (NAICS) codes. They are mutually exclusive, so that no two clusters contain industries with the same NAICS code.

What is new?

Due to the transformation and evolution of certain industries, cluster definitions are revised regularly (every 3-6 years).

- A new **Hospitality, Leisure & Entertainment** cluster was created to evaluate the impact of tourism on many areas across the state.

¹ Descriptions of industry clusters are borrowed directly from the State report. The full report can be found here: <http://www.portal.state.pa.us/portal/server.pt/community/products/19738>

- Retail and Wholesale trade industries were added to the industry cluster definitions that they impact most. Not all retail establishments were added but some were included in clusters where products are sold directly to retail consumers. For example, Hardware Stores are included in the Building & Construction industry cluster.
- The previously-defined **Business & Financial Services** cluster was split into two separate clusters: **Business Services** and **Real Estate, Finance & Insurance**. The cluster was split because Real Estate, Finance & Insurance industries are more geographically specific and employ a narrower set of occupations.
- **Business Services** clusters also absorbed a number of industries from the previous **Information and Communication Cluster**, including media and computer-related services, while the remainder of that cluster was shifted to **Wood, Wood Productions & Publishing**.

What are the existing Commonwealth-identified clusters?

The Commonwealth has identified the following twelve industry clusters to inform economic and workforce development efforts.

- **The Health Care** cluster includes industries that provide for the health and well-being of Philadelphia residents. Direct patient care forms the cornerstone of this cluster. Also included are industries that support direct patient care, such as ambulance services, health insurance carriers and public agencies that oversee health programs. In addition, social assistance such as continuing care retirement communities and assisted living facilities for the elderly are included within the Health Care cluster.
- **The Education** cluster provides a full view of educational institutions in the state. The cluster encompasses elementary schools through universities, as well as technical schools and junior colleges. Finally, public agencies that oversee educational programs are included in the cluster.
- **The Business Services** cluster includes a wide range of services available to today's businesses, from business support services to waste management. Included in the cluster are radio stations, payroll services, public relations agencies, graphic design services, and janitorial services, to name a few. They tend to focus around three sub-clusters: those industries that help business market their products; those that help in the day-to-day operations; and those that offer outside consulting services. **Media, Advertising & Marketing, Operational Services, and Professional & Consulting** services are sub-clusters within the Business Services cluster.
- **The Hospitality, Leisure & Entertainment** cluster is comprised of industries that cater to tourism and recreation. In addition to hotels and restaurants, this cluster includes casinos, golf courses, museums, racetracks, bowling centers and caterers. Many industries in this cluster are seasonal with part-time or tip-based employment. For that reason wages are lower than other clusters, and employment is much more volatile if analyzed on a quarterly basis.
- **The Real Estate, Finance & Insurance** cluster contains all industries related to the purchase and sale of tangible and non-tangible assets. Included in the cluster are banks, consumer lending,

commodity contracts brokerage, direct property and casualty insurers, residential property managers and credit bureaus.

- **The Logistics & Transportation** cluster includes industries related to the storage, transportation and distribution of goods. This cluster includes all modes of transport, among them airlines, railroads, shipping and trucking companies, as well as logistics consulting and other supporting industries. In addition to moving goods, the cluster also contains industries related to passenger transportation: taxi services, charter buses, motor vehicle towing and scheduled passenger air transportation.
- **The Advanced Manufacturing** cluster is made up of mostly durable goods manufacturing but also includes wholesalers, and some retailers such as car dealers. Other industry clusters contain manufacturing within them, while the Advanced Manufacturing cluster is focused around its four sub-clusters: **Chemicals, Rubber & Plastics; Electronics; Metals; and Vehicles & Vehicle Parts.**
- **The Building & Construction** cluster includes industries directly involved in the construction of housing, roadways or other physical structures. Industries such as HVAC (Heating, Ventilation, and Air Conditioning) equipment manufacturing, whose products are used exclusively in the construction of these structures are also included. The retail industries such as Home Centers which act as an intermediary between manufacturer and independent contractors are included as well. Lastly, technical firms such as those that offer drafting or architectural services are also in the cluster.
- In Pennsylvania, the **Agriculture & Food Production** cluster begins with the growing of food crops, including grains and livestock, and ends with the wholesale distribution of these products. Philadelphia industries are mostly concentrated in food production. The cluster also includes support industries, such as refrigerated warehousing and fertilizer manufacturing, as well as public agencies that oversee agricultural programs.
- **The Wood, Wood Products & Publishing** cluster incorporates a supply line from raw material to finished product. It includes logging and lumber production, through the production of paper, to the publishing of magazines and newspapers. Industries found within the cluster include sawmills, truss manufacturing, stationery product manufacturing, printing machinery and equipment manufacturing, book stores and greeting card publishers.
- **The Energy** cluster includes industries associated with the production and distribution of energy, as well as waste disposal industries associated with the remediation and environmental cleanup related to energy production. A wide variety of industries make up the cluster, ranging from petroleum refineries to battery manufacturing to generator manufacturing.
- **The Bio-Medical** cluster includes industries that develop and use technology to enhance life from a health perspective. Industries in this cluster include research laboratories, pharmaceutical manufacturing, surgical and medical equipment manufacturing and imaging centers. This cluster largely represents industries that employ advanced technology and serve as a foundation for enhanced medical services.
- Some industries are not included in the targeted clusters. Those industries are referred to as **Industries outside of Clusters** in the tables below. These industries include State, federal, and

local government, retail stores not included in any other clusters, light manufacturing such as clothing, and others.

Employment and Wages by Industry Cluster

Overall, the twelve industry clusters account for 76 percent of total employment in Philadelphia.

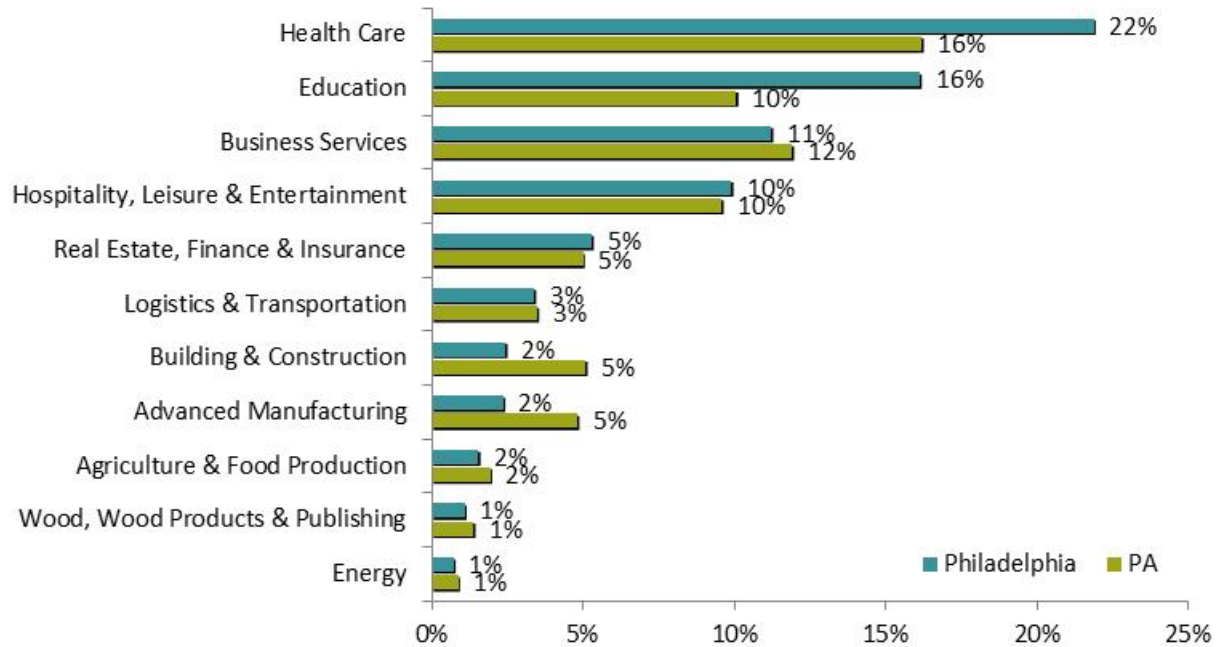
- Health Care; Education; Business Services; and Hospitality; and Leisure & Entertainment are major clusters in Philadelphia that responsible for more than half of all jobs.
- Several industry clusters in Philadelphia have added jobs since 2007 (period before the Great Recession). In Philadelphia, the Health Care industry cluster grew by 11 percent; jobs in Education increased by 10 percent; and Hospitality, Leisure & Entertainment grew by 8 percent.
- Average earnings in Philadelphia are generally higher than in Pennsylvania, for all clusters except Bio-Medical.

MAJOR CLUSTERS IN PHILADELPHIA AND PENNSYLVANIA

| Industry Cluster | Jobs 2013 (#) | Jobs 2013 (%) | % Change 2007-2013 | Earnings | Philadelphia | | | | PA | | | |
|----------------------------------|---------------|---------------|--------------------|----------|---------------|---------------|--------------------|----------|---------------|---------------|--------------------|----------|
| | | | | | Jobs 2013 (#) | Jobs 2013 (%) | % Change 2007-2013 | Earnings | Jobs 2013 (#) | Jobs 2013 (%) | % Change 2007-2013 | Earnings |
| Advanced Manufacturing | 15,892 | 2% | 2.2% | \$48,236 | 283,019 | 5% | -5.1% | \$50,801 | 283,019 | 5% | -5.1% | \$50,801 |
| Agriculture & Food Production | 10,422 | 2% | -12.7% | \$51,080 | 113,678 | 2% | -1.1% | \$42,684 | 113,678 | 2% | -1.1% | \$42,684 |
| Bio-Medical | 4,602 | 1% | 1.6% | \$82,936 | 66,805 | 1% | -11.1% | \$99,411 | 66,805 | 1% | -11.1% | \$99,411 |
| Building & Construction | 16,386 | 2% | -16.7% | \$63,805 | 298,714 | 5% | -14.2% | \$51,356 | 298,714 | 5% | -14.2% | \$51,356 |
| Business Services | 75,188 | 11% | 2.7% | \$93,344 | 699,099 | 12% | 6.7% | \$76,094 | 699,099 | 12% | 6.7% | \$76,094 |
| Education | 108,043 | 16% | 10.0% | \$49,531 | 591,168 | 10% | 0.9% | \$40,041 | 591,168 | 10% | 0.9% | \$40,041 |
| Energy | 4,905 | 1% | 52.9% | \$85,156 | 51,267 | 1% | -7.0% | \$70,100 | 51,267 | 1% | -7.0% | \$70,100 |
| Health Care | 146,511 | 22% | 10.8% | \$53,718 | 950,551 | 16% | 10.1% | \$48,122 | 950,551 | 16% | 10.1% | \$48,122 |
| Hospitality, Leisure & Ent. | 66,356 | 10% | 7.7% | \$27,468 | 562,431 | 10% | 6.3% | \$18,230 | 562,431 | 10% | 6.3% | \$18,230 |
| Logistics & Transportation | 22,709 | 3% | -3.0% | \$47,018 | 205,069 | 3% | 0.7% | \$46,164 | 205,069 | 3% | 0.7% | \$46,164 |
| Real Estate, Finance & Insurance | 35,472 | 5% | -16.6% | \$99,077 | 293,509 | 5% | -5.5% | \$74,265 | 293,509 | 5% | -5.5% | \$74,265 |
| Wood, Wood Products & Pub. | 7,363 | 1% | -19.6% | \$62,198 | 81,370 | 1% | -27.2% | \$48,449 | 81,370 | 1% | -27.2% | \$48,449 |
| All Industries | 669,939 | 100% | 1.6% | \$55,830 | 5,870,188 | 100% | -0.4% | \$47,281 | 5,870,188 | 100% | -0.4% | \$47,281 |

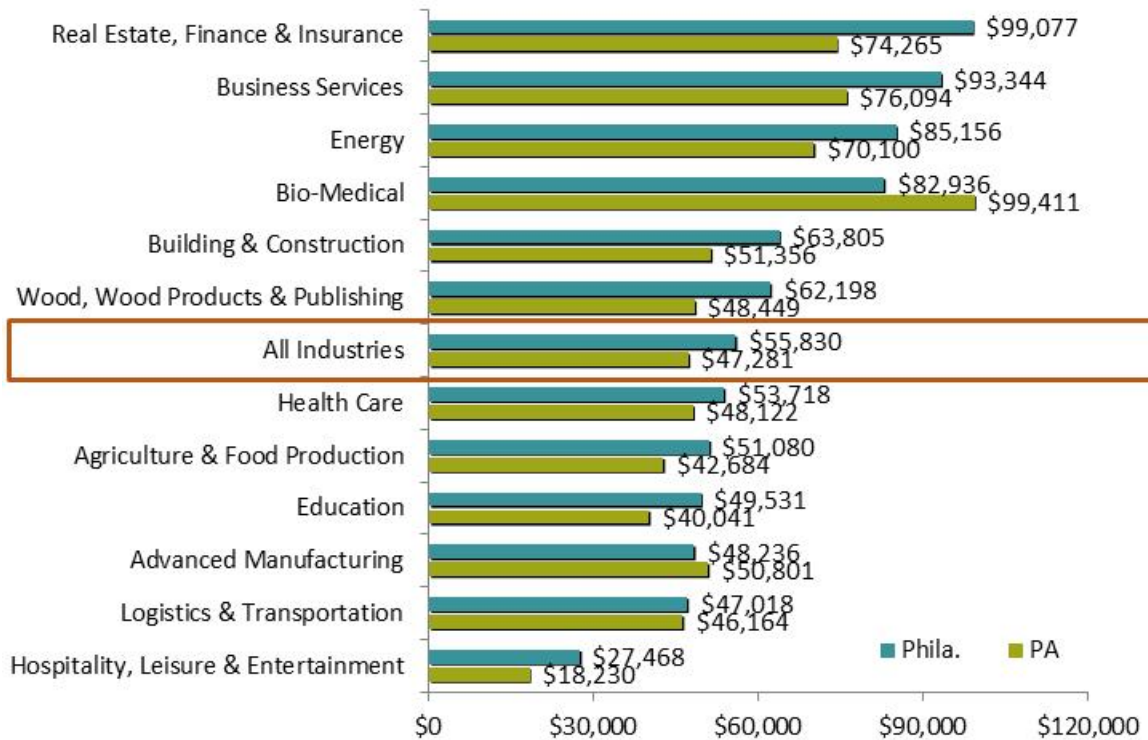
Source: Philadelphia Works analysis of the QCEW Employees & Non-QCEW Employees - EMSI 2013.4 Class of Worker data

EMPLOYMENT BY MAJOR CLUSTERS IN PHILADELPHIA AND PENNSYLVANIA IN 2013



Source: Philadelphia Works analysis of the QCEW Employees & Non-QCEW Employees - EMSI 2013.4 Class of Worker data

WAGES BY MAJOR CLUSTERS IN PHILADELPHIA AND PENNSYLVANIA IN 2013



Source: Philadelphia Works analysis of the QCEW Employees & Non-QCEW Employees - EMSI 2013.4 Class of Worker data

Employer Size by Industry Cluster

- Of over 32,000 employers with more than one employee in Philadelphia, about 11,600 employed between 5 and 99 workers. Employers (establishments) with 5 to 99 employees are defined as “small” by Philadelphia Works, to focus our strategic priority to engage more small employers. Small employers made up 36 percent of total employers in Philadelphia.
- The majority of employers in Philadelphia are “very small” businesses employing 1 to 4 workers. Such businesses made up about 19,700 or 61 percent of total employers.
- Employers in Hospitality, Leisure & Entertainment, Health Care, Business Services, and Real Estate, Finance & Insurance accounted for 56 percent of small businesses.

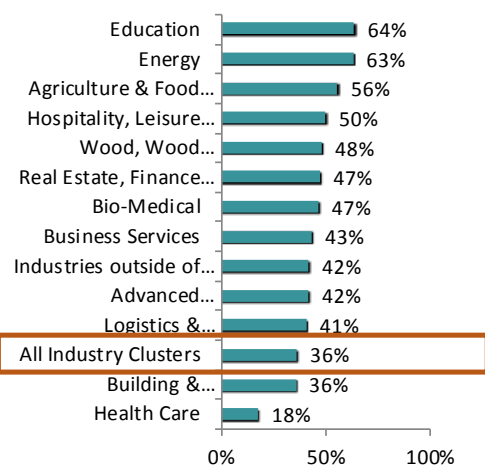
NUMBER OF EMPLOYERS BY SIZE IN INDUSTRY CLUSTERS IN PHILADELPHIA: TABLE

| Industry | 1-4 | 5-9 | 10-19 | 20-49 | 50-99 | 100-249 | 250+ | Total |
|--------------------------------------|--------|-------|-------|-------|-------|---------|------|--------|
| Agriculture & Food Production | 188 | 98 | 78 | 61 | 27 | 15 | 7 | 474 |
| Advanced Manufacturing | 596 | 201 | 124 | 90 | 31 | 19 | 5 | 1,066 |
| Bio-Medical | 53 | 22 | 14 | 14 | 4 | 8 | 1 | 116 |
| Business Services | 1,980 | 647 | 470 | 360 | 139 | 90 | 46 | 3,732 |
| Building & Construction | 908 | 252 | 156 | 79 | 34 | 22 | 6 | 1,457 |
| Education | 330 | 202 | 195 | 199 | 96 | 42 | 23 | 1,087 |
| Energy | 54 | 34 | 24 | 24 | 17 | 2 | 2 | 157 |
| Health Care | 8,639 | 867 | 575 | 345 | 118 | 94 | 76 | 10,714 |
| Hospitality, Leisure & Entertainment | 1,924 | 675 | 581 | 573 | 182 | 67 | 22 | 4,024 |
| Logistics & Transportation | 265 | 73 | 52 | 55 | 20 | 13 | 12 | 490 |
| Real Estate, Finance & Insurance | 1,115 | 479 | 344 | 163 | 62 | 37 | 16 | 2,216 |
| Wood, Wood Products & Publishing | 111 | 42 | 42 | 21 | 11 | 11 | 3 | 241 |
| Industries outside of Clusters | 3,584 | 1,173 | 825 | 527 | 154 | 104 | 27 | 6,394 |
| All Industry Clusters | 19,747 | 4,765 | 3,480 | 2,511 | 895 | 524 | 246 | 32,168 |

Source: PA Employer Database 2013

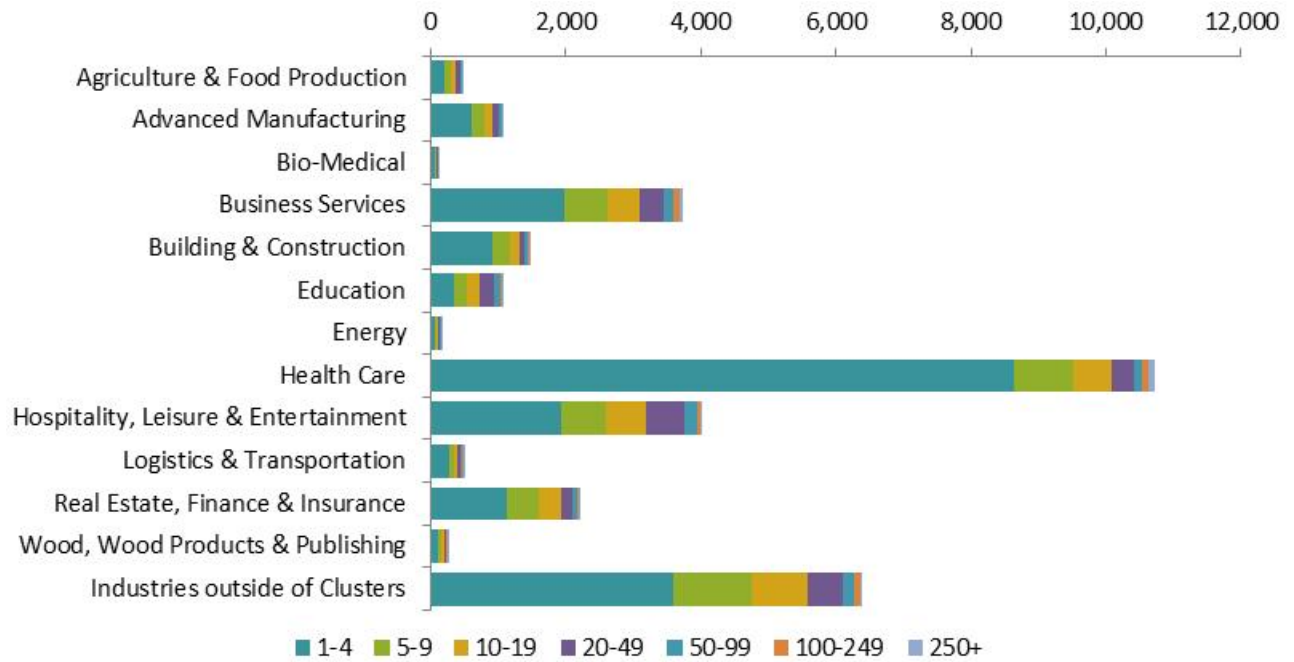
SMALL BUSINESSES (5-99 EMPLOYEES) BY INDUSTRY CLUSTER IN PHILADELPHIA

| Industry | Count | Percent |
|--------------------------------------|--------|---------|
| Industries outside of Clusters | 2,679 | 42% |
| Hospitality, Leisure & Entertainment | 2,011 | 50% |
| Health Care | 1,905 | 18% |
| Business Services | 1,616 | 43% |
| Real Estate, Finance & Insurance | 1,048 | 47% |
| Education | 692 | 64% |
| Building & Construction | 521 | 36% |
| Advanced Manufacturing | 446 | 42% |
| Agriculture & Food Production | 264 | 56% |
| Logistics & Transportation | 200 | 41% |
| Wood, Wood Products & Publishing | 116 | 48% |
| Energy | 99 | 63% |
| Bio-Medical | 54 | 47% |
| All Industry Clusters | 11,651 | 36% |



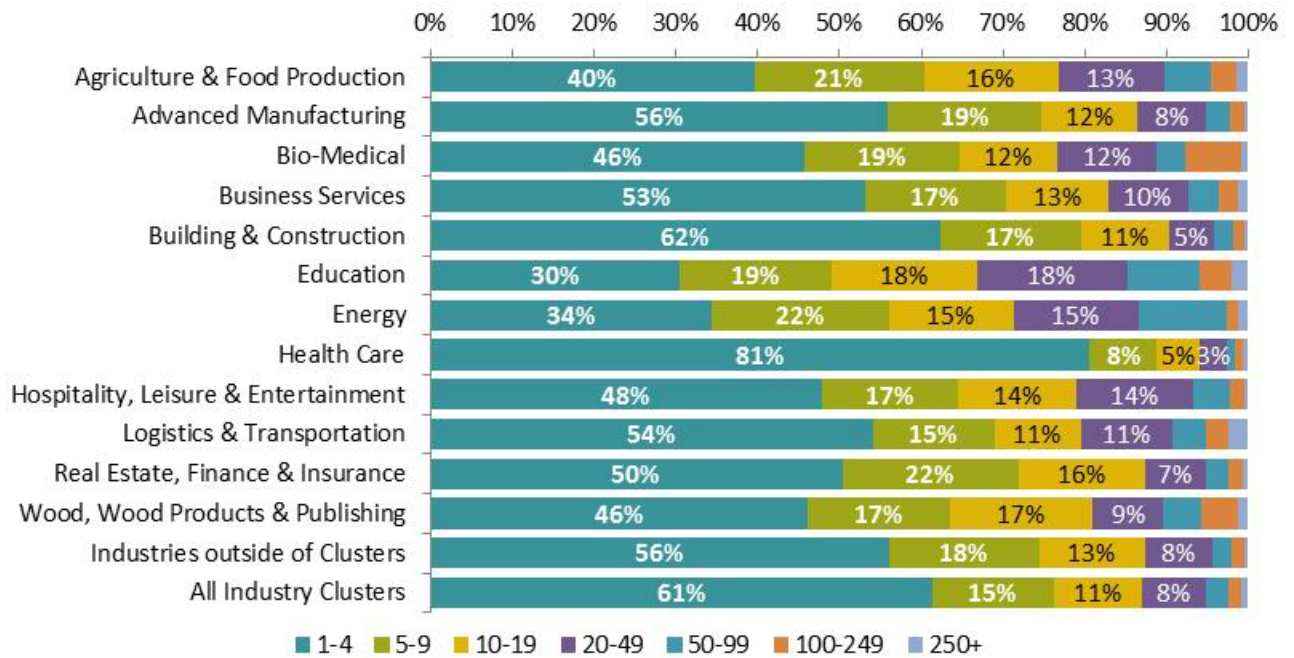
Source: PA Employer Database 2013

NUMBER OF EMPLOYERS BY INDUSTRY CLUSTER IN PHILADELPHIA: CHART



Source: PA Employer Database 2013

PERCENT OF EMPLOYERS BY SIZE IN IN INDUSTRY CLUSTERS IN PHILADELPHIA: CHART



Source: PA Employer Database 2013

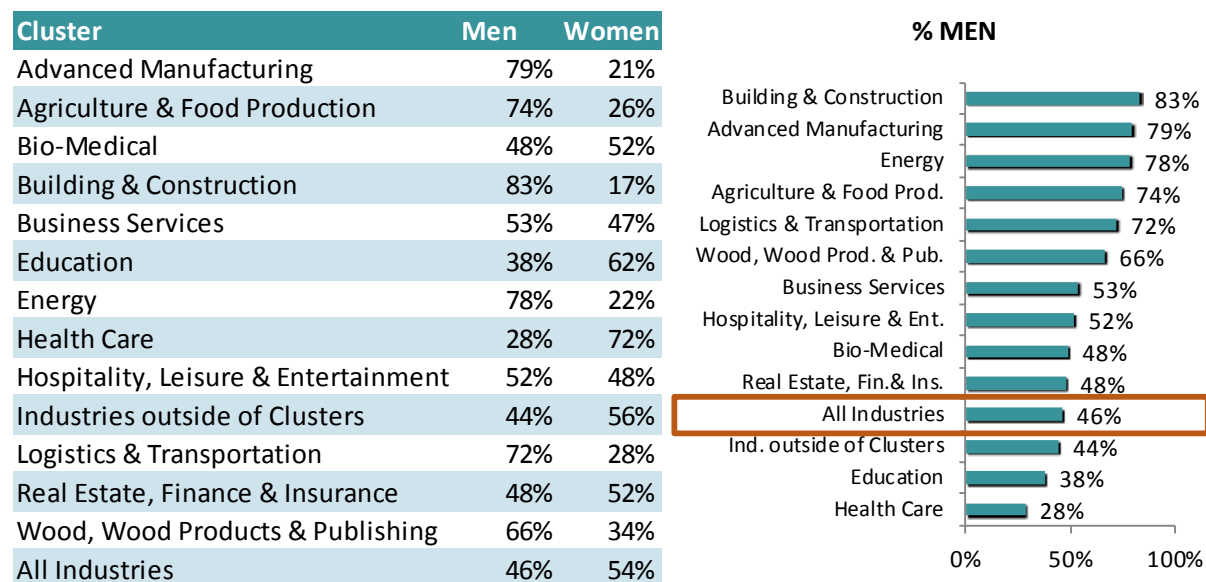
Worker Demographics by Industry Cluster

Workforce demographics are examined by gender, age, and education of workers.

Gender of Workers by Industry Cluster

- Philadelphia workers are predominantly female – women make up 54 percent of workers across all industries because of their overrepresentation in the largest industry clusters of Health Care and Education.
- The gender split is somewhat even in the Bio-Medical; Hospitality, Leisure & Entertainment; Business Services; Real Estate, Finance & Insurance industry clusters.
- Men make up a larger share of workers in Advanced Manufacturing; Building & Construction; Energy; and Logistics & Transportation.
- Women dominate the Health Care and Education industry clusters.

GENDER OF WORKERS BY INDUSTRY CLUSTER IN PHILADELPHIA IN 2013Q1+3 PREVIOUS QUARTERS



Source: Philadelphia Works Analysis of Quarterly Workforce Indicators data.

Age of Workers by Industry Cluster

- Younger workers (14-24 years old) make up 13 percent of total employment. Older workers (55 and over) make up 20 percent of the workers in Philadelphia.
- Hospitality, Leisure & Entertainment and Industries outside of Clusters employed the highest number of younger workers by volume and percent. Advanced Manufacturing, Bio-Medical, and Education clusters employed the largest share of older workers by percent.
- 25-54 year old adults are distributed across industries similar to all age groups.

TOP INDUSTRY CLUSTERS BY AGE OF WORKERS IN 2013Q1+3 PREVIOUS QUARTERS IN PHILADELPHIA:

YOUNGER WORKERS (14-24) BY VOLUME



OLDER WORKERS (55+) BY VOLUME



% YOUNGER WORKERS (14-24)



% OLDER WORKERS (55+)



Source: Philadelphia Works Analysis of Quarterly Workforce Indicators data.

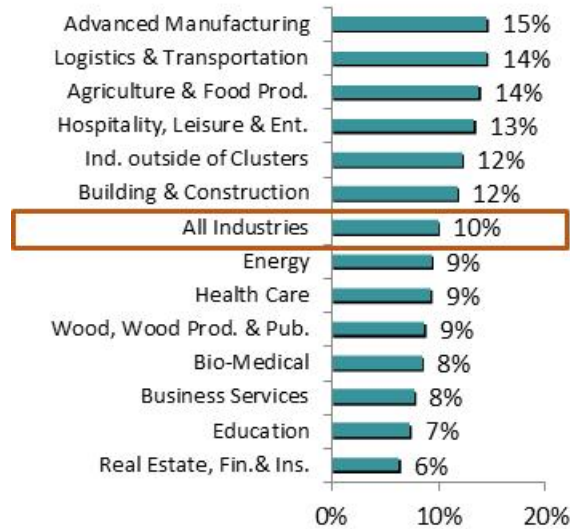
Education of Workers by Industry Cluster

- The majority of workers across all industry clusters have a Bachelor’s degree or higher (29 percent) or an Associate’s degree (26 percent).
- Educational attainment varies across industry clusters – workers without a high school diploma and with only a high school diploma made up a large share of the Advanced Manufacturing; Logistics & Transportation; and Hospitality, Leisure & Entertainment industry clusters. Workers

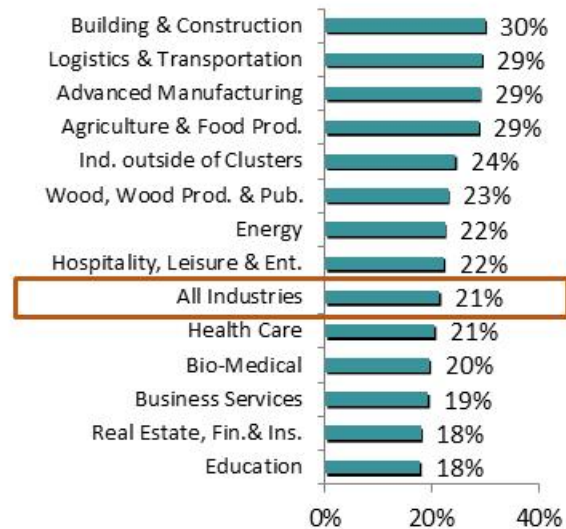
with some college or an Associate’s degree made up a large share of Health Care; Advanced Manufacturing; Logistics & Transportation; and Building & Construction industry jobs. Real Estate, Finance & Insurance; Education; Bio-Medical; and Business Services clusters rely heavily on workers with a Bachelor’s degree or higher.

EDUCATION OF WORKERS BY INDUSTRY CLUSTER IN PHILADELPHIA IN 2013Q1+3 PREVIOUS QUARTERS:

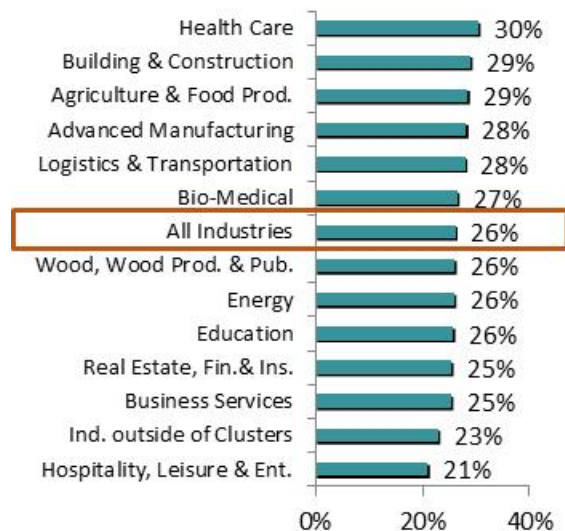
% < HIGH SCHOOL



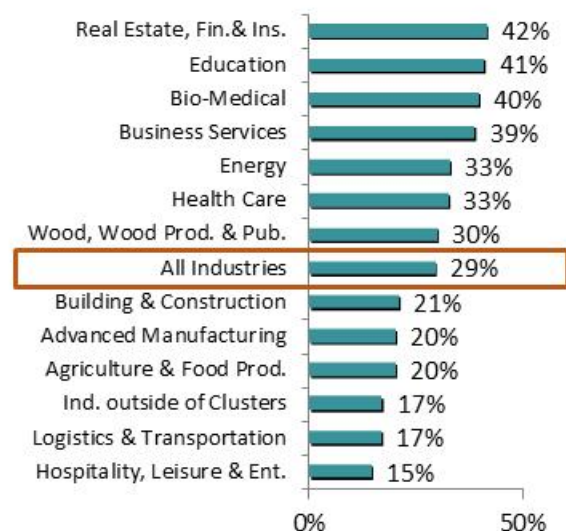
% HIGH SCHOOL DIPLOMA



% SOME COLLEGE/ASSOCIATES



% BACHELOR’S DEGREE AND OVER

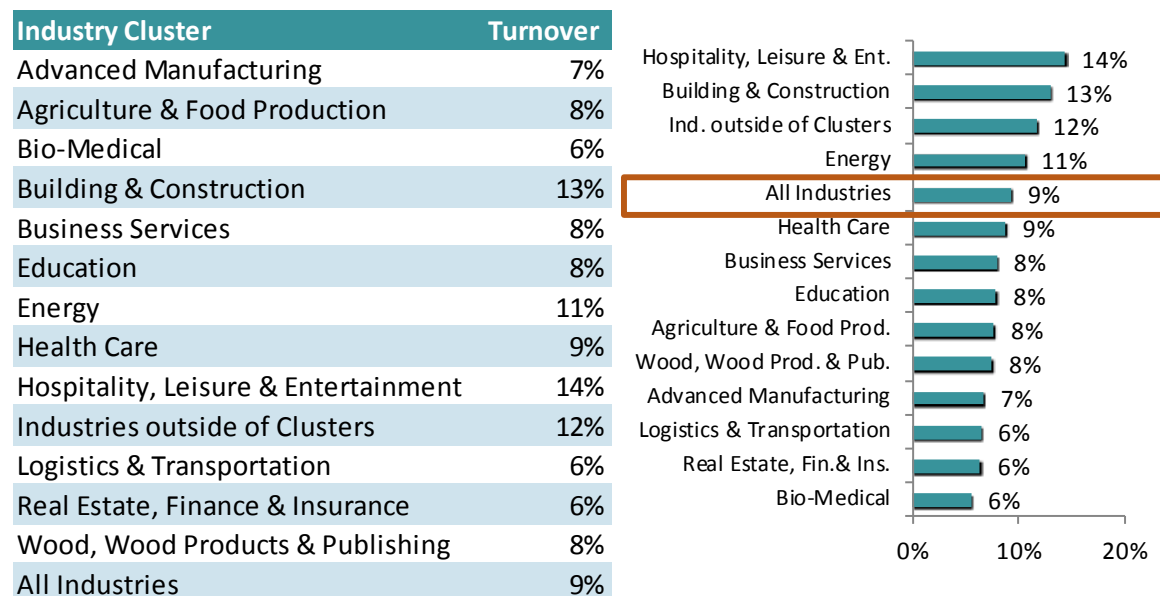


Source: Philadelphia Works Analysis of Quarterly Workforce Indicators data.

Worker Turnover by Industry Cluster

- Turnover rates help us evaluate the churning in the labor force – meaning the average number of separations and hires for the industry group. The rate shows what percentage of the labor force is new.
- Turnover rates vary by industry cluster. Turnover rates are highest in the Hospitality, Leisure & Entertainment, and Building & Construction clusters. Industries outside of Clusters have a high turnover rate as many retail businesses make up this group.

TURNOVER RATES IN PHILADELPHIA IN 2012Q3 (FOUR QUARTER MOVING AVERAGE)

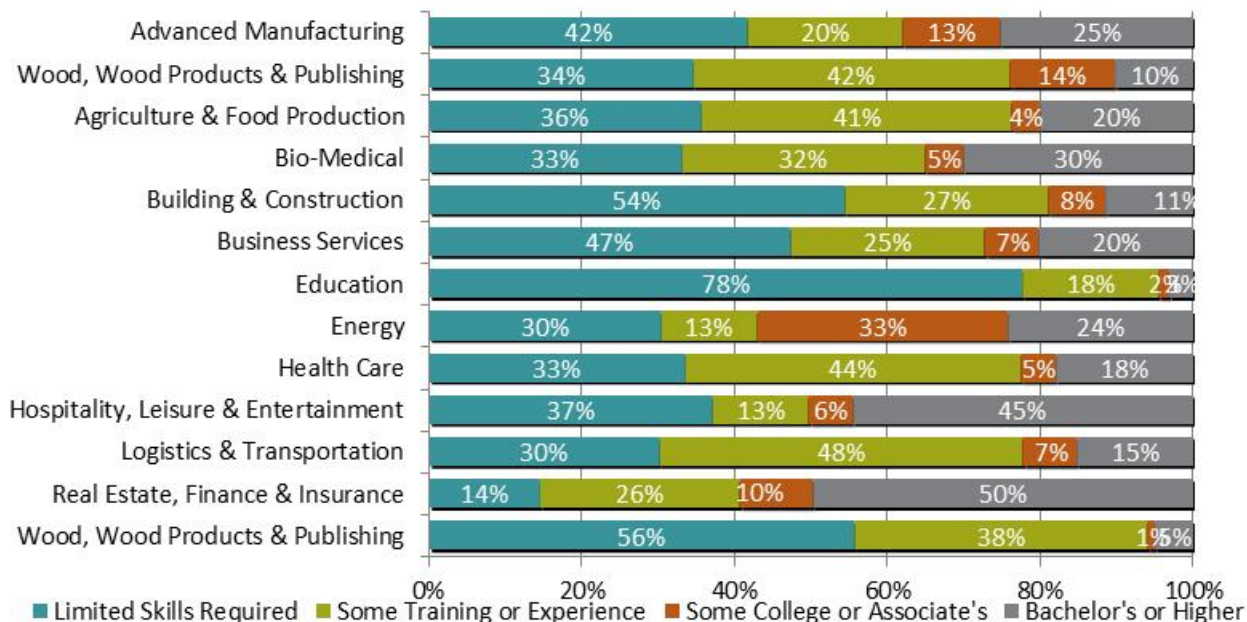


Source: Philadelphia Works Analysis of Quarterly Workforce Indicators data.

Education Required by Occupations in the Industry Clusters

Jobs found in the industry clusters vary by the level of educational attainment required. Education required by occupations in the industry clusters comes from the Bureau of Labor Statistics data that show the typical education of workers. In the real world, education and experience requirements are fluid – in many cases education can stand in for experience and the other way around in occupations not relying on professional certifications.

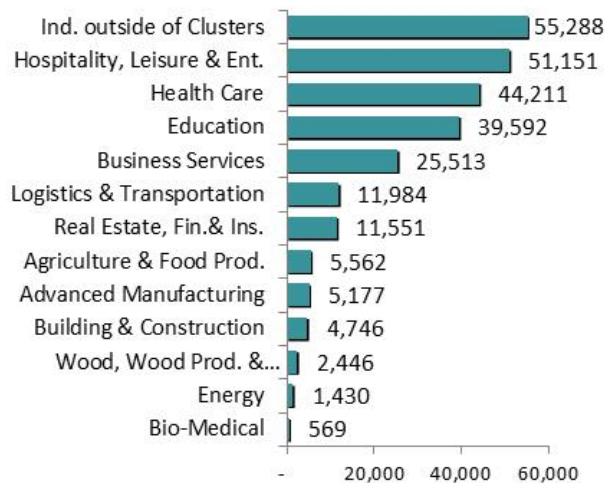
EDUCATION AND EXPERIENCE REQUIRED BY OCCUPATIONS IN THE INDUSTRY CLUSTERS



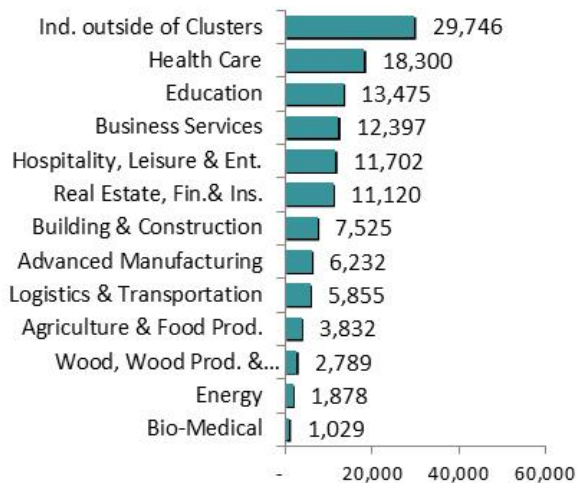
Source: Philadelphia Works analysis of the QCEW Employees & Non-QCEW Employees - EMSI 2013.4 Class of Worker data

TOP INDUSTRY CLUSTERS BY EDUCATION REQUIRED OF WORKERS: NUMBER OF JOBS

LIMITED SKILLS REQUIRED



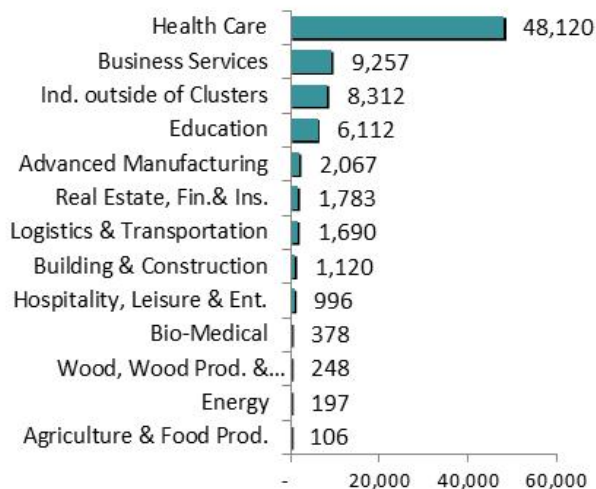
SOME TRAINING OR EXPERIENCE



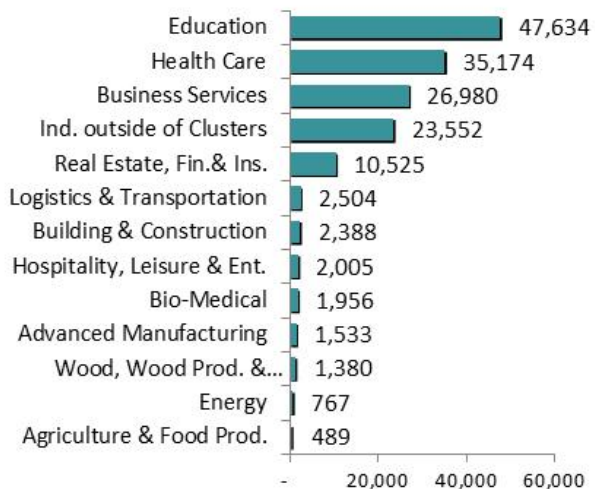
Source: Philadelphia Works analysis of the QCEW Employees & Non-QCEW Employees - EMSI 2013.4 Class of Worker data

TOP INDUSTRY CLUSTERS BY EDUCATION REQUIRED OF WORKERS:

SOME COLLEGE OR ASSOCIATE'S



BACHELOR'S OR HIGHER



Source: Philadelphia Works analysis of the QCEW Employees & Non-QCEW Employees - EMSI 2013.4 Class of Worker data

Intersection of Industry Clusters and Occupations

Staffing patterns analysis helps to identify the relationships between occupations and industry clusters. Here, we look at what occupational families (groups of occupations with similar skills) are most important to the industry clusters and examine what industry clusters need workers in selected occupational families.

- Some industry clusters source workers from several occupational families. For example, the Hospitality, Leisure & Entertainment cluster mostly relies on workers in Food Preparation with 66 percent of workers in this family. Other industry clusters such as Business Services employ workers from across several occupational families.
- Another way of examining the relationship between industries and occupations is to look at what industry clusters employ workers in major occupational families. Some occupational families, like Education occupations, are mostly **concentrated in one industry cluster** (Education). Other occupational families such as Office and Administrative Support occupations **cut across multiple industry clusters**.

The table below shows the relationship between industry clusters and occupational families and answers questions like: what occupational families support the Advanced Manufacturing industry cluster?

TOP OCCUPATIONAL FAMILIES FOUND IN TARGETED INDUSTRY CLUSTERS IN PHILADELPHIA

| Industry/Occupation | % | Industry/Occupation | % |
|---|-----|---|-----|
| Advanced Manufacturing | | Agriculture & Food Production | |
| Production | 24% | Transportation | 27% |
| Sales and related | 21% | Production | 26% |
| Instalation, maint., and repair | 19% | Sales and related | 18% |
| Office and admin. support | 13% | Office and admin. support | 13% |
| Transportation | 10% | Instalation, maint., and repair | 4% |
| Other | 13% | Other | 12% |
| Bio-Medical | | Building & Construction | |
| Life, physical, and soc.science | 19% | Construction | 40% |
| Production | 16% | Sales and related | 13% |
| Office and admin. support | 15% | Office and admin. support | 12% |
| Architecture and Engineering | 9% | Architecture and Engineering | 8% |
| Healthcare pract. | 9% | Instalation, maint., and repair | 6% |
| Other | 31% | Other | 21% |
| Business Services | | Education | |
| Office and admin. support | 25% | Education | 41% |
| Legal | 13% | Office and admin. support | 21% |
| Business and financial operations | 11% | Building and grounds cleaning and maint. | 5% |
| Protective service | 9% | Personal care and service | 5% |
| Comp. and mathematical | 7% | Management | 5% |
| Other | 36% | Other | 24% |
| Energy | | Health Care | |
| Production | 18% | Healthcare pract. | 32% |
| Office and admin. support | 17% | Healthcare support | 17% |
| Transportation | 16% | Office and admin. support | 16% |
| Instalation, maint., and repair | 14% | Community and soc. services | 10% |
| Business and financial operations | 7% | Personal care and service | 6% |
| Other | 29% | Other | 20% |
| Hospitality, Leisure & Entertainment | | Logistics & Transportation | |
| Food preparation | 66% | Transportation | 49% |
| Sales and related | 7% | Office and admin. support | 26% |
| Personal care and service | 6% | Instalation, maint., and repair | 10% |
| Office and admin. support | 5% | Business and financial operations | 4% |
| Building and grounds cleaning and maint. | 5% | Sales and related | 4% |
| Other | 11% | Other | 8% |
| Real Estate, Finance & Insurance | | Wood, Wood Products & Publishing | |
| Office and admin. support | 41% | Production | 26% |
| Business and financial operations | 23% | Sales and related | 21% |
| Sales and related | 16% | Office and admin. support | 20% |
| Management | 6% | Arts, design, ent., sports, and media | 12% |
| Comp. and mathematical | 5% | Transportation | 8% |
| Other | 10% | Other | 13% |

Source: Philadelphia Works analysis of the QCEW Employees & Non-QCEW Employees - EMSI 2013.4 Class of Worker data

Notes on Data

We followed industry cluster definitions proposed by the Center for Workforce Information & Analysis. Some industries, such as those that have a low number of jobs in Philadelphia County, were excluded from the analysis and PA industry clusters were formed in the same way to make comparisons possible.

All the wage, employment, and staffing patterns data in this report come from the EMSI 2013.4 Class of Worker Data. EMSI industry data have various sources including the QCEW (Quarterly Census of Employment and Wages), with supplemental estimates from County Business Patterns and Current Employment Statistics. Non-QCEW employees data are based on a number of sources including QCEW, Current Employment Statistics, County Business Patterns, BEA State and Local Personal Income reports, the National Industry-Occupation Employment Matrix (NIOEM), the American Community Survey, and Railroad Retirement Board statistics.

Philadelphia Works worked with the Quarterly Workforce Indicators data available through the U.S. Census and defined the industry clusters at the four-digit NAICS code level. An industry group was assigned to a cluster if most of the employment fell in that cluster. Because the data are cyclical, the quarterly data were smoothed using a simple moving average. This report shows the data for the third quarter of 2012 plus three previous quarters.

The PA Employer Database available through the Center for Workforce Information & Analysis was used to report on the employers by size.

The document was updated on September 19, 2014 to correct the number of jobs reported in the Building & Construction industry cluster.