

# STATE OF ST. LOUIS **WORKFORCE** 2016



**DRIVING THE ECONOMY...SHAPING THE WORKFORCE**

**STLCC.EDU/STLWORKFORCE**

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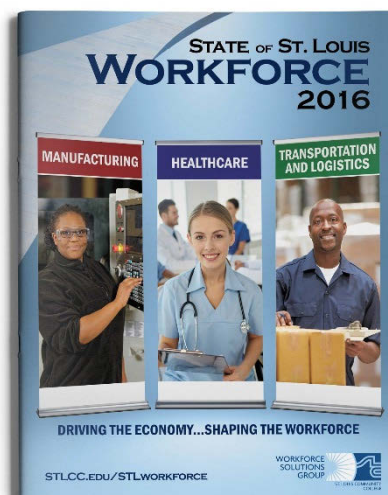
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# FOREWORD

St. Louis Community College is pleased to present the 2016 *State of St. Louis Workforce* Report. Each year since 2009, the College and its research partners have tracked the recovery and growth of our region's workforce, as well as its continuing challenges, through the research and production of this report. It has provided timely and critical workforce intelligence that has helped St. Louis Community College respond to the needs of our students and employer partners. We also believe that it has provided valuable information to the region's many public, private and community-based organizations who are struggling to prepare or acquire the skilled workforce necessary to drive our economy forward.



The *State of St. Louis Workforce* Report alternates annually between a look at a composite of the region's employment and, in the alternating year, a focus on particular sectors or disciplines. The 2015 report looked at a composite of the region's employment with special attention to the challenges that many in our region face with finding employment in light of the events in Ferguson. In 2014, the *State of St. Louis Workforce* Report took an in-depth look at the science, technology, engineering and mathematics (STEM) segment of the workforce. For 2016, the report focuses on three important industry sectors that represent the past, present and future of our economy and workforce: manufacturing, healthcare, and transportation & logistics.

By most measures, the national and regional economies have fully recovered from the great recession and are on a steady, if somewhat uneven, growth trajectory. When the recession began in December 2007, the national unemployment rate was 5%. By June 2016, the national rate had recovered to 4.9%. The gap between the unemployment rate and the number of job openings, used as a measure of labor demand, declined from a high 8.2 in October of 2009 to 1.1 in April 2016, matching the low point of 1.1 for that measure from March 2007. In December 2007, there were 1.9 unemployed workers for each job opening. By July 2009, that number had grown to 6.6 unemployed workers for each job opening. As of May 2016, there are only 1.4 unemployed per opening. Likewise the St. Louis MSA unemployment rate dropped from 5.4 % in May 2015 to 4.5% in May 2016.

Two other measures call for a little more caution in an analysis of recovery. The U-6 unemployment rate includes those marginally attached to the labor force or working part time for economic reasons. The U-6 rate was 8.8% in December 2007 and reached a peak of 17.1% in April 2010. In June 2016, the U-6 rate was 9.6%, still above the level when the recession began. Likewise the Labor

Force Participation Rate was 66% in December 2007 and has since dropped to 62.7% in June 2016. These two measures taken together may suggest that there are still workers on the sidelines waiting to come back into the labor market.

We chose manufacturing, healthcare, and transportation & logistics as the focus of this year's report for specific reasons. Manufacturing is a rich part of our history and will play an important part in our future if we can make the adjustments to new markets and technologies. Healthcare not only has provided a strong employment base for the region, but also shows growth opportunities in health information and services. Transportation & logistics represents untapped growth for our region, given our central location and multi-modal capacity. Each of these sectors has strong regional industry and government collaborations to facilitate their growth and success.

For 2016, we conducted telephone interviews with 478 employers representing the three industry sectors in the St. Louis region. With the help of our partners at the Missouri Economic Research and Information Center, we compiled labor market information from public sources, such as the Bureau of Labor Statistics and the Census Bureau. To provide deeper insights, we used analytical tools such as the Burning Glass real-time labor market analytics tool. The information gathered reflects strength and opportunity for our region's economy, but with ever-present challenges in matching workers with jobs.

We would like to thank and acknowledge our employers, research and media partners without whom we would not be able to bring this informative workforce report to the region. We hope you will find this report valuable and use its findings for the benefit of your organization and our community.

Sincerely,



**Jeff Pittman, Ph.D.**  
Chancellor



**Stephen Long, M.P.A.**  
Associate Vice Chancellor  
Workforce Solutions

# TABLE OF CONTENTS

Foreword.....	ii
Executive Summary.....	1
Methodology.....	5
St. Louis Economy .....	7
Employer Survey .....	22
Conversations with Key Leaders.....	54
Acknowledgements .....	65
Sources.....	66
Appendix I: State of St. Louis Workforce Employer Survey 2016.....	67

# EXECUTIVE SUMMARY

By most measures the United States and our St. Louis regional economy has all but recovered from the great recession that officially began in December 2007 and are on a steady, if somewhat uneven, growth trajectory. When the recession began in December 2007, the national unemployment rate was 5%. In October 2009 it had peaked at 10%, but by June 2016 the national rate had recovered to 4.9%. The gap between the unemployment rate and the number of job openings, used as a measure of labor demand, declined from a high of 8.2 in October 2009 to 1.1 in April 2016, matching the low point of 1.1 for that measure from a pre-recession level of March 2007. In December 2007, there were 1.9 unemployed workers for each job opening. By July 2009 that number had grown to 6.6 unemployed workers for each job opening. As of May 2016, there were only 1.4 unemployed per opening. Between July 1, 2011, and June 30, 2016, the U.S. economy created more than 12 million jobs.

Two other measures call for a little more caution in an analysis of the recovery. The U-6 unemployment rate includes those marginally attached to the labor force or working part time for economic reasons. The U-6 rate was 8.8% in December 2007 and reached a peak of 17.1% in April 2010. In June 2016, the U-6 rate was 9.6%, still above the level when the recession began. Likewise the Labor Force Participation Rate was 66% in December 2007 and has since dropped to 62.7% in June 2016. These two measures taken together may suggest that there are still workers on the sidelines waiting to come back into the labor market.

Gross Domestic Product (GDP) growth has been slow and uneven over the last year (April 1, 2015-March 31, 2016), averaging 2.1% over that period. Nevertheless, the trajectory is up, if at a slow pace. Despite being buffeted by oil price shocks, the uncertainty of Federal Reserve policy, slow growth in China and Japan and, more recently, the decision by Britain to leave the European common market, U.S. equities markets are again at all-time highs. The United States is still considered the “best house in a bad neighborhood” relative to global economic investment and growth and money is flowing into U.S. Treasuries, with the downside effect of making our export goods more expensive.

Likewise the St. Louis MSA unemployment rate dropped from 5.4% in May 2015 to 4.5% in May 2016. This compare to a 10.9% peak unemployment rate in October 2009. The number of unemployed in the St. Louis area has steadily dropped from 104,000 in 2013 to an estimated 68,000 in May 2016, a decrease of 35% over three years. The GDP for our region increased from \$145 billion in 2013 to \$150 billion in 2014. Economic output was dominated by private sector service



providers (73%), private sector goods producers (17%) and government (10%). The industries with the largest employment gains were professional and business services, educational services, leisure and hospitality, and wholesale trade. The industries with the largest declines were information, manufacturing and retail trade.

As in the previous year, unemployment by industry is led by construction at 14.5% and leisure and hospitality at 11.7%. Like the nation's workforce, St. Louis' workforce is aging, with significant growth in the 55-64 and 65-plus age cohorts, which represented nearly 22% of the workforce in 2015. Educational attainment is still a significant factor keeping unemployment rates high and wages low for those without adequate levels of education. For those without a high school degree or GED, the unemployment rate actually increased from 15.1% in 2013 to 18.1% in 2014, the only educational attainment cohort to do so. As in past surveys, nearly one-half of our region's population 25 and older have a high school diploma but no postsecondary education.

For this 2016 report, we chose to focus on three industries important to the past, present and future of the St. Louis economy: manufacturing, healthcare, and transportation & logistics. Nearly one in every four jobs in the St. Louis economy works in one of these sectors. Manufacturing is a rich part of our history and will play an important part in our future if we can make the adjustments to new markets and technologies. Healthcare not only has provided a strong employment base for the region, but also shows growth opportunities in health information and services. Transportation & logistics represents untapped growth for our region given our central location and multi-modal capacity. Each of these sectors has strong regional industry and government collaborations to facilitate their growth and success. It is for these reasons that we believe it is appropriate to focus special attention on them.

The *State of St. Louis Workforce* Report is divided into three sections. The *St. Louis Economy* compiles labor market information, which is publically available, as well as data that is gathered through proprietary analytical tools. The *Employer Survey* is based on a telephone survey of 478 employers across the three targeted industries. Finally, we have included a section on *Conversations with Key Leaders* representing groups engaged in collaborative efforts to create business and jobs in these important industry sectors.

The 2016 *Employer Survey* differs from the previous year in that it is focused on three specific industry sectors rather than a composite of the regional economy. Our local economy is driven largely by personal consumption and personal services, which account for about 70% of the economic activity, and is dominated by small business establishments. The 2016 survey is based on a smaller sample size comprised of employers in the three sectors. The sample trends toward somewhat larger establishment size than in 2015 and is somewhat tilted toward healthcare due to higher

response rates. Since the *State of St. Louis Workforce* Report now alternates between a composite survey reflecting all industries and a more narrowly focused survey, a true comparison for longitudinal trends in the overall economy will need to wait for the 2017 report. However, this report will point out where previous trends are holding or where there are differences due to the nature of the targeted sectors.

In a general sense the employment and workforce trends we have been tracking hold up for these three sectors in 2016. Approximately 35% of the employers surveyed reported increased employment over the past year and only 13% reported decreases. The majority of employers (53%) reported that their employment levels had stayed about the same. Looking forward, more than 4 in 10 employers anticipate expanding employment and fewer than 2% anticipate decreasing. The majority, 57%, anticipate employment remaining the same. Again, this follows past trends, with the exception of an even lower number of employers anticipating decreases.

As they did in 2015, employers responding to the survey report that a *shortage of workers with knowledge and skills* is their most significant barrier to expanding employment. About half of employers reported this barrier for 2016. Although this was a slight decrease from the response level of employers from all industries in 2015, it still tracks this trend. For 2016, one-third more employers reported a *shortage of workers* as a barrier than *economic conditions* and nearly twice as many employers reported *shortage of workers* as compared to *government policies*.

As in all past surveys, employers have been asked about their perceptions of the shortcomings of applicants for their positions across several different descriptors (*e.g. poor work ethic, communication skills, problem solving ability*). The 2015 survey saw response rates to these questions jump to a range of 69% to 73% of employers who found these skills lacking in their applicants. For 2016, about two of every three employers surveyed reported *poor work ethic, lack of communication or interpersonal skills, and lack of critical thinking and problem solving* in their applicants closely tracking this trend.

Although a somewhat smaller proportion of employers reported a shortage of skilled applicants from this year's survey compared to 2015 (45% vs. 55%), nearly 8 in 10 employers reporting a shortage responded that they *were forced to hire less experienced workers and train them* and more than half responded that they *were offering increased wages due to skill shortages* in order to address this skill shortage.

While the 2015 survey reflected a slight decrease in education and experience requirements that we believe reflected employers' response to a tight labor market, the industry focus of the 2016 survey, manufacturing, healthcare, and transportation & logistics, reflected higher levels of experience and education required as compared to the all industry focus of the 2015 report. This would seem logical given the more specific credential, licensure and certification requirements of these industries.



When employers were asked about skill shortages in functional areas (business management, transportation & logistics, customer service, information technology, skilled production and maintenance, engineering and patient care), they most often cited the *lack of graduates in the discipline* and the *competition for graduates* as the reasons in about equal frequency.

In the 2015 survey, we began asking employers questions that attempted to focus on the opportunities that existed for disadvantaged populations to secure employment and move up a career ladder. For the 2016 survey, we again asked employers whether they had positions in their organizations that were available to applicants with short-term training and had an advancement pathway. Of employers surveyed, 85% had some jobs with career pathway advancement opportunities while 71% had jobs that were available with only short-term training (six months or less), providing great employment and advancement opportunities in these growing industries.

As part of this year's report we included the results of more in-depth interviews with individuals who represent organizations that are moving the region forward to sustain and grow these important industry sectors. These include:

- The *Regional Advanced Manufacturing Partnership (RAMP)*, led by the St. Louis Economic Development Partnership. The goals of RAMP are to help the manufacturing industries in St. Louis adapt to new market opportunities, and to align regional business, educational and governmental resources to accomplish this task;
- The *Missouri Hospital Association* is the industry association working with many regional healthcare organizations to address, among other issues, the workforce challenges of the healthcare industry; and
- The *St. Louis Regional Freightway*, led by Bi-State Development and a consortium of regional transportation companies. The goal of St. Louis Regional Freightway is to leverage the strategic transportation assets of our region, including our central location and multi-modal facilities, to grow the transportation, distribution and logistics industry in St. Louis.

We believe that the 2016 *State of St. Louis Workforce* Report not only provides continuity of research across the last eight years, but also focuses on key strategic areas that represent challenges, but more importantly, opportunities for our region. St. Louis Community College is not only pleased to bring this report to the region, but also contribute to solving the issues raised and to move St. Louis forward for the benefit of its citizens.

# METHODOLOGY

The 2016 *State of St. Louis Workforce* Report is the eighth in a series of reports dating back to 2009. These reports have provided valuable information and insights into the economic conditions and workforce issues challenging employers and job seekers and impacting the regional labor market. This year's report is made up of three distinct parts: the *St. Louis Economy*, a compilation of labor market information using public and proprietary sources and tools; the *Employer Survey*; and *Conversations with Key Leaders* representing organizations engaged in collaborative efforts to create business and jobs in these important industry sectors.

## *St. Louis Economy*

As in previous reports, this year's report includes an analysis of available data from public sources such as the Bureau of Labor Statistics and the United States Census Bureau which describes the characteristics of the labor force and correlates unemployment with various labor force demographics. Also included is an analysis of real time labor market demand aggregated through a proprietary tool "Burning Glass" which searches web-based job boards to discern the level of demand for certain occupations and the skills and certifications which employers are requesting.

## *Employer Survey*

As always, the *State of St. Louis Workforce* Report relies heavily on first person interviews of regional employers. After addressing the 2015 survey of employers to the broad spectrum of industries that make up our regional economy, the 2016 survey provides a more focused look at three industry sectors that are key to the economic growth of our region. Approximately 478 local companies were surveyed by telephone during the summer of 2016 representing the seven NAICS (North American Industry Classification System) industries that comprise the three targeted industry sectors. They were asked a series of twelve questions, some with multiple parts, related to hiring trends and skill needs. Companies interviewed for the survey were selected from the Reference USA employer database provided by the Missouri Economic Research and Information Center (MERIC).

## *Conversations with Key Leaders*

In order to provide some deeper understanding and insight into factors driving the workforce needs of these three targeted sectors, we had conversations with key leaders representing organizations engaged in collaborative efforts to create business and jobs in these important industry sectors. These individuals were selected because of their leadership roles in addressing challenges and shaping the

future of these industries in St. Louis. The interviews were conducted in person or by phone, supplemented with email when necessary, between July 8 and July 22, 2016.

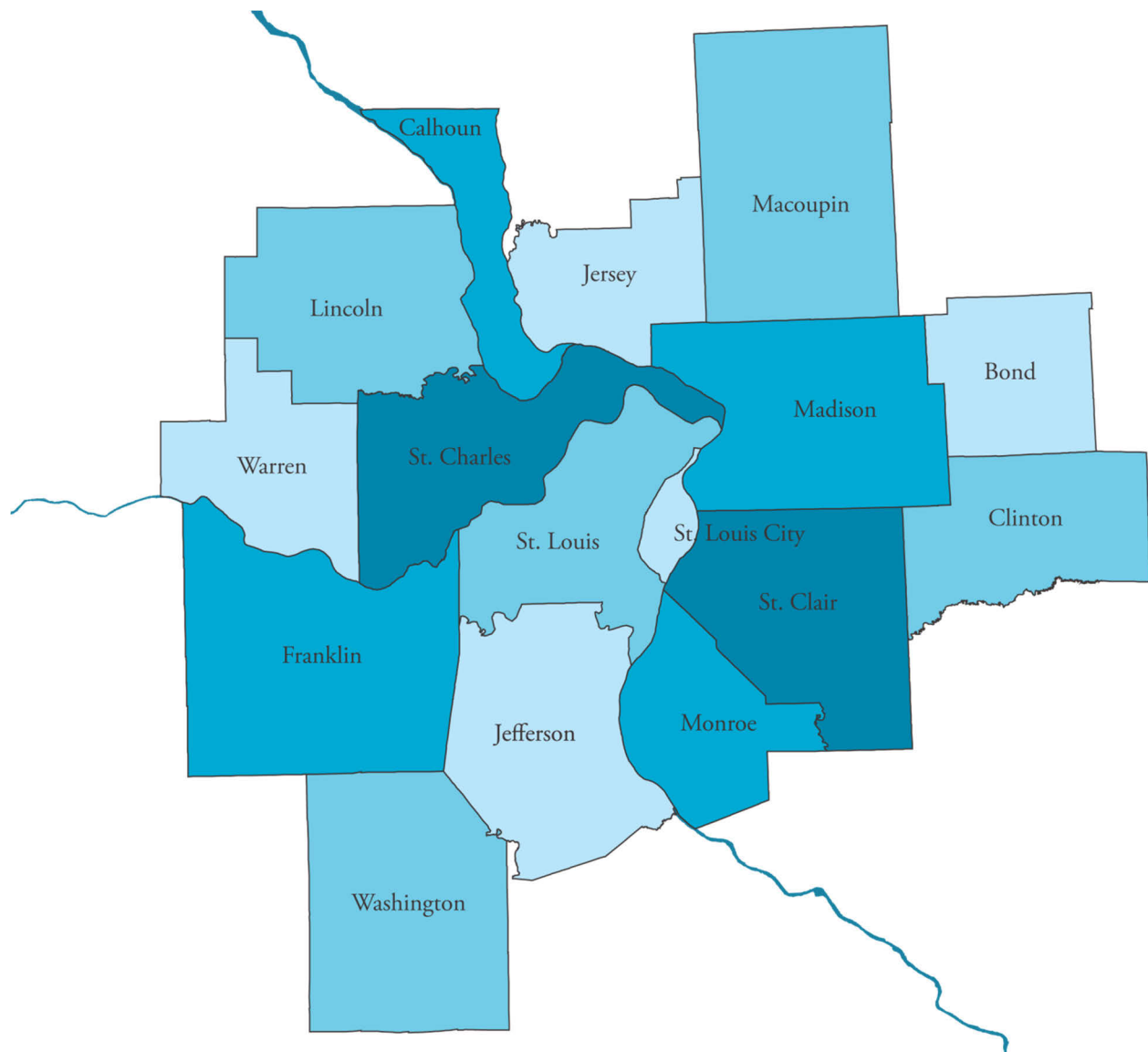
## *Summary*

We believe the methodology followed for the 2016 report is sound and well established and its results track well with previous years' reports and yielded valid and important information for the region.



# ST. LOUIS ECONOMY

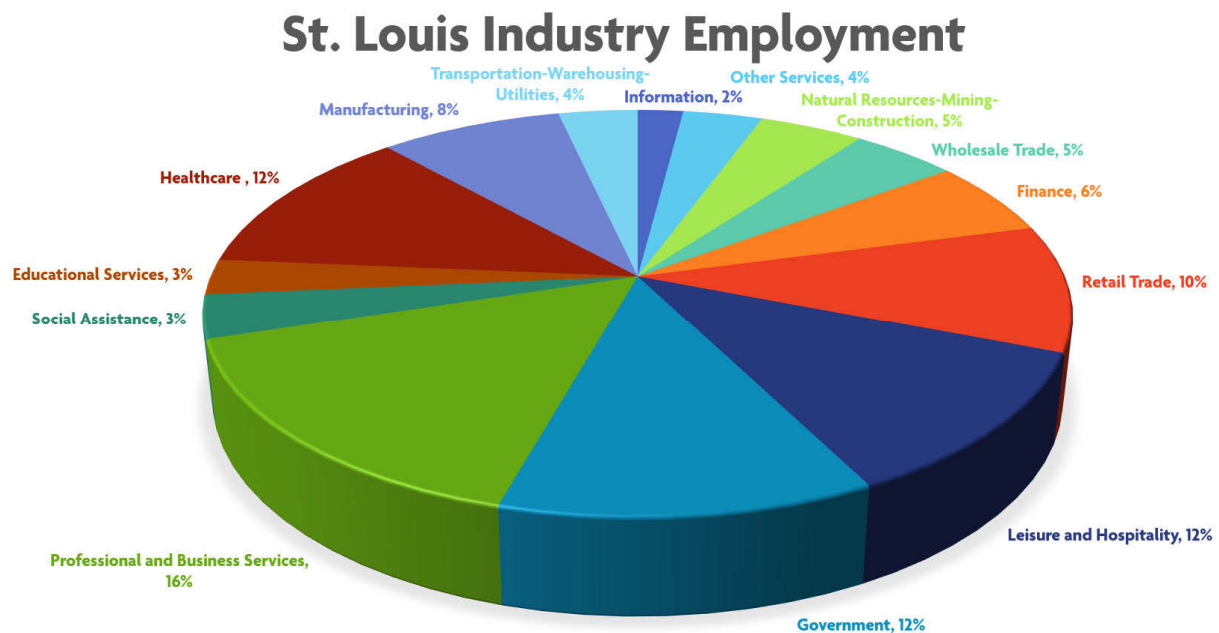
The bi-state St. Louis Missouri-Illinois Metropolitan Statistical Area (MSA) includes 16 counties that straddle the Mississippi River with an estimated population of over 2.8 million. According to the U.S. Bureau of Economic Analysis, the area had a Gross Domestic Product (GDP) of nearly \$150 billion in 2014. The industry with the highest GDP was *Financial Activities*, with \$30 billion. *Private sector service providers* accounted for 73 percent of the regions' output, followed by *Goods-producers* (17%), and *Government* (10%).



*St. Louis Missouri-Illinois Bi-State Metropolitan Statistical Area*

## Employment

The St. Louis MSA has a diverse economy with a labor force of nearly 1.4 million that work in a wide range of industries. The industries with the largest employment gains over the past year, from May 2015 to May 2016, were in *Professional & Business Services*, *Educational Services*, *Leisure & Hospitality*, and *Wholesale Trade*, according to the Bureau of Labor Statistics. *Information*, *Manufacturing*, and *Retail Trade* sectors had the largest declines over the past year. *Healthcare*, *Manufacturing*, and *Transportation & Warehousing*, the focus of this year's survey, together make up nearly one out of every four jobs (24%) in the St. Louis economy.



Source: May 2016 Current Employment Statistics, U.S. Bureau of Labor Statistics, Preliminary estimates.

St. Louis is home to several industry clusters. Large employment concentrations in a mix of sectors highlight regional economic strengths and the connections these industries have to this year's survey focus. Bioscience (plant and medical) research and production represent important area clusters with a range of companies, such as Monsanto, Mallinckrodt, and Sigma-Aldrich, and research institutions like the Danforth Plant Science Center and Washington University, that are engaged in these activities.

*Healthcare* in the St. Louis region is characterized not only by this concentration of bioscience and related health science research but also by a strong network of education institutions representing a well-known regional strength and benefitting a growing demand for *Healthcare* services across the country. St. Louis is home to large hospital networks such as BJC Healthcare, Mercy, and

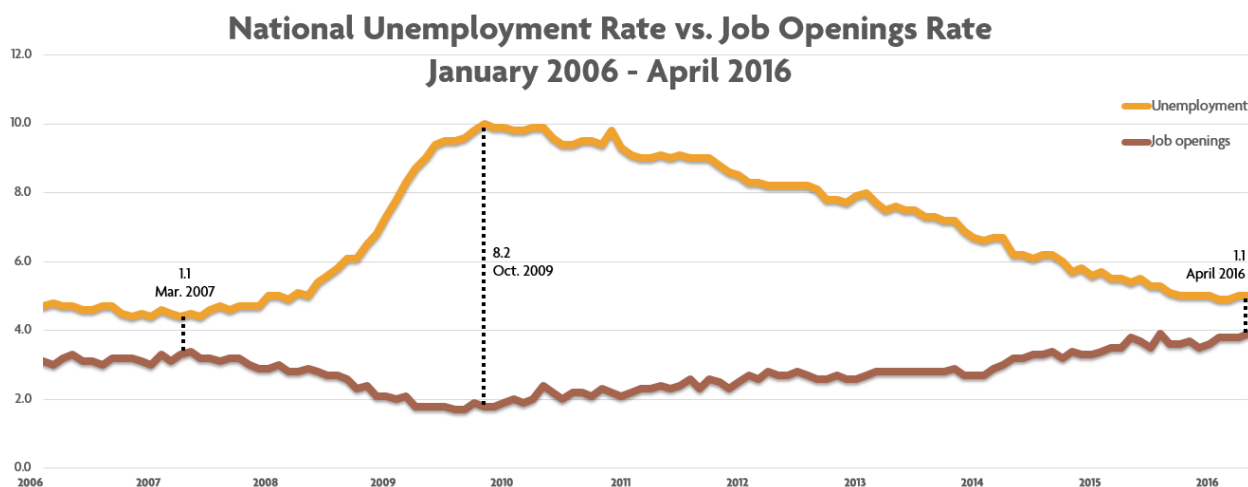
SSM Health, along with Fortune 500 companies like Express Scripts and Centene focused on health services, which together create a strong regional cluster.

*Manufacturing* in transportation equipment, chemical, food and related products, and industrial machinery are also concentrated in St. Louis. Boeing Defense, Space, & Security, Emerson, and Anheuser-Busch InBev have long called this city home and employ thousands of workers. General Motors, Nestle Purina PetCare, and True Manufacturing, among many others, also have large operations in the metropolitan area.

*Transportation & Warehousing*, along with logistics service providers, directly facilitates the movement of products in St. Louis and are key partners in this region's continued strength as a maker and mover of goods. These producers benefit from St. Louis' central U.S. location and transportation infrastructure that has been built up to move goods by train, plane, river and road to customers throughout the Midwest, United States, and to foreign countries. The announcement of a new Amazon distribution center is one example of the growing importance of transportation and logistics to the region.

## Unemployment

Preliminary estimates show the St. Louis MSA seasonally-adjusted unemployment rate was 4.5 in May 2016, down from last year's rate of 5.4 in May of 2015. This is lower than the national rate of 4.7 percent and higher than Missouri's rate of 4.3 percent. As of May 2016, there are still over 68,000 people estimated to be unemployed in the area. However, this is a decrease from the over 79,000 people that were unemployed last year at this time.

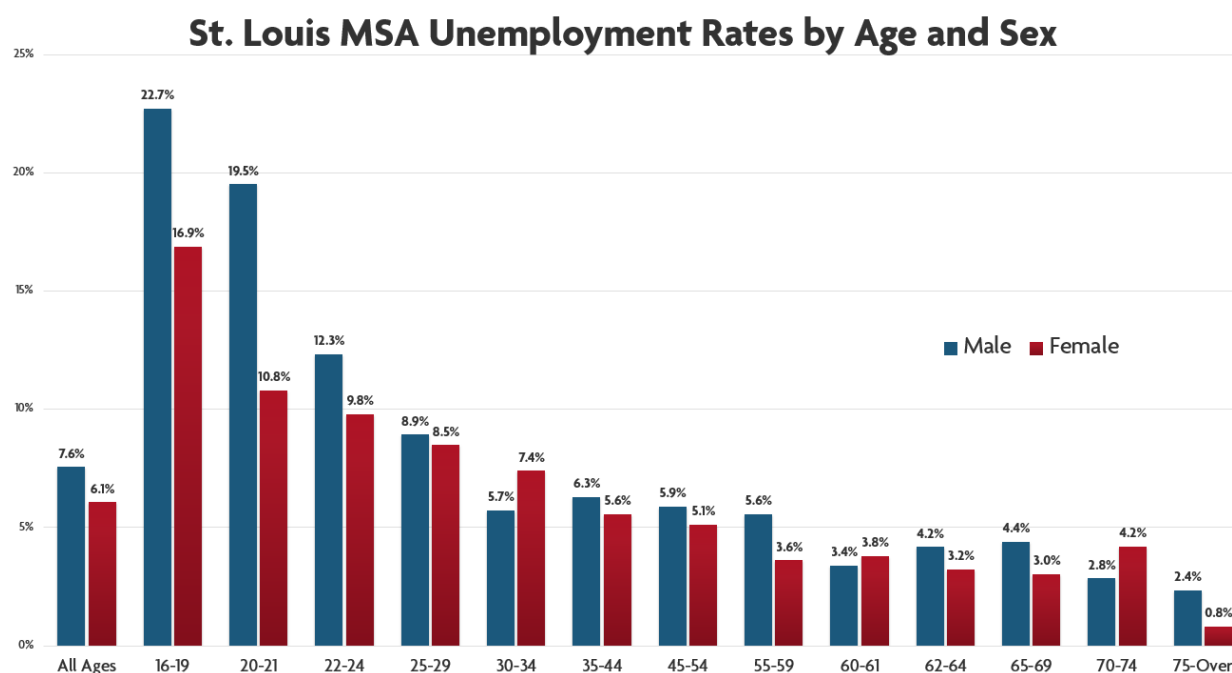


Source: U.S. Bureau of Labor Statistics.

Nationally and regionally, the unemployment rate has declined. The chart on page 9 shows how the job market has changed over the past decade. Job openings and unemployment rates provide a measure of labor demand based on the gap between the two measures. In good times the gap is small (generally less than 2) but during the recession, the gap widens as the October 2009 peak of 8.2 illustrates. Currently, 2016 marked the first year that we saw a return to pre-recession levels with a gap of 1.1, the lowest it has been since 2007.

## Unemployment Demographics

Unemployment rates vary greatly with age and sex. As the chart indicates, younger workers, particularly those under age 21, had unemployment rates at or above 10.8 percent in the St. Louis metro during 2014. Men in the 16-19 age range had the highest rate at 22.7 percent. While there is a large disparity in unemployment rates between males and females in younger and older groups, rates were similar in the 35-54 age groups. St. Louis mirrors the national trend of higher unemployment rates in workers less than 21 years of age, and similar rates between males and females in the middle range age groups. Nationally, unemployment rates in the 30-44 age groups were similar for males and females, and the unemployment rate for the 45-54 age group was 5.3% for both males and females. Unemployment rates for males in St. Louis in the 75+ age groups were below 3%, lower than the national rates, which were over 4%.



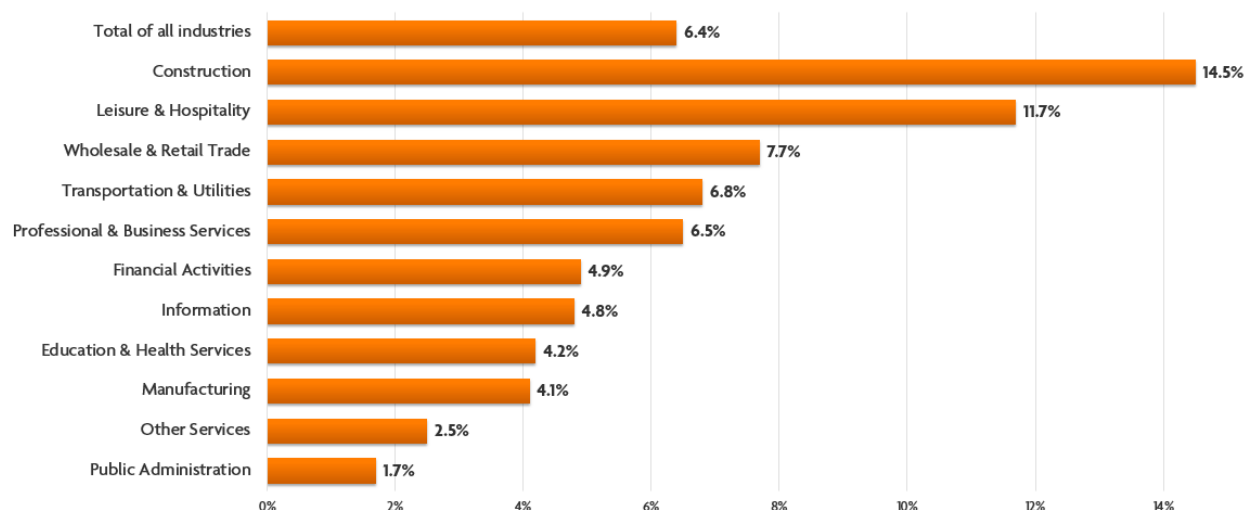
Source: 2014 American Community Survey, U.S. Census Bureau.



For 2014, unemployment rates were the highest in the *Construction* and *Leisure & Hospitality* industries. *Construction* had the highest unemployment rate at 14.5 percent while the rate for *Leisure & Hospitality* was 11.7%. Nationally, *Construction* and *Leisure & Hospitality* also had the highest unemployment rates, at 8.9 and 8.6 percent.

Rates were lowest in *Public Administration*, *Other Services*, *Manufacturing*, and *Education & Health*. The St. Louis unemployment rate in *Manufacturing* was lower than the national rate of 4.9%.

### St. Louis MSA Unemployment Rates by Industry



Source: U.S. Department of Labor, Bureau of Labor Statistics, *Geographic Profile of Employment and Unemployment 2014*.

The old saying, “education pays,” is still true as it relates to income and risk of unemployment. For example, 2014 St. Louis MSA data show that having some college or an associates degree, versus only a high school diploma, reduces the unemployment rate by 3.5 points and provides \$5,163 annually in average extra earnings. A bachelor’s degree or higher further reduces the unemployment rate and increases earnings.

### St. Louis MSA Unemployment Rates and Earnings by Education

Unemployment Rates	Educational Attainment	Median Earnings
18.1%	Less than high school graduate	\$20,911
9.3%	High school graduate / GED	\$28,404
5.8%	Some college or associates degree	\$33,567
2.6%	Bachelor's degree or higher*	\$50,504 / \$62,872

Population 25 years and older.

\*Bachelor’s (\$50,504) and Graduate (\$62,872) degree medians.

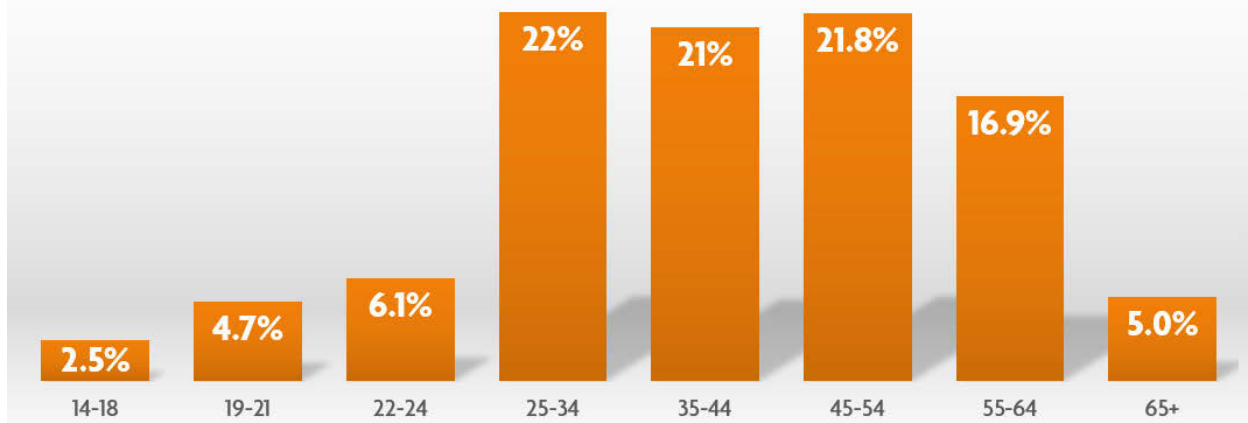
Source: 2014 American Community Survey, U.S. Census Bureau.

The highest unemployment rates and lowest wages belong to those workers with less than a high school education. Unemployment rates for a less than high school graduate are nearly 50% higher than those of a worker with a high school diploma or GED, and nearly seven times the rate of a worker with a bachelor's degree. The unemployment rate for those without a high school degree or GED actually increased between 2013 and 2014 while the rate for all other educational attainment groups decreased. Clearly, young and/or less educated job seekers have had a more difficult time finding employment.

## *Workforce Characteristics*

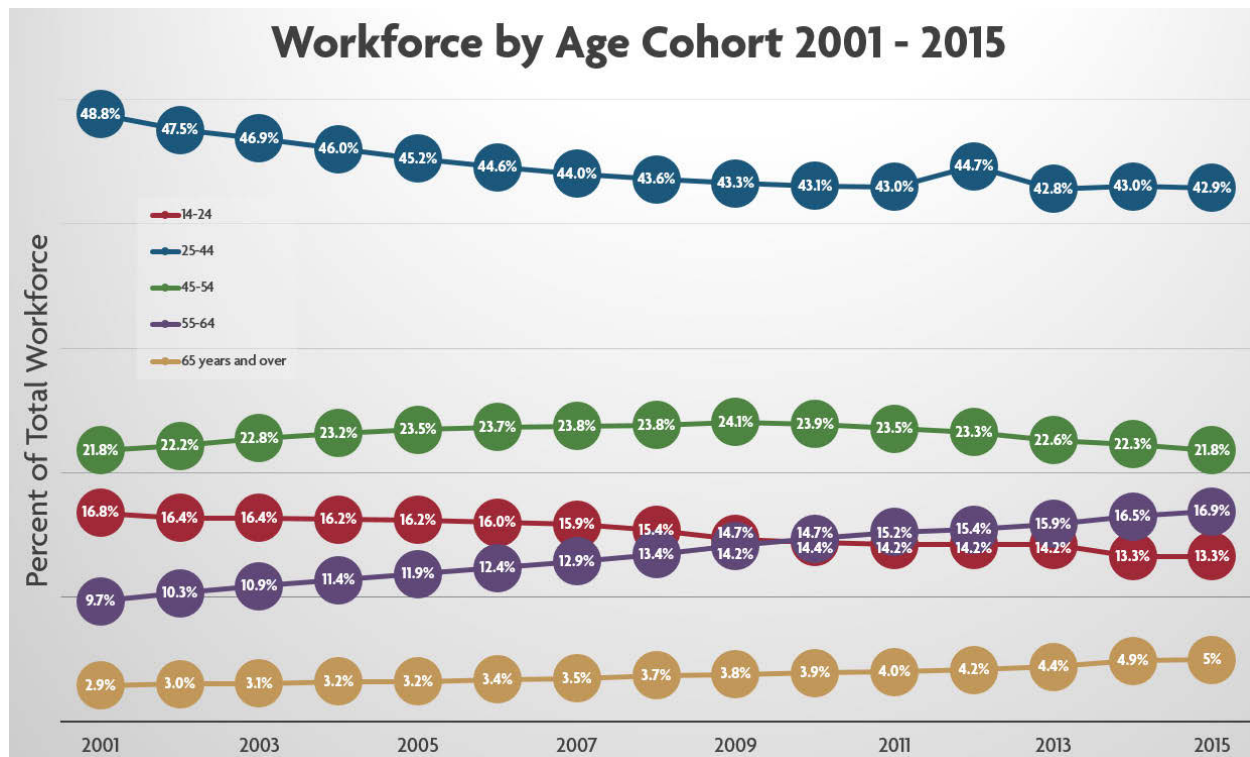
In 2015 the majority of job holders were ages 25-34, representing 22% of the workforce. They were closely followed by the 45-54 age group which represented 21.8% of the workforce. This was a reversal from 2014 where the largest age group was 45-54. The 35-44 age group made up 21% of the workforce. As in the previous year workers age 14-21 made up only 7.2% of the workforce. There was a 0.5% gain in the share of older workers, those 55 and older between 2014 and 2015.

### **St. Louis MSA Age of the Workforce in 2015**



Source: U.S. Census Bureau, QWI Explorer.

The St. Louis age profile has changed over time with the 55-64 and 65+ age groups having steadily increased as a share of the workforce. The 55-64 age group has grown from 9.7% in 2001 to 16.9% in 2015, while the 65+ group has increased from 2.9% to 5% over the 14-year time period. The 45-54 age group has been decreasing over the last few years, falling from 24.1% in 2009 to 21.8% in 2015. St. Louis mirrors the national trend of an aging workforce which is helping drive the demand for healthcare employment as well as the need to replace workers who are retiring.

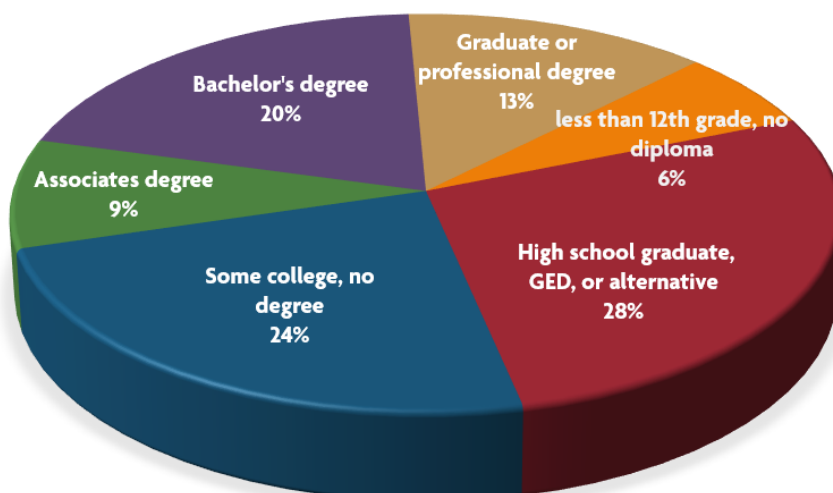


Source: Quarterly Workforce Indicators, U.S. Census Bureau.

## Education Attainment

One-half of the region's 25 years and older population have a high school diploma but have no post-secondary degree. Forty-one percent of the population have an associates degree or greater, which is higher than the national average of 38%. Nine percent of the population has no high school diploma or equivalent measure with 3% having less than a ninth grade education. With the exception of a slight uptick in graduate and professional degrees there was little change in education attainment from the previous year.

**Educational Attainment of the St. Louis MSA Population**



Source:  
2014 American Community Survey, U.S. Census Bureau (population age 25 and over).

## Current Job Demand

Whether through new job growth or companies needing to fill positions vacated through turnover or retiring workers, there are always job openings.

### Top Ten Job Advertisements in the Past Year

Now: Short to Moderate-Term Training	Online Job Ads
Sales Representatives, Wholesale and Manufacturing	7,313
Retail Salespersons	6,534
Customer Service Representatives	5,811
Secretaries and Administrative Assistants	2,781
Combined Food Preparation and Serving Workers	2,248
Bookkeeping, Accounting, and Auditing Clerks	2,001
Laborers and Freight, Stock, and Material Movers	1,897
Stock Clerks and Order Fillers	1,541
Security Guards	1,259
Cashiers	1,234
Next: Long-Term Training to Associates Degree	Online Job Ads
Registered Nurses	15,190
Heavy and Tractor-Trailer Truck Drivers	12,858
Managers, All Other	4,959
First-Line Supervisors of Retail Sales Workers	3,797
Nursing Assistants	2,199
Maintenance and Repair Workers, General	2,088
First-Line Supervisors of Food Preparation and Serving Workers	2,085
Computer User Support Specialists	1,701
Web Developers	1,514
Licensed Practical and Licensed Vocational Nurses	1,380
Later: Bachelor's Degree or Higher	Online Job Ads
Computer Occupations, All Other	7,505
Software Developers, Applications	7,156
Accountants and Auditors	3,488
Human Resources Specialists	2,607
Management Analysts	2,536
Medical and Health Services Managers	2,342
Sales Managers	2,205
Computer Systems Analysts	2,098
Network and Computer Systems Administrators	1,722
Financial Managers	1,704

Source: Online Job Ads from July 01, 2015 - June 30, 2016. Burning Glass Technologies.

One way to measure current employment demand is to track job postings. Over the past year there were over 212,000 online job postings in the St. Louis MSA, an increase of nearly 14% from the previous year. This increase reflects either increased hiring, increased difficulty in finding qualified applicants, or both. The table on the previous page lists jobs, grouped by typical education or training needed, with the most advertisements from July 1, 2015 through June 30, 2016 in the St. Louis metropolitan statistical area.

The top job overall was *Registered Nurses* (15,190) followed by *Heavy and Tractor-Trailer Truck Drivers* (12,858). These were both significant increases from the same period in the previous year. Several other logistics and healthcare jobs were among the top advertised jobs, such as *Laborers & Freight Stock Movers*, *Stock Clerks*, and *Nursing Assistants*.

## Current Certificate and Skill Demand

Top requested certificates are often associated with certain occupations or group of related jobs, such as *Registered Nurse* or *Certified Public Accountant*. Several healthcare related certificates are in the top 10, such as *Registered Nurse*, *First Aid CPR AED*, and *Certified Nursing Assistant*, corresponding with the increasing demand for workers in this sector. Many of the top requested certificates may be obtained through short-term training or through courses offered at a community college.

### Top Ten Certificates in Job Advertisements in the Past Year

Certificate	Online Job Ads
Registered Nurse	13,092
Commercial Driver's License	10,488
Security Clearance	3,251
Certified Public Accountant (CPA)	2,899
First Aid CPR AED	2,538
Project Management Certification (e.g. PMP)	1,665
Certified Nursing Assistant	1,624
Certified Information Systems Security Professional (CISSP)	961
Basic Cardiac Life Support Certification	877
Board Certified/Board Eligible Physician	732

Source: Online Job Ads from July 01, 2015 - June 30, 2016. Burning Glass Technologies.

A skill analysis of job postings over the past year in the St. Louis metro area was conducted. Basic skills are requested in the majority of job advertisements, with *Communication Skills* being the top demand of employers. The number one specialized skill was *Sales*, followed by *Scheduling*, and *Budgeting*. Several *Microsoft Office* programs were in the top requested software and programming skills. *Microsoft Excel* continues to be in high-demand as a basic skill even though it is a specific

software application. Employers value applicants who can work and communicate with numbers which is signaled by a person's familiarity with this application.

## Top Ten Basic Skills

Basic Skills	Online Job Ads
Communication Skills	56,225
Writing	33,312
Customer Service	29,604
Microsoft Excel	25,856
Planning	24,917
Problem Solving	23,590
Organizational Skills	23,105
Team Work/Collaboration	23,021
Microsoft Office	19,278
Detail-Oriented	17,801

## Top Ten Specialized Skills

Specialized Skills	Online Job Ads
Sales	19,911
Scheduling	18,034
Budgeting	15,095
Project Management	13,807
Supervisory Skills	12,793
Customer Contact	11,963
Retail Setting	11,168
Patient Care	9,574
SQL	9,001
Accounting	8,916

Source: Online Job Ads from July 01, 2015 - June 30, 2016. Burning Glass Technologies.

## Top Software and Programming Skills

Software or Programming Skills	Online Job Ads
Microsoft Excel	25,856
Microsoft Office	19,278
Microsoft Word	12,135
Microsoft PowerPoint	9,444
SQL	9,001
Oracle	7,026
JAVA	4,998
SAP	3,901
LINUX	3,543

Source: Online Job Ads from July 01, 2015 - June 30, 2016. Burning Glass Technologies.

## Projected Job Demand

It is also important to look into what jobs will be in demand in the future to ensure our workforce is prepared for the needs of tomorrow. Employment projections out to the year 2022, developed by the Missouri Economic Research and Information Center (MERIC) in partnership with the U.S. Department of Labor, are used to estimate the jobs expected to be in greatest demand over a ten year period. The table shows the occupations, by typical education or training needed, with top job growth openings by the year 2022.

## Jobs by 2022 with the Most Projected Growth Openings

Short to Moderate-Term Training	Growth Openings
Personal Care Aides	3,710
Combined Food Preparation and Serving Workers	3,286
Customer Service Representatives	3,227
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	2,374
Secretaries and Admin. Assistants, Except Legal, Medical, and Executive	1,728
Laborers and Freight, Stock, and Material Movers, Hand	1,682
Retail Salespersons	1,602
Construction Laborers	1,550
Office Clerks, General	1,545
Medical Secretaries	1,406
Long-Term Training to Associates Degree	Growth Openings
Registered Nurses	3,128
General and Operations Managers	2,442
Carpenters	2,047
Nursing Assistants	1,524
Heavy and Tractor-Trailer Truck Drivers	1,386
First-Line Supervisors of Office and Admin. Support Workers	964
Electricians	936
Managers, All Other	850
Plumbers, Pipefitters, and Steamfitters	763
First-Line Supervisors of Food Preparation and Serving Workers	760
Bachelor's Degree or Higher	Growth Openings
Computer Systems Analysts	1,514
Accountants and Auditors	1,335
Software Developers, Applications	1,020
Market Research Analysts and Marketing Specialists	1,006
Lawyers	602
Construction Managers	599
Management Analysts	574
Health Specialties Teachers, Postsecondary	544
Elementary School Teachers, Except Special Education	516
Cost Estimators	510

Source: Long-Term Occupational Projections 2012-2022, St. Louis Workforce Development Area, MERIC.

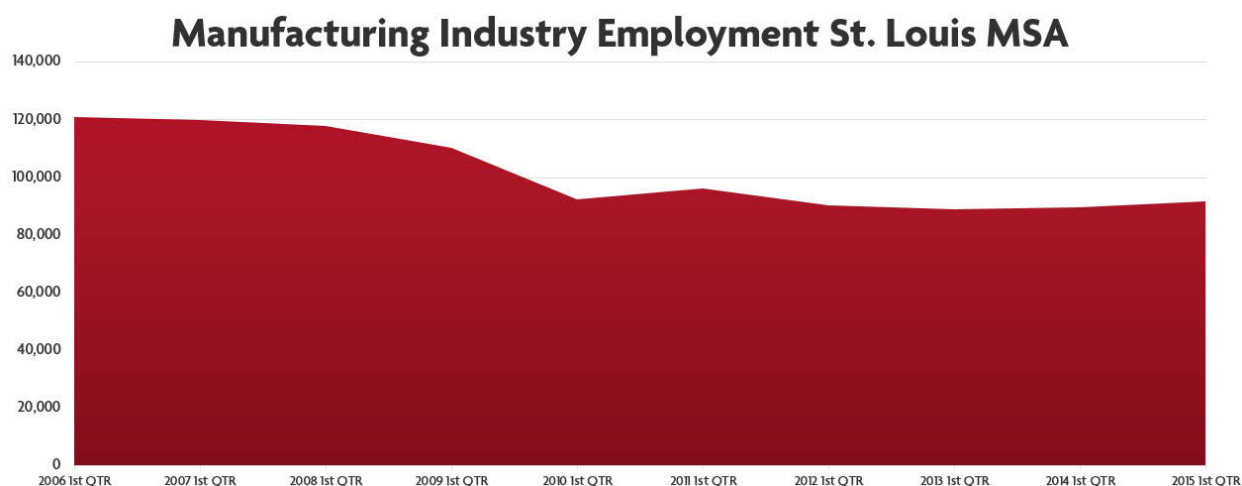
The top long-term growth jobs are *Personal Care Aides*, *Food Preparation & Serving Workers*, and *Customer Service Representatives*.



Several occupations, such as *Registered Nurses*, *Heavy and Tractor-Trailer Truck Drivers*, and *Laborers & Freight Stock Movers* were among the top long-term growth jobs and in the top job advertisements over the past year. This indicates those occupations are in demand now, and will be in demand in the future.

## *Manufacturing*

2015 annual averages from the Bureau of Labor Statistics show *Manufacturing* employed over 114,000 people in the St. Louis MSA. St. Louis is home to the headquarters of several manufacturing firms, such as Boeing, Monsanto, and Anheuser-Busch InBev.



Source: *Quarterly Workforce Indicators*, U.S. Census Bureau.

As the chart shows, manufacturing industry employment in the St. Louis MSA has remained steady the last five years. Short-term industry projections for the St. Louis Workforce Development Area predict this sector will grow 3.2%, adding nearly 3,000 jobs, from 2015-2017 (Short-term 2015-2017 Industry Projections, MERIC).

Manufacturing employers require certain specialized skills and certificates. The tables on the next page show the top requested skills and certificates found in job advertisements from manufacturing employers in the St. Louis MSA.

## Manufacturing Top Certificates and Specialized Skills

Top Certificates	Rank	Top Specialized Skills	Rank
Security Clearance	1	Scheduling	1
American Board For Engineering And Technology (ABET) Accredited	2	Sales	2
Certified Public Accountant (CPA)	3	Project Management	3
Project Management Certification ( <i>e.g.</i> PMP)	4	Budgeting	4
Security+	5	Repair	5
Certified Information Systems Security Professional (CISSP)	6	Supervisory Skills	6
Forklift Operator Certification	7	Inspection	7
Cisco Certified Network Associate	8	Customer Contact	8
Commercial Driver's License	9	SAP	9
Six Sigma Certification	10	Packaging	10

Source: Online Job Ads from July 01, 2015 - June 30, 2016. Burning Glass Technologies.

## Healthcare

2015 annual averages from the Bureau of Labor Statistics show *Healthcare* employed over 160,000 people in the St. Louis MSA. St. Louis is home to several large healthcare employers, such as BJC Healthcare, Mercy and SSM Health.



Source: Quarterly Workforce Indicators, U.S. Census Bureau.

Employment in the Healthcare sector has been growing over the last 10 years, and currently employs over 166,000 people in the St. Louis metro area. Short-term industry projections for the St. Louis

Workforce Development Area predict this sector will grow 1.8%, adding over 2,400 jobs, from 2015-2017. Over the long term this industry is projected to grow 12.2%, adding over 16,000 jobs, from 2012-2022 (Short- and Long-term Industry Projections, MERIC).

Healthcare employers require certain specialized skills and certificates. Below are the top requested skills and certificates found in job advertisements from healthcare employers in the St. Louis MSA.

## Healthcare Top Certificates and Specialized Skills

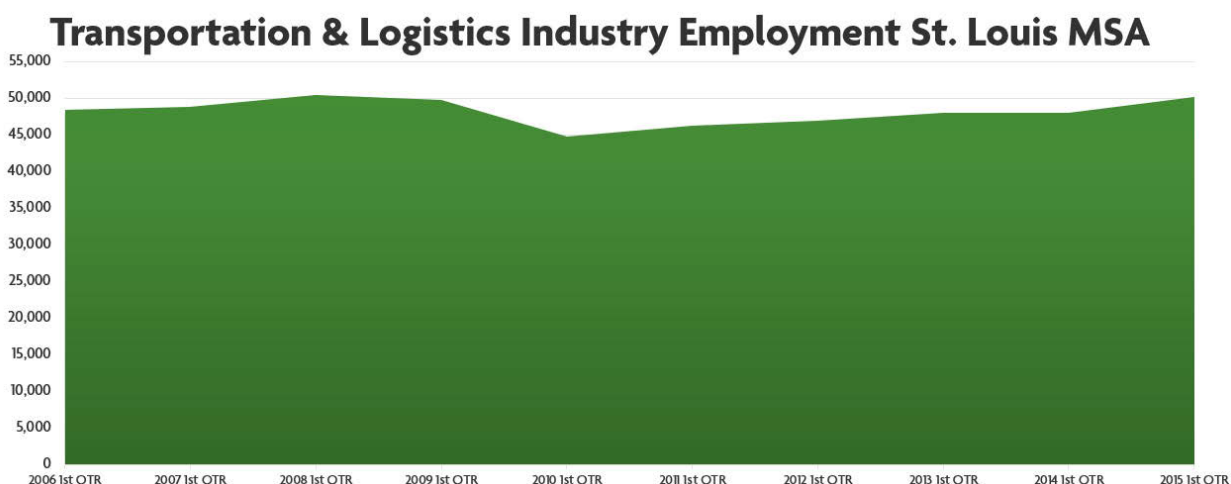
Top Certificates	Rank
Registered Nurse	1
First Aid CPR AED	2
Certified Nursing Assistant	3
American Registry Of Radiologic Technologists (ARRT)	4
Emergency Medical Technician (EMT)	5
Advanced Cardiac Life Support (ACLS) Certification	6
Nurse Practitioner	7
Basic Cardiac Life Support Certification	8
Certified Medical Assistant	9
Board Certified/Board Eligible Physician	10

Top Specialized Skills	Rank
Patient Care	1
Treatment Planning	2
Patient/Family Education and Instruction	3
Patient Direction	4
Medication Administration	5
Home Care	6
Legal Compliance	7
Patient Evaluation	8
Scheduling	9
Budgeting	10

Source: Online Job Ads from July 01, 2015 - June 30, 2016. Burning Glass Technologies.

## Transportation & Logistics

2015 annual averages from the Bureau of Labor Statistics show *Transportation & Logistics* employed nearly 43,000 people in the St. Louis MSA. St. Louis is home to many firms in this sector, such as Graybar, Materiallogic, UniGroup, and XTRA Lease.



Source: *Quarterly Workforce Indicators, U.S. Census Bureau.*

After a drop in employment in 2010, the Transportation & Logistics industry has been steadily growing over the last five years. Short-term industry projections for the St. Louis Workforce Development Area predict this sector will grow 2.6%, adding nearly 900 jobs, from 2015-2017 (Short-term 2015-2017 Industry Projections, MERIC).

Transportation & Logistics employers require certain specialized skills and certificates. Below are the top requested skills and certificates found in job advertisements from employers in the St. Louis MSA.

## Transportation & Logistics Top Certificates and Specialized Skills

Top Certificates	Rank
Commercial Driver's License	1
Security Clearance	2
Forklift Operator Certification	3
Environmental Protection Agency Certification	4
Certified Driver Trainer	5
Airframe and Powerplant (A and P) Certification	6
Automotive Service Excellence (ASE) Certification	7
HAZWOPER	8
Certified Public Accountant (CPA)	9
Project Management Certification (e.g. PMP)	10

Top Specialized Skills	Rank
Logistics	1
Scheduling	2
Repair	3
Inspection	4
Forklift Operation	5
Sales	6
Customer Contact	7
Budgeting	8
Supervisory Skills	9
Data Entry	10

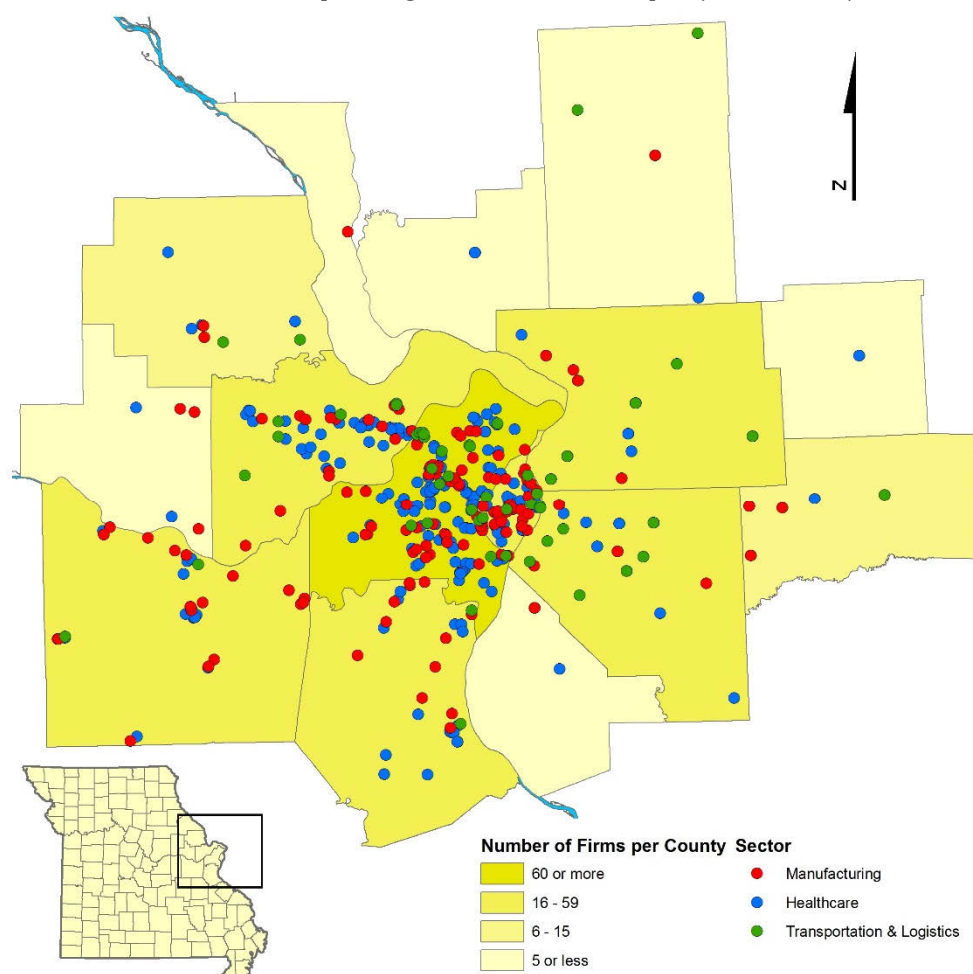
Source: *Online Job Ads from July 01, 2015 - June 30, 2016. Burning Glass Technologies.*

# EMPLOYER SURVEY

The 2016 *Employer Survey* is the eighth annual telephone survey of local companies in the St. Louis metropolitan area. The intent of this survey is to understand the business climate, hiring trends and occupational skills and demands from businesses in the St. Louis region.

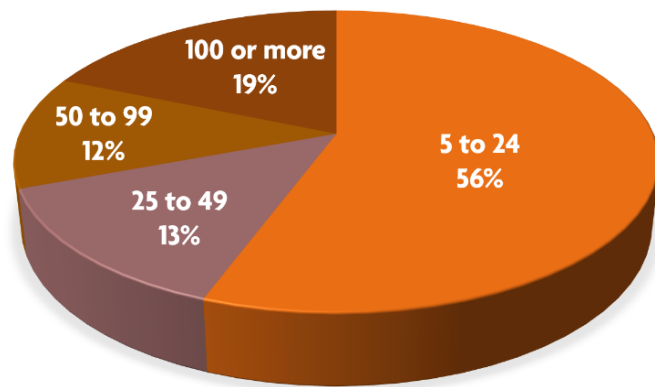
For this 2016 report we chose to focus on three industries important to the past, present and future of the St. Louis economy: Manufacturing, Healthcare, and Transportation & Logistics. Nearly one in every four employees in the St. Louis economy works in one of these sectors. Manufacturing is a rich part of our history and will play an important part in our future if we can make the adjustments to new markets and technologies. Healthcare has always provided a strong employment base for the region but also shows growth opportunities in health information and services. Transportation & Logistics represents untapped growth for our region given our central location and multi-modal capacity.

**Firms Participating in the 2016 Employer Survey**



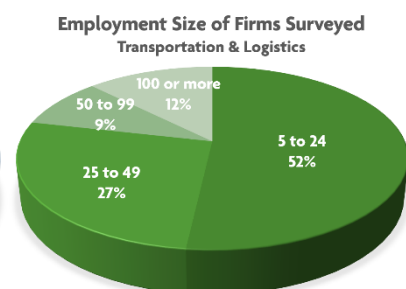
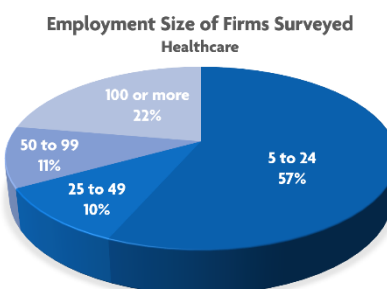
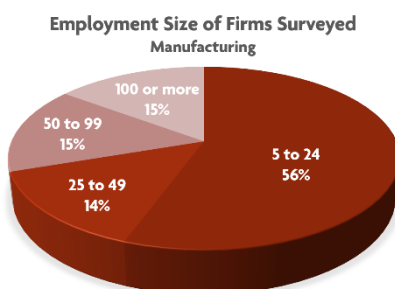
Approximately 478 local companies were surveyed by telephone during the summer of 2016 representing the seven NAICS (North American Industry Classification System) industries that comprise the three targeted industry sectors (see table below). Response rates would indicate that some findings are weighted more heavily by healthcare. They were asked a series of twelve questions, some with multiple parts, designed to gauge the hiring outlook and challenges of individual employers. The sample for the survey was selected from the Reference USA employer database provided by the Missouri Economic Research and Information Center (MERIC). Companies employing less than five employees were not interviewed. Geographically, the firms interviewed also represent the entire St. Louis MSA (see the map on page 22).

**Employment Size of Firms Surveyed**



**Firms Participating in the 2016 Employer Survey**

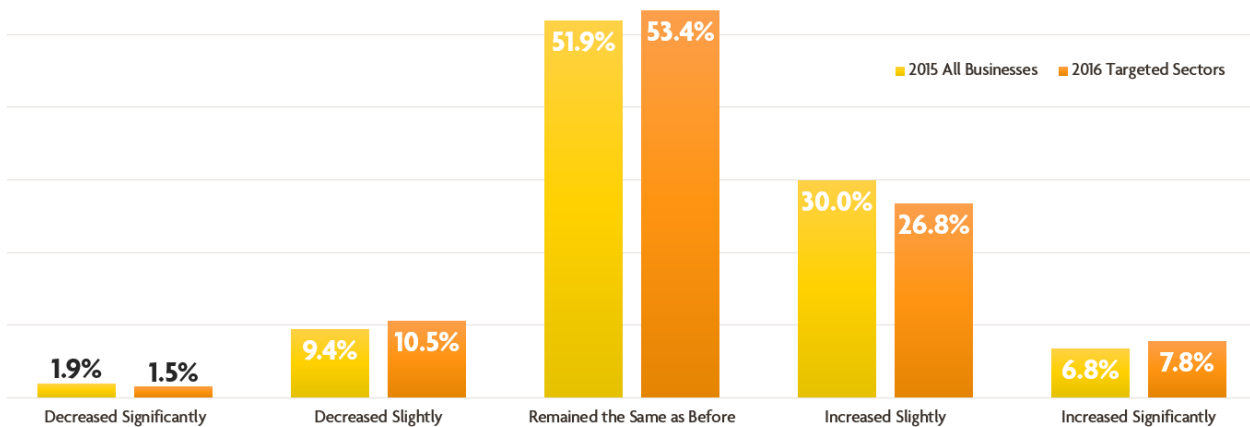
NAICS	Description	Number of Businesses Surveyed	Percent
31	Manufacturing	24	5.0%
32	Wood Products Manufacturing	42	8.8%
33	Primary Metal Manufacturing	96	20.1%
48	Transportation and Warehousing	43	9.0%
49	Postal Service	4	0.8%
54	Professional, Scientific, and Technical Services	9	1.9%
62	Health Care and Social Assistance	260	54.4%



## Hiring Trends – Past Year

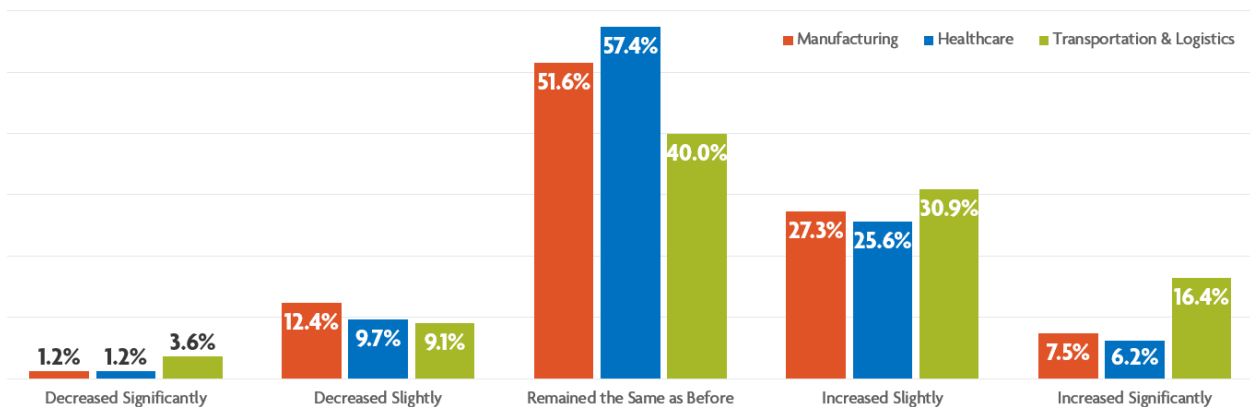
When asked if their employment levels changed over the past twelve months, slightly over half (53%) of survey respondents indicated that it had *remained the same*. Despite coming from a different sample group, this tracks very closely with response rates to this question from previous years. Approximately 35% of employers reported that they increased employment in the past twelve months. This compares to 37% reporting increases in 2015. When examining increases by sector, transportation & logistics had a higher rate of response for increases (47%) and healthcare a slightly lower rate (32%) although the average was weighted by a higher healthcare response rate.

### Change in Employment Levels in the Last 12 Months



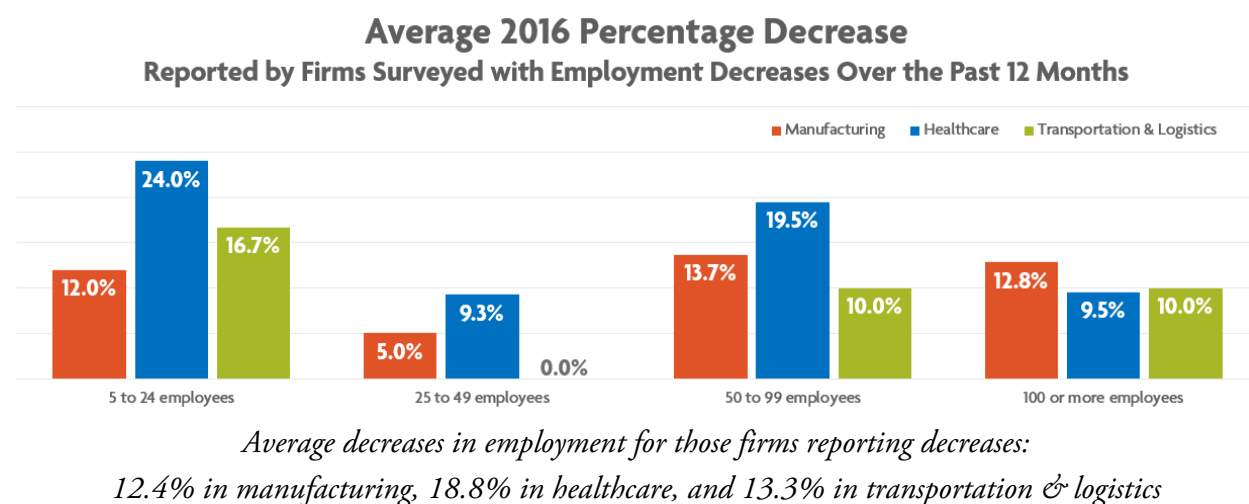
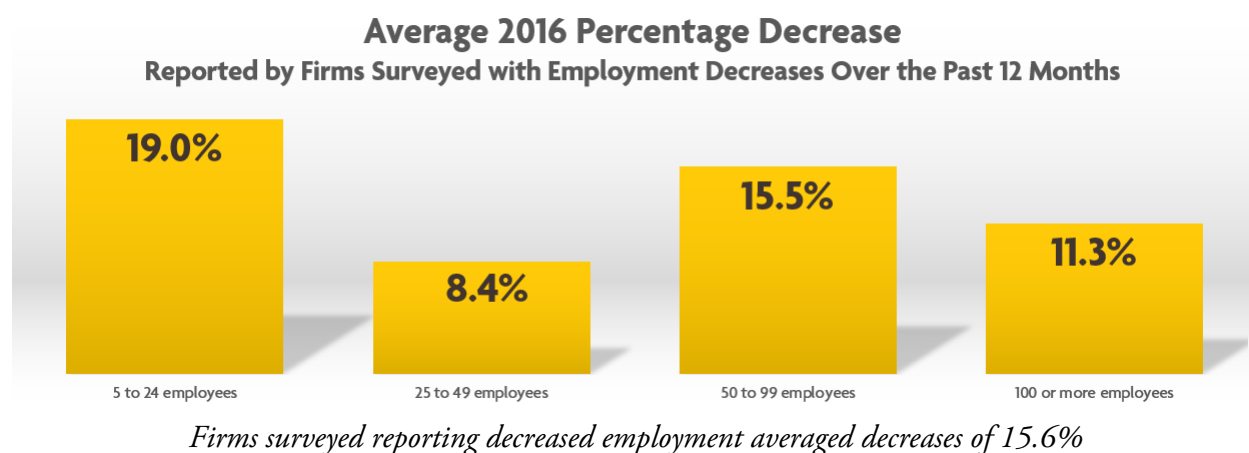
Approximately 12% of employers surveyed reported that hiring had decreased, slightly higher than the all-industry rate of 11.3% in 2015. The percentage of firms reporting decreases by sector was in a tight range from 10.9% for healthcare to 13.6% for manufacturing.

### Change in Employment Levels in the Last 12 Months



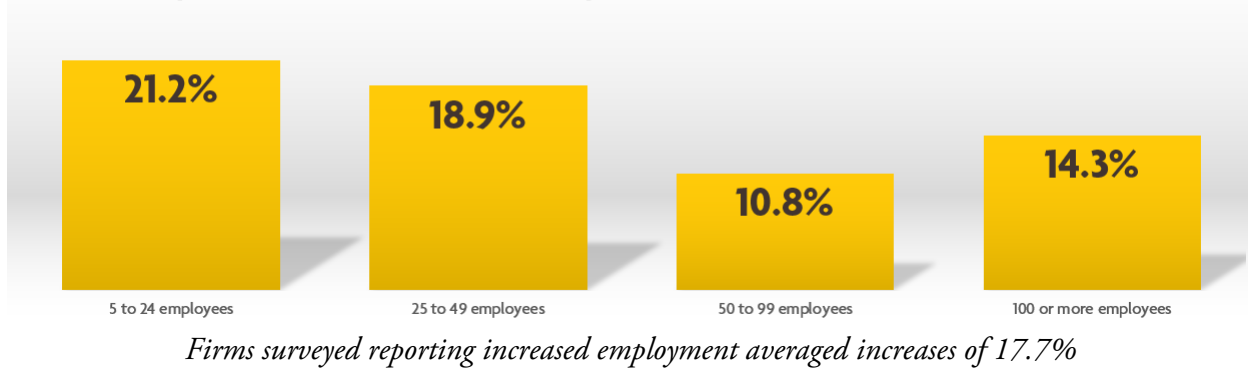


Employers were asked about the size of their decreases or increases in employment. For those firms that reported a decrease in hiring, the average response for the level of decrease was approximately 16% with somewhat higher decreases for smaller firms than larger firms. Healthcare employers reporting decreases cited the highest percentage decrease of employment by sector at nearly 19%. Manufacturing employers reporting decreases cited the lowest percentage decrease at 12.4%.

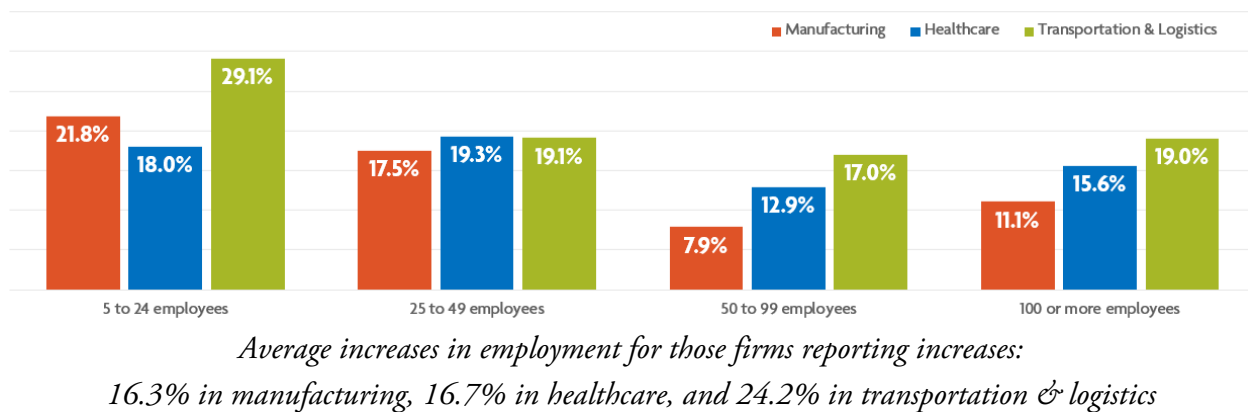


For employers that reported increases, the average response for the level of increases in employment was approximately 18% again this year, with larger rates of increase reported for smaller firms than larger firms. Transportation & logistics firms reporting increases cited the highest average percentage increase in employment at 24% with manufacturing employers citing the lowest average percentage increase at 16%. Again, the average increase is weighted by the higher response rate of healthcare employers.

**Average 2016 Percentage Increase**  
Reported by Firms Surveyed with Employment Increases Over the Past 12 Months



**Average 2016 Percentage Increase**  
Reported by Firms Surveyed with Employment Increases Over the Past 12 Months

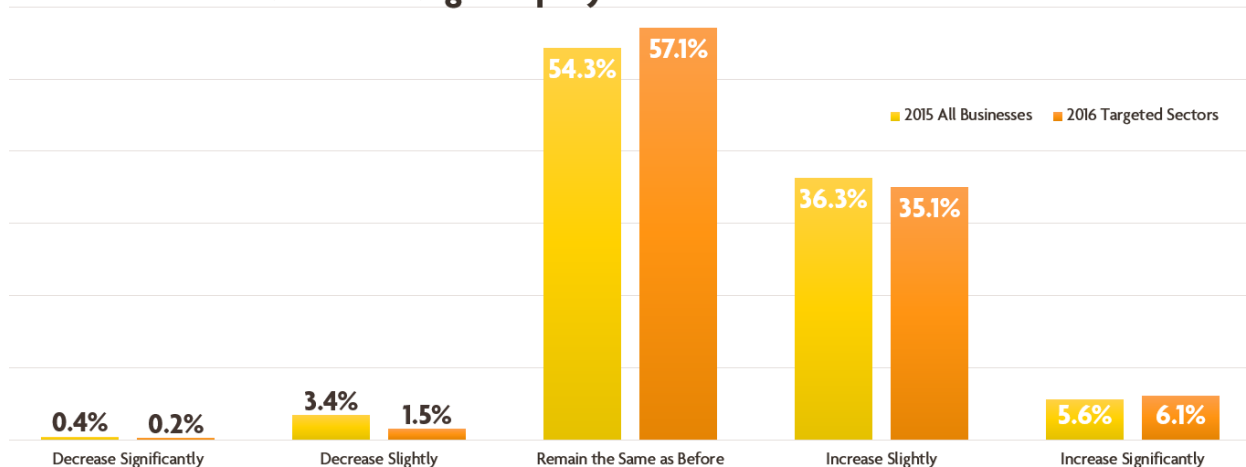


Although taken from a different employer sample, the trends of past hiring tracks closely with previous surveys.

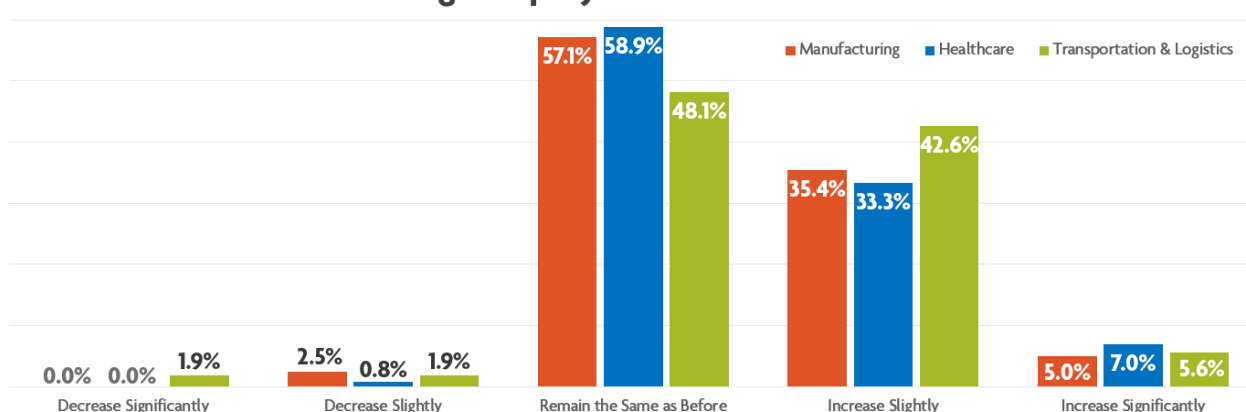
## *Hiring Trends – Future Plans*

When asked about anticipated employment levels over the next twelve months, most employers (57%) indicated that they expected levels to *remain the same*. This is only a slight increase from the 2015 response level of 54%. In these industry sectors fewer employers expect to decrease employment levels with less than 2% of employers anticipating decreases, half the rate reported in 2015 in the all-industry survey. Anticipated decreases by industry sector ranged from transportation & logistics at 3.8% to healthcare with less than 1% of employers anticipating a decrease in employment.

## Future Plans to Change Employment Levels in the Next 12 Months

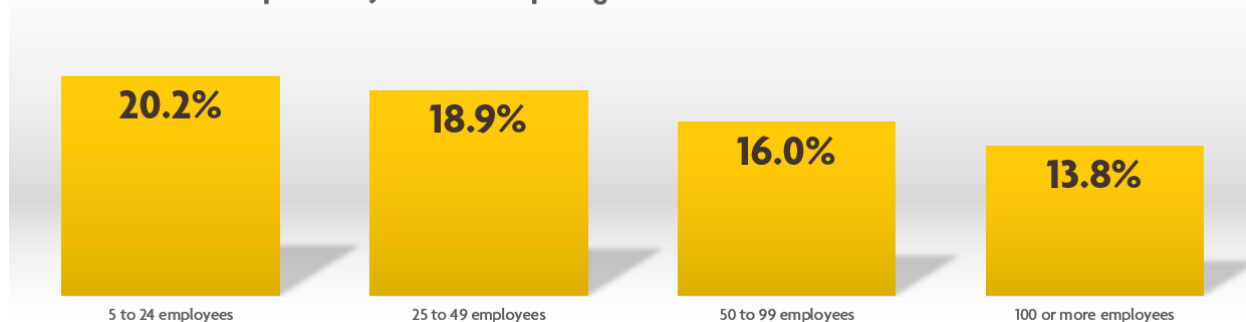


## Future Plans to Change Employment Levels in the Next 12 Months



Approximately 41% of employers reported anticipating increases for 2016 roughly matching the level of the previous year. Anticipated increases by sector ranged from a high of 48.2% of employers surveyed in transportation & logistics to a low of 40.3 % reported by healthcare employers with the average weighted by healthcare responses.

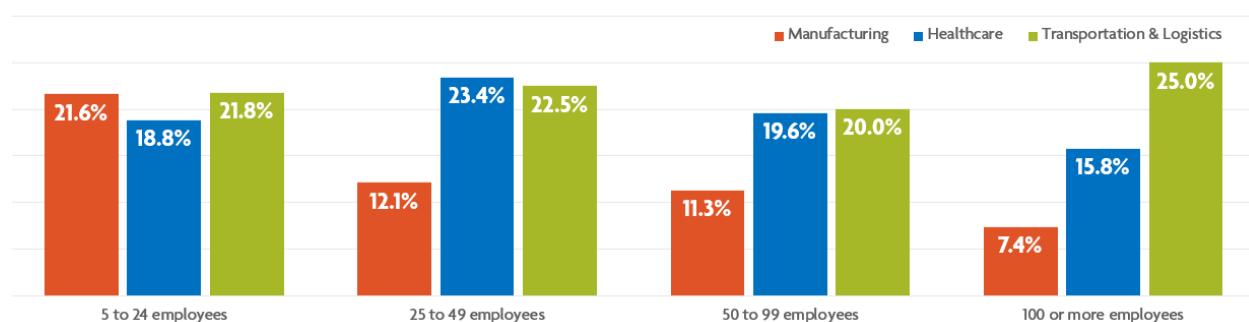
## Anticipated 12 Month Percentage Employment Increase Reported by Firms Anticipating Increases Over the Next 12 Months



*Firms surveyed reporting anticipated employment increases average increases of 17.9%*

Employers were asked to estimate the percentage of workforce decreases or increases expected over the next year. The average level of anticipated increase was a tight range by industry from 16% for manufacturing to 22% for transportation & logistics. There were differences between the sectors in terms of the size of the firms anticipating the largest increases. For manufacturing firms, those between 5 and 24 employees anticipated the largest proportional increases. For healthcare and transportation & logistics the increases were relatively evenly distributed by size of firm.

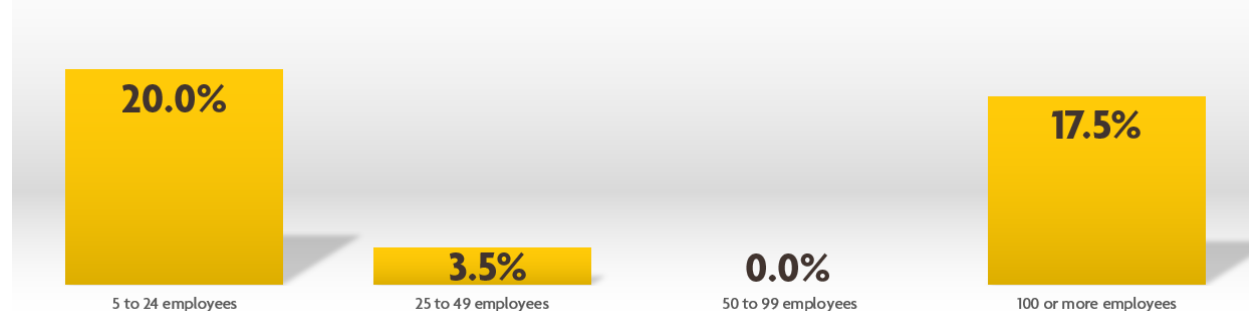
### Anticipated 12 Month Percentage Employment Increase Reported by Firms Anticipating Increases Over the Next 12 Months



*Average increases in employment for those firms reporting anticipated increases:  
15.6% in manufacturing, 18.4% in healthcare, and 22.0% in transportation & logistics*

The average of level of anticipated decreases was approximately 15% for all sectors with small firms reporting the highest levels of decreases for healthcare and manufacturing but large firms, 100 or more employees, reporting the largest proportional decreases in transportation & logistics.

### Anticipated 12 Month Percentage Employment Decrease Reported by Firms Anticipating Decreases Over the Next 12 Months



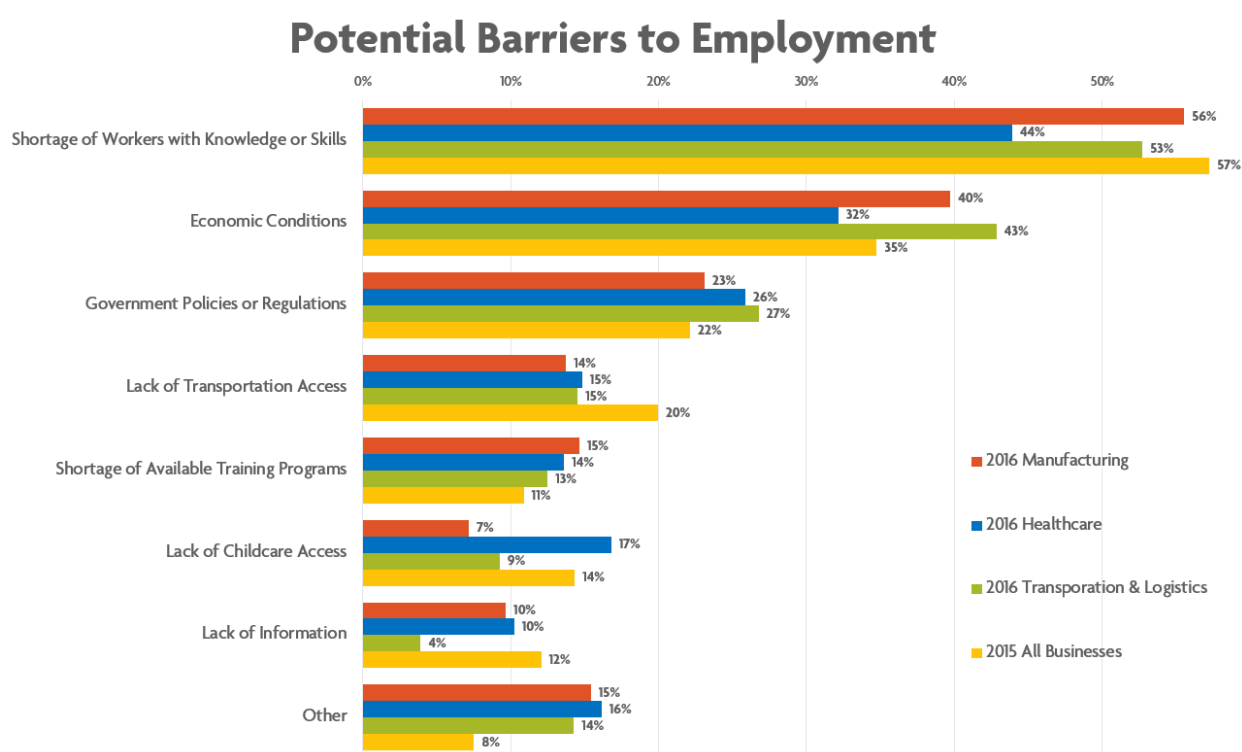
*Firms surveyed reporting anticipated employment decreases average decreases of 15.2%*

As in all past surveys, most employers remain cautious as reflected by the rate of response to the *remain the same* selection option for this question. In the sectors surveyed this year, the rate of anticipated decreases dropped sharply from the previous year's survey. Because of the difference in survey sample it is difficult to say whether this is a continuation of a general trend or due to factors specific to these industries. Other past and anticipated future employment changes align with

previous surveys. Responses for manufacturing and healthcare to these questions were relatively consistent while responses from transportation & logistics had a wider variance.

## Barriers to Expanding Employment

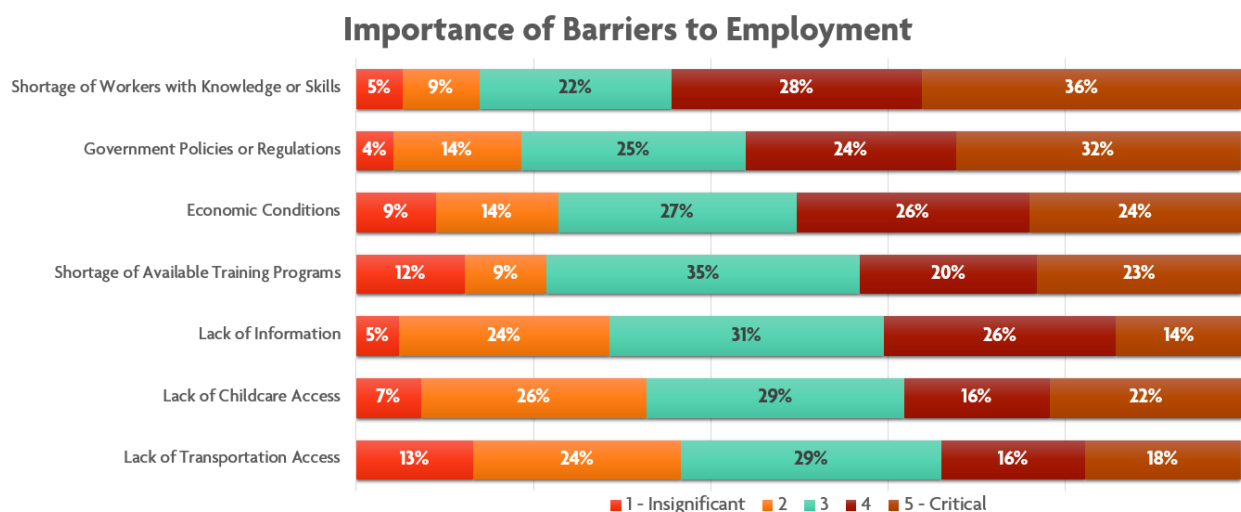
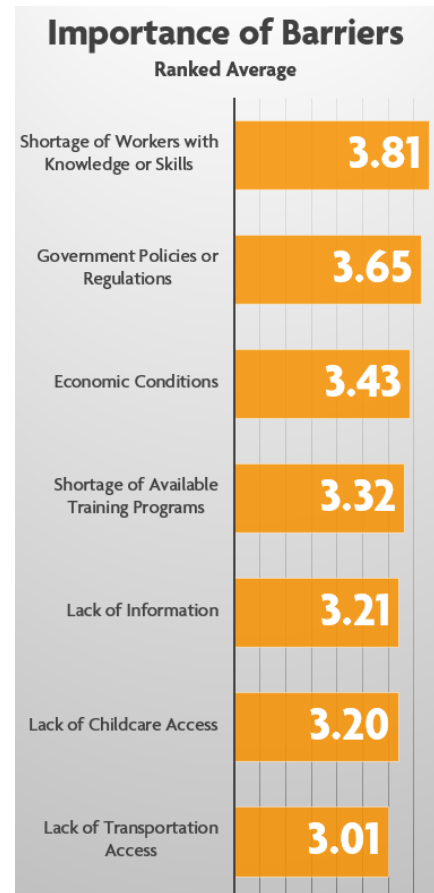
Since the inception of the *State of St. Louis Workforce* Report, employers have been surveyed about their perceived barriers to expanding employment. Each year the top three reasons cited have been *economic conditions*, *shortage of workers with knowledge or skills*, and *government policies or regulations*. In 2015 the responses to this question by employers shifted to *shortage of workers with knowledge and skills* as the most cited reason. We believe this reflected a largely recovered economy and a tight labor market. For 2016 we again posed this question to the employers in the targeted sectors. Although there was a lower percentage of employers reporting *shortage of workers with knowledge and skills* as a barrier to expanding hiring in 2016 as compared to 2015 (49% vs 57%), the rank order of the top three reasons cited was the same. One third more employers reported a *shortage of workers* as a barrier than economic conditions and nearly twice as many employers reported *shortage of workers* as compared to *government policies*.



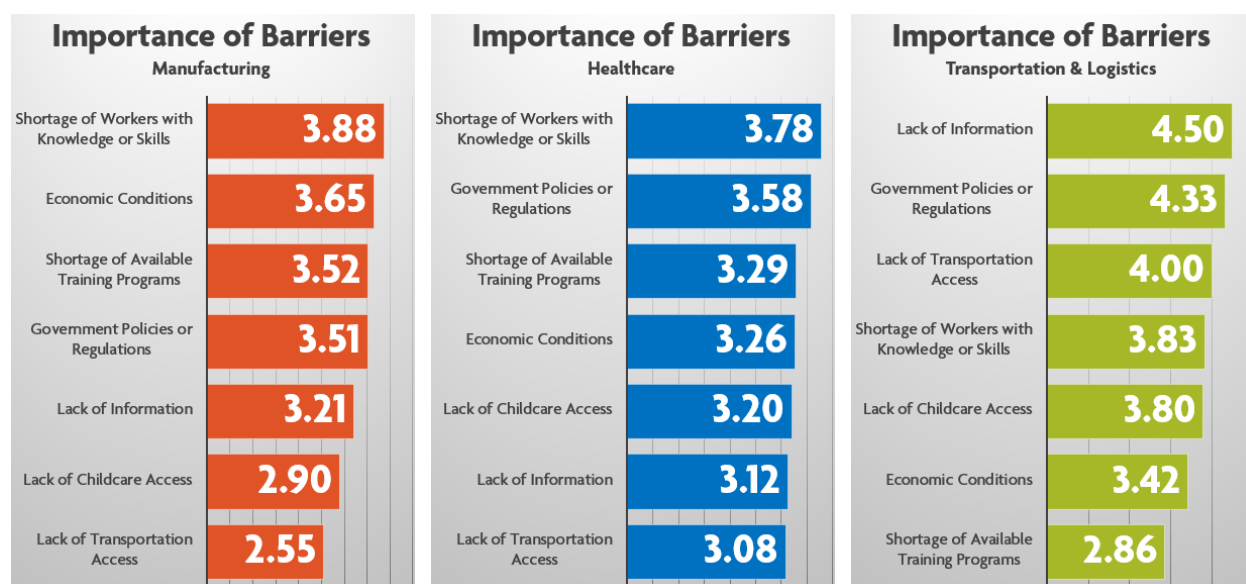
The rank order of the top three responses was the same for each of the three sectors but with some variance in the frequency of the responses particularly between healthcare and the other sectors. The

*shortage of workers with knowledge and skills* was most frequently cited by manufacturing employers at 56% and least by healthcare employers at 44%. *Economic conditions* was cited by only 32% of healthcare employers but by over 40% of manufacturing and transportation & logistics employers. As might be expected of regulated industries, healthcare and transportation & logistics both had a higher frequency of response of *government policy or regulations*.

As in the 2015 survey we asked employers to rate the importance of the barriers on a five point scale. Excluding the *all other* category (also excluded in previous surveys) the highest importance score for the group was *shortage of workers* at 3.81 followed by *government policies* at 3.65 and *economic conditions* at 3.43. This was similar to the rank order and values reported in the 2015 survey of all industries. The way that the three sectors arrived at that average was much different as compared to the previous survey. There were significant differences among the three focus sectors regarding the importance of employment barriers. The *shortage of workers* scored highest in importance by both manufacturing and healthcare employers but was not ranked in the top three barriers by transportation & logistics employers. *Government policies* received the second highest score by both healthcare and transportation & logistics but was not ranked in the top three by manufacturing employers. Significantly, the *shortage of available training programs* received the third highest score by both healthcare and manufacturing employers.



For this question the *shortage of workers with knowledge and skills* was, as in past years, an important barrier to expansion. *Government policies or regulations* were a significant barrier for healthcare and transportation & logistics as regulated industries. A *shortage of available training programs* was also an important barrier for manufacturing and healthcare, a concern that has been expressed throughout the course of our engagement with these sectors.



## Adding Employees

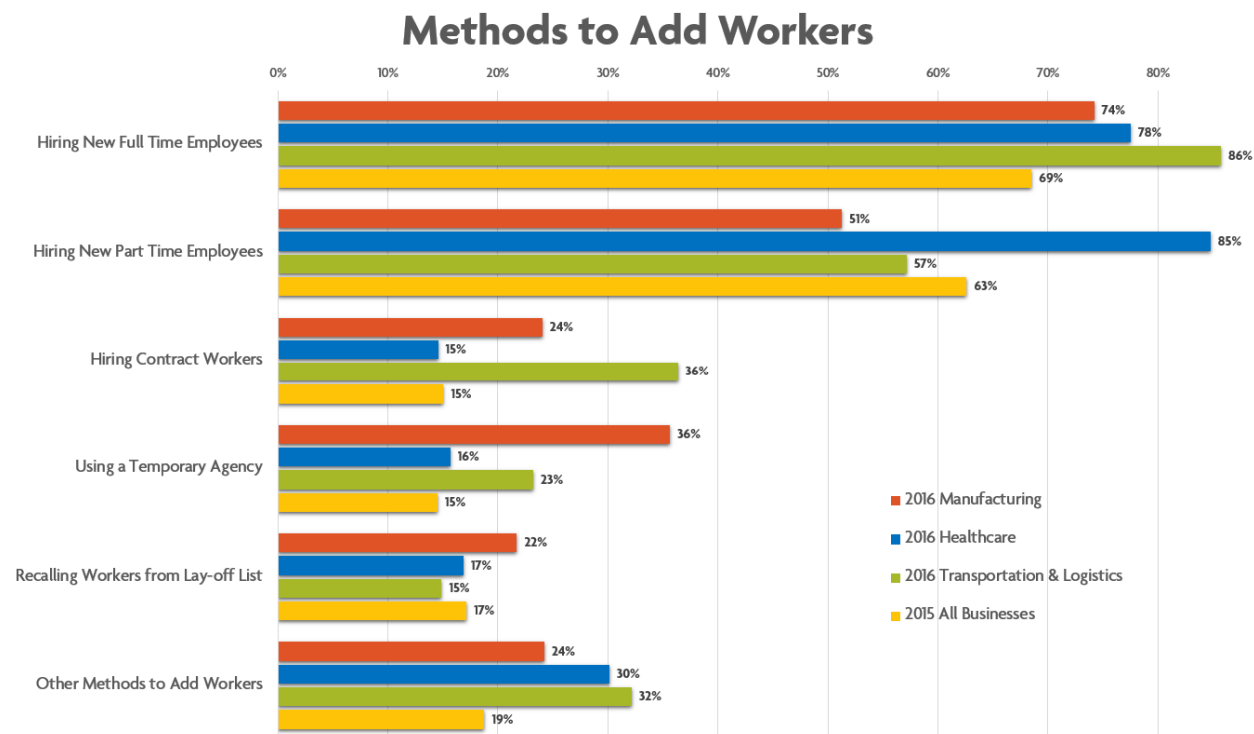
Again in 2016, employers were asked how they would add workers during the next 12 months. Of the employers reporting for these three sectors, 77% responded that *hiring new full-time employees* would be a method of adding workers, an increase from 69% from the all industries survey in 2015. At the same time 70% of those surveyed also indicated that they would be *hiring new part-time employees*, an increase from 63% in 2015. The 2016 survey also reflected higher responses for *hiring contract workers* and *using a temporary agency* than the previous year.

It appears that there is a more of an “all of the above” approach to hiring for employers in these three sectors than in the previous all industries survey, perhaps reflecting a more difficult time staffing their openings.

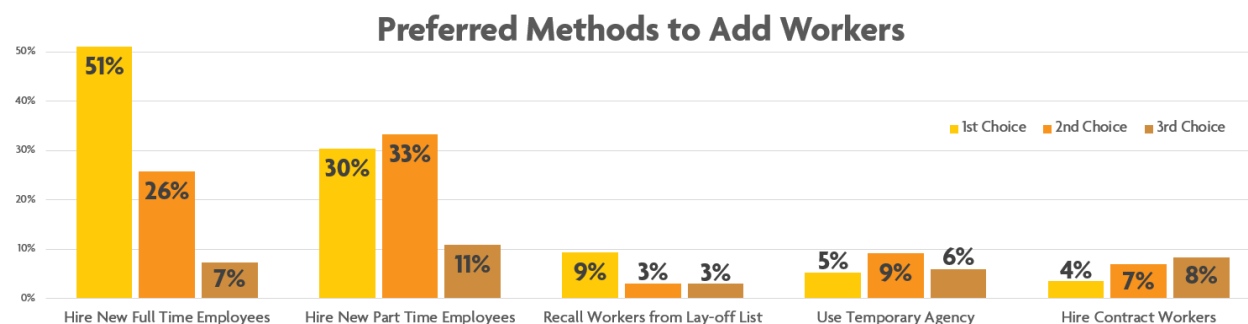
Breaking this response down by sectors reveals that the highest response for *hiring new full-time employees* came from transportation & logistics employers at 86%, followed by healthcare at 78%. Healthcare had the highest response for *hiring new part-time employees* at 85%. Responses from



manufacturing employers were similar to the average of responses from previous year's surveys with the exception of a higher response rate for *using a temporary agency* at 36%.

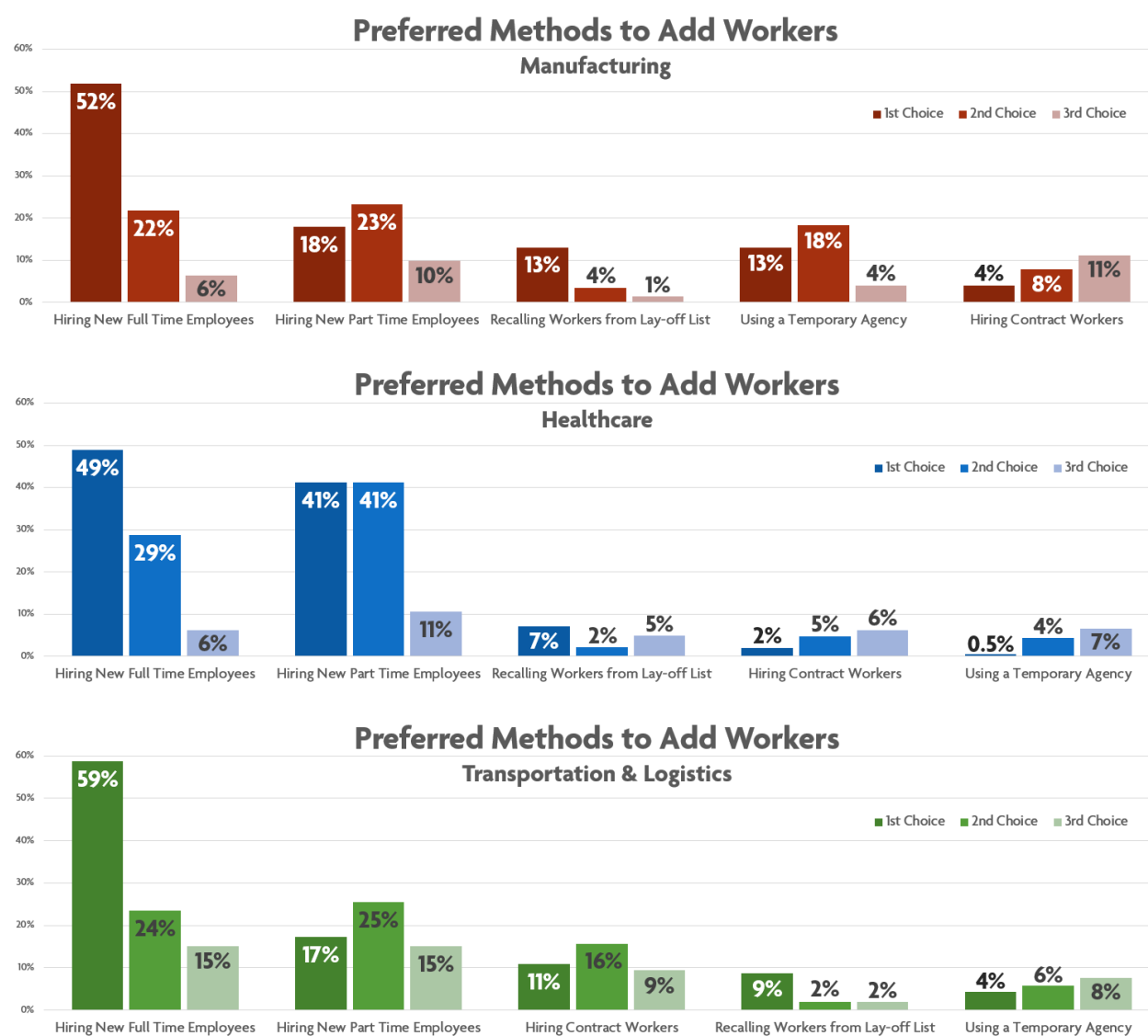


Since employers could respond to multiple methods of adding employees, we attempted to gauge their preferred methods. Employers were asked for their first, second and third choices for adding employees. Of the employers responding, 51% reported *hiring new full-time employees* as their first choice of methods with 30% reporting *hiring new part-time employees* as their first choice. This response is very similar to the 2015 response rates of 47% and 32% respectively. *Hiring new part-time employees* was the most frequently cited second choice by 33% of the respondents.



Reviewing the order of choice for adding employees by sector we find that transportation & logistics employers reported the highest frequency of *hiring new full-time employees* as their first choice at 59% followed by manufacturing employers at 52% and healthcare at 49%. For a second choice of *hiring*

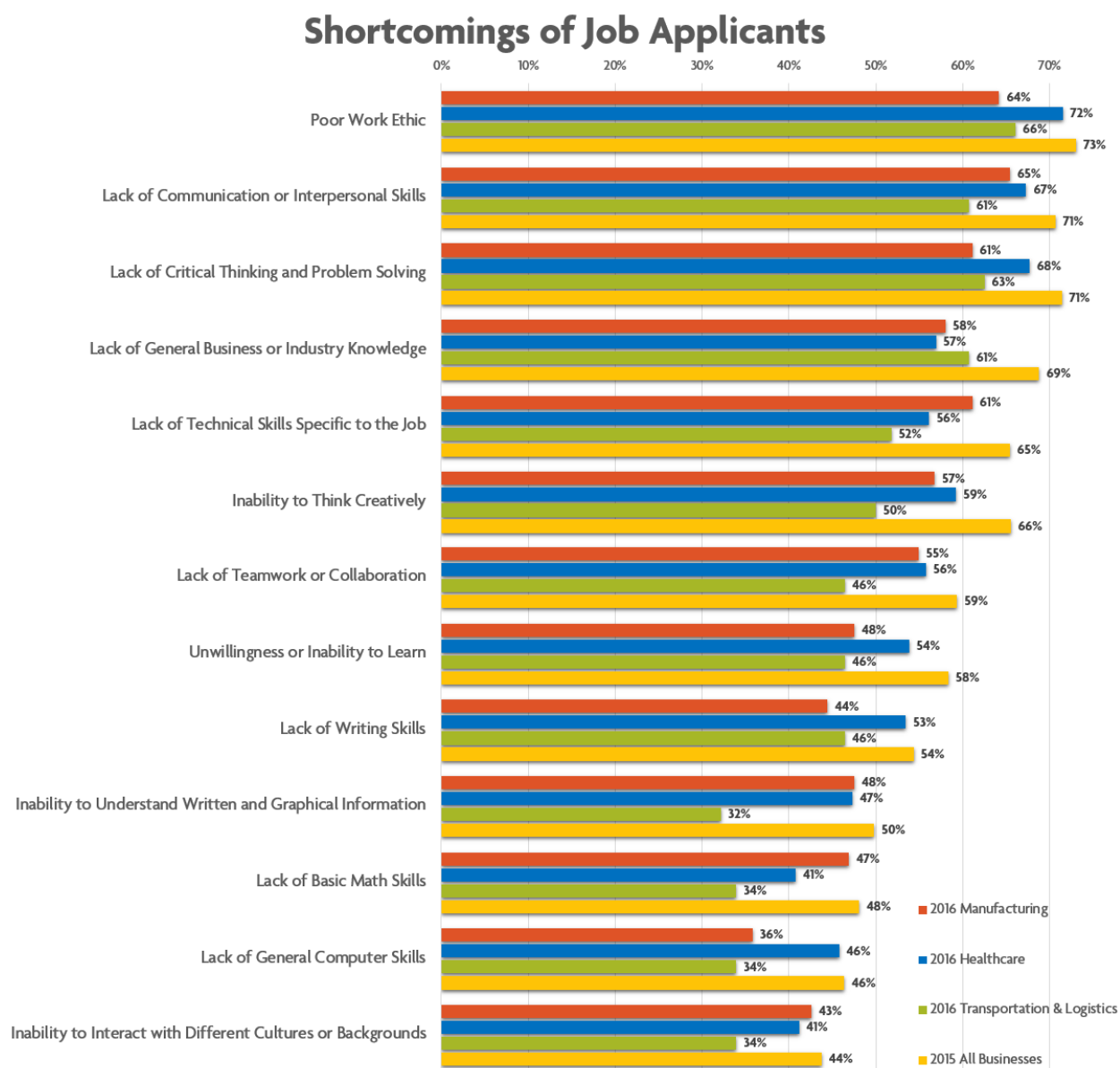
*new part-time employees* healthcare employers reported a high response rate of 41% followed by transportation & logistics at 25% and manufacturing at 23%. Other significant response rates included 18% of manufacturing employers who responded that their second choice for adding employees was *using a temporary agency*.



While the average of responses for this target group was similar to responses to the questions about adding employees in past surveys, there were differences between sectors including the significant reliance on *hiring new part-time workers* by the healthcare industry and a significant response of *using a temporary agency* by manufacturing employers.

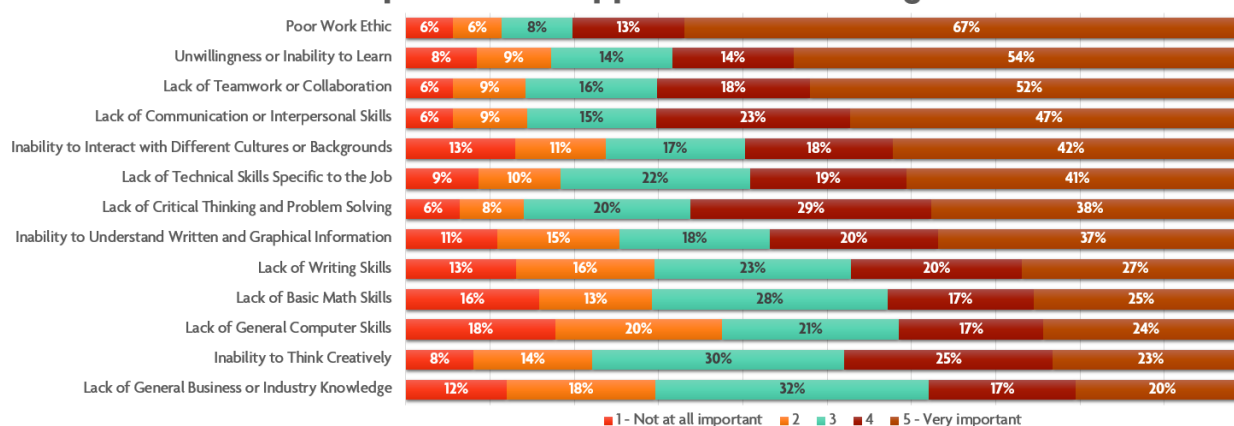
## Shortcomings of Job Applicants

Despite the fact that many jobs within the three targeted sectors carry specific skill, certification or licensure requirements, employers responding to the 2016 survey continue to cite shortcomings of job applicants. About two of every three employers surveyed reported shortcomings in their applicants including: *poor work ethic*, *lack of critical thinking and problem solving*, and *lack of communication or interpersonal skills*. This response rate was only somewhat less than that of the 2015 survey respondents.



Differences in responses by industry sector include healthcare employers who responded with the highest level of shortcomings in their applicants with 72% reporting *poor work ethic*, 68% reporting

## Importance of Applicant Shortcomings



*lack of critical thinking and problem solving*, and 67% reporting *lack of communication or interpersonal skills*. Other significant variances by sector include 61% of manufacturing employers who responded that *lack of technical skills* specific to the job was a shortcoming and 61% of transportation & logistics employers reporting that *lack of general business or industry knowledge* as a shortcoming. Perhaps also significant is the fact that over 55% of both healthcare and manufacturing employers reported that *lack of teamwork or collaboration* was a shortcoming compared to only 46% of transportation & logistics employers, reflecting the nature of the work in those sectors.

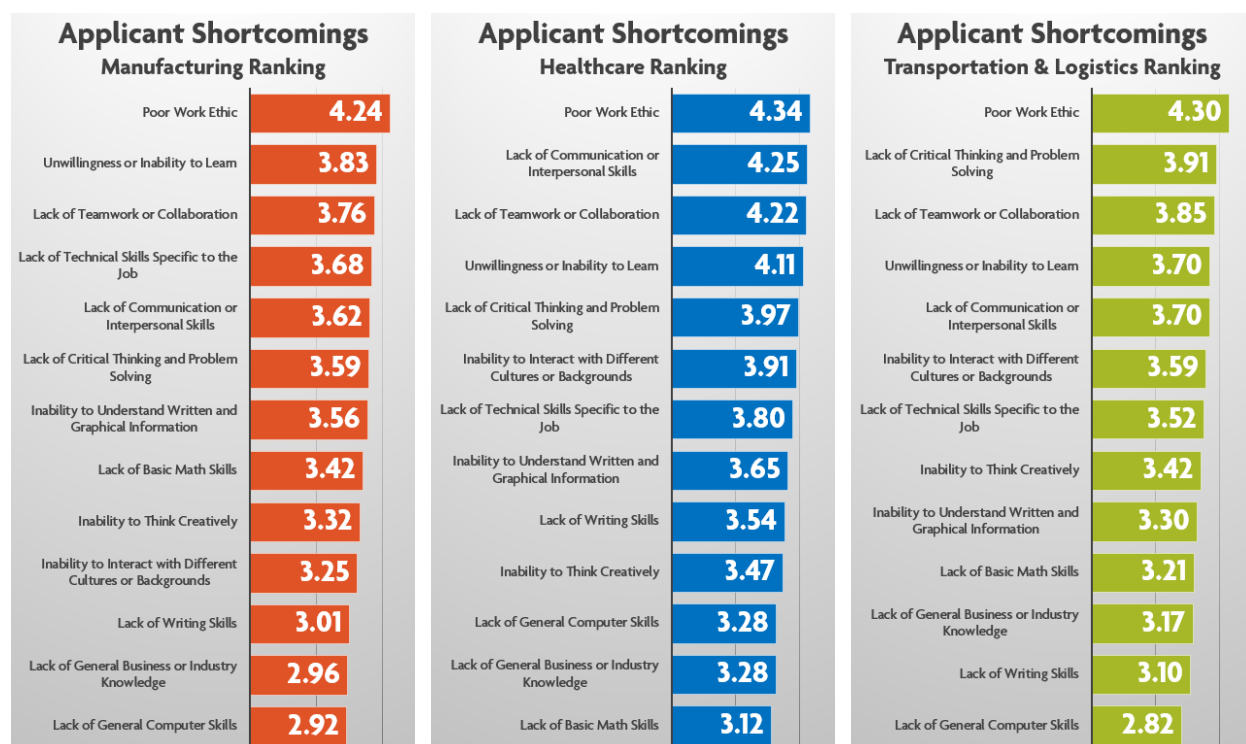
We also asked employers to rate the importance of the shortcomings they cited on a scale of 1 to 5 with 5 being the most important. The ranking of shortcomings by importance differed somewhat from the rankings by largest number of employers responding. The three most cited shortcomings were all in the top five by importance including *poor work ethic* at 4.30, the highest score, *lack of communication or interpersonal skills* at 3.98, and *lack of critical*

## Applicant Shortcomings Importance Ranking



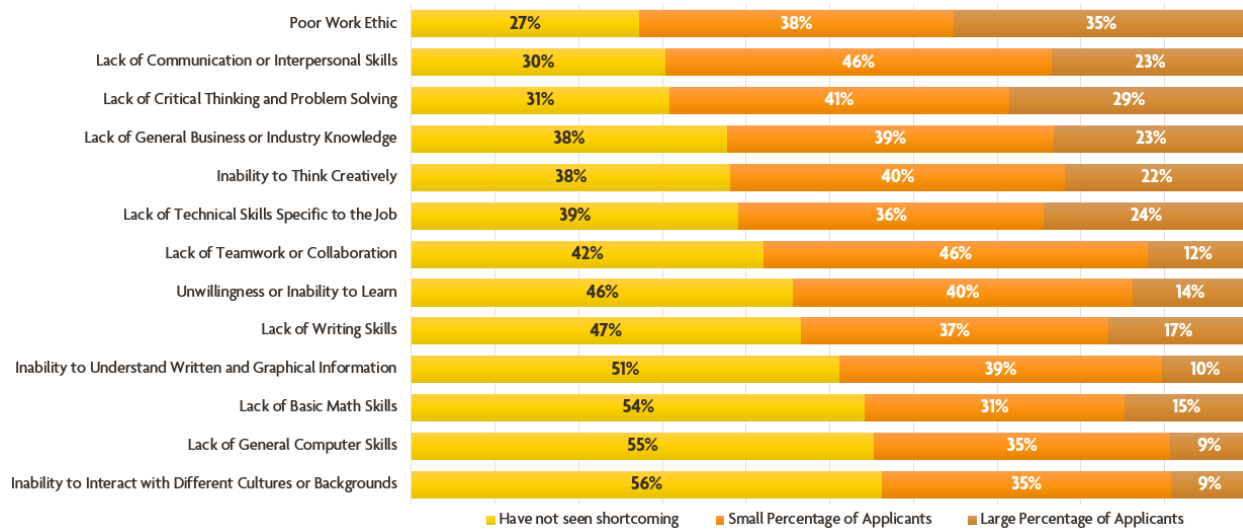
*thinking or problem solving* at 3.83. However two other shortcomings scored high in importance including *lack of teamwork or collaboration* at 4.02 and *unwillingness or inability to learn* at 3.97.

Differences in importance scores by industry sector included both manufacturing and healthcare employers who rated *lack of teamwork and collaboration* as an important shortcoming (3.76 and 4.22 respectively) and *unwillingness or inability to learn* (3.83 and 4.11 respectively). Manufacturing employers also ranked *lack of skills specific to the job high* in importance at 3.68. Transportation & logistics employers ranked importance generally in the same order as the frequency of response.



Finally, we also asked whether employers were seeing these shortcomings in large or small numbers of applicants. Across all of the choices for shortcomings most employers saw them in small numbers of applicants. The shortcoming reported most often in large numbers of applicants was *poor work ethic* with 48% of the employers who saw this shortage reported having seen it in a large number of applicants. Other shortcomings reported in large numbers included *lack of critical thinking and problem solving* at 41%, *lack of technical skills specific to the job* at 40%, *lack of general business or industry knowledge* at 37%, *inability to think creatively* at 35%, and *lack of communication or interpersonal skills* at 34%. Most responses to this question by industry sector fell close to the averages of all responses with the exception of manufacturing employers who indicated that, of those reporting *lack of technical skills specific to the job* as a shortcoming, 55% reported having seen this as a shortcoming in a large number of applicants.

## Frequency of Applicant Shortcomings



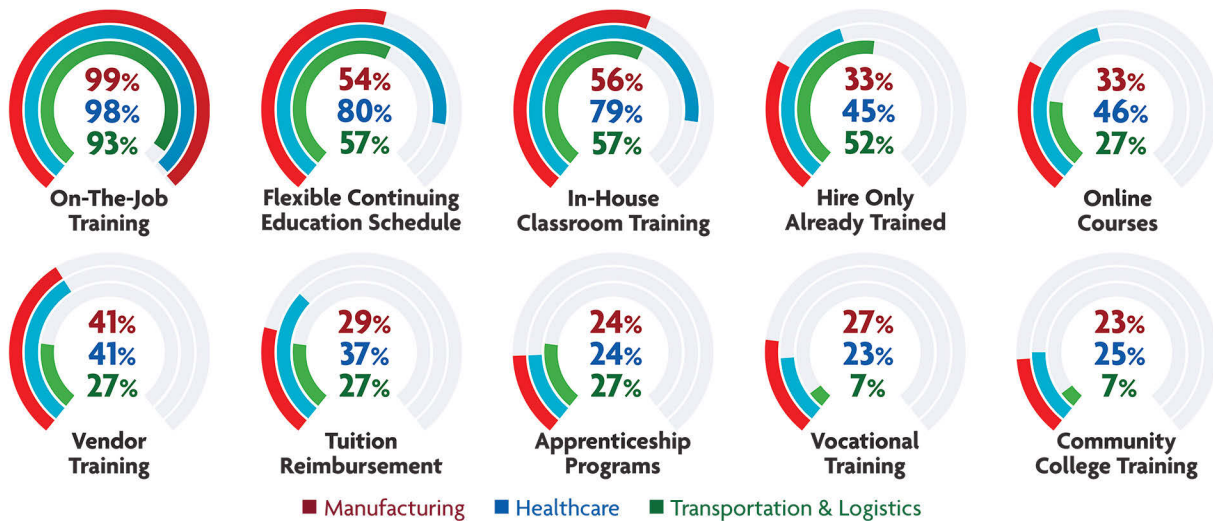
Although the 2016 survey continues to document shortcomings of applicants, it does reflect differences in these three industry sectors as compared to the composite of industries in previous surveys. Among these are the importance of teamwork in manufacturing and healthcare, and job specific skills in manufacturing.

## Methods of Skill Acquisition

When employers were asked about the methods they employ to help their employees acquire skills, they responded in much the same manner as employers in past surveys have responded. Using *on-the-job training* was a method employed by 97% of the respondents with *in-house classroom training* the second most cited method at 68% of employers responding. This compares to 95% and 60% respectively from the previous year's surveys and is also similar to the responses for this same question over the last four years.

For 2016 a new choice was added, *flexible schedule for continuing education*. Sixty-eight percent (68%) of employers responding indicated that they employed this method putting it in the top three responses to this question. A difference in this year's survey was in the response to *hire only workers who are already trained* with 42% of employers citing this as a method. The response to this choice had dropped to 28% in 2015 from a high of 45% in 2011. We believed that this reflected a tighter labor market in 2015 that restricted employers' ability to only hire fully-trained workers. Clearly employers in these sectors seek, or in some cases, may be required to hire only workers who are already trained.

## Methods of Skill Acquisition



The frequency of employers responding to other methods including *tuition reimbursement* at 33%, *apprenticeship programs* at 24% and *community college provided customized training or education* at 22% were in line with responses to these choices from several previous surveys.

Comparing employer responses by industry sector shows little difference between the responses to *on-the-job training* with responses ranging from 93% for transportation & logistics employers to 99% for manufacturing employers. Healthcare employers responded to using *in-house classroom training* at 79% and *flexible schedule for continuing education* at 80%, higher than employers in manufacturing or transportation & logistics, although they were both among the top four choices for those sectors as well. Both healthcare and transportation & logistics employers cited *hire only workers who are already trained* as a method of choice at 45% and 52% respectively as compared to manufacturing employers at 33%. Again it is likely that the licensure and certification requirements of many jobs in those sectors influences the response to this question.

## Addressing Company Skill Shortages

For the industry sectors targeted for the 2016 employer survey, 45% of the responding employers reported that they were experiencing a shortage of skilled applicants. There was very little variation in this response between the three sectors. This level of response was significantly below that of the all-industry survey of 2015 where 55% of employers reported skill shortages. As always, employers are required to make difficult choices to maintain a talent pipeline for their businesses. When asked what measures they were taking to address these shortages, 83% indicated that they were *forced to*

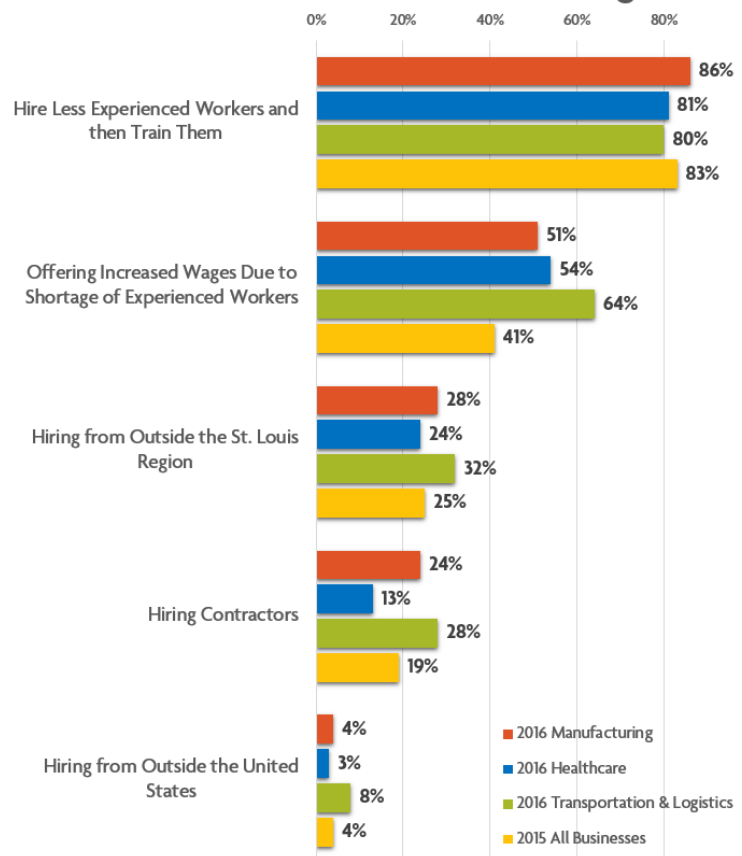


*hire less experienced workers and train them*, matching the rate of response to this question in 2015. At the same time, 54% of the employers who responded with a shortage indicated that they were *offering increased wages due to the shortage of experienced workers*. The frequency of response to this choice was well above that of any previous survey, the high point being 41% of employers reporting that choice in 2015. This may speak to the ability of companies in these three sectors to offer increased wages as compared to all employers in the regional economy. All other responses to this question were very similar to previous survey's response rates.

Comparing these responses between the three sectors shows that they are, in large measure, similar. Some differences include 64% of transportation & logistics employers who responded that *offering increased wages due to the shortage of experienced workers* was a method of addressing skill shortages as compared to manufacturing employers at 51% and healthcare employers at 54%. Manufacturing employers had the highest response rate of *forced to hire less experienced workers and train them* at 86%.

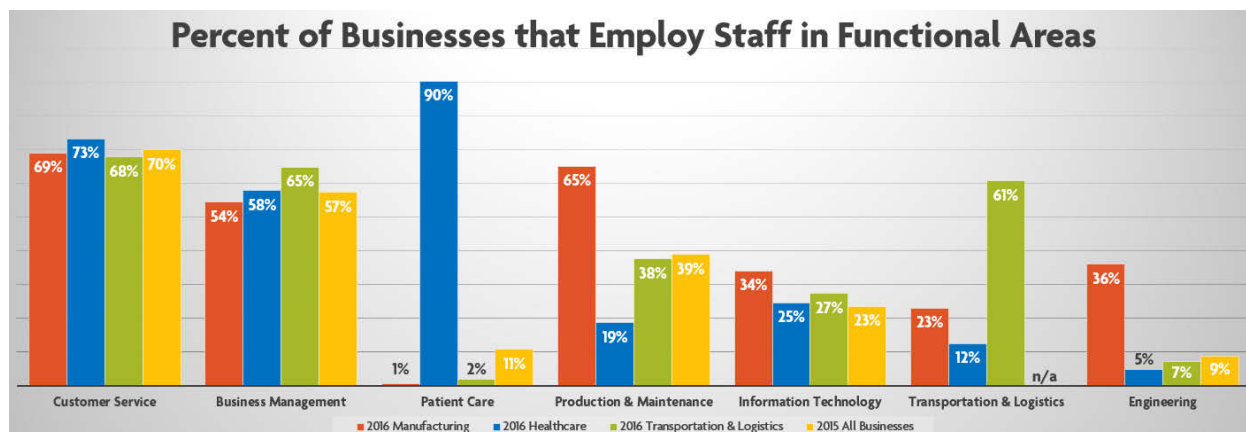
Responses to this question may indicate that manufacturing and healthcare are more constrained in offering increased wages than transportation & logistics employers and manufacturing employers rely most on hiring and training less experienced workers.

## Methods to Address Skill Shortages



## Skills Shortages in Functional Areas

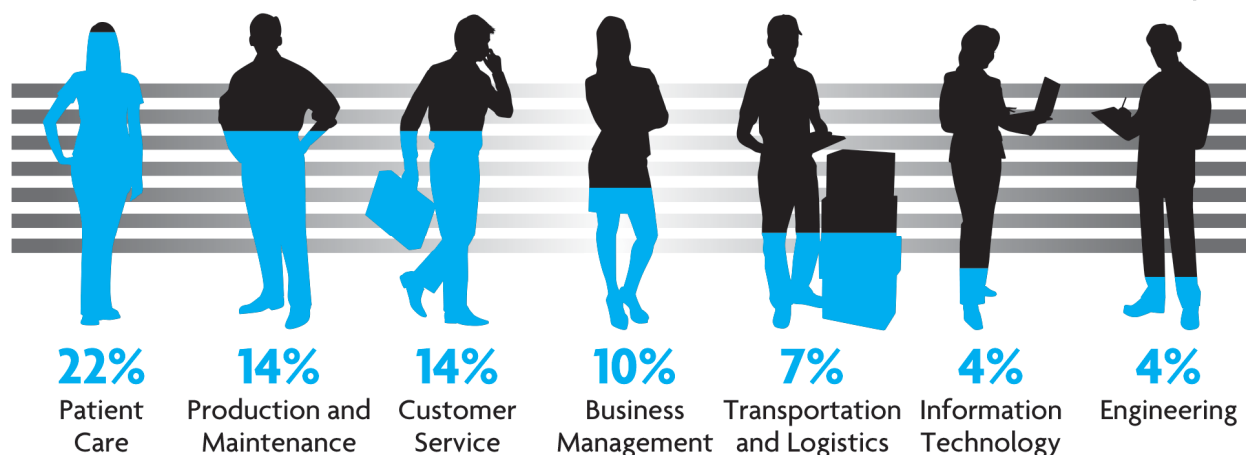
Employers were also asked whether they experienced skill shortages in certain functional areas. Because of the specific targeting of manufacturing, healthcare and transportation & logistics we would expect significant variations of functional skill shortages in the 2016 survey as compared to previous surveys that included all employers in the regional economy. Where *customer service* had



been the most frequently cited functional skill shortage in past surveys, it registered third in this year's report with only 14% of employers reporting this skill shortage. As might be expected *patient care* was the most frequently cited functional skill shortage in 2016 at 22% due to the focus of the survey on healthcare. Likewise *production and maintenance* was listed as a shortage by 14% of all employers responding, also due to the focus on manufacturing. *Transportation & logistics* as a functional skill was cited by 7% of employers. Although significant, this response level was lower because of the somewhat lower survey response rate by transportation & logistics employers. Other functional skill area responses to this survey include *business management* at 10%, *information technology* at 4%, and *engineering* at 4%, all similar response rates as in previous years.

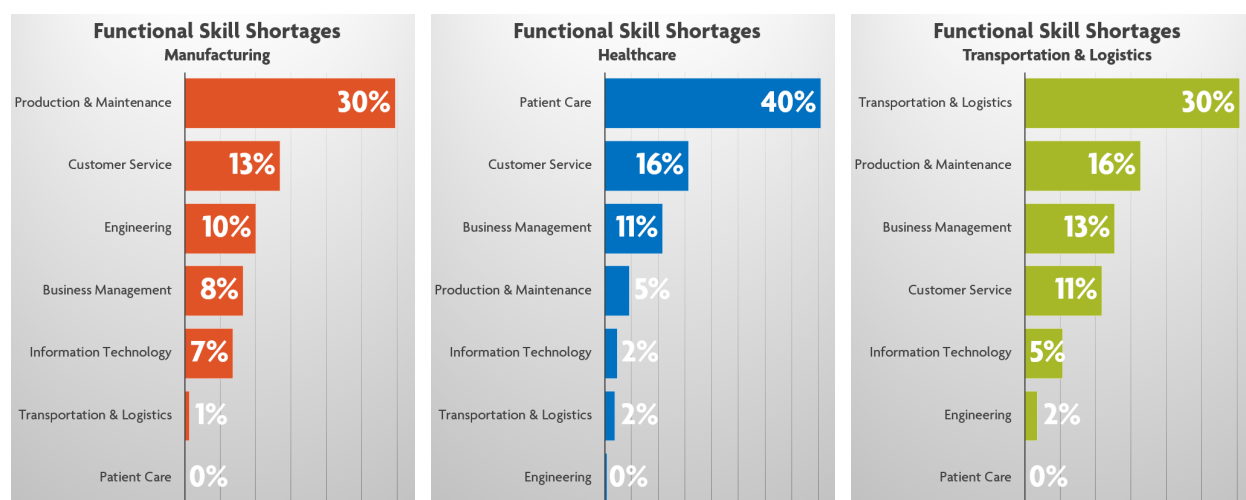
Percentage of employers experiencing ...

## Functional Skill Shortages

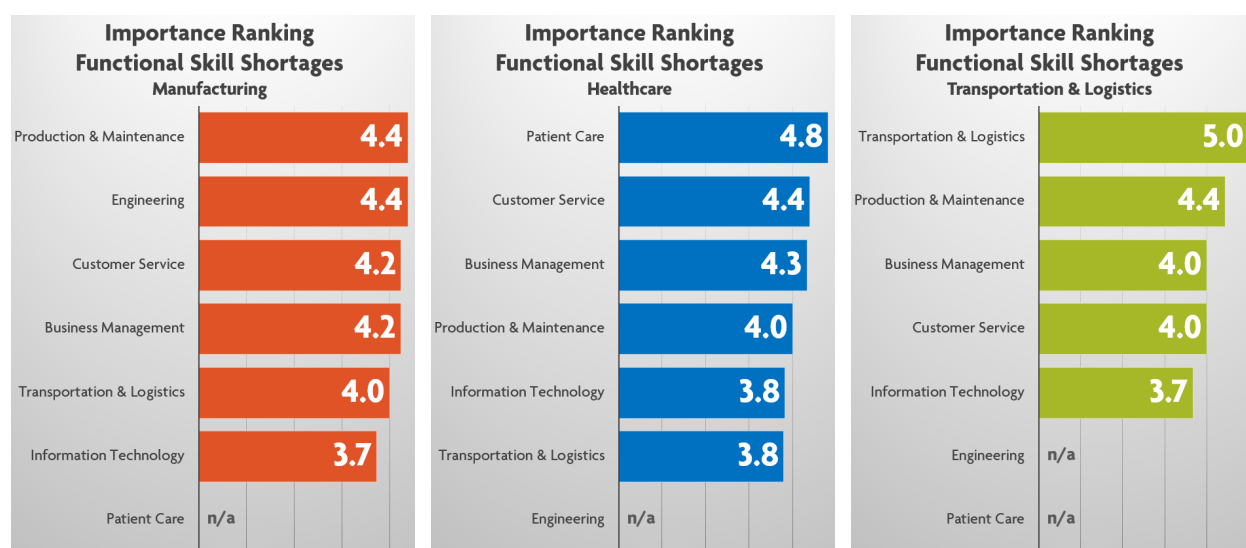


As would be expected, when we analyze responses to this question by industry sector we find that the functional skill area most specific to that particular sector rises to the top of the responses. In the case of healthcare, 40% of employers responding cite a functional skill shortage in *patient care*. Likewise 30% of manufacturing employers cite a shortage in *production and maintenance* while 30% of transportation & logistics employers cite a shortage in *transportation and logistics* skills. *Customer*

*service* receives the second highest response rate for healthcare and manufacturing at 16% and 13% respectively while 16% of transportation & logistics employers cite *production and maintenance* as the second most cited functional skill area shortage.



Employers were also asked to rate the importance of these shortages to their business. The rating was on a five point scale with 5 as most important. As was the case with the frequency of responses to functional skill area shortages, the importance ratings also aligned with the functional skill areas particular to the industry sector. Healthcare employers rated *patient care* skill shortages at 4.8. Manufacturing employers rated *production and maintenance* and *engineering* skill shortages equally at 4.4 while transportation & logistics employers rated *transportation and logistics* skills at a 5.0. Transportation & logistics employers also rated *production and maintenance* importance at 4.4 and all three sectors rated *customer service* at 4 or above.



Employers were asked additional questions about their opinions of the reasons for these skill shortages. Across all functional skill areas employers cited a *lack of qualified new graduates in the discipline* and *increased competition for qualified graduates* as the primary reason for the skill shortage at an almost equal rate. Overall 30% of employers responded that the *lack of qualified new graduates in the discipline* was the primary reason while 28% responded to the *increased competition for qualified graduates*. As in previous surveys employers responding to skill shortages in *information technology* cited *prohibitive cost of training the existing workforce* as a reason at 9%. There were also a significant response to *other reason* in the area of *customer service*. An examination of those reasons identifies a *lack of communications skills* as a contributing factor to that skill shortage.

Percentage of employers citing ...

## Reasons for Skill Shortages

	Patient Care	Production & Maintenance	Customer Service	Business Management	Transportation & Logistics	Information Technology	Engineering
Importance of shortage to businesses (1-5 scale)	4.82	4.32	4.31	4.26	4.48	3.75	4.44
Lack of qualified new graduates in this discipline	32%	33%	25%	30%	18%	37%	44%
Increased competition for qualified graduates	33%	23%	26%	30%	18%	37%	28%
Rapidly changing technology and business environment	4%	8%	8%	4%	9%	5%	11%
Prohibitive cost of training existing workforce	12%	3%	6%	11%	9%	21%	0%

Analyzing the responses for the reasons for skill shortages by industry sector did not reflect any significant differences from the overall response rate except that 12% of healthcare employers cited *prohibitive cost of training existing workforce* for *patient care* as a reason, while 12% of transportation & logistics employers cited the same reason for a skill shortage in transportation and logistics skills. These responses may merely reflect the challenges employers face with funding the ongoing skill upgrade needs of their employees.

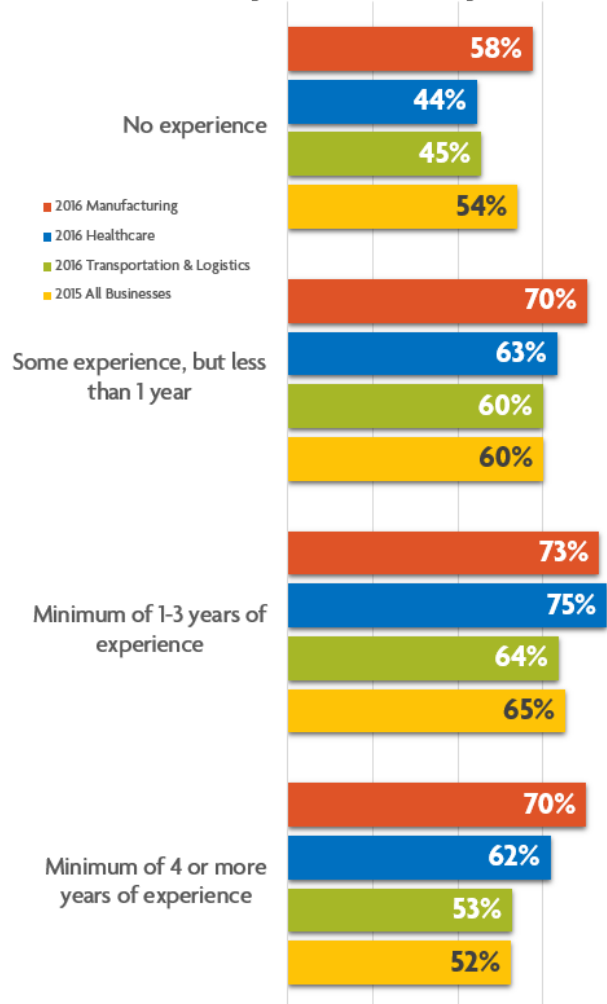
Although the frequency of responses for shortages in different functional skill areas was different because of the industry sector focus in this report, the reasons for skill shortages were much the same as in previous years.

## Experience

The 2015 employer survey documented a slight decrease in experience requirements for jobs in the overall regional economy as compared to previous years. We believe that it reflected employers adjusting their requirements to a tighter labor market. The 2016 survey shows that employers in the targeted sectors are returning to increased levels of experience, or perhaps were among employers who were never able to adjust their experience requirements to a tight labor market because of licensure or certification requirements.

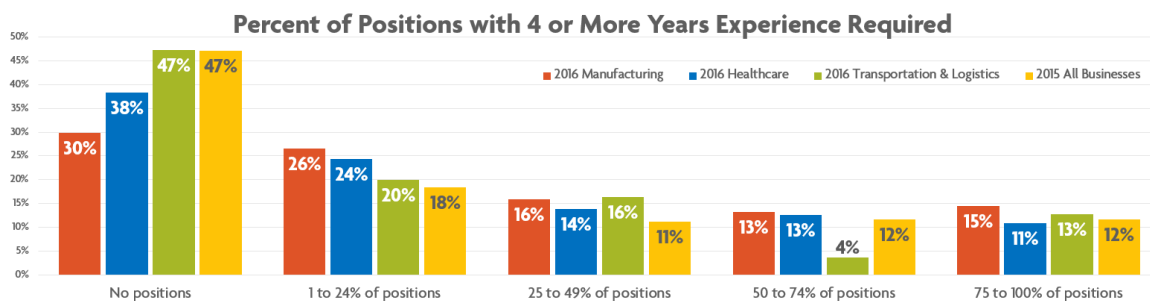
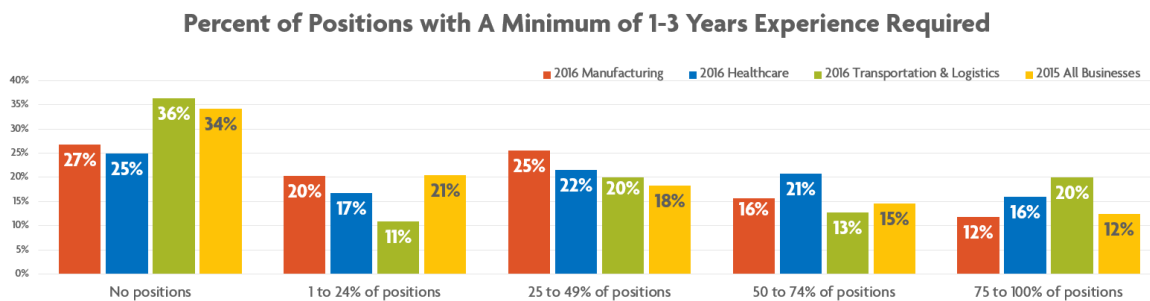
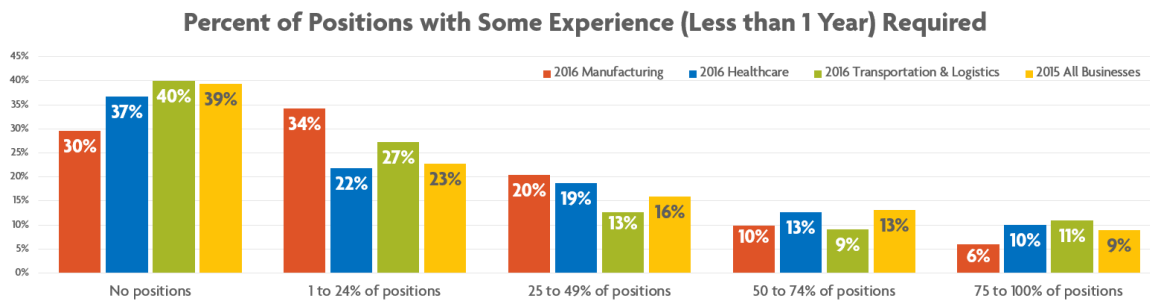
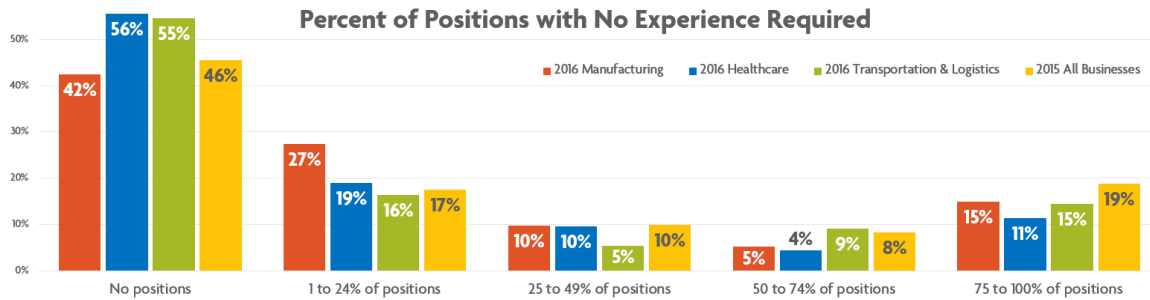
In either case employers responding to this year's survey reflect higher levels of experience as compared to 2015. When asked whether they had jobs that required a *minimum of four or more years of experience* 64% responded that they had some jobs with that requirement as compared to 52% of employers who responded to that level in the 2015 all-industry survey. Likewise 73% reported jobs requiring a *minimum of 1-3 years of experience* as compared to 65% in 2015, while 65% reported jobs requiring *some experience but less than one year* as compared to 60% in 2015. Jobs requiring *no experience* from our employer sample actually decreased to 49% from 54% in 2015.

### Level of Experience Required



Analyzing the responses by industry sector finds that 70% of manufacturing employers responded that they have jobs requiring a *minimum of four or more years of experience* and, at the same time, 58% responded that they have jobs requiring *no experience*, both the highest response rates to this question. This would seem to reflect a wide range of jobs within a manufacturing firm.

Transportation & logistics employers reported having the lowest percentage of jobs requiring a *minimum of four or more years of experience*, 53%, while 62% of healthcare employers reported having jobs requiring a *minimum of four or more years of experience*. The response to the selection of jobs requiring *no experience* was similar between healthcare and transportation & logistics at 44% and 45% respectively.



Employers were also asked about the percentage of jobs they had at various experience levels. Of the employers responding that they had jobs requiring a minimum of *four or more years of experience*, 24% indicated that more than 50% of their jobs had that requirement. Conversely, of those employers that responded that they had jobs requiring *no experience*, only 18% reported having more than 50% of their jobs with that requirement. The most frequent response was by 33% of employers who reported having more than 50% of their jobs with the requirement of a minimum of *1-3 years of experience*.

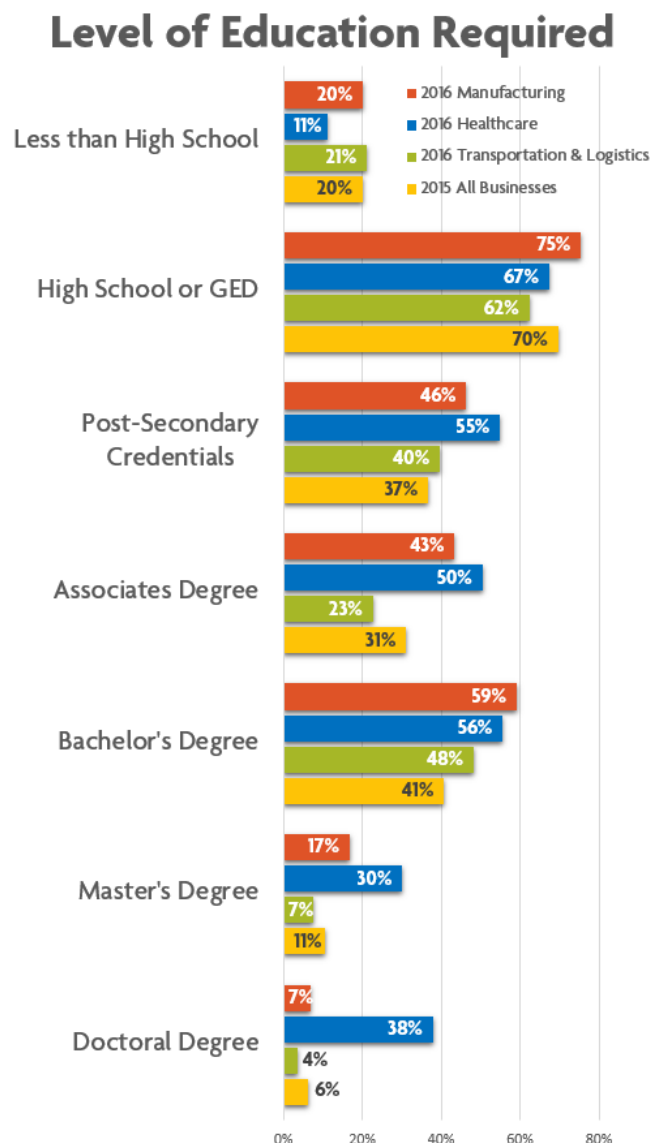
Analyzing the percentage of jobs at various experience levels by industry sector finds that 28% of manufacturing employers have 50% or more of their jobs with the requirement of a minimum of *four or more years of experience*, the highest rate; while transportation & logistics employers report the lowest rate of 50% or more jobs requiring a minimum of *four or more years of experience* at 17%. Healthcare employers responded with the lowest incidence of 50% or more of their jobs requiring *no experience* at only 15%.

One explanation for higher experience requirements for these industry sectors is the specific job requirements including licensure and certifications.

## Education

Our experience in past surveys would indicate that education and experience track closely together in terms of job requirement trends. Over the last five years our survey has tracked increasing requirements when employers had a large selection of applicants to choose from, and decreased requirements as the labor market tightened. With the focus of the 2016 survey on three industry sectors that utilize jobs with relatively higher skill levels than in the general economy, we would expect to see higher education requirements as compared to the previous survey. In fact, the survey responses for these sectors do reflect higher educational levels than the all-industry survey in 2015.

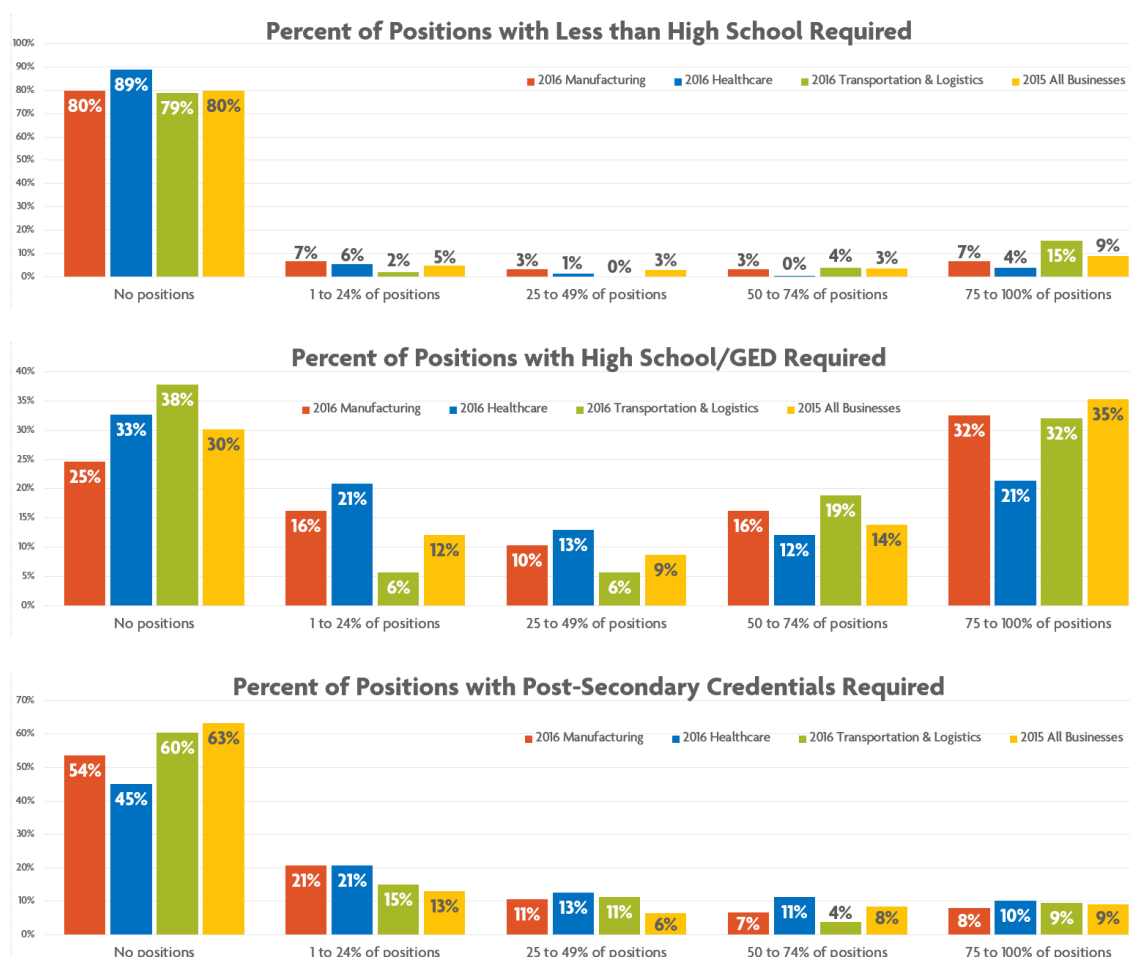
Overall employers responding to the 2016 survey cite higher requirements for all educational levels except *high school or GED* and *less than high school*. Of the employers surveyed, 23% report having positions at the doctoral degree level as compared to only 6% in 2015. At the *master's degree* level another



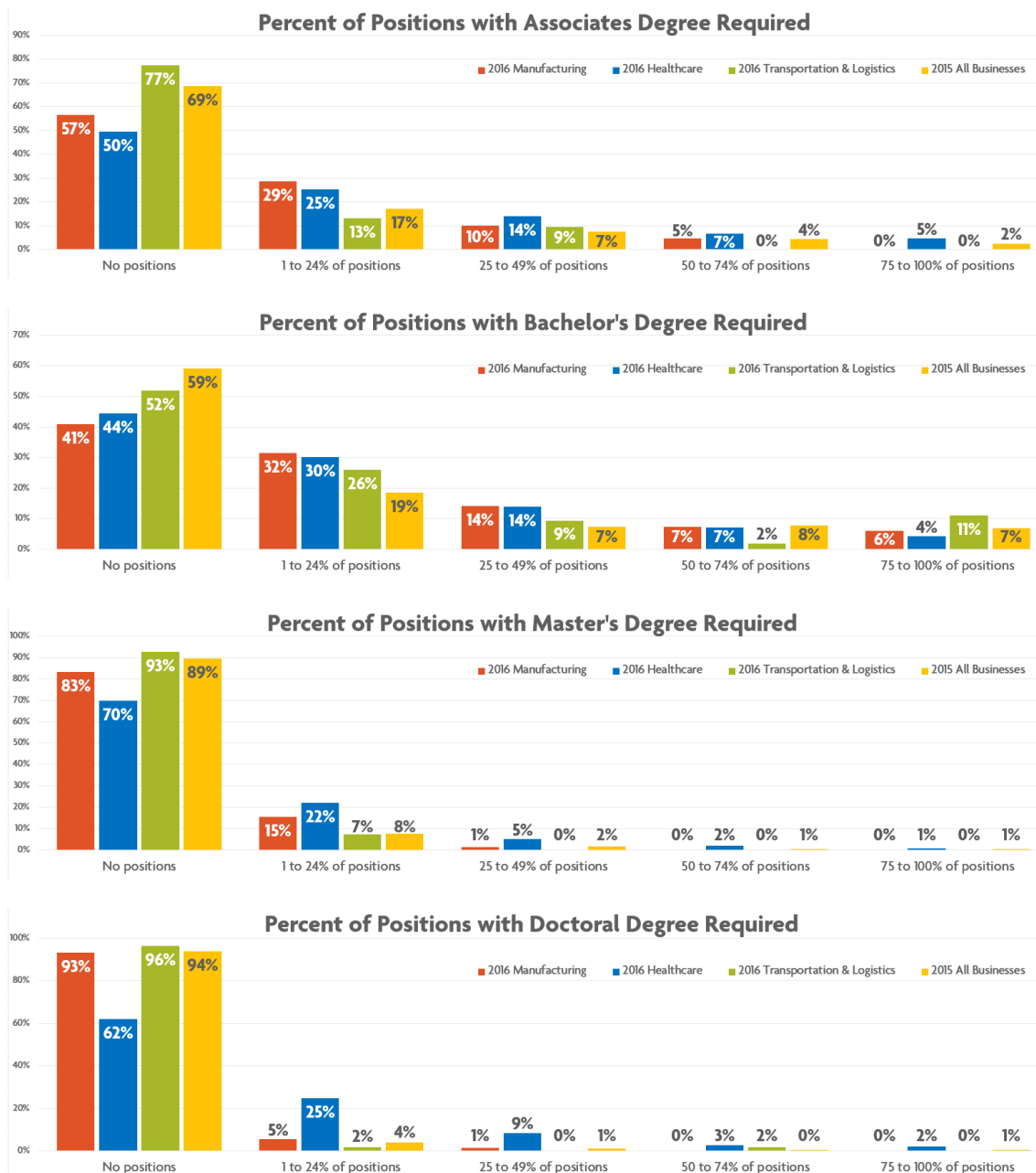


23% of employers reported having positions with this requirement compared to 11% in 2015. The comparison between 2016 and 2015 also held true for *bachelor's degree*, 56% vs 41%; *associates degree*, 45% vs 31%; and *post-secondary credential*, 50% vs 37%. The percentage of employers reporting that they had jobs requiring *less than high school* decreased in 2016 to 15% from the 2015 response rate of 20%.

Analyzing responses by industry sector reveals that healthcare employers are largely responsible for the overall response rate for *doctoral degree* and *master's degree* with 38% of healthcare employers responding that they had positions requiring a *doctoral degree* and 30% with *master's degree* requirements. Employer responses on positions requiring *bachelor's degrees* were more evenly distributed among the three sectors ranging from 59% of manufacturing employers responding that they had *bachelor's degree* positions to 48% of transportation & logistics employers. The drop from the 2015 survey response of positions requiring *less than high school* was largely a factor of only 11% of healthcare employers reporting that they had such positions. Responses from both healthcare and manufacturing employers to having positions requiring *associates degree* and *post-secondary credentials* contributed to a response rate to those choices that was significantly higher than in previous years.







We also asked employers about the magnitude of jobs requiring each of the education requirement levels expressed as a percentage of jobs at each level. As might be expected, a smaller percentage of jobs required the highest educational levels and a larger percentage required lower levels. Only 12% of employers responded that more than half of their jobs required a minimum of a *bachelor's degree* while 18% responded that more than half their jobs required at least a *post-secondary credential*. The highest response rate to this question was *high school or GED* to which 40% of employers responded that half or more of their jobs had this requirement.

Examining the responses by industry sector to this question shows that employers with 50% or more of their jobs having a *bachelor's degree* requirement is fairly evenly spread among the three sectors ranging from 11% of healthcare employers to 13% of manufacturing and transportation & logistics employers with that level of *bachelor's degree* jobs. Healthcare employers reported the lowest level for half or more of their jobs requiring *high school or GED* at 33% and *less than high school* at only 4%. This compares to 51% of transportation & logistics employers and 48% of manufacturing employers having half or more of their jobs at the *high school or GED* level. Of the transportation & logistics employers responding to this question, 19% indicated that more than half their jobs required *less than high school*, the highest response level for this selection. Again, responses from healthcare and manufacturing employers to the percentage of their jobs requiring *post-secondary credentials* drove the high overall response to this selection with 21% of healthcare employers indicating that 50% or more of their jobs required a *post-secondary credential* and 15% of manufacturing employers responding the same.

Due to the focus of the 2016 report on key sectors with specific skill, licensure and certification requirements it was somewhat intuitive to expect higher education levels and they were documented in the survey responses.

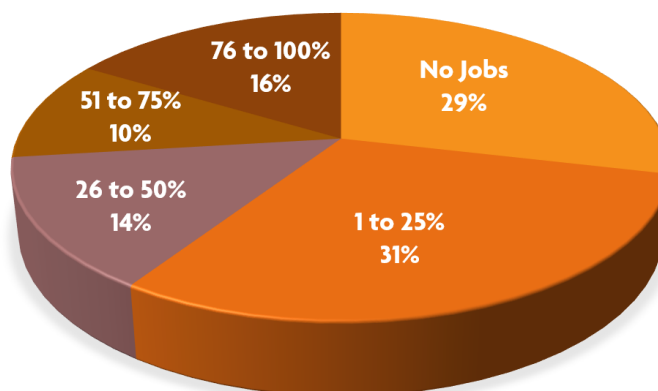
## *Bridges to Opportunities*

For the first time in 2015 the survey asked employers questions related to “bridges to opportunities” for individuals who had been disadvantaged in some way from fully participating in the job market. We again asked those questions for 2016. Those questions included the proportion of jobs that were available to those with only *short-term training*, six months or less past high school, and the proportion that had some type of *established pathway to advancement* to higher level skills and wages. For 2016 we added a question about the considerations that employers use in making decisions about *advancing internal candidates*.

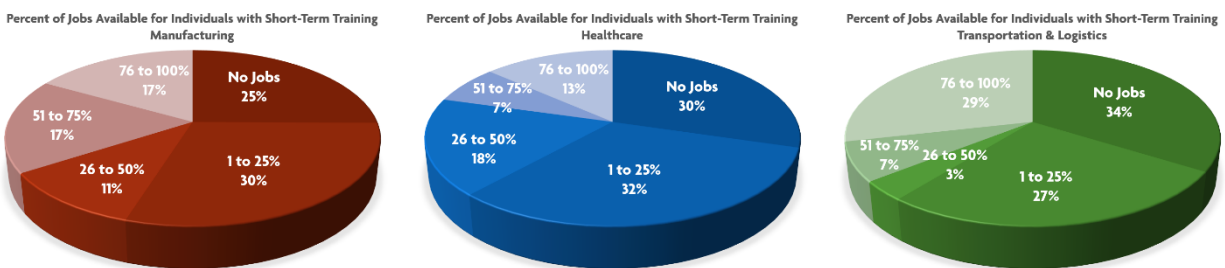
### *Short Term Training*

Overall 71% of employers responding to the 2016 survey had some *jobs that required only short term training*, about the same level reported in 2015 (69%). However in this year's survey employers reported having a smaller percentage of

Percent of Jobs Available for Individuals with Short-Term Training



*jobs requiring only short term training.* Only 26% (compared to 39% in 2015) of the employers surveyed reported having 50% or more of their *jobs requiring only short term training.*

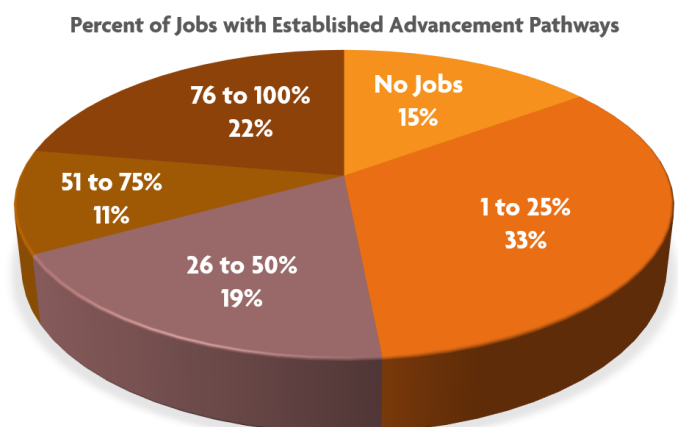


When we break down responses to this question by the three industry sectors we find that the response of having some jobs requiring training of six months or less past high school ranges from a low of 66% for transportation & logistics to a high of 75% for manufacturing employers. The lower number of transportation & logistics employers reporting *jobs available with short-term training*, six months or less past high school, may have been a factor of the industry practice of hiring only those over age 21 for truck driving positions. When asked about the percentage of these jobs available, only 20% of healthcare employers reported having more than half of their jobs with this requirement as compared to 36% of transportation & logistics employers and 34% of manufacturing employers. The frequency of response by healthcare employers contributed to bringing down the total percentage of *short term training* jobs reported by employers in these sectors.

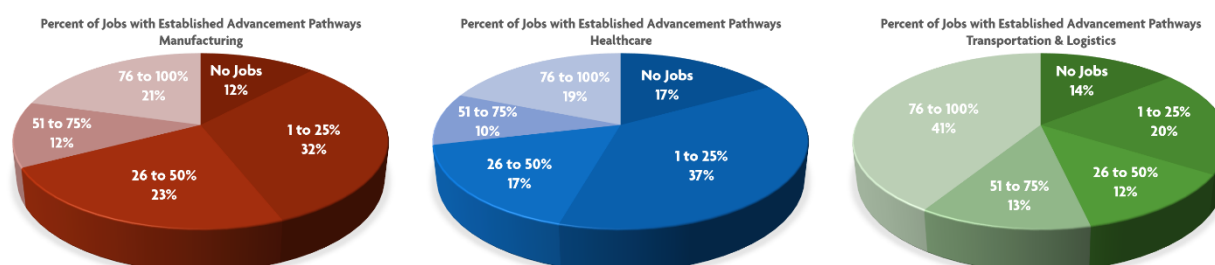
## Pathways to Advancement

When asked about the percentage of *jobs with established pathways to advancement*, 85% of employers responded that they had jobs with these pathways, about the same level as reported in 2015 (86%). As with *short term training*, employers reported a smaller percentage of *jobs with established pathways* in the 2016 report. Only 33% of employers responding to the 2016 survey reported having more than half their positions with *established pathways to advancement* as compared to 60% in 2015.

Comparing these responses by industry finds that the percentage of employers offering jobs with *established pathways to advancement* varies little by industry ranging from 83% of healthcare employers to 88% of manufacturing employers



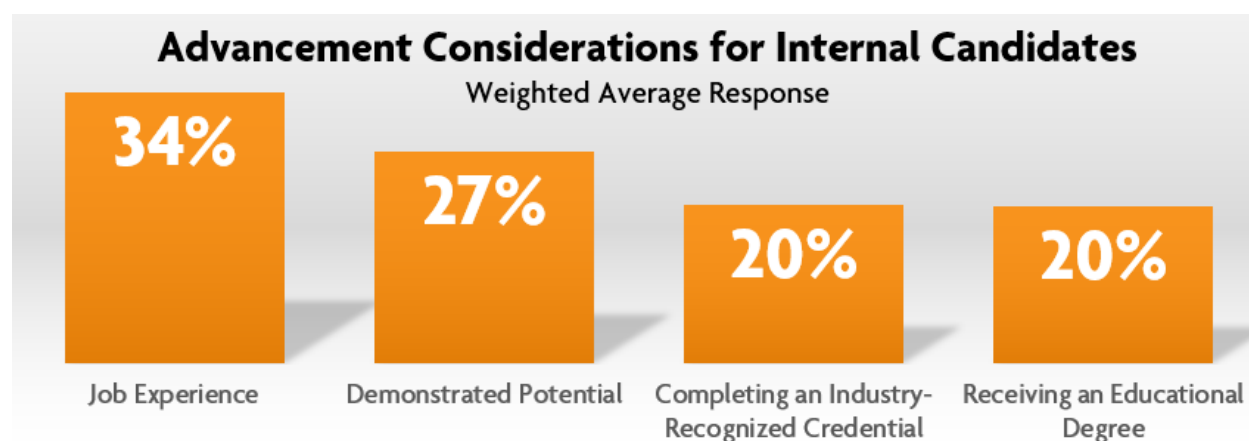
having some jobs with advancement pathways. However when we asked employers whether 50% or more of their jobs had *established pathways to advancement* significant differences emerged. Only 29% of healthcare employers responded that 50% or more of their jobs had *established pathways to advancement* contributing to the overall lower response rate to this selection. Both manufacturing and transportation & logistics employers responded in higher percentages to having more than half their jobs with *established pathways to advancement* at 33% and 54% respectively.



Although there are “bridges to opportunities” for these industry sectors, the regulatory environment may limit both short term training opportunities and advancement pathways as compared to an all-industry average.

## Advancing Internal Candidates

When asked about considerations in *advancing internal candidates* 34% of employers responded that job experience is the most important factor followed by demonstrated potential at 27%. Completing an industry-recognized credential was cited by 20% of employers, the same response as those citing an educational degree.



## *Employer Survey – Summary*

The 2016 *State of St. Louis Workforce* Report focused on three key industry sectors important to the past, present and future of our regional economy. As stated previously the survey sample for this year does not represent a true composite picture of the St. Louis economy, so comparisons from previous surveys cannot be made with certainty. Nevertheless, when looking at the combined responses from employers in these industries we find that, in general, they track with trends we have been seeing over the last five years. However we also find, as one would expect, that there are differences between the sectors based on the nature of the work and the regulatory environment in which they operate.

The combined responses demonstrate a continued optimism for employment growth in these sectors over the next 12 months, with 41% of employers anticipating increases and less than 2% of employers anticipating a decrease. As they did in 2015, employers responded that a *shortage of workers with knowledge and skills* was the most significant barrier to expanding employment although the frequency of that response was somewhat less for this group of employers than in the previous year (49% vs 57%). About two of every three employers in this survey cited *poor work ethic, lack of critical thinking and problem solving* and *lack of communication or interpersonal skills* as shortcomings in their applicant pools, a similar, if slightly smaller, frequency than in 2015.

For 2016, 83% of employers who reported skill shortages responded that they were *forced to hire less experienced workers and train them*, as a method of addressing skill shortages, the same response rate as in 2015. More employers in 2016 responded that they were *offering increased wages due to the shortage of experienced workers* than in the previous year (54% vs 41%). Employers continue to cite skill shortages, specifically difficulty finding qualified applicants for their positions. As in previous surveys they attribute this to a *lack of qualified new graduates in the discipline* and *increased competition for qualified graduates*.

As might be expected of industries that rely on higher skilled positions and, to some extent, those that require licensure or certification, both the level of education and experience was higher than that of jobs in the general economy as reflected in the differences between this year's survey and previous surveys.

In terms of *bridges to opportunities* which, for this survey, is defined as the availability of jobs requiring only *short-term training*, six months or less past high school and jobs that are on *established pathways to advancement*, employers in these sectors reported having such positions in about the same frequency as 2015 but reported a smaller percentage of their jobs with these requirements.

Some differences between the three sectors include:

## ***Manufacturing***

Small manufacturing firms (between 5 and 24 employees) anticipated the highest percentage increase in employment in the next 12 months at nearly 22%. The highest response to the *shortage of workers with knowledge and skills* as a barrier to expanding employment came from manufacturing employers at a 56% response rate. They also reported the *shortage of available training programs* at a higher rate than the overall response with 15% of employers citing it as a barrier. In terms of shortcomings of applicants, manufacturing employers reported *lack of technical skills specific to the job* (61%) and *lack of teamwork or collaboration* (55%) at higher rates than the overall response rate. Fifty-five percent (55%) of manufacturing employers saw the *lack of technical skills specific to the job* in large numbers of applicants, one of the highest levels of response for this selection. Manufacturing employers also responded that they were *forced to hire less experienced workers and train them* as a method of addressing company skill shortages at a higher rate, 86%, than employers from other sectors. They listed *production and maintenance* as a functional skill shortage at the highest rate of response, 30%, as might be expected. When asked about experience requirements, more manufacturing employers responded that they had jobs requiring a minimum of *four or more years of experience* (70%) as well as jobs requiring *no experience* (58%) possibly reflecting the wide range of jobs in a manufacturing firm. Fifteen percent (15%) of manufacturing employers also responded that more than half their jobs required a *post-secondary credential*, a higher rate than overall. More manufacturing employers (75%) reported having jobs requiring only *short term training*, six months or less past high school than the other sector employers as well as having jobs on *established pathways to advancement* (88%).

## ***Healthcare***

When surveyed about anticipated employment changes, less than 1% of healthcare employers anticipated decreases in employment compared to higher levels of the other sectors. Healthcare employers also cited as hiring barriers the *shortage of workers with knowledge and skills* and *economic conditions* less frequently than the other sectors and cited *government policies or regulations* more frequently. Healthcare employers reported seeing shortcomings in their applicants at a somewhat higher rate than employers from the other sectors including *lack of teamwork or collaboration*. More healthcare employers reported using *in-house classroom training* and *flexible schedules for continuing education* than the other sector employers. As might be expected *patient care* was the most frequently cited skill shortage for healthcare and also received the highest importance score at 4.8. Healthcare employers responded to *lack of qualified new graduates in the discipline* and *increased competition for qualified graduates* at about the same frequency as reasons for the skill shortage. They also reported the lowest percentage of jobs requiring *no experience*. Regarding education requirements, healthcare



employers cited higher percentages of their jobs requiring *doctoral* and *master's degrees* and the lower percentages for *high school or GED* and *less than high school*. More healthcare employers also reported having jobs requiring *post-secondary credentials*, as well as a higher percentage of their jobs with this requirement as compared to employers from the other sectors. Finally, healthcare employers reported having a somewhat smaller percentage of their jobs with the requirement of *six months or less past high school* and being on an *established pathway to advancement* than employers in the other sectors.

## *Transportation & Logistics*

Transportation & logistics employers reported anticipating employment increases at the highest rate, 48%, of any of the sectors surveyed. As was the case with healthcare, transportation & logistics employers report *government policies or regulations* as a significant barrier to expanding employment at a higher rate (27%) than overall and higher than past surveys. They also reported *lack of general business and industry knowledge* at a higher rate (61%) than other sector employers. Transportation & logistics employers responded that they would *hire only workers who are already trained* as a method of skill acquisition at the highest response rate of 52%. *Offering increased wages due to the shortage of experienced workers* was also cited by 64% of transportation & logistics employers, the highest response rate to that selection for addressing company skill shortages. Transportation & logistics employers rated the importance of the skill shortage in their area at the highest level, 5.0 on a five point scale, of any other skill shortage of any sector. When asked about education requirements, 19% of transportation & logistics employers indicated that half or more of their jobs required *less than high school*, the highest rate of response to this selection. When asked about positions requiring *short term training*, six months or less past high school, 66% of transportation & logistics employers responded that they had jobs with that requirement. Although this was the lowest rate of response by any of the three sectors to this question, 36% of transportation & logistics employers then responded that more than half of their jobs carried that requirement, the highest response to that selection.

We believe that the 2016 *State of St. Louis Workforce* Report continues to shed light on the progress of the St. Louis economy and workforce. It reflects not only continuity of recovery but also focuses on industries critical to the future success of the region. We believe that examining both the similarities and differences among the sectors will help formulate responses to some of the challenges faced by these sectors together with the education community in our continued collaboration to build a more robust workforce for the St. Louis region.

Thanks to all who contributed to the 2016 *State of St. Louis Workforce* Report.

# CONVERSATIONS WITH KEY LEADERS

*Conversations with Key Leaders in Manufacturing, Healthcare, and Transportation & Logistics.*

## *Manufacturing*

### **St. Louis Economic Development Partnership Regional Advanced Manufacturing Partnership (RAMP)**

St. Louis Economic Development Partnership expands the size and reach of the St. Louis County Economic Council. Through the combined efforts of the city and county, the St. Louis Economic Development Partnership has created a unified voice for the region, delivering services more efficiently while focusing on some of the most important areas of regional economic development. The Regional Advanced Manufacturing Partnership is the unified comprehensive regional voice of the St. Louis advanced manufacturing sector.

**John Hixson**, Vice President, Defense and Advanced Manufacturing, provides senior executive leadership in the area of defense business/worker retention and expansion to grow the advanced manufacturing sector.



- Q. Briefly describe the current state of the manufacturing industry in terms of opportunities or challenges to growth and expansion in the St. Louis region. What are some of the key factors that are fueling and/or inhibiting this growth?
- A. *Our work is in the Defense Industry Advanced Manufacturing sector. In St. Louis, that translates to significant activity in military aerospace. The research confirms the decline in defense acquisitions of F-15 and F/A-18 aircraft over the next few years, and that will have a significant adverse effect on the St. Louis Regional economy. Those two airplanes make up as much as half of the defense spending dollars being spent in the St. Louis region. It will likely result in some layoffs, if not at Boeing, then almost certainly from sub-contractors that support Boeing. There have been some foreign military sales that have helped sustain the business and there will be ongoing work in support of existing aircraft as*



*well. There has been an ongoing effort to transition away from relying too much on defense money, but the impact will be impossible to avoid. The biggest hits will come during and after 2020.*

Q. A 2015 survey of the St. Louis employers indicated that the “shortage of workers with knowledge and skills” was the most cited barrier to expanding employment. To what degree is a skilled workforce either contributing to or inhibiting growth and expansion in your industry?

A. *For the sector of Advanced Manufacturing, the term “skilled workforce” includes a very wide range of skills, and for some of those skills, very deep expertise. The cost of labor drives low skilled manufacturing jobs to low wage nations around the world – the language of the day calls those jobs the “tradeable jobs.” In order for jobs to remain here, they must, by the force of global economics, be non-tradeable jobs, and therefore they must be jobs of higher skill. We hear from manufacturing businesses that there is some difficulty in finding appropriately skilled people. The full answer might be to find ways to more accurately identify and attract appropriately skilled people at a labor cost competitive with the global marketplace.*

*Growing the business without growing the employee base is the goal. In order to control costs and to stay competitive, it is necessary that we find ways to do more with fewer people. We need more skilled individuals to become more lean. Transitioning to this more sustainable model will require people who can do many things at a high skill level, at a competitive price. There will be more automated equipment and that will require people with the skills to run that more complex equipment.*

Q. What are the main reasons for hiring in your industry? Explain.

A. *Clearly, the need for hiring is to improve the skillset within the business. That applies to every position within the business. In order for the business to advance its global competitiveness, each position must be able to advance its skills. If the employee either cannot or will not advance, the business must find an employee who brings higher skills, or who will achieve higher skills.*

*I believe most businesses are genuine in expressing their employees are their most valuable asset. The businesses are like most families, they love their children but do not want any more of them. Businesses are trying to figure out how they can grow their business with the employees they have, rather than grow by adding more employees.*

*Manufacturing will be fine, but it will be different. The workers that lose jobs to automation will adapt and run the machines or will find other work. This has happened in other industries. In the 1930s there were an enormous number of Americans working in the farming industry. As techniques changed and advancements occurred, the workforce needs changed and people adjusted. The industry become more efficient, producing more food at a lower price and with less manual labor. The*

*manufacturing industry is in for that kind of change and growth and people will change and grow with it.*

- Q. How would you rate or describe the availability of a skilled workforce for your industry? If that availability is not adequate what is your perspective on the nature of that shortfall as well as the reasons?

- A. *When I had a manufacturing business, we did not seem to have difficulty finding terrific employees. The difficulty was finding people who have the life skills to manage themselves in a work environment. I know there are some manufacturers who are struggling to find enough people with the skills to be productive immediately.*

*There remains a demand for qualified, sophisticated machine operators. Some jobs still require machinists, but there are not many of those type of jobs remaining. There are sophisticated new machines that can do an awful lot of things and those machines require skilled workers. Education has been responsive to needs. The education system in the area is an asset for the community. One of the largest remaining challenges is to find people with life skills that predict success. People need to show up and pass the drug test. There is a need for more mentoring and mentorship programs. We need leaders to make a greater commitment to being mentors, not just managing the work. It is harder today, because there is an awful lot for managers to do, but it is an important aspect of creating a successful workforce.*

*The research has confirmed the St. Louis Regional workforce development community, and the workforce education and training community are very active, very willing, and very responsive. We must all be attentive to maintain and even increase the resources available to this essential component of our economy.*

- Q. What are some of the most critical soft skills deficiencies and technical deficiencies that you have seen in your industry?

- A. *In every industry, the advances in technology require all workers in the business to continuously upgrade their skills and knowledge. Every job changes as the technologies advance.*

*On the soft skills side: Showing up on time and regularly, initiative and resourcefulness, take charge of selves, taking personal responsibility.*

- Q. How have you addressed the availability of a skilled workforce either in terms of numbers of workers or skill levels? Describe any innovative partnerships with employers, education or government to address these needs.

- A. *People want to be an important part of an important undertaking. Part of the responsibility for the future of the workforce is to correspondingly upgrade the management skillsets. Managing the productivity of a highly skilled, highly educated workforce is vastly different than managing the productivity of an unskilled, undereducated workforce. Good managers attract good workers.*

*Part of the issue is that the commercial marketplace is about the focus on mass customization instead of mass production. People aren't as transferable as they used to be because of the larger number of differences in production methods and techniques. There are many shop to shop differences that result in every line being significantly different, which makes it less likely that skills and experiences are transferable.*

- Q. Finally, what would you think is the single most impactful action that you would take to address the skilled workforce needs of your industry?

- A. *Maintain, in the vision of workforce programs, the notion of a focus on the enabling technologies, rather than on the strictly current processes. Every job will change, to keep up with advancing technology, and the workers comfortable with the enabling technologies will be better able to adapt and grow with the changes than workers who are tied to a set process.*

*There is optimism regarding manufacturing in the St. Louis region. It will be robust and manufacturing and employment numbers may not be as connected as they used to be as indicators of strength. Our local companies are optimistic and encouraged. They are not afraid to compete because they feel well positioned to be successful. Employers want the opportunity to leverage their workforce and they all want more a skilled workforce even if they already have skilled workers.*

## Healthcare

### Missouri Hospital Association

The Missouri Hospital Association (MHA) represents every acute care hospital in the state, as well as most of the federal and state hospitals and rehabilitation and psychiatric care facilities. Their mission is to create an environment that enables member hospitals and health care systems to improve the health of their patients and communities. Mary Becker serves as the Senior Vice President of Strategic Partnerships and Communications. Her areas of responsibility and leadership include communications, educational services, advocacy and statewide health care workforce development initiatives.



Q. Briefly describe the current state of the healthcare industry in terms of opportunities or challenges to growth and expansion in the St. Louis region. What are some of the key factors that are fueling and/or inhibiting this growth?

A. *Healthcare is a large economic driver and there are a large number of hospitals and providers in the St. Louis Region. My main focus is on hospitals. They are dealing with a tremendous number of changing dynamics as an industry, including an increased number and complexity of regulations and significant changes in government reimbursement due to the Affordable Care Act (ACA).*

*The top payer in the industry is the federal government and the fact that Missouri has not expanded Medicaid has had a negative impact on hospital finances. Workforce decisions have been influenced and the ability of Missouri hospitals that border expansion states (Illinois, Arkansas and Iowa) to compete for workers has been hurt. The St. Louis region can still attract employees by leveraging the fact that many of our institutions are rated as world class hospitals, but the fact remains that other states often have more revenue coming in.*

Q. A 2015 survey of the St. Louis employers indicated that the “shortage of workers with knowledge and skills” was the most cited barrier to expanding employment. To what degree is a skilled workforce either contributing to or inhibiting growth and expansion in your industry?

A. *The workforce is inhibiting a bit. The unique nature of the industry is that we don't control the flow of work. When there is a need for more people we try to be creative to meet those needs. There is a clear shortage of qualified nurses in the area. We have an aging population that is driving hospital admissions higher and higher while our experienced workforce continues to age. The experienced*

*personnel are starting to retire and there are not enough people to replace them. The uninsured numbers are down, so more people are coming in for services they may have been putting off, while more baby boomers are getting elective surgeries. Further, there is a demand for nurses in other industries (IT, Outpatient, call centers, insurance companies) that is creating more competition for our most experienced nurses. Patient care nursing is a physical job and, therefore, more experienced nurses are looking for less physical jobs. A lot of the younger, less experienced nurses like to move from job to job. This creates increased turnover, which further drives demand.*

Q. What are the main reasons for hiring in your industry? Explain.

A. *The aging boomer population is putting pressure on staffing demands and more people now have insurance. There is an increased number of elective procedures and there is simply a need to hire more people to deal with the increased demand. We have more licensed nurses than ever before, but they are spread across more industries than ever before. Nursing is physically demanding, so as nurses age you have to find ways to continue to leverage them in less physically demanding roles. With the recession ending, more retirements have occurred from those who were waiting for the economy to improve or bounce back. There is a strong need to fill exiting roles. There was a 17% turnover rate for RNs at the end of 2015 and a vacancy rate of 9.2%.*

Q. How would you rate or describe the availability of a skilled workforce for your industry? If that availability is not adequate what is your perspective on the nature of that shortfall as well as the reasons?

A. *There is still a shortage, even though there was fair warning and a lot of effort has been put into meeting the need. The expectations of millennials have changed things from a stability standpoint. There are many who change jobs frequently. We need to find a way to creatively retain nurses as they get older and we need to invest in future nurses in a targeted, effective way. People who want to be nurses but are blocked from the opportunity should be provided help. Tuition assistance is an effective tool, if targeted correctly. It is a steady profession, but the cost can be prohibitive. We need to make it easier to get people in and through.*

Q. What are some of the most critical soft skills deficiencies and technical deficiencies that you have seen in your industry?

A. *The worst thing is when a nurse does not want to deal with people. Believe it or not, it happens. There is a strong need to screen for that on the front end so that people don't invest time and energy into a nursing program only to find that the job is a poor fit. In addition, we need people who are comfortable working on a team and who have strong problem solving skills. Empathy, compassion and a desire to make a difference are among the best predictors of success in the field. Nurses need to*

*have a strong work ethic and to be reliable and trustworthy. Mentoring from experienced nurses is an essential part of the formula for developing the workforce.*

Q. How have you addressed the availability of a skilled workforce either in terms of numbers of workers or skill levels? Describe any innovative partnerships with employers, education or government to address these needs.

A. *Partnerships with the educational community and nursing schools are an essential tool in meeting the demand. Career promotion at regularly scheduled events that involve educational facilities and members of the public workforce system are effective in educating and creating interest for opportunities in the healthcare field. The website [www.missourihealthcareers.com](http://www.missourihealthcareers.com) is an effective tool as well. There are scholarships and grants that have been used to identify and grow talent in the industry. Individual hospitals organize camps and work with other organizations to build awareness and develop individuals looking for opportunities in the field.*

Q. Finally, what would you think is the single most impactful action that you would take to address the skilled workforce needs of your industry?

A. *There is not one thing that can be done to address the need. There are too many factors to try just one thing. All of the forces impacting it make it so that it is too complex for a “one front” approach, instead creating a problem that must be attacked from all sides. One thing that can help create an environment for a multi-faceted approach is increased awareness. Governmental entities need to understand how important and time sensitive the issues facing the healthcare workforce are (particularly nursing). Healthcare is a major economic driver in many communities and economic investment is needed to avoid significant shortages that will impact the larger community from both a public safety standpoint and as an economic driver.*

## Transportation & Logistics

### Bi-State Development – St. Louis Regional Freightway

Bi-State Development (BSD) is a dynamic and multi-faceted resource for economic development in the St. Louis region. As leaders in public transit, they are world renowned for



**ST LOUIS REGIONAL  
FREIGHTWAY**

**Your Gateway to the World**

reliability and efficiency with deep expertise in planning and implementation to provide real solutions to regional challenges. The St. Louis Regional Freightway drives regional economic growth through public and private efforts, optimizing the regional multimodal investment portfolio and marketing the Greater St. Louis' multimodal opportunities. **Mary Lamie** is the Executive Director responsible for the activities and operation of St. Louis Regional Freightway.

Q. Briefly describe the current state of the transportation and logistics industry in terms of opportunities or challenges to growth and expansion in the St. Louis region. What are some of the key factors that are fueling and/or inhibiting this growth?

A. *In 2015, United States Department of Transportation studies indicate that the population will grow by 70 million people and freight volume will increase by 45% by 2045. St. Louis is well positioned to take advantage of this projected growth, and should be able to capture a major share. Logistics is all about location and infrastructure and workforce. More shippers are opening distribution and fulfillment centers. The logistics and transportation industry in the St. Louis Region is experiencing increased activity at logistics parks. Developers are investing in industrial space by building speculative warehouse space even before tenants are signed to use the space. This is a testament to the confidence and strength of our region's industrial market growth potential. In 2016, we anticipate over 7 million square feet of new industrial space will be delivered to capture market demand and up to 4 million square feet is planned for 2017.*

*Specifically, there are plans to develop space for Amazon, New Balance and a number of support/suppliers and sub-assembly operations to the GM-Wentzville plant. In addition, the space formally occupied by the Chrysler auto assembly plant will become The Fenton Logistics Park, containing over 2 million square feet of warehouse offices and industrial tenants.*

*A key factor that is fueling this growth and ongoing economic expansion is our low transportation costs. We offer a diversity of shipping options through freight rail, our interstate system, international air cargo and the barge industry. We have the third largest rail hub and the third largest inland port.*

*From St. Louis, travel to major cities like Chicago, Memphis, Nashville, Kansas City, and Columbus offer supply chain savings that are very attractive to potential businesses.*

*Finally, the quality and experience of the St. Louis logistics workforce is viewed positively by the industry.*

Q. A 2015 survey of the St. Louis employers indicated that the “shortage of workers with knowledge and skills” was the most cited barrier to expanding employment. To what degree is a skilled workforce either contributing to or inhibiting growth and expansion in your industry?

A. *The entire St. Louis region was founded on its logistical advantages. As mentioned above, we offer a unique combination of competitive advantages due to the diversity of shipping options available from our centralized location.*

*Another major advantage for St. Louis is the large number of workers employed in manufacturing among comparably-sized Midwestern cities. Due to the growing freight economy, the availability of skilled labor has become one of the most important factors in industrial site selection decisions. The St. Louis region offers a highly skilled and diverse workforce with core strengths in manufacturing, supply chain logistics, and value-added distribution. The workforce and diversification has resulted in high productivity, high levels of safety and high quality of work. With the support of our educational institutions, our workforce is doing more multifaceted production with sophisticated equipment and is focused on innovation and manufacturing flexibility. The St. Louis workforce is adaptable and able to learn new, advanced manufacturing techniques as they are developed. We are fortunate to have local educational community support to meet the market demand.*

Q. What are the main reasons for hiring in your industry? Explain.

A. *The main reasons for hiring is a combination of business expansion and an aging workforce, especially in manufacturing and in the trucking industry. Many of our larger plants have a graying workforce; employees in their 50s and early 60s who will be retiring between now and the next fifteen years. The challenge and opportunity will be to transition younger workers into these production roles and to continue to support the future pipeline of workers by encouraging careers in manufacturing. In contrast to the common negative perceptions, a career in manufacturing or truck driving can provide a tremendous opportunities for a fast-paced career using the latest technologies and innovation. It is important that we continue to work to make people aware of the opportunities available in the industry.*



Q. How would you rate or describe the availability of a skilled workforce for your industry? If that availability is not adequate what is your perspective on the nature of that shortfall as well as the reasons?

A. *In order for our region to continue to grow and expand manufacturing and logistics the workforce needs to be able continue to grow and meet the demands for skilled trade jobs.*

*By 2017, an estimated 2.5 million new, middle-skill jobs are expected to be added to the workforce, accounting for nearly 40% of all job growth, according to a USA TODAY analysis of local data from Economic Modeling Specialists Intl. and CareerBuilder. All pay at least \$13 an hour, with many paying much more. These jobs require some skill and training but far less school than a bachelor's degree.*

*Our region has been responding to the workforce need and the first step is focused on a rebranding effort. Manufacturing, logistics and truck driving have not always been viewed as an attractive industry to build a career. The fact is someone who is highly skilled in computer programming, lab science, engineering, electrical circuitry, sheet metal working, welding, and other technical skills are in demand on the shop floor, and there are employers regionally who offer a very high quality work environment and excellent pay. There is a blend of traditional blue and white collar fields in today's workplace and into the future. Workers who can effectively move in and out of an office and technical environment will be highly valued in the global economy. We need to reinforce this message. Having technical skills and the willingness to utilize these skills and continue to grow and learn new skills both on the job and in off hours as technology continues to evolve will prepare the workforce for the opportunities and challenges to come.*

Q. What are some of the most critical soft skills deficiencies and technical deficiencies that you have seen in your industry?

A. *Soft skill deficiency may be more of a generational difference. Older generations may prefer face to face or phone communication, while younger generations may prefer email, text messages, and communication through social media. Each form of communication has a role in the workplace, the important thing is to know which is the most effective for the particular situation. When a company is able to recognize the strengths of each generation, everyone benefits. The work ethic and experience of senior staff who are mentoring the younger employees can have a positive effect on product quality and customer service. Additionally, the younger generation sharing the utility of technology to older generations will have similar positive impacts. Regardless, customer service and the ability to meet the needs of a customer will always be a priority. Those who are able to effectively communicate and serve their customers the most effectively will best be positioned to grow their businesses.*

- Q. How have you addressed the availability of a skilled workforce either in terms of numbers of workers or skill levels? Describe any innovative partnerships with employers, education or government to address these needs.
- A. *Through public-private partnerships we are collaborating and maximizing available resources among private sector industry leaders, educational institutions, workforce development offices and economic development organizations. The key to workforce development is a substantial employer engagement. We're in the initial phases – first steps focus on building on lessons learned from the past, understanding the workforce and employment requirements and developing short and long term training programs that are flexible, responsive and meet the needs of the manufacturing and logistic industry.*
- Q. Finally, what would you think is the single most impactful action that you would take to address the skilled workforce needs of your industry?
- A. *We need to continue to improve communication and build partnerships with private industry to better understand the trends in the industry and to help promote the logistics and manufacturing industries that offer opportunities for viable careers. Our manufacturing and logistics industries are the key to economic growth, and offering a highly skilled and diversified workforce is key to their success.*



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# APPENDIX I: STATE OF ST. LOUIS

## WORKFORCE EMPLOYER SURVEY 2016

Survey questions for the 2016 *State of St. Louis Workforce* Employer Survey.

### Initial Question Employees

First, including yourself, how many employees does your company CURRENTLY employ in the St. Louis area?

Less than 5 (Thank & Terminate)	01
5 to 24	02
25 to 49	03
50 to 99	04
100 or more	05
(Do not read) Refuse - Thank & Terminate	97
(Do not read) Don't know/Not sure - Thank & Terminate	98

1a. Over the past 12 months, would you say your employment levels have increased significantly, increased slightly, remained the same as before, decreased slightly, or decreased significantly?

Increased significantly	01
Increased slightly	02
Remained the same as before	03
Decreased slightly	04
Decreased significantly	05
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

1b-1. (If employment levels have "increased significantly/slightly" per Q.1a)

By approximately what percent has your employment level increased over the past 12 months?

Refuse = 997  
Don't know/Not sure = 998

1b-2. (If employment levels have "decreased slightly/significantly" per Q.1a)

By approximately what percent has your employment level decreased over the past 12 months?

Refuse = 997  
Don't know/Not sure = 998

2a. Over the next 12 months, how does your business PLAN to change your employment levels? Would you say your employment levels will increase significantly, increase slightly, remain the same as before, decrease slightly, or decrease significantly?

Increase significantly	01
Increase slightly	02
Remain the same as before	03
Decrease slightly	04
Decrease significantly	05
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

2b-1. (If employment levels will "increase significantly/slightly" per Q.2a)

By approximately what percent do you expect your employment level to increase over the next 12 months?

Refuse = 997  
Don't know/Not sure = 998

2b-2. (If employment levels will "decrease slightly/significantly" per Q.2a)

By approximately what percent do you expect your employment level to decrease over the next 12 months?

Refuse = 997  
Don't know/Not sure = 998

3a. Please tell me if you have encountered the following barriers to expanding your employment level.

(Rotate barriers; ask "Any other barrier?" last)

Shortage of workers with knowledge or skills	01
Shortage of available training programs	02
Economic conditions	03
Government policies or regulations	04
Lack of information	05
Lack of access to transportation to get to work	06
Lack of access to child care	07
Any other barrier? (If "Yes" - Record on next screen)	08
(Do not read) Have not encountered any barriers to expanding employment level	95
(Do not read) Not applicable - Not expanding employment level	96
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98
(Do not read) Terminate	99

3c. (Re: each barrier named on Q.3a/b)

Please tell how large a barrier each is to your business using a 1-to-5 scale where 1 is "insignificant" and 5 is a "critical barrier." You may also use any number between 1 and 5. And, if an item is not applicable to your business, please tell me so.

1 – Insignificant

2

3

4

5 - Critical barrier

6 - Don't know/Not sure

7 – Refuse

Shortage of workers with knowledge or skills	—
Shortage of available training programs	—
Economic conditions	—
Government policies or regulations	—
Lack of information	—
Lack of access to transportation to get to work	—
Lack of access to child care	—
Other barrier: [ANSWER TO Q. 10]	—

4a. If you were to add employees in the next 12 months, which of the following methods would you use?

Read list; enter code for each method would use; enter all that apply.

(Rotate methods)

Recalling workers from a lay-off list	01
Hiring new full-time employees	02
Hiring new part-time employees	03
Hiring contract workers	04
Using a temporary agency	05
(Do not read) Not applicable - Not wanting to expand	95
(Do not read) Would not use any listed method	96
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

4a. What other methods would you use if you were to add employees in the next 12 months?

4b. Of the methods you will use to add employees, which will be your first choice, which will be your second choice, and which will be your third choice?

Enter the answers in order - 1st Choice, 2nd Choice, and 3rd Choice.

Recalling workers from a lay-off list	01
Hiring new full-time employees	02
Hiring part-time employees	03
Hiring contract workers	04
Using a temporary agency	05
Other method named: [ANSWER TO Q. 13]	96
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98
(Do not read) Terminate	99

5a. Next, I am going to read some possible shortcomings of job applicants and ask about the frequency in which you see these characteristics. Please tell me if, over the last 12 months, you have noticed a large percentage of applicants with each characteristic, a small percentage of applicants, or you have not seen this characteristic in your job applicants.

(Rotate Q.5a-A thru Q.5a-M)

5a-A. Please tell me if, over the last 12 months, you have noticed a large percentage of applicants, a small percentage of applicants, or if you have not seen job applicants with a Poor work ethic.

Large percentage of job applicants	01
Small percentage of job applicants	02
Have not seen this characteristic in job applicants	03
(Do not read) Refuse	97
(Do not read) Don't know/Not sure/Not sure	98

5a-B. Please tell me if, over the last 12 months, you have noticed a large percentage of applicants, a small percentage of applicants, or if you have not seen job applicants with a Lack of general knowledge about business or industry.

Large percentage of job applicants	01
Small percentage of job applicants	02
Have not seen this characteristic in job applicants	03
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

5a-C. Please tell me if, over the last 12 months, you have noticed a large percentage of applicants, a small percentage of applicants, or if you have not seen job applicants with a Lack of ability to interact effectively with people of different cultures and socio-economic backgrounds.

Large percentage of job applicants	01
Small percentage of job applicants	02
Have not seen this characteristic in job applicants	03
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

5a-D. Please tell me if, over the last 12 months, you have noticed a large percentage of applicants, a small percentage of applicants, or if you have not seen job applicants with a Lack of communication or interpersonal skills.

Large percentage of job applicants	01
Small percentage of job applicants	02
Have not seen this characteristic in job applicants	03
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

5a-E. Please tell me if, over the last 12 months, you have noticed a large percentage of applicants, a small percentage of applicants, or if you have not seen job applicants with a Lack of willingness to learn or inability to learn.

Large percentage of job applicants	01
Small percentage of job applicants	02
Have not seen this characteristic in job applicants	03
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

5a-F. Please tell me if, over the last 12 months, you have noticed a large percentage of applicants, a small percentage of applicants, or if you have not seen job applicants with a Lack of teamwork or collaboration.

Large percentage of job applicants	01
Small percentage of job applicants	02
Have not seen this characteristic in job applicants	03
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

5a-G. Please tell me if, over the last 12 months, you have noticed a large percentage of applicants, a small percentage of applicants, or if you have not seen job applicants with a Lack of general computer skills.

Large percentage of job applicants	01
Small percentage of job applicants	02
Have not seen this characteristic in job applicants	03
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

5a-H. Please tell me if, over the last 12 months, you have noticed a large percentage of applicants, a small percentage of applicants, or if you have not seen job applicants with a Lack of critical thinking and problem solving.

Large percentage of job applicants	01
Small percentage of job applicants	02
Have not seen this characteristic in job applicants	03
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

5a-I. Please tell me if, over the last 12 months, you have noticed a large percentage of applicants, a small percentage of applicants, or if you have not seen job applicants with an Inability to think creatively or "out of the box."

Large percentage of job applicants	01
Small percentage of job applicants	02
Have not seen this characteristic in job applicants	03
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

5a-J. Please tell me if, over the last 12 months, you have noticed a large percentage of applicants, a small percentage of applicants, or if you have not seen job applicants with a Lack of writing skills.

Large percentage of job applicants	01
Small percentage of job applicants	02
Have not seen this characteristic in job applicants	03
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

5a-K. Please tell me if, over the last 12 months, you have noticed a large percentage of applicants, a small percentage of applicants, or if you have not seen job applicants with a Lack of basic math skills.

Large percentage of job applicants	01
Small percentage of job applicants	02
Have not seen this characteristic in job applicants	03
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

5a-L. Please tell me if, over the last 12 months, you have noticed a large percentage of applicants, a small percentage of applicants, or if you have not seen job applicants with a Lack of technical skills specific to the job.

Large percentage of job applicants	01
Small percentage of job applicants	02
Have not seen this characteristic in job applicants	03
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

5a-M. Please tell me if, over the last 12 months, you have noticed a large percentage of applicants, a small percentage of applicants, or if you have not seen job applicants with an Inability to understand written and graphical information.

Large percentage of job applicants	01
Small percentage of job applicants	02
Have not seen this characteristic in job applicants	03
(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98

5b. Now, on a scale of 1 to 5 where 1 is "not at all important" and 5 is "very important," how would you rate the importance of applicant shortcomings in the following areas to your business? Again, you may use any number between 1 and 5.

1 - Not at all important

2

3

4

5 - Very important

6 - Don't know/Not sure

7 - Refuse

8 - Not applicable

(Rotate shortcomings)

Poor work ethic \_\_\_\_\_

Lack of general knowledge about business or industry \_\_\_\_\_

\_\_\_\_\_

Lack of ability to interact effectively with people of different cultures and socio-economic backgrounds \_\_\_\_\_

Lack of communication or interpersonal skills \_\_\_\_\_

Lack of willingness to learn or inability to learn \_\_\_\_\_

Lack of teamwork and collaboration \_\_\_\_\_

Lack of general computer skills \_\_\_\_\_

Lack of critical thinking and problem solving \_\_\_\_\_

Inability to think creatively or "out of the box" \_\_\_\_\_

Lack of writing skills \_\_\_\_\_

Lack of basic math skills \_\_\_\_\_

Lack of technical skills specific to the job \_\_\_\_\_

Inability to understand written and graphical information \_\_\_\_\_



6a. Are you experiencing a shortage of skilled applicants for your organization?		(Do not read) Refuse	97
		(Do not read) Don't know/Not sure	98
Yes	01		
No	02		
(Do not read) Refuse	97		
(Do not read) Don't know/Not sure	98		
6b. (If experiencing shortage of skilled applicants per Q.6a)		8. Please rank order the following factors in considering an internal candidate for career advancement in your organization?	
		Job experience	
		Demonstrated potential	
		Completing an industry-recognized credential	
		Receiving an educational degree	
Please tell me if you are taking any of the following measures to meet the skill shortages of applicants.			
(Rotate measures)		9a. Do you employ staff in the Business Management function?	
Hiring from outside the St. Louis, Missouri/Illinois region	01	Yes	01
Hiring from outside the United States	02	No	02
Hiring contractors	03	(Do not read) Refuse	97
Forced to hire less experienced workers and then train them	04	(Do not read) Don't know/Not sure	98
Offering increased wages due to shortage of experienced workers	05		
(Do not read) Not taking any of listed measures	96	9aa. (If employ staff in Business Management function per Q.9a)	
(Do not read) Refuse	97	Are you seeing a shortage of skilled applicants in the Business Management function?	
(Do not read) Don't know/Not sure	98		
7. Which of the following methods do you use to assist current workers in addressing your company's need for new or increased skill requirements?		Yes	01
		No	02
		(Do not read) Refuse	97
		(Do not read) Don't know/Not sure	98
Read list; enter all that apply.			
(Rotate methods)		9aaa. (If seeing shortage of skilled applicants in the Business Management function per Q.9aa)	
In-house classroom training	01	On a scale of 1 to 5 where 1 means "not at all important" and 5 means "very important," how important is the shortage of skilled applicants in the Business Management function to your business?	
On-the-job training	02		
Vendor training	03	1 - Not at all important	01
Apprenticeship programs	04	2	02
Community college provided customized training or education	05	3	03
Vocational training	06	4	04
Tuition reimbursement	07	5 - Very important	05
Hire only workers who are already trained	08	(Do not read) Don't know/Not sure	06
Online courses	09	(Do not read) Refuse	07
Provide flexible schedule for outside continuing education	10		
(Do not read) Not applicable - Do not need new or increased skills	95		

9aaaa. (If seeing shortage of skilled applicants in the Business Management function per Q.9aa)		(Do not read) Don't know/Not sure	06
		(Do not read) Refuse	07
In your opinion, what is the main reason for this skill shortage in Business Management?		9bbbb. (If seeing shortage of skilled applicants in the Accounting/Finance function per Q.9bb)	
Read list; single response only.		In your opinion, what is the main reason for this skill shortage in Transportation and Logistics?	
Rapidly changing technology and business environment	01	Read list; single response only.	
Lack of qualified new graduates in the discipline	02	Rapidly changing technology and business environment	01
Increased competition for qualified graduates	03	Lack of qualified new graduates in the discipline	02
Prohibitive cost of training existing workforce	04	Increased competition for qualified graduates	03
Or some other reason? (Record on next screen)	96	Prohibitive cost of training existing workforce	04
(Do not read) Refuse	97	Or some other reason? (Record on next screen)	96
(Do not read) Don't know/Not sure	98	(Do not read) Refuse	97
(Do not read) Terminate	99	(Do not read) Don't know/Not sure	98
9b. Do you employ staff in Transportation and Logistics?		9c. Do you employ staff in the Information Technology function?	
Yes	01	Yes	01
No	02	No	02
(Do not read) Refuse	97	(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98	(Do not read) Don't know/Not sure	98
9bb. (If employ staff in the Accounting/Finance function per Q.9b)		9cc. (If employ staff in the Information Technology function per Q.9c)	
Are you seeing a shortage of skilled applicants in Transportation and Logistics?		Are you seeing a shortage of skilled applicants in the Information Technology function?	
Yes	01	Yes	01
No	02	No	02
(Do not read) Refuse	97	(Do not read) Refuse	97
(Do not read) Don't know/Not sure	98	(Do not read) Don't know/Not sure	98
9bbb. (If seeing shortage of skilled applicants in the Accounting/Finance function per Q.9bb)		9ccc. (If see shortage of skilled applicants in the Information Technology function per Q.9cc)	
On a scale of 1 to 5 where 1 means "not at all important" and 5 means "very important," how important is the shortage of skilled applicants in Transportation and Logistics to your business?		On a scale of 1 to 5 where 1 means "not at all important" and 5 means "very important," how important is the shortage of skilled applicants in the Information Technology function to your business?	
1 - Not at all important	01	1 - Not at all important	01
2	02	2	02
3	03		
4	04		
5 - Very important	05		

3  
4  
5 - Very important  
(Do not read) Don't know/Not sure  
(Do not read) Refuse

03  
04  
05  
06  
07

9cccc. (If see shortage of skilled applicants in the Information Technology function per Q.9cc)

In your opinion, what is the main reason for this skill shortage in Information Technology?

Read list; single response only.

Rapidly changing technology and business environment  
01

Lack of qualified new graduates in the discipline 02  
Increased competition for qualified graduates 03  
Prohibitive cost of training existing workforce 04  
Or some other reason? (Record on next screen) 96  
(Do not read) Refuse 97  
(Do not read) Don't know/Not sure 98

9d. Do you employ staff in the Customer Service function?

Yes 01  
No 02  
(Do not read) Refuse 97  
(Do not read) Don't know/Not sure 98

9dd. (If employ staff in the Customer Service function per Q.9d)

Are you seeing a shortage of skilled applicants in the Customer Service function?

Yes 01  
No 02  
(Do not read) Refuse 97  
(Do not read) Don't know/Not sure 98

9ddd. (If seeing shortage of skilled applicants in the Customer Service function per Q.9dd)

On a scale of 1 to 5 where 1 means "not at all important" and 5 means "very important," how important is the shortage of skilled applicants in the Customer Service function to your business?

1 - Not at all important 01  
2 02  
3 03  
4 04  
5 - Very important 05  
(Do not read) Don't know/Not sure 06  
(Do not read) Refuse 07

9dddd. (If seeing shortage of skilled applicants in the Customer Service function per Q.9dd)

In your opinion, what is the main reason for this skill shortage in Customer Service?

Read list; single response only.

Rapidly changing technology and business environment  
01

Lack of qualified new graduates in the discipline 02  
Increased competition for qualified graduates 03  
Prohibitive cost of training existing workforce 04  
Or some other reason? (Record on next screen) 96  
(Do not read) Refuse 97  
(Do not read) Don't know/Not sure 98

9e. Do you employ staff in the Skilled Production and Maintenance function?

Yes 01  
No 02  
(Do not read) Refuse 97  
(Do not read) Don't know/Not sure 98

9ee. (If employ staff in the Skilled Trades function per Q.9e)

Are you seeing a shortage of skilled applicants in the Skilled Production and Maintenance function?

Yes 01  
No 02  
(Do not read) Refuse 97  
(Do not read) Don't know/Not sure 98

9eee. (If seeing shortage of skilled applicants in the Skilled Trades function per Q.9ee)

On a scale of 1 to 5 where 1 means "not at all important" and 5 means "very important," how

important is the shortage of skilled applicants in the Skilled Production and Maintenance function to your business?

- |                                   |    |
|-----------------------------------|----|
| 1 - Not at all important          | 01 |
| 2                                 | 02 |
| 3                                 | 03 |
| 4                                 | 04 |
| 5 - Very important                | 05 |
| (Do not read) Don't know/Not sure | 06 |
| (Do not read) Refuse              | 07 |

9eeee. (If seeing shortage of skilled applicants in the Skilled Trades function per Q.9ee)

In your opinion, what is the main reason for this skill shortage in Skilled Production and Maintenance?

Read list; single response only.

- |  |    |
|--|----|
| Rapidly changing technology and business environment | 01 |
| Lack of qualified new graduates in the discipline    | 02 |
| Increased competition for qualified graduates        | 03 |
| Prohibitive cost of training existing workforce      | 04 |
| Or some other reason? (Record on next screen)        | 96 |
| (Do not read) Refuse                                 | 97 |
| (Do not read) Don't know/Not sure                    | 98 |

9f. Do you employ staff in the Engineering function?

- |                                   |    |
|-----------------------------------|----|
| Yes                               | 01 |
| No                                | 02 |
| (Do not read) Refuse              | 97 |
| (Do not read) Don't know/Not sure | 98 |

9ff. (If employ staff in the Engineering function per Q.9f)

Are you seeing a shortage of skilled applicants in the Engineering function?

- |                                   |    |
|-----------------------------------|----|
| Yes                               | 01 |
| No                                | 02 |
| (Do not read) Refuse              | 97 |
| (Do not read) Don't know/Not sure | 98 |

9fff. (If seeing shortage of skilled applicants in the Engineering function per Q.9f)

On a scale of 1 to 5 where 1 means "not at all important" and 5 means "very important," how important is the shortage of skilled applicants in the Engineering function to your business?

- |                                   |    |
|-----------------------------------|----|
| 1 - Not at all important          | 01 |
| 2                                 | 02 |
| 3                                 | 03 |
| 4                                 | 04 |
| 5 - Very important                | 05 |
| (Do not read) Don't know/Not sure | 06 |
| (Do not read) Refuse              | 07 |

9ffff. (If seeing shortage of skilled applicants in the Engineering function per Q.9ff)

In your opinion, what is the main reason for this skill shortage in Engineering?

Read list; single response only.

- |  |    |
|--|----|
| Rapidly changing technology and business environment | 01 |
| Lack of qualified new graduates in the discipline    | 02 |
| Increased competition for qualified graduates        | 03 |
| Prohibitive cost of training existing workforce      | 04 |
| Or some other reason? (Record on next screen)        | 96 |
| (Do not read) Refuse                                 | 97 |
| (Do not read) Don't know/Not sure                    | 98 |

9g. Do you employ staff in the Patient Care function?

- |                                   |    |
|-----------------------------------|----|
| Yes                               | 01 |
| No                                | 02 |
| (Do not read) Refuse              | 97 |
| (Do not read) Don't know/Not sure | 98 |

9gg. (If employ staff in Patient Care function per Q.9g)

Are you seeing a shortage of skilled applicants in the Patient Care function?

- |                                   |    |
|-----------------------------------|----|
| Yes                               | 01 |
| No                                | 02 |
| (Do not read) Refuse              | 97 |
| (Do not read) Don't know/Not sure | 98 |

9ggg. (If seeing shortage of skilled applicants in the Patient Care function per Q.9gg)

On a scale of 1 to 5 where 1 means "not at all important" and 5 means "very important," how important is the shortage of skilled applicants in the Patient Care function to your business?

- |                                   |    |
|-----------------------------------|----|
| 1- Not at all important           | 01 |
| 2                                 | 02 |
| 3                                 | 03 |
| 4                                 | 04 |
| 5 - Very important                | 05 |
| (Do not read) Don't know/Not sure | 06 |
| (Do not read) Refuse              | 07 |

9gggg. (If seeing shortage of skilled applicants in the Patient Care function per Q.9gg)

In your opinion, what is the main reason for this skill shortage in Patient Care?

Read list; single response only.

- |  |    |
|--|----|
| Rapidly changing technology and business environment | 01 |
| Lack of qualified new graduates in the discipline    | 02 |
| Increased competition for qualified graduates        | 03 |
| Prohibitive cost of training existing workforce      | 04 |
| Or some other reason? (Record on next screen)        | 96 |
| (Do not read) Refuse                                 | 97 |
| (Do not read) Don't know/Not sure                    | 98 |

10. In your business, what percentage of positions requires each of the following levels of experience? What percent of positions require ...

Answers MUST total 100%

Refuse = 997

Don't know/Not sure = 998

- |  |       |
|--|-------|
| A minimum of 4 or more years of experience | _____ |
| A minimum of 1 to 3 years experience       | _____ |
| Some experience, but less than 1 year      | _____ |
| No experience                              | _____ |

11. In your business, what percentage of your total employees requires each of the following levels of education as a minimum requirement? First, what percent require a...

All answers MUST total 100%

Refuse = 997

Don't know/Not sure = 998

- |   |       |
|---|-------|
| Doctoral degree   | _____ |
| Master's degree   | _____ |
| Bachelor's degree   | _____ |
| Associate degree  | _____ |
| Post-secondary credentials ie. apprenticeships, trade/vocational school or any training short of a 2-year |       |
| Assoc. degree   | _____ |
| High school or GED  | _____ |
| Less than high school   | _____ |

11. What percentage of jobs in your business are available for individuals with short-term training, meaning not more than 6 months past high school, which is relevant to your industry?

- |                                   |    |
|-----------------------------------|----|
| No jobs                           | 01 |
| 1-25% of jobs                     | 02 |
| 26 – 50% of jobs                  | 03 |
| 51 – 75% of jobs                  | 04 |
| 76 – 100% of jobs                 | 05 |
| (Do not read) Don't know/Not sure | 06 |
| (Do not read) Refuse              | 07 |

Refuse = 997

Don't know/Not sure = 998

12. For what percent of jobs are there established pathways for advancement in your firm based on performance and/or additional training?

- |                                   |    |
|-----------------------------------|----|
| No jobs                           | 01 |
| 1-25% of jobs                     | 02 |
| 26 – 50% of jobs                  | 03 |
| 51 – 75% of jobs                  | 04 |
| 76 – 100% of jobs                 | 05 |
| (Do not read) Don't know/Not sure | 06 |
| (Do not read) Refuse              | 07 |

Refuse = 997

Don't know/Not sure = 998

Those are all of my questions. The Missouri Department of Economic Development and St. Louis Community College thank you for sharing your experience and your time.