FOREWORD

St. Louis Community College is pleased to present the 2018 State of the St. Louis Workforce Report. This year we celebrate the 10th anniversary of providing this important information to the St. Louis region. For a decade, St. Louis Community College and its research partners have tracked the recovery and growth of our region’s workforce, as well as its continuing challenges, through this report. Each year, the report has provided timely and relevant workforce intelligence that helps St. Louis Community College respond to the needs of our students and employer partners. In addition, it has provided valuable information to the region’s public, private and community-based organizations who are preparing the next generation of skilled workers.

The State of the St. Louis Workforce Report alternates annually between a look at a composite of the region’s employment and a focus on particular sectors or disciplines. Examples of report themes include STEM employment in 2014 and middle-skills jobs in 2017. For 2018, the College focused the survey and report on three industry sectors that are of critical importance to our economy. Information Technology is represented by Technology-Intensive Services, employing more than 140,000 workers in the region, many of whom utilize information technology skills in their work. Average wages exceed $90,000. Financial Services has become an important factor in the changing profile of the economy with first- and second-tier corporate locations established in St. Louis. Health Care – with nearly 165,000 employees – provided a crucial employment lifeline during the difficult recession years and continues to grow to serve an aging population. More than half of the job postings for health care are for middle-skill jobs.

Since the first report was issued in 2009, the landscape of the St. Louis economy and workforce has undergone dramatic change. Current employment levels and workforce characteristics would have been almost unimaginable in 2009. In July 2009, there were 6.6 unemployed workers for every job opening. In April 2018, for the first time since the Department of Labor began tracking job openings, there were more job openings reported (6.7 million) than unemployed persons (6.35 million). Likewise, the March 2018 U.S. job openings rate (4.3) was higher than the unemployment rate (4.1) for the first time. The unemployment rate, which peaked at 10% in 2009, was down to 3.9% in April 2018. What was a gradual tightening in the labor market has now become a constricting factor in employers’ ability to expand. This has been reflected for the past several years in our employer survey. In 2011, nearly two-thirds of employers cited economic conditions as a barrier to expanding employment as compared to only 38% citing the shortage of workers with knowledge or skills. By 2017, more than half of employers were citing the shortage of workers as a barrier compared to only about one-quarter citing economic conditions.

Jeff Pittman, Ph.D.
Chancellor

Hart Nelson, M.B.A.
Associate Vice-Chancellor for Workforce Solutions
As of May 2018, the national unemployment rate was 3.8%, down from 4.3% a year earlier. As indicated above, there are now more job openings than unemployed persons. Between July 1, 2011, and June 30, 2017, the U.S. economy created more than 14 million jobs. Through March 2018, an additional 1.7 million jobs have been added. A broader measure of unemployment level – the U-6 unemployment rate – now stands at 7.6% down from 8.4% a year earlier. It includes the unemployed but also those marginally attached to the labor force or working part time for economic reasons. The Labor Force Participation (LFP) rate for May 2018 stands at 62.7%, unchanged from the previous year. The broader unemployment measure and the LFP rate continue to represent headwinds that prevent employers from finding enough applicants for open positions and keep the unemployed and underemployed from benefitting from a growing job market.

The unemployment rate for the St. Louis Metropolitan Statistical Area (MSA) continues to drop in line with the national trend. As of April 2018, the St. Louis unemployment rate stood at 3.2%, down from 3.6% in April 2017. It is also lower than the April 2018 national average of 3.9% and the Missouri rate of 3.6%. There were 47,407 unemployed persons in the St. Louis MSA in April 2018, a reduction of 4,368 or 8.4% from the 51,775 unemployed in April 2017.

The State of the St. Louis Workforce Report is once again co-sponsored by the Federal Reserve Bank. We appreciate their support and interest in this important topic of preparing our future workforce and addressing the challenges of the skill shortage. Along with the assistance 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 Burning Glass Labor Insight, a 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. For 2018 we are happy to welcome a new media partner, the Nine Network of Public Media, who will assist in distributing this report in our community and beyond.

We would like to thank and acknowledge our employer, 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.
# TABLE OF CONTENTS

Foreword .......................................................................................................................................... iii  
Executive Summary ....................................................................................................................... 1  
Methodology ...................................................................................................................................... 7  
   St. Louis Economy ......................................................................................................................................... 7  
   Employer Survey ........................................................................................................................................... 7  
Three Industry Sectors Critical to the Future of the St. Louis Economy ....................................... 8  
Summary .......................................................................................................................................................... 8  
St. Louis Economy ........................................................................................................................... 9  
   Employment .................................................................................................................................................... 9  
   Unemployment ............................................................................................................................................ 10  
   Unemployment Demographics ............................................................................................................. 11  
   Workforce Characteristics ...................................................................................................................... 12  
   Education Attainment ............................................................................................................................... 12  
   Labor Shed ..................................................................................................................................................... 13  
   Current Job Demand ................................................................................................................................... 13  
   Skills and Certificates ................................................................................................................................ 15  
   Projected Job Demand .............................................................................................................................. 16  
   Information Technology: Technology-Intensive Services ......................................................................... 17  
   Financial Services ....................................................................................................................................... 18  
   Health Care .................................................................................................................................................... 19  
Employer Survey .................................................................................................................................... 21  
   Hiring Trends - Past Year ........................................................................................................................ 22  
   Hiring Trends - Future Plans .................................................................................................................. 23  
   Barriers to Expanding Employment .................................................................................................. 25  
   Adding Employees ...................................................................................................................................... 30  
   Shortcomings of Job Applicants ........................................................................................................ 31  
   Methods of Skill Acquisition .............................................................................................................. 37  
   Addressing Company Skill Shortages ................................................................................................. 38  
   Skills Shortages in Functional Areas .................................................................................................. 42  
   Experience ..................................................................................................................................................... 52
Education.......................................................................................................................................................55
Opportunity and Advancement............................................................................................................57
Summary........................................................................................................................................................58
Three Industry Sectors Critical to the Future of the St. Louis Economy ..........63
  Information Technology..........................................................................................................................63
  Financial Services.......................................................................................................................................64
  Health Care....................................................................................................................................................65
Acknowledgements........................................................................................................................................68
Sources..............................................................................................................................................68
Appendix I: State of The St. Louis Workforce Employer Survey 2018.........69
Executive Summary

This year we celebrate the 10th anniversary of St. Louis Community College’s State of the St. Louis Workforce report. We continue to believe that this is one of the most important pieces of workforce intelligence produced in the region. Along with helping St. Louis Community College respond to the needs of our students and employer partners, the report has provided valuable information to the region’s public, private and community-based organizations who are preparing the next generation of skilled workers. Over the past decade, 2009-2018, these reports have reflected a dramatic turnaround in the fortunes of our economy and workforce. State of the St. Louis Workforce has also highlighted challenges to employers in finding and maintaining a skilled workforce, as well as some of our region’s more stubborn problems of increasing educational attainment and creating opportunities for our underserved communities.

The employment and workforce characteristics present in 2018 could hardly have been anticipated in 2009. In October 2009, the unemployment rate peaked at 10%, having nearly doubled in only two years from the start of the recession in December 2007. As of May 2018, the national unemployment rate was under 4% (3.8%). The gap between the unemployment rate and the job openings rate is often used as a measure of labor demand. In October 2009, that measure reached a high of 8.2. By April 2017, it had declined to only .4 – the lowest in a decade. This past March, the U.S. job openings rate (4.3) was higher than the unemployment rate (4.1) for the first time since this measure was used. In July 2009, there were 6.6 unemployed workers for every job opening. This past April, for the first time since the Department of Labor began tracking job openings, there were more jobs openings reported – 6.7 million – than unemployed persons, 6.35 million. What was a gradual tightening in the labor market has now become a constricting factor in employers’ ability to expand. This has been reflected for the past several years in our employer survey. In 2011, nearly two-thirds of employers cited economic conditions as a barrier to expanding employment as compared to only 38% citing the shortage of workers with knowledge or skills. By 2017 more than half of employers were citing the shortage of workers as a barrier compared to only about one quarter citing economic conditions.
Between July 1, 2011, and June 30, 2017, the U.S. economy created more than 14 million jobs. Through March 2018, an additional 1.7 million jobs have been added. A broader measure of unemployment level – the U-6 unemployment rate – stands at 7.6% for May 2018 down from 8.4% a year earlier. It includes the unemployed but also those marginally attached to the labor force or working part time for economic reasons. The Labor Force Participation (LFP) rate for May 2018 remains unchanged from the previous year. The broader unemployment measure and the labor force participation rate continue to represent headwinds that are preventing employers from finding enough applicants for open positions and keeping the unemployed and underemployed from benefitting from a growing job market.

The U.S. gross domestic product (GDP) for 2017 accelerated to an average quarterly growth of nearly 2.7% after averaging around 2% quarterly growth over the previous two years. Some argue that the significant regulatory relief by the current administration with the expectation of additional relief was a factor as was the anticipation of new tax policy enacted by Congress at the end of 2017. In any case, the economy at the national level is growing, as are stock indices and the earnings of many of our top corporations illustrated by Apple, Alphabet and Amazon. After having attracted global economic investment for many years, the U.S. as a place for foreign investment is being challenged by actual or anticipated changes in U.S. international trade policy.

The unemployment rate for the St. Louis MSA continues to drop in line with the national trend. As of April 2018, the St. Louis unemployment rate stood at 3.2%, down from the 3.6% rate of April 2017. It is also lower than the national average of 3.9% and the Missouri rate of 3.6%. There were 47,407 unemployed in the St. Louis MSA in April 2018, a reduction of 4,368 or 8.4% from the 51,775 unemployed in April 2017.

The GDP for our region increased from $155 billion in 2015 to $160 billion in 2016, an increase of 3.2%. Economic output was dominated by private sector service providers (72%), private sector goods producers (17%) and government (9%). Nearly one in three St. Louis workers were employed in either Health Care and Social Assistance or Wholesale and Retail Trade. The industry sector with the largest employment gains over the last five years was Health Care and Social Assistance with a 14.5% gain. Industries losing employment over that period included Educational Services with a 6.8% reduction and Other Services with a 7.7% decrease.

Nearly one in four St. Louis MSA workers is 55 and older. This represents an increase from approximately one in six a decade ago. At the same time, the proportion of the workforce aged 35-54 decreased from 46.8% in 2007 to 42.3% in 2017. Nearly half of the region’s population 25 and older have a high school diploma but no post-secondary
degree, equal to the national rate but lower than the state rate of 54%. Thirty-four percent of the St. Louis population has a Bachelor’s degree or higher, which is higher than both the state rate (29%) and the national rate (31%).

For 2018, the College focused the survey and report on three industry sectors that are of critical importance to our economy. Information Technology, represented by Technology-Intensive Services, employs more than 145,000 workers in the region, many of whom utilize information technology skills in their work. Average wages for this sector exceed $90,000. Financial Services (referred to as Finance), employing more than 70,000 in the region, has become an important factor in the changing profile of the St. Louis economy with first and second tier corporate locations established in St. Louis. Health Care – with more than 165,000 employees regionwide – provided a crucial employment lifeline to the region during the difficult recession years and continues to grow to serve an aging population. More than half of the job postings for healthcare are for middle-skill jobs.

The State of the 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 1,246 employers in the three selected industry clusters. Of the 11 NAICS classifications covered in the survey, five represent Technology-Intensive Services, three Finance, and three Health Care. The third and final section of the report, Three Industry Sectors Critical to the Future of the St. Louis Economy, highlights some of the challenges of meeting workforce demand as well as examples of important initiatives in each of the report’s focus sectors.

When looking across all industries, our local economy is dominated by small business establishments. However, as a result of this year’s survey focus on three specific industry sectors, there were slightly more medium to large firms in the survey and fewer small firms as compared to last year. More than 12% of survey responses were from firms employing more than 50 employees, compared to 9% in 2017.

For 2018, the employer survey yielded some information that aligns with past findings and trends, and some that reflects differences between the targeted sectors and the broader regional economy. Differences among the three sectors were also apparent.

More employers reported that they had increased employment in the past 12 months (36%) than in 2017 (33%). At the same time, more also reported decreasing employment (23%) as compared to 2017 (12%). More employers also anticipated increases in the next 12 months (48%) as compared to 2017 (42%). Anticipated increases were strongest for Technology-Intensive Services and Health Care.

Nearly one in four St. Louis MSA workers is 55 and older – this represents an increase from approximately one in six a decade ago.
The shortage of workers with knowledge and skills was still employers’ top choice as a barrier to expanding employment, but the frequency of this response (41%) was down significantly from the 2017 response level (52%) reversing a trend from previous surveys. Economic conditions and government policies or regulations continued its downward trend of the past few years. The shortage of available training programs showed a significant increase in response by employers from all three sectors in 2018. Technology-Intensive Services employers cited the shortage of workers with knowledge or skills at a higher rate than Health Care or Finance, and they rated the shortage of available training programs at a higher importance level than the other sectors. Government policies or regulations as a barrier also received high importance scores particularly from Technology-Intensive Services and Health Care. Some survey respondents mentioned uncertainty around H-1B visas and the Affordable Care Act as potentially impacting their decisions.

More employers intended to add employees by hiring full-time workers and relatively fewer planned to hire part-time workers. The biggest change from previous surveys was to the choice of hiring contract workers which increased to 20% of employers, driven by Health Care employers of whom 30% indicated hiring contractors as a method of adding employees.

Employers are still seeing shortcomings in their job applicants – led by poor work habits at 48% – but they are being reported with less frequency than in past years. With one exception, each sector reported poor work habits, lack of communication or interpersonal skills, lack of teamwork or collaboration and lack of critical thinking and problem solving as their top choices for shortcomings. These are the same choices employers have reported for the past several years although in somewhat lower frequency and in different order by sector. The lack of communication or interpersonal skills was cited by only 13% of Health Care employers responding to the survey which caused a significant overall decrease in the response rate, as well as dropping that choice from the top four by Health Care employers. Technology-Intensive Services employers reported shortcomings of job applicants at generally higher rates than the other sectors.

Employers from that sector attached high importance to the choice of lack of technical skills specific to the job. Health Care employers attached high importance to lack of communication or interpersonal skills despite fewer (13%) employers seeing that shortcoming in their job applicants.
Fewer employers reported relying on on-the-job training as a method of assisting workers to acquire needed skills than in past surveys. More employers report using in-house classroom training, flexible schedule for continuing education and online courses as compared to previous surveys. The shift away from on-the-job training and towards more formal methods was led by the Health Care sector with 75% reporting flexible schedule for continuing education.

Although fewer employers identified the shortage of workers with knowledge or skills as a barrier to expansion, more employers reported an overall shortage of skilled applicants in this year’s survey (45%) as compared to last year, driven primarily by the Technology-Intensive Services sector reporting this shortage at a 61% rate. Significantly more employers reported that their shortages were at a high-skill level and significantly fewer reported them at a middle-skill level. There was a sharp decrease in the choice of forced to hire less experienced workers and train them as a measure to address the shortage of skilled applicants as well as a decrease in offering increased wages due to the shortage of experienced workers. There were sharp increases in hiring outside the St. Louis, MO-IL region led by Finance, hiring contractors, led by Health Care and hiring from outside the United States led by Technology-Intensive Services. There was also a sharp increase in not taking any listed measure, driven by the 42% of Technology-Intensive Services employers responding.

Customer service remains the functional area that receives the highest response overall from employers as a skill shortage. The highest effective rate for a skill shortage was also customer service reported by Finance and Health Care. Finance reported a significant shortage in commercial and residential lending while Health Care reported a high overall response to a shortage for diagnostic services. Technology-Intensive Services employers reported skill shortages for web development and cybersecurity and rated the skill level to address this shortage as middle-skill. An average of one-third of the applicants needed to meet skill shortages in the Health Care specific functional areas (therapeutic services, patient care and diagnostic services) are rated at the middle-skill level by employers.

In this year’s survey, more employers responding have more jobs requiring higher levels of experience and fewer at lower levels of experience. More Finance employers report jobs at the highest experience levels. More Health Care employers report jobs at the lower levels of experience. Technology Intensive Service employers had the most even distribution of jobs by experience level. The majority of employers in all three sectors had jobs available at every experience level surveyed.
Significantly more employers in 2018 reported having high-skill positions than in 2017. More employers also reported middle-skill positions but fewer reported low-skill positions. The highest response to having high-skill positions and middle-skill positions came from Finance. The highest response to having low-skill positions came from Health Care. More than two-thirds of all employers reported having between 1% and 49.9% of their positions at the middle-skill level.

Seventy-seven percent of employers reported having jobs available with only a short-term training requirement, an increase from 2017. The highest response from a sector to having jobs requiring only short-term training came from Health Care (84%) but the highest response to having more than half of their jobs with that requirement come from Technology-Intensive Services employers (31%).

Targeted industry sectors – Information Technology, represented by Technology-Intensive Services firms, Finance and Health Care – are critical to the future of the St. Louis economy. As part of this year’s report, we reached out to industry leaders in these sectors to get their perspectives on what the future holds for them, particularly in terms of regional employment, and the challenges that they face in acquiring and retaining the talent needed to grow. We are also focusing on promising initiatives to address the workforce needs of these three sectors.

The 2018 State of the St. Louis Workforce Report reflects a growing local economy but with a constricted labor market supply due to low unemployment, an aging workforce and static labor force participation that may eventually constrain future growth. Although employers continue to report talent pipeline shortages and applicant skill shortcomings, there are significant differences when we focus on specific industry clusters, particularly high-skill clusters, as opposed to the broad economy. One difference is that skill requirements are often specified by licensure and certifications. These specific requirements attract more highly-qualified applicants and may deter applicants that do not meet the stated requirements. This may be the reason that fewer employers this year are reporting a shortage of workers with knowledge or skills as a barrier to expansion. At the same time, the fact that more employers cite shortage of available training programs may indicate that there are an inadequate number of applicants for their positions. Even though more employers report more positions at the high-skill level, the report makes clear that there are positions in these sectors at both the middle-skill and low-skill levels providing opportunities for a wide range of job seekers.
METHODOLOGY

With the release of the 2018 State of the St. Louis Workforce Report, St. Louis Community College celebrates a decade of bringing workforce research to the St. Louis community. Each year, the report has provided valuable information and insights into the economic conditions and workforce issues that challenge employers and job seekers, and impact 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 a section focusing on Three Industry Sectors Critical to the Future of the St. Louis Economy. These sectors include Information Technology (represented by Technology-Intensive Services), Financial Services and Health Care.

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 the proprietary Burning Glass Labor Insight tool 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

The State of the St. Louis Workforce report relies heavily on first-person interviews of regional employers. For the 2018 employer survey, 1,246 local companies were surveyed by telephone during summer 2018, representing the 11 NAICS (North American Industry Classification System) categories that include the three focus sectors:

<table>
<thead>
<tr>
<th>Focus Sector</th>
<th>NAICS Category</th>
<th>Surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology-Intensive Services</td>
<td>NAICS 5112 Software publishers</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>NAICS 517 Telecommunications</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>NAICS 518 Data processing, hosting and related services</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>NAICS 541 Professional and technical services</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>NAICS 551 Management of companies and enterprises</td>
<td>*25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>420</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Focus Sector</th>
<th>NAICS Category</th>
<th>Surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Services</td>
<td>NAICS 522 Credit intermediation and related activities</td>
<td>224</td>
</tr>
<tr>
<td></td>
<td>NAICS 523 Securities, commodity contracts, investments</td>
<td>175</td>
</tr>
<tr>
<td></td>
<td>NAICS 525 Funds, trusts, and other financial vehicles</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>404</strong></td>
</tr>
</tbody>
</table>

* Mixture of other Technology sectors
### Focus Sector

<table>
<thead>
<tr>
<th>NAICS Category</th>
<th>Surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Care Services: NAICS 621 Ambulatory health care services</td>
<td>350</td>
</tr>
<tr>
<td>Health Care Services: NAICS 622 Hospitals</td>
<td>17</td>
</tr>
<tr>
<td>Health Care Services: NAICS 623 Nursing and residential care facilities</td>
<td>55</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>422</strong></td>
</tr>
</tbody>
</table>

Information Technology (represented by the technology-intensive NAICS 5112, 517, 518, 541 and 551), Financial Services (NAICS 522, 523 and 525) and Health Care (NAICS 621, 622 and 623). Survey respondents were asked a series of 12 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).

### Three Industry Sectors Critical to the Future of the St. Louis Economy

The 2018 report is focused on three important industry sectors: Information Technology, a sector offering significant numbers of jobs at some of the highest average wages of any industry in the area; Financial Services, an industry important to the changing profile of the St. Louis economy; and Health Care, which has been critical to sustaining employment during difficult recessionary periods. Drawing on the voices of industry leaders and educators, this section highlights some of the challenges of meeting workforce demand as well as examples of important initiatives in each sector.

### Summary

We believe the methodology followed for the 2018 report is sound and well-established and will allow the comparison of results from previous years, helping to identify trends going forward and/or significant changes in workforce trends and employers’ strategies.
The St. Louis MO-IL Metropolitan Statistical Area (MSA) includes 16 counties on both sides of the Mississippi River with an estimated population of more than 2.8 million. According to the U.S. Bureau of Economic Analysis, the area had a gross domestic product (GDP) of nearly $160 billion in 2016, representing a 3.2% increase from 2015. The industry with the highest GDP was Professional and Business Services, with $23 billion. Comparatively, the industry with the highest GDP the previous year was Financial Activities with $30 billion. Private Sector Service Providers accounted for 72% of the region’s output, followed by Goods- Producers (17%), and Government (9%).

**Employment**

The St. Louis MSA has a diverse economy with a labor force of more than 1.3 million workers in a wide range of industries. Although the labor force declined by nearly 56,000, or 4%, from the previous year, there was a change in the methodology of estimating the workforce size that could account for some of the change. In relative terms, the size of the labor force was constant. Health Care & Social Assistance and Wholesale & Retail Trade each employed over 210,000 people in 2017, each making up 16% of total employment. Health Care & Social Assistance employment has increased 14.5% over the last five years, while Other Services decreased 7.7%. Educational Services also shows a large decrease, losing 6.8% of its employment from 2012-2017. Employment in Public Administration remained steady, increasing just 3.2% and adding just under 1,000 employees in the last five years. Overall, the St. Louis economy added just over 80,000 employees in the last five years.

St. Louis is home to several industry clusters. Large employment concentrations in a mix of sectors highlight areas of regional economic strength. St. Louis is home to major firms in the finance sector including Edward Jones and Enterprise Bank & Trust. Health Sciences and Services represent businesses spanning a variety of health care needs, including insurers, health care providers and product manufacturers. St. Louis is home
to 10 Fortune 500 companies including Centene, Edward Jones, Emerson Electric and Peabody.

**St. Louis Industry Employment**

<table>
<thead>
<tr>
<th>Industry</th>
<th>2017</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Care and Social Assistance</td>
<td>213,445</td>
<td></td>
</tr>
<tr>
<td>Wholesale &amp; Retail Trade</td>
<td>210,765</td>
<td></td>
</tr>
<tr>
<td>Leisure &amp; Hospitality</td>
<td>158,216</td>
<td>114,173</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>114,173</td>
<td>96,099</td>
</tr>
<tr>
<td>Educational Services</td>
<td>89,394</td>
<td></td>
</tr>
<tr>
<td>Administrative and Support Services</td>
<td>82,843</td>
<td></td>
</tr>
<tr>
<td>Professional, Scientific, and Technical Services</td>
<td>70,300</td>
<td>66,330</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>62,736</td>
<td>62,910</td>
</tr>
<tr>
<td>Construction</td>
<td>58,300</td>
<td></td>
</tr>
<tr>
<td>Transportation, Warehousing &amp; Utilities</td>
<td>32,411</td>
<td>30,208</td>
</tr>
<tr>
<td>Other Services</td>
<td>20,016</td>
<td></td>
</tr>
<tr>
<td>Management of Companies and Enterprises</td>
<td>4,036</td>
<td></td>
</tr>
<tr>
<td>Public Administration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture, Forestry, Mining &amp; Quarrying</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**Unemployment**

The seasonally adjusted unemployment rate for the St. Louis MSA was 3.2% in April 2018, down from last year’s rate of 3.6% in April 2017. This is lower than the national rate of 3.9% and the state rate of 3.6%.

**Job Openings Rate Surpasses National Unemployment Rate**

January 2008 – April 2018

Nationally and regionally, the unemployment rate has declined. The chart above shows how the job market has changed across the nation 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 a recession, the gap widens as the Oct. 2009 peak of 8.2 illustrates. In 2016, the gap
returned to pre-recession levels and in March 2018 the job openings rate (4.3) was higher than the unemployment rate (4.1) for the first time.

**Unemployment Demographics**

Unemployment rates vary greatly with age and sex. As the chart on the following page indicates, younger workers—particularly those under age 22—had unemployment rates at or above 7.2% in the St. Louis metro during 2016. Men in the 16-19 age range had the highest rate at 16.9%. 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 state and national trend of higher unemployment rates for workers younger than 22 years of age. Nationally, the unemployment rates for all ages were 5.8% for males and 5.2% for females. This is slightly higher than the St. Louis rate of 5.7% for males, and nearly 1 percentage point higher than the St. Louis rate of 4.3% for females.

![St. Louis MSA Unemployment Rates by Age and Sex](image)


For the 30-34 age group, Missouri showed unemployment rates similar to those of St. Louis for males and females at 4.4% and 5.4% respectively.

The old saying, “education pays,” is still true as it relates to income and risk of unemployment. For example, 2016 St. Louis MSA data show that having some college or an associate degree, versus only a high school diploma, reduces the unemployment rate by 1.3 points and provides $5,454 annually in average extra earnings. A bachelor’s degree or higher further reduces the unemployment rate by 1.8 points and increases median earnings. The gap in the unemployment rate between those with a high school diploma or GED and those with some college or an associate degree declined from 1.8% in 2015 to 1.3% in 2016. The gap between those with some college or an associate degree and those with a bachelor’s degree or higher also decreased from 2% in 2015 to 1.8% in 2016. These changes may reflect employers’ willingness to be more flexible on requirements in light of a tight labor market.
The highest unemployment rates and lowest wages belong to those workers with less than a high school education. Unemployment rates for workers who do not have a high school diploma or GED are more than double those of high school graduates, and five times higher than workers with a bachelor’s degree or higher. Young and/or less educated job seekers have a more difficult time finding employment.

### St. Louis MSA Unemployment Rates and Earnings by Education, Population 25 Years and Older

<table>
<thead>
<tr>
<th>Unemployment Rates</th>
<th>Educational Attainment</th>
<th>Median Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.2%</td>
<td>Less than high school graduate</td>
<td>$21,831</td>
</tr>
<tr>
<td>5.7%</td>
<td>High school graduate or GED</td>
<td>$30,724</td>
</tr>
<tr>
<td>4.4%</td>
<td>Some college or associate degree</td>
<td>$36,178</td>
</tr>
<tr>
<td>2.6%</td>
<td>Bachelor’s degree or higher</td>
<td>$56,989*</td>
</tr>
</tbody>
</table>

* Bachelor’s ($50,971) and graduate ($63,006) degree medians. 

### Workforce Characteristics

In 2017, the majority of jobholders were ages 25-34, representing nearly 21.9% of the workforce. The 45-54 age group closely followed, representing 21.4% of the workforce; as well as the 35-44 age group, which made up nearly 21% of the workforce. Workers ages 14-21 made up only 7.3% of the workforce. The St. Louis age profile has changed over time with the 55+ age groups having increased as a share of the workforce, while the 35-54 age groups have decreased. The 55+ age groups have grown from 16.7% in 2007 to 22.6% in 2017. With nearly one-fourth of the workforce in the 55+ age groups, St. Louis mirrors the national trend of an aging workforce, which is helping drive the demand for health care employment as well as the need to replace workers who are retiring.

### St. Louis MSA Age of the Workforce

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

### Education Attainment

Nearly one-half (48%) of the region’s population age 25 years and older have a high school diploma but have no post-secondary degree. This is identical to the national rate and lower than the state rate of 54%. Thirty-four percent of the population has a
bachelor’s degree or greater, which is higher than both the state (29%) and national (31%) rates and a 2% increase from the previous year. Nearly 32% of the population has some college or an associate degree, a slight increase from the 31% at this educational attainment level the previous year. Nine percent of the St. Louis MSA population has no high school diploma or GED.

![Educational Attainment of the Population Graph](image)


**Labor Shed**

Estimates from the Census Bureau for 2015 shows St. Louis employed more than 1.2 million people. Most of them live in the area, but 126,250 commute to work from outside of the MSA.

![Commuting Distance Map](image)

**Commuting Distance**

<table>
<thead>
<tr>
<th>Distance</th>
<th>% of Workforce</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 miles</td>
<td>46%</td>
</tr>
<tr>
<td>10 to 24 miles</td>
<td>35%</td>
</tr>
<tr>
<td>25 to 50 miles</td>
<td>10%</td>
</tr>
<tr>
<td>Greater than 50 miles</td>
<td>9%</td>
</tr>
</tbody>
</table>

*Source: U.S. Census Bureau, OnTheMap Application, Primary Jobs 2015.*

Slightly more than 100,000 of the residents commute outside of the St. Louis MSA for work. Nearly half (46%) of the workforce commute fewer than 10 miles to work, while nine percent travel over 50 miles.

**Current Job Demand**

Whether through new job growth or the need to fill vacant positions, there are always job openings. One way to measure current employment demand is to track job postings. Over the past year, there were over 200,000 online job postings in the St. Louis MSA. The table lists jobs, grouped by typical education or training needed, with the most advertisements from June 1, 2017-May 31, 2018 in the St. Louis MSA.

The top posted job overall was Registered Nurses (11,317) followed by Computer Occupations, All Other (8,373) and Applications Software Developers (8,239).
### Top St. Louis MSA Job Advertisements in the Past Year

<table>
<thead>
<tr>
<th>Now: Short to Moderate-Term Training</th>
<th>Online Job Ads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Salespersons</td>
<td>6,175</td>
</tr>
<tr>
<td>Sales Representatives, Wholesale and Manufacturing</td>
<td>5,963</td>
</tr>
<tr>
<td>Customer Service Representatives</td>
<td>4,926</td>
</tr>
<tr>
<td>Combined Food Preparation and Serving Workers</td>
<td>2,771</td>
</tr>
<tr>
<td>Secretaries and Administrative Assistants</td>
<td>2,348</td>
</tr>
<tr>
<td>Laborers and Freight, Stock, and Material Movers</td>
<td>2,061</td>
</tr>
<tr>
<td>Stock Clerks and Order Fillers</td>
<td>1,767</td>
</tr>
<tr>
<td>Cashiers</td>
<td>1,319</td>
</tr>
<tr>
<td>Janitors and Cleaners</td>
<td>1,298</td>
</tr>
<tr>
<td>Security Guards</td>
<td>1,247</td>
</tr>
<tr>
<td><strong>Next: Long-Term Training to Associate Degree</strong></td>
<td></td>
</tr>
<tr>
<td>Registered Nurses</td>
<td>11,317</td>
</tr>
<tr>
<td>Heavy and Tractor-Trailer Truck Drivers</td>
<td>4,007</td>
</tr>
<tr>
<td>First-Line Supervisors of Retail Sales Workers</td>
<td>3,976</td>
</tr>
<tr>
<td>Food Service Managers</td>
<td>2,440</td>
</tr>
<tr>
<td>Computer User Support Specialists</td>
<td>2,181</td>
</tr>
<tr>
<td>Bookkeeping, Accounting, and Auditing Clerks</td>
<td>1,737</td>
</tr>
<tr>
<td>Nursing Assistants</td>
<td>1,627</td>
</tr>
<tr>
<td>Maintenance and Repair Workers, General</td>
<td>1,551</td>
</tr>
<tr>
<td>Cooks, Restaurant</td>
<td>1,536</td>
</tr>
<tr>
<td>Licensed Practical and Licensed Vocational Nurses</td>
<td>1,284</td>
</tr>
<tr>
<td>Medical Assistants</td>
<td>1,262</td>
</tr>
<tr>
<td><strong>Later: Bachelor's Degree or Higher</strong></td>
<td></td>
</tr>
<tr>
<td>Computer Occupations, All Other</td>
<td>8,373</td>
</tr>
<tr>
<td>Software Developers, Applications</td>
<td>8,239</td>
</tr>
<tr>
<td>Managers, All Other</td>
<td>4,769</td>
</tr>
<tr>
<td>Medical and Health Services Managers</td>
<td>2,519</td>
</tr>
<tr>
<td>Management Analysts</td>
<td>2,374</td>
</tr>
<tr>
<td>Computer Systems Analysts</td>
<td>2,234</td>
</tr>
<tr>
<td>Accountants and Auditors</td>
<td>2,188</td>
</tr>
<tr>
<td>Sales Managers</td>
<td>2,122</td>
</tr>
<tr>
<td>Human Resources Specialists</td>
<td>2,023</td>
</tr>
</tbody>
</table>

**Source:** Online Job Ads from June 1, 2017 through May 31, 2018. Burning Glass Technologies.

Four of the top "Next" jobs and one of the top "Later" jobs are Health Care related. Several Information Technology and Finance related jobs, such as *Computer User Support Specialists* and *Bookkeepers*, were also among those with the most job postings over the last year.
Skills and Certificates

Basic skills are requested in the majority of job advertisements, with Communication Skills being the top demand of employers, requested in more than one-fourth (27%) of total job postings. Overall the top basic skills cited in 2017-2018 job postings were very similar to the 2016-2017 job postings. The number one specialized skill was Customer Service, followed by Sales and Scheduling. The rank order of the top five specialized skills remained unchanged from the previous year's job postings. Several Microsoft Office programs were in the top requested software and programming skills.

<table>
<thead>
<tr>
<th>Top Basic Skills</th>
<th>Online Job Ads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Skills</td>
<td>56,649</td>
</tr>
<tr>
<td>Teamwork / Collaboration</td>
<td>29,833</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>26,543</td>
</tr>
<tr>
<td>Organizational Skills</td>
<td>23,676</td>
</tr>
<tr>
<td>Planning</td>
<td>22,998</td>
</tr>
<tr>
<td>Microsoft Excel</td>
<td>22,646</td>
</tr>
<tr>
<td>Detail-Oriented</td>
<td>20,027</td>
</tr>
<tr>
<td>Microsoft Office</td>
<td>19,883</td>
</tr>
<tr>
<td>Research</td>
<td>18,360</td>
</tr>
<tr>
<td>Writing</td>
<td>18,232</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Top Specialized Skills</th>
<th>Online Job Ads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Service</td>
<td>34,157</td>
</tr>
<tr>
<td>Sales</td>
<td>23,253</td>
</tr>
<tr>
<td>Scheduling</td>
<td>20,713</td>
</tr>
<tr>
<td>Budgeting</td>
<td>14,244</td>
</tr>
<tr>
<td>Project Management</td>
<td>13,507</td>
</tr>
<tr>
<td>Customer Contact</td>
<td>12,426</td>
</tr>
<tr>
<td>Retail Industry Knowledge</td>
<td>12,419</td>
</tr>
<tr>
<td>Patient Care</td>
<td>11,180</td>
</tr>
<tr>
<td>Repair</td>
<td>10,191</td>
</tr>
<tr>
<td>SQL</td>
<td>8,961</td>
</tr>
</tbody>
</table>


Top requested certificates are often associated with certain occupations or a group of related jobs, such as Registered Nurse or Certified Public Accountant. Four of the top 10 certificates are health care related, corresponding with the increasing demand for workers in this sector. Eight of the top 10 certificates are related to one of the three industry sectors addressed in this year's State of the St. Louis Workforce report – Information Technology (Technology-Intensive Services), Financial Services (Finance) and Health Care. Several of the top requested certificates are available through short-term training or through courses offered at a community college.

<table>
<thead>
<tr>
<th>Top Certificates</th>
<th>Online Job Ads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver's License</td>
<td>14,477</td>
</tr>
<tr>
<td>Registered Nurse</td>
<td>10,624</td>
</tr>
<tr>
<td>Security Clearance</td>
<td>3,767</td>
</tr>
<tr>
<td>Commercial Driver's License</td>
<td>3,337</td>
</tr>
<tr>
<td>Advanced Cardiac Life Support</td>
<td>3,324</td>
</tr>
<tr>
<td>First Aid CPR AED</td>
<td>2,454</td>
</tr>
<tr>
<td>Certified Public Accountant</td>
<td>2,046</td>
</tr>
<tr>
<td>Project Management</td>
<td>1,861</td>
</tr>
<tr>
<td>Basic Life Support (BLS)</td>
<td>1,818</td>
</tr>
<tr>
<td>IT Infrastructure Library (ITIL)</td>
<td>1,560</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Top Software and Programming Skills</th>
<th>Online Job Ads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Excel</td>
<td>22,646</td>
</tr>
<tr>
<td>Microsoft Office</td>
<td>19,883</td>
</tr>
<tr>
<td>Microsoft Word</td>
<td>9,510</td>
</tr>
<tr>
<td>SQL</td>
<td>8,961</td>
</tr>
<tr>
<td>Microsoft PowerPoint</td>
<td>8,819</td>
</tr>
<tr>
<td>Java</td>
<td>7,035</td>
</tr>
<tr>
<td>Software Development</td>
<td>6,492</td>
</tr>
<tr>
<td>Oracle</td>
<td>5,621</td>
</tr>
<tr>
<td>SAP</td>
<td>4,345</td>
</tr>
<tr>
<td>JavaScript</td>
<td>3,784</td>
</tr>
</tbody>
</table>

**Projected Job Demand**

To ensure a well-prepared workforce, it is important to look at future job demand. Employment projections to the year 2026 – developed by the Missouri Economic Research and Information Center (MERIC) in partnership with the U.S. Department of Labor – estimate the jobs expected to be in greatest demand over a 10-year period. The table shows the occupations, by typical education or training needed, with top job openings by the year 2026.

*Source: Long-Term Occupational Projections 2016-2026, St. Louis Workforce Development Area, MERIC.*

### Jobs by 2026 with the Most Projected Openings

<table>
<thead>
<tr>
<th>Now: Short to Moderate-Term Training</th>
<th>Exits</th>
<th>Transfers</th>
<th>Growth</th>
<th>Total Openings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined Food Preparation and Serving Workers, Including Fast Food</td>
<td>27,075</td>
<td>28,316</td>
<td>4,377</td>
<td>59,768</td>
</tr>
<tr>
<td>Cashiers</td>
<td>23,030</td>
<td>22,476</td>
<td>-156</td>
<td>45,350</td>
</tr>
<tr>
<td>Retail Salespersons</td>
<td>18,811</td>
<td>23,580</td>
<td>-950</td>
<td>41,441</td>
</tr>
<tr>
<td>Waiters and Waitresses</td>
<td>15,898</td>
<td>24,358</td>
<td>798</td>
<td>41,054</td>
</tr>
<tr>
<td>Personal Care Aides</td>
<td>18,154</td>
<td>13,675</td>
<td>7,308</td>
<td>39,137</td>
</tr>
<tr>
<td>Customer Service Representatives</td>
<td>12,746</td>
<td>18,705</td>
<td>992</td>
<td>32,443</td>
</tr>
<tr>
<td>Secretaries and Administrative Assistants</td>
<td>15,543</td>
<td>15,119</td>
<td>-2,148</td>
<td>28,514</td>
</tr>
<tr>
<td>Janitors and Cleaners</td>
<td>12,797</td>
<td>12,367</td>
<td>2,205</td>
<td>27,369</td>
</tr>
<tr>
<td>Laborers and Freight, Stock, and Material Movers</td>
<td>9,066</td>
<td>15,646</td>
<td>839</td>
<td>25,551</td>
</tr>
<tr>
<td>Office Clerks, General</td>
<td>9,620</td>
<td>9,374</td>
<td>-326</td>
<td>18,668</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Next: Long-Term Training to Associate Degree</th>
<th>Exits</th>
<th>Transfers</th>
<th>Growth</th>
<th>Total Openings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered Nurses</td>
<td>10,442</td>
<td>7,929</td>
<td>5,712</td>
<td>24,083</td>
</tr>
<tr>
<td>Nursing Assistants</td>
<td>10,362</td>
<td>8,620</td>
<td>2,375</td>
<td>21,357</td>
</tr>
<tr>
<td>Cooks, Restaurant</td>
<td>6,836</td>
<td>9,334</td>
<td>992</td>
<td>17,162</td>
</tr>
<tr>
<td>Bookkeeping, Accounting, and Auditing Clerks</td>
<td>7,838</td>
<td>6,082</td>
<td>-442</td>
<td>13,478</td>
</tr>
<tr>
<td>First-Line Supervisors of Food Preparation and Serving Workers</td>
<td>4,044</td>
<td>8,612</td>
<td>675</td>
<td>13,331</td>
</tr>
<tr>
<td>First-Line Supervisors of Retail Sales Workers</td>
<td>4,145</td>
<td>7,557</td>
<td>156</td>
<td>11,858</td>
</tr>
<tr>
<td>Maintenance and Repair Workers, General</td>
<td>4,404</td>
<td>6,011</td>
<td>543</td>
<td>10,958</td>
</tr>
<tr>
<td>Heavy and Tractor-Trailer Truck Drivers</td>
<td>4,201</td>
<td>6,225</td>
<td>228</td>
<td>10,654</td>
</tr>
<tr>
<td>First-Line Supervisors of Office and Admin. Support Workers</td>
<td>4,066</td>
<td>6,049</td>
<td>121</td>
<td>10,236</td>
</tr>
<tr>
<td>Carpenters</td>
<td>3,140</td>
<td>5,076</td>
<td>820</td>
<td>9,036</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Later: Bachelor’s Degree or Higher</th>
<th>Exits</th>
<th>Transfers</th>
<th>Growth</th>
<th>Total Openings</th>
</tr>
</thead>
<tbody>
<tr>
<td>General and Operations Managers</td>
<td>3,603</td>
<td>10,366</td>
<td>1,249</td>
<td>15,218</td>
</tr>
<tr>
<td>Accountants and Auditors</td>
<td>3,577</td>
<td>6,972</td>
<td>846</td>
<td>11,395</td>
</tr>
<tr>
<td>Elementary School Teachers</td>
<td>3,008</td>
<td>3,374</td>
<td>669</td>
<td>7,051</td>
</tr>
<tr>
<td>Business Operations Specialists, All Other</td>
<td>2,286</td>
<td>4,204</td>
<td>493</td>
<td>6,983</td>
</tr>
<tr>
<td>Market Research Analysts and Marketing Specialists</td>
<td>1,568</td>
<td>4,055</td>
<td>1,150</td>
<td>6,773</td>
</tr>
<tr>
<td>Software Developers, Applications</td>
<td>931</td>
<td>3,346</td>
<td>1,500</td>
<td>5,777</td>
</tr>
<tr>
<td>Human Resources Specialists</td>
<td>1,352</td>
<td>3,061</td>
<td>305</td>
<td>4,718</td>
</tr>
<tr>
<td>Computer Systems Analysts</td>
<td>1,207</td>
<td>2,949</td>
<td>514</td>
<td>4,670</td>
</tr>
<tr>
<td>Secondary School Teachers</td>
<td>1,820</td>
<td>2,217</td>
<td>441</td>
<td>4,478</td>
</tr>
</tbody>
</table>
Occupations with the most openings are determined by looking at openings created by new job (net) growth, as well as those created by workers exiting the occupation or transferring to another occupation.

The top long-term jobs with the highest projected total openings are Combined Food Prep and Serving Workers, Cashiers, and Retail Salespersons.

Several occupations, such as Registered Nurses, Accountants, and Software Developers, were among the top projected job openings 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.

**Information Technology: Technology-Intensive Services**

Technology-Intensive Services have a technical focus and derive most of their employment from information technology occupations. Company headquarters, telecommunications, software publishers, data processing services and professional, scientific and technical services are all included in this category. Annual averages for 2017 from the Bureau of Labor Statistics showed technology-intensive industries employed over 145,000 people in the St. Louis MSA. St. Louis is home to many information technology firms such as Computer Science Corporation and Amdocs, as well as several company headquarters. After experiencing a decline in employment from 2008 through 2012 due to the recession and its aftermath, these industries have experienced 11.2% growth from 2012-2017, well above the 10 year growth rate of 1% for all industries.

**Technology-Intensive Services Employment**

There were more than 17,000 job postings in the technology-intensive industries over the last year. Several soft skills such as Communication and Teamwork were among the top requested basic skills. Customer Service was the top requested specialized skill, followed by Project Management and Sales. The top requested software and programming skills include Microsoft Office programs, SQL and JAVA.
As expected, many information technology certificates such as IT Infrastructure Library (ITIL) and CompTIA+ were among the top requested certificates over the past year.

Financial Services

Annual averages from the Bureau of Labor Statistics for 2017 showed the Finance and Insurance industries employed more than 70,000 people in the St. Louis MSA. St. Louis is home to major investment and banking firms such as Edward Jones and Enterprise Bank.
& Trust. Between 2008 and 2009, the industry experienced a 15% reduction in employment, but has since rebounded by 23% through the first quarter of 2017.

There were nearly 8,000 job postings in the Finance industry over the last year. Several soft skills such as Communication and Problem Solving were among the top requested basic skills. Customer Service was the top requested specialized skill, followed by Sales and Customer Contact. The top requested software and programming skills include Microsoft Office programs, SQL and JAVA.

<table>
<thead>
<tr>
<th>Top Basic Skills</th>
<th>Top Specialized Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Skills</td>
<td>Customer Service</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>Sales</td>
</tr>
<tr>
<td>Microsoft Office</td>
<td>Customer Contact</td>
</tr>
<tr>
<td>Detail-Oriented</td>
<td>Risk Management</td>
</tr>
<tr>
<td>Written Communication</td>
<td>Project Management</td>
</tr>
<tr>
<td>Building Effective Relationships</td>
<td>Retail Industry Knowledge</td>
</tr>
<tr>
<td>Teamwork / Collaboration</td>
<td>Cash Handling</td>
</tr>
<tr>
<td>Planning</td>
<td>Product Sales</td>
</tr>
<tr>
<td>Microsoft Excel</td>
<td>Scheduling</td>
</tr>
<tr>
<td>Research</td>
<td>Nationwide Mortgage Licensing System (NMLS)</td>
</tr>
</tbody>
</table>

Top Certificates

Series 7 Financial Securities
Driver's License
Insurance License
Certified Public Accountant (CPA)
Insurance Agent Certification
Certified Financial Planner (CFP)
Series 66 Financial Securities
Certified Information Systems Auditor (CISA)
Project Management Certification
Series 63 Financial Securities

Top Software/Programming Skills

Microsoft Office
Microsoft Excel
Microsoft Word
Microsoft PowerPoint
SQL
Java
Oracle
Software Development
Software Engineering
UNIX

Securities and Insurance Licenses were among the top requested certificates over the last year.

Top Certificates

Series 7 Financial Securities
Driver's License
Insurance License
Certified Public Accountant (CPA)
Insurance Agent Certification
Certified Financial Planner (CFP)
Series 66 Financial Securities
Certified Information Systems Auditor (CISA)
Project Management Certification
Series 63 Financial Securities

Top Software/Programming Skills

Microsoft Office
Microsoft Excel
Microsoft Word
Microsoft PowerPoint
SQL
Java
Oracle
Software Development
Software Engineering
UNIX


Health Care

Annual averages for 2017 from the Bureau of Labor Statistics show Health Care employed more than 165,000 people in the St. Louis MSA. St. Louis is home to several large health care employers such as BJC Healthcare, Mercy Health, and SSM Health. Employment in the Health Care industry has been growing, increasing 14% over the last 10 years, well above total employment growth of 1% for all industries.
There were over 21,000 job postings in the Health Care industry over the last year. Several soft skills such as Communication and Teamwork were among the top requested basic skills. Patient Care was the top requested specialized skill, most commonly found in job ads for Registered Nurses and Nursing Assistants. Microsoft Office programs made up the majority of the top requested software and programming skills.

**Top Basic Skills**
- Communication Skills
- Teamwork / Collaboration
- Planning
- Critical Thinking
- Organizational Skills
- Problem Solving
- Computer Literacy
- Microsoft Excel
- Research
- Building Effective Relationships

**Top Specialized Skills**
- Patient Care
- Treatment Planning
- Patient/Family Education and Instruction
- Scheduling
- Customer Service
- Home Care
- Patient Evaluation
- Legal Compliance
- Cardiopulmonary Resuscitation (CPR)
- Medication Administration

Top requested certificates included Registered Nurse, Driver's License, and Advanced Cardiac Life Support (ACLS).

**Top Certificates**
- Registered Nurse
- Driver's License
- Advanced Cardiac Life Support (ACLS) Certification
- First Aid CPR AED
- Basic Life Saving (BLS)
- Licensed Practical Nurse (LPN)
- Certified Nursing Assistant
- Basic Cardiac Life Support Certification
- American Registry of Radiologic Technologists (ARRT) Certification
- Nurse Practitioner

**Top Software/Programming Skills**
- Microsoft Excel
- Microsoft Office
- Microsoft Word
- Microsoft PowerPoint
- Microsoft Outlook
- SQL
- Word Processing
- Microsoft Access
- ICD-10
- Software Development
The 2018 employer survey is the 10th 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. In alternating years the survey targets industries that represent a composite of the entire St. Louis economy and specific industry sectors that are important to the economy at the time of the report. The 2018 survey is focused on three specific industry sectors that are important not only to the recovery of the St. Louis economy since the recession, but also critical to its future growth: Information Technology (Technology-Intensive Services), Financial Services (Finance) and Health Care.

This year’s survey targeted 1,246 employers across 11 industry segments as defined by the North American Industry Classification System (NAICS). Of the 11 industry segments, five represent Technology-Intensive Services (NAICS 5112, 517, 518, 541 and 551), three represent Financial Services, referred to as Finance throughout this document, (NAICS 522, 523 and 525), and three represent Health Care (NAICS 621, 622, and 623). Technology-Intensive Services represent industries with high utilization of information technology skills. A statistically significant sample was surveyed in each of the industry segments and NAICS codes. The NAICS descriptions, and tables of the numbers of employers surveyed in each of the NAICS codes, are in the Methodology section.

Although company size was not a specific element in constructing the survey targets, it was tracked by the survey team. Companies employing fewer than five employees were not interviewed. Although the companies interviewed reflect a wide range of sizes as measured by number of employees, this year’s survey included a slightly larger segment of...
firms employing more than 50 employees (12%) as compared to that same firm size in the 2017 report (9%). It stands to reason that the size distribution of the firms surveyed is related to the industries that were selected for this year’s survey. Geographically, the firms interviewed also represented the entire St. Louis MSA.

Each employer surveyed was asked a series of twelve questions, several with multiple parts, which attempted to gauge the hiring outlook and challenges of individual employers as well as specific employer strategies and practices to find, train and maintain a skilled workforce.

**Hiring Trends - Past Year**

The first question asked of those surveyed was whether and to what extent employment levels changed over the past 12 months. The responses to this question were significantly different for the 2018 targeted industries when compared to the 2017 “all industry” response. In aggregate, more firms in 2018 indicated that they had increased employment in the past 12 months (36%) than in 2017 (33%). This includes more firms citing increased significantly (15%) in 2018 as compared to 2017 (9%). At the same time, the percentage of employers who responded that they had decreased employment levels nearly doubled in 2018 to 23% from the 2017 level of 12%. Within that figure, there was a sharp increase in employers who cited decreased significantly as their response choice in 2018 (8%) as compared to 2017 (2%). The most significant change in the responses to this question came in the choice of remained the same as before. Over the history of the survey, well over half of employers

![](image.png)
consistently chose remained the same as before as their response choice for the question about changes in employment levels. For 2017 this response was chosen by 56% of the respondents. For the 2018 survey, only 41% chose remained the same as before, still the most frequent response but significantly lower than in previous surveys.

When examining these responses by industry, one might expect to see some significant differences. However, the responses were fairly similar across industries. Of the Technology-Intensive Services firms responding, 33% indicated increased employment levels, 22% cited decreased employment levels while 45% said that their employment levels remained the same as before. Of the Finance firms responding, 36% indicated increased employment levels, 22% indicated decreased levels and 42% indicated that employment levels remained the same as before. For Health Care, a slightly higher percentage of firms cited increased employment levels (39%) and somewhat fewer responded to remained the same as before (37%) as compared to the other two sectors. However, Health Care reported a fairly similar percentage of responses indicating decreased employment levels (23%) as the other sectors.

Change in Employment Levels over the Last 12 Months

There are some significant differences to the responses to this question as compared to previous surveys. The 2018 responses reflect a more dynamic employment situation for these particular sectors. There are several possible explanations for this, including competitive market forces such as mergers or acquisitions, inability to attract and retain a sufficient number of qualified workers, and/or government policy such as concerns expressed in comments from survey respondents about uncertainty around the Affordable Care Act and the H-1B visa program.

Hiring Trends - Future Plans

When asked about anticipated employment levels over the next 12 months, employer responses for the 2018 survey reflect the same dynamic employment situation as the first survey question regarding changing employment levels over the past 12 months. The responses also followed a similar pattern when comparing them to the 2017 survey
responses. In total for 2018, 48% of employers indicated that they anticipated increasing employment levels in the next 12 months. This compares to 42% in 2017. At the same time, 12% of employers indicated that they anticipated decreased employment levels in the next 12 months as compared to only 2% of employers making that response choice in 2017. Similar to the responses to the preceding survey question, the most significant change to the responses to this question came in the response of remained the same as before. Of the employers describing future hiring plans, 41% indicated that their anticipated employment levels would remain the same as before compared to the 56% of employers responding that way in 2017, as well as more than 50% of employers who made that selection each year since the survey began.

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

Looking by industry sector, employer responses to this question reflect a more optimistic outlook for employment over the next 12 months for Technology-Intensive Services and Health Care as compared to Finance. More than half of all employers surveyed for Technology-Intensive Services (50%) and Health Care (54%) anticipate
increased employment levels as compared to less than 40% for Finance. The differences between the sectors for the choices of decreased employment levels anticipated over the next 12 months were minimal, with 11% of Technology-Intensive Services, 13% of Finance and 11% of Health Care. Fewer Health Care and Technology-Intensive firms anticipated that employment levels would remain the same as before as compared to Finance. While only 36% of Health Care firms and 39% of Technology-Intensive Services firms indicated that their employment levels would remain the same, almost half (48%) of Finance firms responded with that choice.

Anticipated employment levels for these sectors reflect a generally positive outlook (and in the case of Health Care and Technology-Intensive Services a very positive outlook) but one still impacted by market forces and other factors causing significant shifting of employment levels within each sector. This is evidenced by significant increases and decreases in past and projected employment levels, with relatively fewer firms anticipating no change to their employment levels as compared to previous surveys.

**Barriers to Expanding Employment**

Since the inception of the State of the 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. The responses to this question for the 2018 survey continue with these three as the top choices. The shortage of workers with knowledge or skills is the most frequent response, as it has been for the past three years, with economic conditions and government policies or regulations continuing to decline as potential barriers to expanding employment.

There has been a significant change to magnitude of response to some of the barrier choices for 2018. In total for these sectors, 41% of the employers surveyed selected the shortage of workers with knowledge or skills as a potential barrier to expanding employment. This was the most frequent response but was significantly below the 52% of employers citing that response in 2017. Economic conditions continued to trend
downward to 22% from the 2017 level of 27%. Likewise, government policies or regulations continued its decline from 21% in 2017 to 19% in this year’s survey. A significant increase in response came from shortage of available training programs as a barrier to expansion, with a jump from the 2017 response level of 12% to 18% for 2018. There was also a significant increase to the choice of no barrier with a 25% response rate in 2018 compared to 14% in 2017. Employers also cited other barriers including, primarily, failed background and/or drug tests, past drug abuse, invalid identification, and social media posts.

Disaggregating the responses by industry results in some differences but more similarity in the frequency of responses to the various choices that employers could select. The most frequent choice for all three sectors was the shortage of workers with knowledge or skills. However, Technology-Intensive Service employers made this choice at a significantly higher rate (46%) than either Finance (39%) or Health Care (38%). The response seen in Technology-Intensive Services approaches the 50% response level that we have seen overall in our past few surveys.

Conversely, both Finance and Health Care at 24% gave a significantly higher response to economic conditions as a barrier than did the Technology-Intensive sector at 18%. Although government policies or regulations has seen a declining response rate it seems to be a larger factor for Technology-Intensive Services employers with more than 20% of employers citing it as a barrier and Health Care with almost 20% as compared to the Finance sector with only 16% indicating that it is a barrier. Comments from some of the survey respondents reflected uncertainty around the Affordable Care Act and the H-1B visa program that may have contributed to the higher response rate for these sectors.

One of the key differences in the 2018 survey as compared to past surveys is the increase in the response to the choice of shortage of available training programs as a potential barrier. Employers from all three sectors chose this response at rates that
exceeded 17%, led by Health Care at 19% followed by Technology-Intensive Services and Finance. For the Finance sector, the shortage of available training programs received a higher response rate from employers than government policies or regulations. For Health Care, these two choices received the same response rate of 19%. For Technology-Intensive Services there was less than a one point difference in the response rates for shortage of available training programs at 17% and economic conditions at 18%.

The response rates to the choices of lack of information, lack of transportation access, lack of childcare access, and other barriers were very similar between the three industry clusters. They were also similar to the previous year’s response rate with the one exception of a drop in response rate to lack of transportation from the 2017 survey.

There are a number of possible explanations for the change in response rates to the choices for this question. All three of these sectors require specific skills that are documented by either licensure or certification. Since these requirements are transparent to applicants, it may be that employers are seeing a higher percentage of qualified applicants even if they may not be seeing a sufficient number of qualified applicants. This may be one explanation for the drop in response rate to shortage of workers with knowledge or skills while at the same time seeing an increase in the response rate to shortage of available training programs. Finally, the lower response rate to economic conditions as a barrier and the higher response rate to no barrier may indicate an underlying strong economy which is preempting any other barriers in the perceptions of employers.

The survey also asks employers to rate the criticality of the barriers they cite using a five-point scale, with five being the most critical. The highest weighted average response for any barrier cited (excluding an all other category) was a 3.90 score for government policies and regulations. This was also the case in 2017, where government policies or regulations received the highest criticality score of 4.02. Even though fewer employers cited government policies or regulations as a barrier in 2018, it was rated as a very critical barrier. The next highest weighted average response was 3.74 for shortage of workers with knowledge or skills, also attesting to the critical nature of that barrier. This was followed by shortage of available training programs with a weighted average response of 3.68 and economic conditions with a score of 3.53. This represents a reversal of the order in the 2017 survey where the weighted average response of economic conditions (3.77) was higher than shortage of available training programs (3.43).
As we examine this measure of importance for each of the three sectors, we find that each had a different rank order of criticality for the top four barrier choices. The choice of government policies or regulations received the highest criticality score for the Health Care (3.93) and Finance (3.84) sectors. Although Technology-Intensive Services gave this choice a high score of 3.92, it was exceeded by shortage of available training programs at a 4.01 score for that sector. The shortage of workers with knowledge or skills ranked second in order of criticality for Health Care and Finance and third for Technology-Intensive Services. Economic conditions ranked third or fourth in order for all sectors. The widest divergence between the sectors in terms of criticality was for the choice of shortage of available training programs which received a top rank from Technology-Intensive Service employers but only a third and fourth rank by Finance and Health Care respectively.

The weighted average method measures how important or critical a given barrier is to those who report it as a barrier. However, looking at the number of employers who rated the importance of a specific barrier, and particularly the number of employers who gave it a significant (4) or critical (5) score, the rank order changes. Using that methodology results in a more significant measure of importance for the shortage of workers with knowledge or skills and the shortage of available training programs than government policies or regulations and economic conditions to expanding employment.

We can also use this method to measure the importance of these barriers for each of the three sectors. The shortage of workers with knowledge or skills is ranked most important
by all sectors by significant margins. Economic conditions and government policies or regulations is ranked either second or third by Finance and Health Care with the shortage of available training programs as the fourth most important barrier for those two sectors. However for Technology-Intensive Services the shortage of available training programs received the highest importance measure after shortage of workers with knowledge or skills followed by government policies or regulations and economic conditions.

Examining the frequency of responses coupled with criticality scores paints a picture of three sectors operating in an underlying strong economy but with complex issues of
government policy and talent pipeline challenges. There is some evidence that the talent pipeline issue is particularly impacting employers in the Technology-Intensive Services sector.

**Adding Employees**

When employers were asked for the 2018 survey what methods they would use to add workers, more responded to hiring new full-time employees (74%) and fewer reported hiring new part-time employees (63%) than in the 2017 survey when 69% responded to hiring new full-time employees and 66% hiring new part-time employees. This may be due to the industry sectors selected and/or the somewhat larger firm size in 2018 as compared to the 2017 all-industry survey.

In a reversal of the trend we saw in 2017, more employers this year responded that they would add employees by hiring contract workers (20%) compared to 13% in 2017. At the same time, fewer employers selected using a temporary agency (13%) or recalling workers from lay-off list (9%) than in 2017 when 17% of employers reported using a temporary agency and 14% reported recalling workers from lay-off list.

Regarding the two most frequently cited methods of adding workers, there was little variance between the three sectors. Responses to hiring new full-time employees were in a tight range between Finance (73%) and Health Care (75%) with Technology-Intensive Services falling between. Likewise, for hiring new part-time employees as a method of adding workers the ranged from 61% for Finance and 65% for Health Care with
Technology-Intensive Services falling between. The largest variance in responses between the industry sectors came in the choices of hiring contract workers, using a temporary agency and recalling workers from a lay-off list. For all these choices Health Care had a significantly higher response rate than the other two sectors to using these methods to add workers including more than 30% of Health Care employers responding with hiring contract workers.

While Finance and Technology-Intensive Services firms utilize the more common and established methods of adding employees as tracked in our previous surveys, Health Care has utilized more and varied methods to add workers to address workforce needs. This is certainly due to the more complex staffing requirements of patient care operations where a range of hiring options are required to fill needed positions.

**Shortcomings of Job Applicants**

Since the first survey was commissioned in 2009, employers have been asked about shortcomings they see in their job applicants. Previously referred to as “soft skills,” they are now considered essential skills. Employers were asked to respond to as many of several possible choices among shortcomings as they see in their applicant pools. In past surveys, as many as two-thirds to nearly three-quarters of employers reported seeing at least one shortcoming.

![Shortcomings of Job Applicants](image)

For the 2018 survey of these selected industry sectors, the response rate to the various choices is lower than in previous surveys, in some cases significantly lower. The top four choices among the shortcomings remain consistent between 2017 and 2018, but with a
lower frequency of response and a different rank order in 2018. The most frequently cited shortcoming is *poor work habits*, which was the most frequent choice in 2018 with 48% of employers citing it as a shortcoming. It was also the most frequent response in 2017 but with a significantly larger response rate of 59%. In 2018, *poor work habits* was followed by *lack of critical thinking and problem solving* (45%), *lack of teamwork or collaboration* (43%) and *lack of communication or interpersonal skills* (36%). This compares to a different rank order and frequency in 2017 where *poor work habits* was followed by *lack of communications or interpersonal skills* (55%), *lack of critical thinking and problem solving* (51%) and *lack of teamwork or collaboration* (50%).

One significant divergence from past surveys in the 2018 responses is seen in the choice of *lack of communications or interpersonal skills*. Consistently the second most frequent choice by employers after *poor work habits*, for the 2018 survey, only 36% of employers cited it as a shortcoming ranking it fourth among the top four choices and much lower than the 55% citing it as a shortcoming in 2017. It may be that employers in these sectors are seeing more skilled and qualified applicants due to the higher and more transparent entry requirements in the form of licensures or certifications. As a result they may be seeing fewer shortcomings in these applicants. Further evidence may be seen in the 2018 response rates to *lack of technical skills specific to the job*, *lack of basic math skills* and *lack of writing skills* all of which are sharply lower than the 2017 response rates. As an example, *lack of technical skills specific to the job* dropped from a response rate of 41% in 2017 to only 13% in 2018.

**Shortcomings of Job Applicants - Technology**

![Graph showing shortcoming percentages](image)

When the responses to this question are disaggregated by industry, they reflect several similarities between the sectors as well as with prior survey results. With one exception, the top four shortcomings reflected in the total responses were also reflected in the responses by industry sector. These include *poor work habits*, *lack of communication or interpersonal skills*, *lack of critical thinking and problem solving*, and *lack of teamwork or collaboration*. Although the rank order of these shortcomings was different for each sector, they were all included in the top four except for Health Care employers who ranked *lack of communications or interpersonal skills* much lower than the other sectors.

Other shortcomings that rose in rank when we analyzed sector responses include *inability to interact with different cultures or socio-economic backgrounds* which was ranked fourth by Health Care and tied for the fourth ranking by Finance and *inability to think creatively* which was tied for the fourth ranking by Health Care.
A larger percentage of Technology-Intensive Services firms saw these shortcomings in their applicants than either Finance or Health Care. Both Technology-Intensive Services firms and Finance firms reported shortcomings at rates similar to past surveys. The top four choices for Technology-Intensive Services ranged from lack of critical thinking and problem solving – with 44% of employers reporting – to lack of communication or interpersonal skills at 58%. Finance firms reported shortcomings ranging from lack of communication or interpersonal skills and inability to interact with different cultures or socio-economic backgrounds, both with 38% of employers reporting, to poor work habits with 50% of employers citing this shortcoming. Responses by Health Care employers to applicant shortcomings were significantly lower than the other sectors and much lower than have been reflected in previous surveys. Responses from Health Care ranged from 27% reporting the shortcomings of inability to interact with different cultures or socio-economic backgrounds and inability to think creatively to 42% reporting the lack of critical thinking and problem solving. Only 13% of Health Care employers reported seeing a lack of communication or interpersonal skills in their applicants. This is the lowest that particular shortcoming has been reported in any past survey. The very low Health Care sector responses were the primary reason for the lower response rates overall to applicant shortcomings. As discussed earlier, it may be that the specific licensure and certification requirements of these sectors, particularly Health Care, are causing employers to see a larger percentage of highly-qualified applicants.

We asked employers to rate the criticality of the reported shortcomings on a scale of 1 to 5, with 5 being the most critical. The ranking of shortcomings by criticality differed somewhat from the rankings by largest percentage of employers reporting them. Poor work habits was cited by the largest percentage of employers and also received the highest weighted average score of 4.25, a decrease from the 2017 score of 4.38. The unwillingness or inability to learn was reported by only 20% of employers but received
the second highest criticality score of 4.07, a decrease from the 2017 score of 4.20. The criticality of the next four shortcomings: lack of teamwork or collaboration (4.00); lack of communication or interpersonal skills (3.96); lack of critical thinking and problem solving (3.88) and inability to interact with different cultures or socio-economic backgrounds (3.74) tracked very closely with the order that employers reported seeing these shortcomings. Most of the 2018 importance scores were slightly lower than the 2017 ratings.

**Importance of Applicant Shortcomings**

Using the weighted average method, we examined the importance ratings by industry sector and see both similarities and differences between the sectors. We also show the differences in rank order of the frequency in which employers saw shortcomings and the importance they attach to those shortcomings.

For the Technology-Intensive Services sector, the rank order by importance tracks well with the frequency in which employers in that sector reported seeing shortcomings. The one exception is for the choice unwillingness or inability to learn which earned the second highest importance score from that sector even though only 28% of employers saw that shortcoming in their applicant pool.

**Importance of Applicant Shortcomings - Technology**

For the Finance sector, the inability to interact with different cultures or socio-economic backgrounds received the second highest importance score (4.08) after poor work habits even though it only tied for fourth place in the order of frequency. At the same time the lack of communication or interpersonal skills received a comparatively low importance score of 3.50 when you consider that 38% of employers in this sector reported seeing it as a shortcoming. The unwillingness or inability to learn also received a relatively high importance score of 3.89 compared to the 20% of Finance employers who reported this shortcoming.
Like the other sectors, Health Care employers gave the *unwillingness or inability to learn* a high importance score (4.16) when compared to the frequency that employers were encountering it in their applicant pool (11%). Another large variance between importance and frequency in the Health Care sector was for the choice of *lack of communication or interpersonal skills* which received the second highest importance score for this sector despite only being reported as a shortcoming by 13% of Health Care employers.

The weighted average method measures how important or critical a given shortcoming is to those who chose it as a shortcoming. Another way to measure importance is by looking at the actual number of employers who rated the importance of a specific shortcoming as very high, giving it a *significant* (4) or *critical* (5) score. Using this method on all responses yields the same rank order of importance as the weighted average method.
However, when this same method is applied to the responses by industry, the rankings by sector differ from the overall rankings for some of the shortcomings. For Technology-Intensive Services, the \textit{lack of technical skills specific to the job} rises to the fourth most important shortcoming despite only 22\% of sector employers encountering this in their applicant pools. For Finance sector employers, the \textit{inability to interact with different cultures or socio-economic backgrounds} received the second rank in importance as compared to a fifth rank by percentage of employers reporting it as a shortcoming. Only
23% of Finance sector employers reported the **lack of general computer skills** in their applicants but ranked it fourth in importance. For Health Care, the **lack of communication or interpersonal skills** received the third rank in importance even though only 13% of employers saw this shortcoming in their applicant pools.

While the 2018 survey responses reflect a lower percentage of employers encountering shortcomings overall than in past surveys, there are still the same fundamental shortcomings being reported along with specific areas of concern being expressed by employers in the different sector, such as **lack of technical skills specific to the job** for Technology-Intensive Services and **lack of general computer skills** for Finance.

**Methods of Skill Acquisition**

For the 2018 survey, employers were asked what methods they used to assist current workers to address their company’s need for new or increased skills. The most frequent response was **on-the-job training** with 74% of employers responding that they used this method. Although this was the most frequent response, as it has been in every past survey, it is significantly lower than the 90% of employers who reported this method in 2017. In fact, every past survey has seen response rate of 90% or greater for this choice.

**Methods to Address Need for New or Increased Skills**

![Chart showing methods to address need for new or increased skills](chart.png)

At the same time that the responses to **on-the-job training** were lower, most other response choices for methods to acquire or improve skills were higher than the 2017 survey. Most notably the choice of **in-house classroom training** increased to a 69% employer response rate from the previous year’s level of 56%. Likewise, **flexible schedule for continuing education** received a 67% response rate in 2018, up from 62% in 2017, and **online courses** was chosen by 43% of employers as a method of skill acquisition in 2018 compared to 38% in 2017. Other methods including **tuition reimbursement**, **community college provided customized training or education**, and **apprenticeship programs** saw employer response rates increase by 2-3% from the level of the 2017 survey.

The increased use of more structured skill acquisition methods and less reliance on **on-the-job training** may be a reflection of the more formal requirements for retention and advancement in these three sectors that more heavily utilize certifications as a means to document new skills and advance in the industry.
The largest variance between the three sectors regarding skill acquisition methods was in the use of *on-the-job training*. Where the Technology-Intensive Services and Finance sectors reported a heavy use of *on-the-job training* (84% and 81% respectively), only 57% of Health Care employers reported *on-the-job training* as a method of skill acquisition. The highest response rate from Health Care employers was to the choice of *flexible schedule for continuing education* with 75% reporting that choice. There was also a significant difference between the sectors in the choice of *online courses* where 49% of Health Care employers made that selection as compared to 37% of Finance firms and 42% of Technology-Intensive Services firms. There was little variation in response rates between the sectors for *vendor training, tuition reimbursement, vocational training, apprenticeship programs,* and *community college provided customized training or education*.

### Methods to Address Need for New or Increased Skills by Sector

Employers in these sectors, particularly Health Care, seem to rely on more formal methods of skill acquisition and are employing multiple methods to address this challenge. There were also fairly strong responses from Health Care and, to a lesser extent, Technology-Intensive Services to the choices for *flexible schedule for continuing education, online courses* and even *tuition reimbursement*. These choices may indicate that employees in these sectors are expected to be responsible for managing the maintenance and improvement of their skills and credentials.

### Addressing Company Skill Shortages

This year when employers were asked if they were experiencing a shortage of skilled applicants for their positions, 45% reported experiencing a shortage. This was a significant increase from the survey response of 31% in the 2017 survey of all industries comprising the St. Louis economy. The difference in this rate could be explained by the focus on these more high skill targeted sectors as compared to the economy overall. As with the analysis of responses to barriers to expanding...
employment, it may be that employers in these sectors are seeing a higher percentage of applicants with knowledge and skills but just not seeing enough of them.

Again for 2018, employers were asked about the skill level required to address the skill shortage. Employers were asked what percentages of their shortages were: high skill – requiring a four-year degree or higher, middle skill – requiring training or education beyond high school but less than a four-year degree, or low skill – requiring high school or less. The highest percentage of shortages seen in the 2018 survey was high skill with 49% of skill shortages reported at this level. This was followed by low skill at 32% and middle skill at 19%. These responses varied significantly from the 2017 responses of 46% middle skill, 39% low skill and 14% high skill. Obviously there are significant differences in skill level requirements between these high-skill targeted sectors and industries that make up the overall regional economy.

The survey also included a question about the measures that employers were taking to address skill shortages. The highest frequency of response was to the measure of forced to hire less experienced workers and then train them with 48% of employers reporting using this measure. This is significantly below the 2017 response rate of 81%. Lower
response rates for the 2018 survey were also reported for invest in automation (12% as compared to 20% for 2017) and offering increased wages due to the shortage of experienced workers (36% as compared to 40% for 2017). Conversely, several measures were reported by employers at higher rates for 2018. Most significantly was the choice hiring from outside the St. Louis, MO-IL region which garnered a 42% response rate in 2018 as compared to only a 19% rate for the 2017 survey. Likewise hiring from outside the United States jumped from only 4% in 2017 to 24% in 2018, and hiring contractors increased from 20% in 2017 to 29% in 2018. One interesting and somewhat surprising response was to the choice of not taking any listed measure which increased from a response rate of only 5% in 2017 to 26% in 2018.

Examining the responses to the measures taken to address skill shortages by industry sector reflects some unique and significant differences between the sectors. One of the larger variances between the sectors was in the response of forced to hire less experienced workers and then train them. This response was chosen by 74% of employers in the Finance sector, a much greater response rate than either Health Care at 47% or Technology-Intensive Services at 33% and closer to the 2017 response rate of 81% to that measure. There was less variance to the response of offering increased wages due to shortage of experienced workers with responses ranging from 32% for Technology-Intensive Services to 41% for Finance. Health Care employers reported hiring contractors at a much higher rate (47%) than the other two sectors and more
than twice the response rate to that measure in the 2017 survey (20%). Finance reported hiring outside the St. Louis region at the highest rate (60%) which may be the result of national recruitment strategies by the first- and second-tier corporate offices located in our region. The largest variance of response between sectors was to the measure of hiring from outside the United States. Nearly half (47%) of Technology-Intensive Services employers reported employing this measure. This compares to only 3% for Finance and 5% for Health Care employers. It is also far greater than the 4% of employers who chose this measure in 2017. This response may reflect the use of the H-1B visa program by technology firms. As discussed previously, the choice of not taking any listed measure increased from the 2017 response level of 5% to 26% in 2018. Although this response increased for all industry sectors, the overall increase was driven primarily by the response rate of 42% from employers in the Technology-Intensive Services sector. This may reflect a reticence by Technology-Intensive Services employers to invest in employee development in a very talent-competitive industry. Clearly, a number of survey responses by Technology-Intensive Services employers to questions about skill shortages, shortages of workers and shortages of available training programs depict a challenging workforce environment for that sector with few easy answers.

The increase in the frequency of responses indicating an overall skill shortage are largely driven by the responses of employers in the Technology-Intensive Services sector, with 61% reporting skill shortages. Responses from the other two sectors were closer to the 2017 response level for all industries. The percentage of middle skill job shortages dropped significantly in 2018, driven largely by the Finance sector with only 10% of their skill shortages at the middle skill level and Technology-Intensive Services with only 20% at the middle skill level. Health Care remains a strong sector for middle skill jobs with 29% of skill shortages reported at this level. Finally there are significant differences in the measures taken to address skill shortages both between the sectors and from prior years' surveys. Among these are the large proportion of Health Care employers using the hiring contractors measure, the large proportion of Finance
employers hiring from outside the St. Louis region and the nearly half of Technology-Intensive Services employers reporting hiring from outside the United States. Also notable is the 42% of Technology-Intensive Services employers who reported not taking any listed measure.

**Skills Shortages in Functional Areas**

This year employers were asked a two-part question about skill shortages in functional areas. All employers were asked whether they were experiencing skill shortages in four general areas. These were accounting/finance, information technology, customer service, and business management. These were chosen because they can generally be found in any business. The second set of functional skill shortages were specific to the industry sector, for example web development for Technology-Intensive Services employers.

Employers were first asked the extent to which they employed staff in these “general” functional areas. Overall, 52% of employers reported staff in the functional area of accounting/finance, 48% in customer service, 45% in business management, and 40% in information technology. The response rates for information technology and accounting/finance were higher than 2017 due to the focus on Finance and Technology-Intensive Services in the survey. The response to customer service, the most ubiquitous functional skill in the economy, was 48% as compared to 69% in the 2017 survey of all industries, probably because of the more technical nature of the targeted sectors.

**Percent of Businesses that Employ Staff in General Functional Areas**

For 2018, when employers were asked whether they were experiencing skill shortages in these functional areas, 13% reported a shortage in customer service, 9% in accounting/finance, and 8% in both business management and information technology. The reported shortage for customer service is much lower than the 23% reported in 2017 in part due to the lower utilization of the customer service function in the targeted survey sample as compared to all industries. Likewise, the reported shortages in
accounting/finance and information technology are larger than in 2017 due to the higher utilization of these functions in the survey sample. The reported shortage in the business management function was nearly the same for 2018 as it was for 2017.

Another way to look at skill shortages by function is to analyze the "effective rate" of functional skill shortages. That is the ratio of the number employers reporting a functional skill shortage to the number of employers employing that particular function (rather than to the total number of employers in the survey sample). Using this method of calculation yields an effective rate that is more than double the "nominal" rate of functional skill shortages and one that is more indicative of the impact of a functional skill shortage. The effective rate of the skill shortage of customer service is 27%, closer to the effective rate for that function reported in 2017 (33%). On the other hand, the effective functional skill shortage for information technology is lower for 2018 (19%) than 2017 (22%). This would seem to indicate that a higher percentage of employers utilizing the information technology function in 2017 were experiencing skill shortages compared to 2018. Again this difference is probably due to the representation of Technology-Intensive Services employers in the survey sample for 2018 who may be more effective at recruiting and hiring qualified applicants in information technology.

In order to gauge the skill level required to meet the shortages in each of the functional areas, employers were asked to give the percentages of their shortages that require:
high skill – requiring a four-year degree or higher, middle skill – requiring training or education beyond high school but less than a four-year degree, or low skill – requiring high school or less. Information technology received the largest response of high skill as the skill level required to address a shortage at 54%, and the lowest response of low skill at 13%. Conversely the largest response of low skill to address a functional shortage was for customer service at 54%. Customer service also received the smallest response for high skill as the level for the functional shortage at only 11%. The distribution of the skill level needed to address functional skill shortages was very similar for accounting/finance and business management with accounting/finance at 49% high skill, 33% middle skill and 18% low skill, and business management at 44% high skill, 39% middle skill and 17% low skill. Across all functional areas middle skill averaged 35% as the required level needed to address skill shortages.

Employers responding to this question were also asked to rate the importance of functional skill shortages to their business. The rating was on a five-point scale with 5 as most important. Using a weighted average method, the highest importance score was for business management with a weighted average score of 4.37 followed by customer service at 4.27, accounting/finance at 4.02, and information technology at 3.62. These scores are all lower than 2017 scores for those same functions. Accounting/finance and information technology were significantly higher in importance in 2017 as compared to 2018. This may be due to the heavy representation of Finance and Technology-Intensive Services firms in the 2018 survey. The relatively higher importance rating for customer service in the 2018 survey as compared to other functional skills was even more significant given its moderate utilization rate by employers in the survey sample and its nominal and effective skill shortage rate. Employers seem to recognize the importance of customer service as a critical job function regardless of the specific job role in the firm.

Importance of Functional Skill Shortages

As we break out the survey responses to this question by industry sector, we find some wide variances in the level of responses as well as a few similarities. As discussed previously, there are four functions that apply to all three sectors (accounting/finance, business management, customer service, and information technology) and two to three additional functions for each specific sector.
For the Technology-Intensive Services sector, employers were asked about three additional functional areas: web development, software development and cybersecurity. As might be expected, the general functional area of information technology is most utilized by the Technology-Intensive Services sector with 75% of employers responding that they employ staff in this functional area. This compares to 40% for the overall 2018 targeted sectors. This area is followed by software development with 62% of employers responding. The other technology-related functions of cybersecurity (49%) and web development (47%) fall behind the more general functional areas of business management (60%) and customer service (54%) in terms of employment of staff with those skills. More employers in this sector report employing staff in business management and customer service than in the overall 2018 survey sample.

When Technology-Intensive Services employers are asked whether they are experiencing a shortage of skilled applicants in these areas, the largest shortages are for web development with 18%, followed by information technology at 16%, and cybersecurity at 15% reporting shortages. However when we examine the effective rate of the skill shortage – that is, of those employers who employ staff with a particular function, what percentage is experiencing a shortage of applicants with that functional skill – the order of response changes. The highest effective rate for a functional skill shortage is web development at 37% of employers reporting and cybersecurity at 30%. Accounting/finance follows closely behind at 29%. General information technology and software development fall farther back in rank order at 21% each. Although significantly
more employers in this sector employ staff with information technology and software development skills, the more acute shortages are for cybersecurity and web development.

Effective Rate of Technology Shortages in Functional Areas

Technology-Intensive Services employers were also asked about the skill level of applicants to meet their shortages. They were asked what percentage of their shortages were: high skill – requiring a four-year degree or higher, middle skill – requiring training or education beyond high school but less than a four-year degree, or low skill – requiring high school or less. The highest response from employers for a high skill level to meet their shortages was for information technology at 65%. That was also the functional area that received the lowest percentage of employers reporting a low skill level to address that shortage. Other functional areas with the majority of employers reporting a high skill level requirement include accounting/finance (52%) and software development (52%). Customer service received the largest percentage of employers reporting low skill as the level required to address that shortage at 43% although there was a somewhat even distribution across skill levels, perhaps reflecting the multiple tiers of customer service provided by firms in this sector depending on the complexity of the project or application. The largest percentage of employers responding to middle skill as the required level was to web development and cybersecurity, the two areas with the highest effective rates of applicant skill shortage. One explanation for the different responses by skill level would be that employers default to high skill requirements for broader information technology functions but only require specific certifications or associate degrees for more narrow or specialized functions.
When Technology-Intensive Services employers were asked to rate the importance of the shortages of applicants for specific functional areas using a five-point scale, the highest weighted average scores were for the general areas of business management (4.33), customer service (4.24) and accounting/finance (4.22). All the information technology-related functional shortages received lower importance scores. Web development received the highest importance score for a technology skill at 3.68. Employers rating these functional skills may be communicating the importance of general business and customer service skills along with specific information technology skills as part of a complete applicant skill set.

### Importance of Technology Functional Skill Shortages

<table>
<thead>
<tr>
<th>Function</th>
<th>Weighted Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Management</td>
<td>4.33</td>
</tr>
<tr>
<td>Customer Service</td>
<td>4.24</td>
</tr>
<tr>
<td>Accounting/Finance</td>
<td>4.22</td>
</tr>
<tr>
<td>Web Development</td>
<td>3.68</td>
</tr>
<tr>
<td>Software Development</td>
<td>3.41</td>
</tr>
<tr>
<td>Cybersecurity</td>
<td>3.40</td>
</tr>
<tr>
<td>Information Technology</td>
<td>3.28</td>
</tr>
</tbody>
</table>

For the Finance industry, there were two additional functional skill areas: financial advisement and commercial and residential lending. The survey requested that employers report whether they employed staff in these functional areas as well as the four general functional areas described previously. Of the sector employers responding, two-thirds (66%) reported employing staff in financial advisement, the most frequent response. The next highest functional areas reported by Finance employers were all general functional areas including business management (61%), accounting/finance (60%) and information technology (39%). Only 25% of employers reported employing staff in commercial and residential lending.

### Percent of Finance Businesses that Employ Staff in Functional Areas

<table>
<thead>
<tr>
<th>Function</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Advisement</td>
<td>66%</td>
</tr>
<tr>
<td>Business Management</td>
<td>61%</td>
</tr>
<tr>
<td>Accounting/Finance</td>
<td>60%</td>
</tr>
<tr>
<td>Information Technology</td>
<td>39%</td>
</tr>
<tr>
<td>Commercial and Residential Lending</td>
<td>25%</td>
</tr>
<tr>
<td>Customer Service</td>
<td>23%</td>
</tr>
</tbody>
</table>

When asked whether they were experiencing a shortage of applicants for these areas, 25% of employers reported a shortage in applicants with customer service skills. The two sector-specific functional skills commercial and residential lending and financial advisement were reported less frequently as a shortage by sector employers with 9%
and 8% respectively reported. When we measure the effective rate of the shortage, the percentage of employers reporting a shortage of applicants with customer service skills rises to nearly a third (32%) of employers who employ staff in customer service roles. The effective rate of shortage for commercial and residential lending also rises significantly to nearly one in five employers (19%) who employ such staff.

**Effective Rate of Finance Shortages in Functional Areas**

Employers in Finance were also asked to rate the skill level of the applicants required to meet their applicant shortages. As described previously these are high, middle or low. The largest response of high skill shortages was for the function accounting/finance at 44%. This was followed by 43% of commercial and residential lending shortages rated at a high skill level. The highest percentage of shortages at a low skill level was customer service where 59% of employers reported that requirement level to meet their applicant
shortages. The most frequent skill level rating provided by employers was for middle skill. Middle skill ratings ranged from a low of 30% for financial advisement to a high of 50% for information technology.

Finance sector employers, rating the importance of the shortage of applicants in various functional skill areas, gave their highest importance scores to the general skill areas of business management (4.95), customer service (4.51), information technology (4.30), and accounting/finance (4.15). The two lowest importance scores were given to the sector-specific functional skills of commercial and residential lending and financial advisement. The fact that the highest scores were given to the more general business and customer service area reflects not only the need for well-rounded applicants but is further evidence of bifurcated (high and low) skill level employment in this sector where, as reported previously, 68% of the positions required by the Finance sector to meet their skill shortages require a low skill level and only 22% require a high skill level.

There were three additional sector-specific functional skill areas selected for the survey for Health Care. These included diagnostic services, patient care and therapeutic care. When asked whether they employed staff in these functional areas 63% reported employing staff in diagnostic services, 52% in patient care and 29% in therapeutic care. Unlike Technology-Intensive Services and Finance, more Health Care employers reported employing staff in the sector-specific functional skill areas than in the general functional areas. The only exception in Health Care was for accounting/finance where 53% of employers reported employing staff in this functional area. This may be due to the insurance and billing specialists that are critical to the Health Care system. Only 6%
of Health Care employers reported employing staff in the *information technology* function. The low response to *information technology* may be due to the significant outsourcing of this function in the Health Care sector.

When Health Care sector employers were asked whether they were seeing a shortage of applicants skilled in these specific functions, the responses generally followed the order in which they employed staff by function. The most frequent responses were for *diagnostic services* and *accounting/finance*, each reported by 10% of employers. This response was followed by *patient care* at 9% and *therapeutic care* at 7%. However,

**Health Care Businesses Experiencing Shortages in Functional Areas**

![Bar chart showing the percentage of employers experiencing shortages in different functional areas. Diagnostic Services: 10%, Accounting/Finance: 10%, Patient Care: 9%, Therapeutic Care: 7%, Business Management: 5%, Customer Service: 4%, Information Technology: 1%]

when we measure the shortage as a percentage of those employers who actually employ staff in these skills area, *i.e.* the effective rate, *customer service* is reported as a shortage by 29% of employers despite only 4% of total Health Care employers reporting a shortage in *customer service*. *Therapeutic care* and *information technology* also were reported at higher effective rates of shortage as compared to the nominal rate.

**Effective Rate of Health Care Shortages in Functional Areas**

![Bar chart showing the effective percentage of employers experiencing shortages in different functional areas. Customer Service: 29%, Therapeutic Care: 25%, Information Technology: 21%, Business Management: 21%, Accounting/Finance: 19%, Patient Care: 18%, Diagnostic Services: 16%]

Health Care sector employers were also asked to rate the skill level of the applicants required to meet their shortages in each of these functional areas. The most frequent response was *high skill*, which ranged from 34% for *customer service* to 65% for *business management*. *Low skill* was the least frequent response ranging from a low of 6% of employers choosing that level for *information technology* to 36% for *customer service*. *Middle skill* was a significant response by employers ranging from a low of 28% for *business management* and *therapeutic care* to 56% for *information technology*. An average of one-third of the applicants needed to meet skill shortages in the Health Care sector.
specific functional areas (therapeutic services, patient care and diagnostic services) are rated at the middle skill level by employers.

The highest importance score, based on a 1-5 scale, for a Health Care-specific functional area was reported by employers to be information technology at 5.00, followed by patient care at a 4.10 importance level and diagnostic services at 3.81. Customer service received a relatively high importance score of 4.0 particularly in light of the fact that only 14% of the Health Care employers surveyed reported employing staff in this functional area.

Disaggregating the responses to these questions by industry sector yields some insights into their unique workforce needs and challenges. Although more employers in Technology-Intensive Services employ staff in information technology and software development, the highest effective rate for a functional skill shortage is reported for web development and cybersecurity. These two areas also received the largest response of middle skill as the skill level of applicants needed to address this shortage. Employers also attach high importance to general business and customer service skills attesting to the need for applicants with more than just narrow technical skills.

For the Finance sector, customer service is the most acute shortage reported by employers. A significant shortage is also reported for commercial and residential lending. The most frequently cited skill level for shortages in this sector is middle skill. It appears that this sector relies heavily on a large base of employees at the low and middle skill levels with strong customer service and general business skills to support a smaller
percentage of high skill employees in financial advisement and commercial and residential lending.

More than half of Health Care employers (53%) report employing staff with accounting/finance skills, attesting to the critical need for insurance and billing services functions. There were also relatively high rates of skill shortages reported for this function. The highest effective skill shortage rate for Health Care was customer service. However, the highest percentage of response overall to a skill shortage was for diagnostic services. An average of one third of employers cited middle skill as the level needed to meet their skill shortages in the three Health Care-specific functions (diagnostic services, patient care and therapeutic services).

**Experience and Education**

Responses from past surveys have seen experience and education requirements wax and wane as employers try to gauge the requirements necessary to attain the highest skill level and still maintain a pipeline of candidates for open positions. Because of the industry sector focus for the 2018 survey, which appear to employ a higher percentage of high skill employees, we would expect to see differences from the most recent surveys with regard to both experience and education.

**Experience**

As in past surveys, this year’s survey asked employers if they had positions requiring various levels of experience. For 2018 significantly more employers (65%) reported having positions requiring four or more years of experience than in 2017 where 56% reported having jobs at this experience level. The 2018 response to all other experience levels were slightly lower than in 2017. Fewer employers (67%) responded to jobs with a minimum of 1-3 years of experience in this year’s survey than in 2017 (68%), some experience but less than 1 year (51% for 2018 as compared to 55% for 2017), and no experience (60% for 2018 as compared to 62% for 2017).

**Percentage of Employers with Jobs at Specified Experience Levels**

![Graph showing percentage of employers with jobs at specified experience levels]

Employers were also asked to delineate the percentage of jobs they had at each of the four experience levels. For the highest experience level, a minimum of 4 or more years of
experience, 46% of employers reported that more than half of their jobs required that experience level. Of the employers who responded to the experience level of a minimum of 1-3 years of experience, one third reported having more than 50% of their jobs at that level. For employers who reported having jobs at lower experience levels, fewer reported a large portion of their jobs at these levels. For the experience level of some experience, but less than 1 year, only 5% of employers reported that more than half of their jobs were at that level. Similarly, of employers who reported jobs with no experience required, only 16% reported more than half of their jobs with no experience. All of these 2018 response levels were reversed from the 2017 survey where a smaller proportion of jobs required higher experience levels and larger portion required lower skill levels.

Percentage of Positions Requiring the Indicated Level of Experience

<table>
<thead>
<tr>
<th>Experience Level</th>
<th>Percentage of Employers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum of 4 or more years of experience</td>
<td>46%</td>
</tr>
<tr>
<td>Minimum of 1 to 3 years of experience</td>
<td>33%</td>
</tr>
<tr>
<td>Some experience, but less than 1 year</td>
<td>5%</td>
</tr>
<tr>
<td>No experience</td>
<td>16%</td>
</tr>
</tbody>
</table>

Both the increase in the percentage of employers responding with jobs requiring four or more years of experience as well as the larger proportion of jobs at high experience levels and lower proportion at lower experience levels speaks to the high skill (including high experience) nature of these targeted industry sectors.

When the responses to experience levels are broken out by sector, 69% of Finance employers report having jobs with the requirement of a minimum of 4 or more years of experience, the highest response rate of any sector to that level. For both the Health Care sector and the Technology-Intensive Services sector 63% of employers reported having jobs at that level of required experience. The largest percentage of employers reporting having jobs requiring a minimum of 1-3 years of experience (75%) also came from the

Percentage of Employers with Jobs at Specified Experience Levels

<table>
<thead>
<tr>
<th>Experience Level</th>
<th>Technology</th>
<th>Financial</th>
<th>Health Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum of 4 or more years of experience</td>
<td>63%</td>
<td>69%</td>
<td>63%</td>
</tr>
<tr>
<td>Minimum of 1 to 3 years of experience</td>
<td>65%</td>
<td>75%</td>
<td>61%</td>
</tr>
<tr>
<td>Some experience, but less than 1 year</td>
<td>59%</td>
<td>49%</td>
<td>44%</td>
</tr>
<tr>
<td>No experience</td>
<td>58%</td>
<td>59%</td>
<td>62%</td>
</tr>
</tbody>
</table>
Finance sector. The largest response to having jobs with no experience required came from the Health Care sector with 62% of sector employers reporting jobs at that experience level, although the response rates between the three sectors for that experience level were in a tight range. Technology-Intensive Services employers had the highest rate of response to some experience, but less than 1 year at 59%. The closest distribution of the percentage of employers responding that they had jobs at various experience levels was from Technology-Intensive Services with between 58% (no experience) and 65% (minimum of 1-3 years of experience). The response rates from the
sectors to a *minimum of 4 or more years of experience* were greater than 2017 while the response rates for the level of *no experience* were lower than – or in the case of Health Care equal to – 2017.

In terms of the highest percentage of jobs, 51% of Finance employers reported having half or more of their jobs at the experience level of a *minimum of 4 or more years of experience*. This is followed by 43% of Health Care employers and 46% of Technology-Intensive Services employers with half or more of their jobs at that level. For the *no experience* requirement, 26% of Health Care employers responded that half or more of their jobs were available at that experience level, the highest response to percentage of jobs at that level. There was an almost even distribution of response by industry sector for half or more of their jobs at the experience level of a *minimum of one to three years of experience* (35% Technology-Intensive Services, 34% Finance and 30% Health Care).

Required experience levels for these targeted sectors are generally higher than the general economy, as measured by the 2017 survey. Finance has the most employers reporting the largest percentage of jobs at the highest skill levels. More Health Care employers report having larger percentages of jobs at the lowest experience requirement level than the other two sectors but not by a wide margin. The majority of employers in all three sectors had jobs at all the experience levels surveyed.

**Education**

Again for 2018, employers were asked about the required education levels for their positions. For purposes of the survey we are defining educational requirements by skill level. These levels are defined as *high skill* – requiring a four-year degree or higher, *middle skill* – requiring training or education beyond high school but less than a four-year degree, or *low skill* – requiring high school or less.

Employers were asked if they had positions at each of the skill levels as described. The highest response by employers was to *low skill* positions with 80% of employers indicating that they had such positions. However, this was slightly less than the 83% of employers who reported such position requirements in 2017. Significantly more employers responded that they had *high skill* positions in 2018 (77%) than in 2017.
More employers also reported having positions with **middle skill** requirements in 2018 (74%) than in 2017 (62%). There was a relatively close distribution of the percentage of employers having jobs at each of the skill level requirements.

Employers were also asked about the percentage of positions they had at each of these levels. Of the employers who indicated that they had positions requiring a **high skill** level, 33% reported having half or more of their jobs at that requirement level. Of the employers who reported having jobs at a **low skill** level 52% reported having more than half of their jobs at this level.

### Percentage of Positions at the Specified Education Level

![Bar chart showing percentage of positions at low, middle, and high skill levels.]

Although only 7% of employers reported having more than half of their jobs with a **middle skill** requirement, more than two-thirds of the employers surveyed reported having between 1% and 49% of their jobs with this requirement.

The highest response rate by industry sector to jobs with **high skill** requirements is from the Finance sector with 89% of employers reporting having jobs at that skill level. Responses by Technology-Intensive Services employers follow closely behind at 84%.

### Percentage of Employers with Jobs at Specified Education Levels

![Bar chart showing percentage of employers with low, middle, and high skill education levels.]

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56 State of the St. Louis Workforce 2018   stlcc.edu/STLworkforce
Only 58% of Health Care employers reported having jobs at the high skill level (58%) while 88% reported having jobs at the low skill level, the highest response to that skill level. Finance employers reported having jobs requiring middle skill at the highest rate of any industry sector (85%). High percentages of Finance employers reported having jobs at each of the skill levels (89% high, 85% middle and 83% low).

**Opportunity and Advancement**

Increasingly educational institutions and community-based organizations are, individually or in partnership, offering accelerated programs to quickly teach skills and re-engage unemployed or dislocated workers to the workforce. Many of these programs are six months or less in length and often result in industry certifications. Most teach “soft skills” along with technical skills. Some of these programs can create skills for a lifetime or the foundations for a career and entry to educational pathways. Many are designed in close partnership with a specific employer and provide direct entry to employment for those who complete.

Again for the 2018 survey, we asked employers about the percentage of jobs in their organizations that would be available to applicants who had completed short-term training, defined as no more than six months past high school and relevant to their industry.

Of the employers responding to this year’s survey, 77% reported jobs requiring only short-term training. Somewhat surprisingly for this targeted industry survey sample, this was an increase from the 70% reporting this level in the 2017 all-industry survey. Twenty-eight percent of employers reported that more than half their jobs were available with short-term training, a decrease from the 2017 level of 42%. Nearly half (49%) of the employers surveyed reported that between 1% and 49% of their jobs required only short-term training, a significant increase from the 2017 response of 28% for that range of jobs.
Eighty-four percent of Health Care employers reported having jobs available with short-term training, the highest response from any of the industry sectors. This was followed by 77% of Finance employers and 70% of Technology-Intensive Services employers reporting jobs available with short-term training. Although fewer Technology-Intensive Services employers reported jobs available with short-term training, they reported the highest percentage with more than half of their jobs requiring only short-term training (32%). This was followed by 28% of Health Care employers and 25% of Finance employers reporting with more than half of their jobs with the short-term training requirement.

**Percent of Jobs Available with Short-Term Training**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Jobs Available</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>50% to 100%</td>
<td>31%</td>
</tr>
<tr>
<td></td>
<td>1% to 49%</td>
<td>39%</td>
</tr>
<tr>
<td></td>
<td>No Jobs</td>
<td>30%</td>
</tr>
<tr>
<td>Finance</td>
<td>50% to 100%</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>1% to 49%</td>
<td>52%</td>
</tr>
<tr>
<td></td>
<td>No Jobs</td>
<td>23%</td>
</tr>
<tr>
<td>Health Care</td>
<td>50% to 100%</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>1% to 49%</td>
<td>56%</td>
</tr>
<tr>
<td></td>
<td>No Jobs</td>
<td>16%</td>
</tr>
</tbody>
</table>

Despite the fact that these three targeted industry sectors are generally characterized by high experience and skill requirements, there are still significant opportunities for job seekers with relatively short-term training to enter employment and begin the career development process. Even in these high skill sectors, there are bridges to economic opportunity that are available. The challenge is to raise awareness among employers, job applicants and employees. Employers and job seekers should be more aware of the accelerated training opportunities available to them. Job applicants and employees should be better informed about career advancement pathways and supports.

**Summary**

The 2018 State of the St. Louis Workforce employer survey targeted three industry sectors that have been important to the regional economy’s recovery since 2009, when our first survey was conducted, and will continue to be critical to its future. Information Technology, (as represented by Technology-Intensive Services), Finance and Health Care are all functioning in a labor market where there are more job openings than unemployed, where economic growth is strong but where there are uncertainties around government policies regarding Health Care, trade and immigration and where market forces in the form of mergers, acquisitions or consolidation can have immediate and significant impacts on employment levels. All of these factors create a dynamic environment in which employers in these sectors must operate. For 2018, the 1,246 employers surveyed were divided evenly between the three sectors.
More employers in the 2018 survey reported both increasing and decreasing employment levels over the past 12 months as compared to previous surveys. Fewer employers reported that their employment level had remained the same. They responded similarly when asked about their future plans for changing employment levels. Again, more employers plan to increase employment over the next 12 months, but more also plan to decrease employment levels for that same period and fewer plan to have their employment level remain the same. While in past surveys more than half of employers characterized their past or projected employment levels as remain the same, only about 40% of this year’s survey respondents gave that response.

The shortage of workers with knowledge or skills is still the most frequently cited barrier to expanding employment with economic conditions and government policies or regulations continuing to decline in the frequency of response. Although the shortage of workers with knowledge or skills was the most frequently cited barrier in 2018, it was significantly lower than the 2017 level. A significant increase in response came from the choice shortage of available training programs with the highest response to that barrier since the survey began. Employers from the Technology-Intensive Services sector gave the highest response rate to shortage of workers with knowledge and skills and the highest importance score for shortage of available training programs as barriers to expanding employment. Health Care employers had the highest response rate to the shortage of available training programs.

More employers in this year’s survey reported adding employees by hiring full-time workers and fewer by hiring part-time workers than in past surveys. The biggest change was in hiring contract workers, chosen by 20% of employers overall. This response rate was primarily driven by the 30% of Health Care employers who reported using this method.

Employers responding to the 2018 survey continue to report shortcomings of job applicants at significant levels. Top choices from all previous surveys – poor work habits, lack of communication or interpersonal skills, and lack of critical thinking and problem solving – continue to be top choices for 2018. However the level at which employers reported these shortcomings and their rank order changed this year. Poor work habits was reported by 48% of employers in this year’s survey compared to 59% in 2017. Lack of communication or interpersonal skills dropped to fourth rank after being higher in all past surveys since 2010, primarily due to only 13% of Health Care employers selecting this shortcoming this year. Technology-Intensive Services employers reported these shortcomings at generally higher rates than Finance or Health Care. Technology-Intensive Services employers ranked the lack of technical skills specific to the job at a high importance level. Health Care employers ranked the lack of communication or interpersonal skills at a high importance level despite its low response rate.
Although it remains the most frequent response, fewer employers reported relying on on-the-job training as a method of assisting workers to acquire needed skills than in past surveys. More employers report using formal methods including in-house classroom training, flexible schedule for continuing education and on-line courses as compared to previous surveys. The shift away from on-the-job training and towards more formal methods was led by the Health Care sector with 75% reporting flexible schedule for continuing education. Technology-Intensive Services employers gave the highest response to vendor training.

More employers reported a shortage of skilled applicants in this year’s survey (45%) as compared to last year. Significantly more employers reported that their shortages were at a high skill level and significantly fewer reported them at a middle skill level. The increase in the reported shortage of skilled applicants was driven primarily by the Technology-Intensive Services sector, with 61% reporting a shortage of skilled applicants. The highest response of high skill for the level of shortage was from Technology-Intensive Services employers. Finance reported the highest response rate to low skill for their shortages. Health Care shortages were almost evenly distributed between high, middle and low. There was a sharp decrease in the choice of forced to hire less experienced workers and train them as a measure to address the shortage of skilled applicants as well as a decrease in offering increased wages due to the shortage of experienced workers. There were sharp increases in hiring outside the St. Louis, MO-IL region led by Finance; hiring contractors, led by Health Care; and hiring from outside the United States, led by Technology-Intensive Services. There was also a sharp increase in the choice of not taking any listed measure which was driven by the 42% of Technology-Intensive Services who gave that response.

Although customer service was not utilized as a functional skill in this year’s targeted survey sample to the degree it was 2017, when all regional industries were included, it is still the skill that gets the highest response overall from employers as a skill shortage. The highest effective rates for a skill shortage reported by the Finance sector was for customer service. Employers from that sector also attached a high importance to customer service. Finance also reported a high shortage rate for commercial and residential lending. The most frequent skill level rating for shortages in this sector was middle skill. Technology-Intensive Services employers reported the highest effective rate of skill shortage for web development and cybersecurity. These skill areas also received the highest middle skill rating for this sector. Health Care reported the highest overall response to a shortage for diagnostic services but the highest effective rate (shortage reported by those who employ that function) for customer service. One third of Health Care jobs needed to address the shortage in patient care, diagnostic care and therapeutic care are the middle skill level. The highest importance level by Health Care was given to patient care.
For 2018, more employers have more jobs requiring higher levels of experience and fewer at lower levels of experience. More Finance employers report jobs at the highest experience levels than Health Care or Technology-Intensive Services. More Health Care employers report jobs at the lower levels of experience. Technology Intensive Service employers had the tightest range of responses to jobs by experience level. The majority of employers in all three sectors had jobs available at every experience level surveyed.

Significantly, more employers in 2018 reported having high skill positions than in 2017 due, at least in part, to the specific industry targeting in this year’s survey. More employers also reported middle skill positions but fewer reported low skill positions. The highest response to having high skill positions and middle skill positions came from Finance. The highest response to having low skill positions came from Health Care. More than two-thirds of all employers reported having between 1% and 49% positions at the middle skill level.

Seventy-seven percent of employers reported having jobs available with only a short-term training requirements, an increase from 2017 despite the high skill orientation of these sectors. The highest response to having jobs requiring only short-term training came from Health Care (84%) but the highest response to having more than half of their jobs with that requirement come from Technology-Intensive Services employers (31%).

The 2018 responses reflect a more dynamic employment situation for these targeted sectors with significant increases and decreases in employment levels experienced and anticipated. Employment levels for these sectors reflect a generally positive outlook (and in the case of Health Care and Technology-Intensive Services a very positive outlook). However, these sectors are still impacted by market forces and other factors, causing significant shifting of employment levels. Possible explanations for this include competitive market forces including mergers or acquisitions, inability to attract and retain a sufficient number of qualified workers and/or government policy reflected in comments from survey respondents about uncertainty around the Affordable Care Act and the H-1B visa program.

While fewer employers are reporting the shortage of workers with knowledge or skills as a barrier, more are reporting the shortage of available training programs. A possible explanation for this is that all three of these sectors require specific skills that are documented by either licensure or certification. Since these requirements are transparent to applicants, it may be that employers are seeing a higher percentage of qualified applicants even if they may not be seeing a sufficient number of applicants. There is some evidence that the talent pipeline issue is particularly impacting employers in the Technology-Intensive Services sector.
Although each sector has its unique challenges in terms of skill shortages, *customer service* cuts across all sectors as a recognized and important skill shortage.

While fewer employers are reporting shortcomings in job applicants they are still attaching a high level of importance to them. Although each sector has its unique challenges in terms of skill shortages, *customer service* cuts across all sectors as a recognized and important skill shortage.

Finally, while by several measures these sectors can be considered high skill sectors, there are still jobs available at every skill and experience level as well as significant jobs that are available through *short-term training*. The 2018 State of the St. Louis Workforce Employer Survey provides a lesson in the complexity of employment dynamics and skill composition in an industry sector, as well as the unique nature of each sector.
Three Industry Sectors Critical to the Future of the St. Louis Economy

Drawing on the voices of industry leaders, employers and educators, this section highlights some of the challenges of meeting workforce demand in the three State of the St. Louis Workforce focus sectors, as well as a few examples of initiatives in each sector that address the workforce needs of the St. Louis economy.

Information Technology

The Information Technology sector, represented by Technology-Intensive Services, includes company headquarters, telecommunications, software publishers, data processing services and professional, scientific and technical services. Technology-Intensive Services employs more than 145,000 people in the St. Louis MSA. After a decline in employment from 2008 through 2012 due to the recession, the Technology-Intensive Services sector has experienced growth of 11.2% from 2012-2017, well above the 10-year growth rate of 1% for all industries.

ITEN

ITEN, an industry leader in information technology, delivers programs, services and events that impact startups, accelerate corporate innovation and strengthen St. Louis' economy in key technology areas. ITEN releases an annual St. Louis Tech Startup Report, and this year, has commissioned the ITEN Tech Jobs and Skills Research Study designed to measure the core IT skills and talent needs across the business community in the region. The organization's leadership sees the tech talent gap as an issue for all businesses regardless of size, industry, or location. In order to reduce the supply versus demand imbalance, a better understanding of gaps related to both job type and skill requirements is needed. Sharing findings from community-based research initiatives will enable the implementation of immediate and long-term solutions that address both parts of the equation – the employee and employer.

“A change in the traditional approaches to how employees obtain skills and employers recruit talent can offer near-term relief. For employees, programs such as those provided by our community colleges, LaunchCode and Savvy Coders provide technical skills training in three months to two years that reduce both time...
and cost barriers. And for those reasons, employers’ recruiting processes should include these types of technical training programs as a resource.”

— Mary Louise Helbig, Executive Director, ITEN

**St. Louis Community College Cybersecurity Programs**

In this year’s State of the St. Louis Workforce employer survey, the shortage of cybersecurity personnel – particularly at the middle-skill level – emerged prominently in the survey responses. Of those companies that employed people in the cybersecurity function, 30% reported a shortage. When describing the skill level needed to fill their cybersecurity shortages, employers reported that 40% of those jobs were at the middle-skill level. St. Louis Community College is responding to this need. STLCC has become a leader in cyber defense education with associate degree programs that provide experienced professionals to fill skills gaps. The National Security Agency and the Department of Homeland Security have designated STLCC as a National Center of Academic Excellence in Cyber Defense Two-Year Education (CAE2Y). This designation, conferred in fall 2017 with the support of the National Science Foundation and the National Cyberwatch Center, signifies that STLCC’s robust cybersecurity program meets national training standards. The Associate of Applied Science (AAS) degree in Network Engineering – Security Focus was the first program to meet the designation criteria. STLCC has also launched an Associate of Applied Science and Certificate of Proficiency in Cybersecurity. These new programs in cyber defense, also part of the national designation, presented their first graduates this spring. In addition, the Certificate of Proficiency in Network Security provides students with infrastructure-specific curriculum in area of cybersecurity.

“We all embrace the Internet of Things (IoT) where our mobile device is the standard. The complexity of IoT sets us up for extensive risk, and cyber defense is mandatory for all of us. Businesses face the same issues on a much larger scale. STLCC offers cyber defense programs to prepare our students to excel in the cybersecurity workforce for area companies.”

— Brenda Kahan, department chair, Information Systems, STLCC-Forest Park

“Response from employers to the cybersecurity program has been very positive; they are pleased that we are meeting national standards in the field. The STLCC program teaches hands-on cybersecurity skills, providing a different experience than the four-year university environment. We meet students where they are and bring them to where they need to be.”

— Craig Chott, program coordinator, STLCC-Forest Park

**Financial Services**

The Finance and Insurance industry sector employs more than 70,000 people in the St. Louis MSA. St. Louis is home to firms such as Edward Jones, Stifel, Mastercard, CitiMortage, Wells Fargo Advisors and Enterprise Bank & Trust. Between 2008 and 2009, the industry saw a 15% decline in employment, but has since rebounded by 23% through the first quarter of 2017. Among the 20 largest metro areas, St. Louis has the
third most concentrated market for investment advisors, just behind New York and Boston, according to the St. Louis Regional Chamber.

This year’s State of the St. Louis Workforce findings demonstrate a need for a pipeline of employees across a range of skill and experience levels in the Finance sector, including a need for middle-skill employees in the area of customer service. Customer service ranked highest among all of the functional area shortages reported by Finance employers at 32%. When rating importance of shortages on a five-point scale, Finance employers gave their highest importance scores to the general skill areas of business management (4.95) and customer service (4.51). In addition, when describing the skill level needed to fill their customer service shortages, Finance employers reported that 40% of those jobs were at the middle-skill level.

This summer, St. Louis Community College launched a new accelerated training program designed to assist in filling the need for customer service specialists with strong technology skills in the Finance sector and beyond. The Customer Information Support Specialist (CISS) program will meet the local labor market demand for technology-driven middle-skill jobs in customer service, data entry, and administrative support. This 12-week program includes Microsoft Office applications, communications skills, customer service and a range of soft skills that lead to success in the workplace. The curriculum includes modules on cybersecurity and financial literacy to better prepare students for the workplace. Completers are prepared to sit for certifications including Microsoft Office Specialist in Word and Excel and Proficiency in Microsoft PowerPoint and Outlook. CISS launches students on a true career pathway; program completers are eligible to receive 11 credit hours at STLCC towards a Computer Applications degree.

“The Customer Information Support Specialist program will fill an important workforce need in skilled customer service while starting adult learners on a career pathway in a high-demand area. We are proud to launch this training option which prepares students for employment with technical and soft skills, and offers credit for prior learning towards a Computer Applications degree at STLCC.”

— Hart Nelson, associate vice chancellor, STLCC Workforce Solutions Group

Health Care

Health Care is long-established as a high-demand, high-growth industry in the St. Louis MSA. Employment in the local health care sector increased by 14% over the past decade, and currently stands at more than 165,000 workers. Future growth is projected at 8% over the next 10 years. The St. Louis area is home to more than 38 hospitals. The location quotient for hospitals stands at 1.36, or more than a third higher concentration than average for the nation. An aging population ensures that the demand for health care services will continue to grow. At the same time, an aging workforce along with an upswing in the economy points to the need for replacement workers as many in the current workforce move toward retirement.
The nursing shortage is widely discussed; statistics such as 19% vacancy and 13% turnover rates reported by the Missouri Hospital Association (MHA) in the St. Louis area exemplify the great challenges faced by health care employers. These challenges extend across a broad range of middle-skills occupations. Employment in health-related middle-skills jobs (those that require more than high school but less than a bachelor’s degree) stands at just over 85,000 jobs in the St. Louis area. In addition to Registered Nurse, other high-demand middle-skills occupations include Nursing Assistants, Licensed Practical Nurses, EMT and Paramedics, Medical Assistants, Radiologic Technicians, and a wide range of other therapeutic and diagnostic positions.

**St. Louis Community College Center for Nursing and Health Sciences**

St. Louis Community College is the region’s primary educational institution filling the training pipeline for a wide spectrum of middle-skills jobs in healthcare. Although updated several times over the years, much of STLCC’s infrastructure for delivering health care training was originally built in the 1960s. These facilities have become difficult to maintain from a cost and educational efficiency standpoint. In order to provide facilities aligned with the importance of health care to the region, STLCC has begun construction on a new building on the Forest Park campus. The new Center for Nursing and Health Sciences will be a state-of-the-art learning facility featuring the latest technology. Situated in proximity to several major hospital campuses, the new building will allow STLCC to expand popular programs, serve more students and expand established partnerships with health care employers.

“The new Center for Nursing and Health Sciences is our commitment to continue to meet the growing need for healthcare professionals in the greater St. Louis metropolitan area. It will offer future St. Louis Community College students the opportunity to obtain their education and training in state-of-the-art classrooms and laboratories as they prepare for careers in the health sciences.”

— Bill Hubble, district division dean, STLCC Health Sciences

“The Missouri Hospital Association greatly appreciates the more than decade-long partnership we've had with St. Louis Community College to develop the healthcare workforce. The college has continually approached the workforce needs of the St. Louis metropolitan hospitals with innovative thinking and enthusiastic solutions. This collaboration has helped address some of the hospitals' most challenging hiring and retention issues. With healthcare as the largest employment sector in St. Louis, it’s another example of the college’s forward thinking and innovative approach.”

— Jill Williams, director of workforce initiatives, Missouri Hospital Association

Working with state and federal partners and by collaboratively engaging with our regional health care employers, St. Louis Community College has established successful new accelerated training programs in health care, including Medical Assistant, Patient Care Technician and Community Health Worker. Because of the close working
relationship with our employer partners, these programs have resulted in exceptional completion and employment rates. For example, Medical Assistant cohorts offered through our innovative partnership with Washington University School of Medicine show an 88% program completion rate with 95% job placement. All successful graduates participate in clinical experiences and attain the Certified Clinical Medical Assistant credential.

Employer partners shared their perspectives on workforce challenges and needs:

“Healthcare continues to transform at a rapid pace with new service delivery models and continued growth, placing a high demand for critical talent in our region. Our relationship with St. Louis Community College has assisted in meeting our workforce needs by offering quality training programs for Medical Assistants and Patient Care Technicians. We look forward to expanding our partnership to build a sustainable talent pipeline into the future.”
— Tom Ahr, system vice president talent, SSM Health

“The growing demand of outpatient clinical care services in the St. Louis metropolitan area has outpaced the supply of well-trained and certified Medical Assistants. This skills gap required an innovative approach to training and certifying Medical Assistants. A partnership between the Higher Education Consortium, St. Louis Community College and Washington University School of Medicine clinics created a path for community members interested in health care to enter the Medical Assistant workforce. Grant funding gave students the opportunity to pursue vocational education, training and support services to secure Medical Assistant positions that offer career opportunities and exceptional employer benefits.”
— Tracey Faulkner, clinical recruiter, Washington University School of Medicine

“St. Louis is currently going through an extremely important time. With the events that have happened in the area in the past five years, it has been imperative for the region to take a look at the underlying issues around health, socio-economic and socio-demographic equity. Community Health Workers have played a vital part at Affinia Healthcare to assess and address social determinants of health, which ultimately manifest as issues within underserved communities. Educational institutions such as St. Louis Community College have been essential in training Community Health Workers, preparing them to make an impact in the communities we serve.”
— Sonia Deal, director of practice transformation, Affinia Healthcare
ACKNOWLEDGEMENTS

We would like to thank the 1,246 companies who were interviewed for their voluntary participation in the survey.

We would like to thank the Federal Reserve Bank of St. Louis for their support of this report and event.

We would like to thank the Nine Network of Public Media for their support as our media partner.

We would like to acknowledge the contributions of Singo Solution, Inc. for their help with the design and administration of the employer survey as well as data collection and tabulation.

Finally, we would like thank the leaders from business and education from Health Care, Finance and Information Technology for their contributory remarks about the workforce challenges and promising programs serving those sectors.

The 2018 State of St. Louis Workforce Report was made possible by the collaborative efforts of staff from the St. Louis Community College Workforce Solutions Group and the Missouri Economic Research and Information Center (MERIC), the research unit of the Missouri Department of Economic Development.

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APPENDIX I: STATE OF THE ST. LOUIS WORKFORCE EMPLOYER SURVEY 2018

The employer survey was conducted by phone on weekdays starting April 17, 2018 and finished on June 21, 2018.

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 10 02
- 11 to 49 03
- 50 or more 04
- (Do not read) Refuse - Thank & Terminate 97
- (Do not read) Don’t know/Not sure - Thank & Terminate 98

1. Over the past 12 months, would you say your employment levels have increased significantly (by 15% or more), increased slightly (by less than 15%), remained the same as before, decreased slightly (by less than 15%), or decreased significantly (by 15% or more)?

- Increased significantly, by 15% or more 01
- Increased slightly, by less than 15% 02
- Remained the same as before 03
- Decreased slightly, by less than 15% 04
- Decreased significantly, by 15% or more 05
- (Do not read) Refuse 97
- (Do not read) Don’t know/Not sure 98

2. Looking ahead over the next 12 months, how does your business PLAN to change your employment levels? Would you say your employment levels will increase significantly (by 15% or more), increase slightly (by less than 15%), remain the same as before, decrease slightly (by less than 15%), or decrease significantly (by 15% or more)?

- Increase significantly, by 15% or more 01
- Increase slightly, by less than 15% 02
- Remain the same as before 03
- Decrease slightly, by less than 15% 04
- Decrease significantly, by 15% or more 05
- (Do not read) Refuse 97
- (Do not read) Don’t know/Not sure 98

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

- 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
- 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. Please tell me if you have encountered any of the following barriers to expanding your employment level.

- 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 regarding the occupation 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
- Have not encountered any barriers to expanding employment level 95
- 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

4b. (Re: each barrier named on Q. 4a) Please tell me how large each of these barriers are 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 01
- 2 02
- 3 03
- 4 04
- 5 - Critical barrier 05
5a. Next, I am going to read some possible shortcomings of job applicants and ask if you have or have not seen these characteristics in a significant number of applicants.

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

5a-A. Please tell me if, over the last 12 months, you have or have not noticed a significant number of applicants with Poor work habits (including attendance, punctuality, and attention to job).

Have seen this characteristic in job applicants 01
Have not seen this characteristic in job applicants 02
(Do not read) Refuse 97
(Do not read) Don’t know/Not sure 98

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

Have seen this characteristic in job applicants 01
Have not seen this characteristic in job applicants 02
(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 or have not noticed a significant number of applicants with a Lack of ability to interact effectively with people of different cultures and socio-economic backgrounds.

Have seen this characteristic in job applicants 01
Have not seen this characteristic in job applicants 02
(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 or have not noticed a significant number of applicants with a Lack of communication or interpersonal skills.

Have seen this characteristic in job applicants 01
Have not seen this characteristic in job applicants 02
(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 or have not noticed a significant number of applicants with a Lack of willingness to learn or inability to learn.

Have seen this characteristic in job applicants 01
Have not seen this characteristic in job applicants 02
(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 or have not noticed a significant number of applicants with a Lack of teamwork or collaboration.

Have seen this characteristic in job applicants 01
Have not seen this characteristic in job applicants 02
(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 or have not noticed a significant number of applicants with a Lack of general computer skills.

Have seen this characteristic in job applicants 01
Have not seen this characteristic in job applicants 02
(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 or have not noticed a significant number of applicants with a Lack of critical thinking and problem solving.

Have seen this characteristic in job applicants 01
Have not seen this characteristic in job applicants 02
(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 or have not noticed a significant number of applicants with an Inability to think creatively or “out of the box.”

Have seen this characteristic in job applicants 01
Have not seen this characteristic in job applicants 02
(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 or have not noticed a significant number of applicants with a Lack of writing skills.

Have seen this characteristic in job applicants 01
Have not seen this characteristic in job applicants 02
(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 or have not noticed a significant number of applicants with a Lack of basic math skills.

Have seen this characteristic in job applicants 01
Have not seen this characteristic in job applicants 02
(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 or have not noticed a significant number of applicants with a Lack of technical skills specific to the job.

Have seen this characteristic in job applicants 01
Have not seen this characteristic in job applicants 02
5a-M. Please tell me if, over the last 12 months, you have or have not noticed a significant number of applicants with an inability to understand written and graphical information.

- Have seen this characteristic in job applicants 01
- Have not seen this characteristic in job applicants 02
- Refuse 97
- 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
96 - Not applicable
97 – Refuse
98 - Don't know/Not sure

(Rotate shortcomings)

- Poor work habits
- 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?

- Yes 01
- No 02
- Refuse 97
- Don't know/Not sure 98

6b. (If experiencing shortage of skilled applicants per Q.6a)

Please tell me if you are taking any of the following measures to meet the skill shortages of applicants.

(Rotate measures)

- Hiring from outside the St. Louis, Missouri/Illinois region 01
- Hiring from outside the United States 02
- Hiring contractors 03
- Forced to hire less experienced workers and then train them 04
- Invest in automation instead of hiring 05
- Offering increased wages due to shortage of experienced workers 06
- Not taking any of listed measures 96
- Refuse 97
- Don't know/Not sure 98

7. Which of the following methods do you use to assist current workers to address your company's need for new or increased skills?

Read list; enter all that apply.

(Rotate methods)

- In-house classroom training 01
- On-the-job training 02
- Vendor training 03
- Apprenticeship programs 04
- Community college provided customized training or education 05
- Vocational training 06
- Tuition reimbursement 07
- Online courses 08
- Provide flexible schedule for outside continuing education 09
- Not applicable - Do not need new or increased skills 95
- Refuse 97
- Don't know/Not sure 98

8. Now we have some questions about your company’s workforce by job function.

8a. Do you employ staff in the Accounting or Finance function?

- Yes 01
- No 02
- Refuse 97
- Don't know/Not sure 98

8aa. (If employ staff in the Accounting or Finance function per Q.8a)
Are you seeing a shortage of skilled applicants in the Accounting or Finance function?

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

8aaa. (If seeing shortage of skilled applicants in the Accounting or Finance function per Q.8aa)
Please tell me the skill level of applicants required to meet your Accounting or Finance skill shortages. Approximately what percentage of the shortages you are experiencing require high-skill applicants (those with a 4-year degree or higher); middle-skill applicants (training or education beyond high school, but less than a 4-year degree); and low-skill applicants (high school or less).

What percent of positions require...

Answers MUST total 100%
Refuse = 97
Don’t know/Not sure = 98
High-skill, requiring a 4-year degree or higher ______
Middle-skill, training or education beyond high school, but less than a 4-year degree ______
Low-skill, requiring high school or less ______

8aaa. (If seeing shortage of skilled applicants in the Accounting or Finance function per Q.8aa)
On a scale of 1 to 5 where 1 means "not at all important" and 5 means "very important," how important to your business is the shortage of applicants for the Accounting or Finance function?

1 - Not at all important 01
2 02
3 03
4 04
5 - Very important 05
(Do not read) Refuse 97
(Do not read) Don’t know/Not sure 98

8b. Do you employ staff in the Information Technology function?

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

8bb. (If employ staff in the Information Technology function per Q.8b)
Are you seeing a shortage of skilled applicants in the Information Technology function?

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

8bbb. (If seeing shortage of skilled applicants in the Information Technology function per Q.8bb)
Please tell me the skill level of applicants required to meet your Information Technology skill shortages. Approximately what percentage of the shortages you are experiencing require high-skill applicants (those with a 4-year degree or higher); middle-skill applicants (training or education beyond high school, but less than a 4-year degree); and low-skill applicants (high school or less).

What percent of positions require...

Answers MUST total 100%
Refuse = 97
Don’t know/Not sure = 98
High-skill, requiring a 4-year degree or higher ______
Middle-skill, training or education beyond high school, but less than a 4-year degree ______
Low-skill, requiring high school or less ______

8bbbb. (If seeing shortage of skilled applicants in the Information Technology function per Q.8bbb)
On a scale of 1 to 5 where 1 means "not at all important" and 5 means "very important," how important to your business is the shortage of applicants for the Information Technology function?

1 - Not at all important 01
2 02
3 03
4 04
5 - Very important 05
(Do not read) Refuse 97
(Do not read) Don’t know/Not sure 98

8c. Do you employ staff in the Customer Sales and Service function?

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

8cc. (If employ staff in the Customer Sales and Service function per Q.8c)
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

8ccc. (If seeing shortage of skilled applicants in the Customer Sales and Service function per Q.8cc)
Please tell me the skill level of applicants required to meet your Customer Sales and Service skill shortages. Approximately what percentage of the shortages you are experiencing require high-skill applicants (those with a 4-year degree or higher); middle-skill applicants (training or education beyond high school, but less than a 4-year degree); and low-skill applicants (high school or less).

What percent of positions require...
Answers MUST total 100%
Refuse = 97
Don't know/Not sure = 98

High-skill, requiring a 4-year degree or higher ______
Middle-skill, training or education beyond high school, but less than a 4-year degree ______
Low-skill, requiring high school or less ______

8ccc. (If seeing shortage of skilled applicants in the Customer Sales and Service function per Q.8cc)
On a scale of 1 to 5 where 1 means "not at all important" and 5 means "very important," how important to your business is the shortage of applicants for the Customer Service function?

1 - Not at all important 01
2 02
3 03
4 04
5 - Very important 05
(Do not read) Refuse 97
(Do not read) Don't know/Not sure 98

8d. Do you employ staff in the Business Management function?
Yes 01
No 02
(Do not read) Refuse 97
(Do not read) Don't know/Not sure 98

8dd. (If employ staff in the Business Management function per Q.8d)
Are you seeing a shortage of skilled applicants in the Business Management function?
Yes 01
No 02
(Do not read) Refuse 97
(Do not read) Don't know/Not sure 98

8ddd. (If seeing shortage of skilled applicants in the Business Management function per Q.8dd)
Please tell me the skill level of applicants required to meet your Business Management skill shortages. Approximately what percentage of the shortages you are experiencing require high-skill applicants (those with a 4-year degree or higher); middle-skill applicants (training or education beyond high school, but less than a 4-year degree); and low-skill applicants (high school or less).

What percent of positions require...
Answers MUST total 100%
Refuse = 97
Don't know/Not sure = 98

High-skill, requiring a 4-year degree or higher ______
Middle-skill, training or education beyond high school, but less than a 4-year degree ______
Low-skill, requiring high school or less ______

8dddd. (If seeing shortage of skilled applicants in the Business Management function per Q.8dd)
On a scale of 1 to 5 where 1 means "not at all important" and 5 means "very important," how important to your business is the shortage of applicants for the Business Management function?

1 - Not at all important 01
2 02
3 03
4 04
5 - Very important 05
(Do not read) Refuse 97
(Do not read) Don't know/Not sure 98

9. [(Do not read) Questions here are asked based on the company's specific industry sector based on their NAICS code (9a-9c for Technology-Intensive Services, 9d-9e for Financial Services, and 9f-9h for Healthcare Services).]
9a. [(Do not read) Only ask 9a-9aaaa for companies in Technology-Intensive Services.]
Do you employ staff in the Web Development function?
Yes 01
No 02
(Do not read) Refuse 97
(Do not read) Don't know/Not sure 98

9aa. (If employ staff in the Web Development function per Q.9a)
Are you seeing a shortage of skilled applicants in the Web Development function?
Yes 01
No 02
(Do not read) Refuse 97
(Do not read) Don't know/Not sure 98

9aaa. (If seeing shortage of skilled applicants in the Web Development function per Q.9aa)
Please tell me the skill level of applicants required to meet your Web Development skill shortages. Approximately what percentage of the shortages you are experiencing require high-skill applicants (those with a 4-year degree or higher); middle-skill applicants (training or education beyond high school, but less than a 4-year degree); and low-skill applicants (high school or less).

What percent of positions require...
Answers MUST total 100%
Refuse = 97
Don't know/Not sure = 98

High-skill, requiring a 4-year degree or higher ______
Middle-skill, training or education beyond high school, but less than a 4-year degree ______
Low-skill, requiring high school or less ______

9aaaa. (If seeing shortage of skilled applicants in the Web Development function per Q.9aa)
On a scale of 1 to 5 where 1 means "not at all important" and 5 means "very important," how
important to your business is the shortage of applicants for the Web Development function?

1 - Not at all important 01
2 02
3 03
4 04
5 - Very important 05
(Do not read) Refuse 97
(Do not read) Don't know/Not sure 98

9b. [[Do not read] Only ask 9b-9bb for companies in Technology-Intensive Services.]
Do you employ staff in the Software Development function?
Yes 01
No 02
(Do not read) Refuse 97
(Do not read) Don't know/Not sure 98

9bb. (If employ staff in the Software Development function per Q.9b)
Are you seeing a shortage of skilled applicants in the Software Development function?
Yes 01
No 02
(Do not read) Refuse 97
(Do not read) Don't know/Not sure 98

9bbb. (If seeing shortage of skilled applicants in the Software Development function per Q.9bb)
Please tell me the skill level of applicants required to meet your Software Development skill shortages. Approximately what percentage of the shortages you are experiencing require high-skill applicants (those with a 4-year degree or higher); middle-skill applicants (training or education beyond high school, but less than a 4-year degree); and low-skill applicants (high school or less).

What percent of positions require...

Answers MUST total 100%
Refuse = 97
Don't know/Not sure = 98

High-skill, requiring a 4-year degree or higher _______
Middle-skill, training or education beyond high school, but less than a 4-year degree _______
Low-skill, requiring high school or less _______

9ccc. (If seeing shortage of skilled applicants in the Information Security or Cybersecurity function per Q.9cc)
Please tell me the skill level of applicants required to meet your Information Security or Cybersecurity skill shortages. Approximately what percentage of the shortages you are experiencing require high-skill applicants (those with a 4-year degree or higher); middle-skill applicants (training or education beyond high school, but less than a 4-year degree); and low-skill applicants (high school or less).

What percent of positions require...

Answers MUST total 100%
Refuse = 97
Don't know/Not sure = 98

High-skill, requiring a 4-year degree or higher _______
Middle-skill, training or education beyond high school, but less than a 4-year degree _______
Low-skill, requiring high school or less _______

9c. [[Do not read] Only ask 9c-9ccc for companies in Technology-Intensive Services.]
Do you employ staff in the Financial Advisement 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 Financial Advisement function per Q.9d)

Are you seeing a shortage of skilled applicants in the Financial Advisement 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 Financial Advisement function per Q.9dd)

Please tell me the skill level of applicants required to meet your Financial Advisement skill shortages. Approximately what percentage of the shortages you are experiencing require high-skill applicants (those with a 4-year degree or higher); middle-skill applicants (training or education beyond high school, but less than a 4-year degree); and low-skill applicants (high school or less).

What percent of positions require...

Answers MUST total 100%

- Refuse = 97
- Don’t know/Not sure = 98

9ede. (If seeing shortage of skilled applicants in the Financial Advisement function per Q.9e)

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

1 - Not at all important   01
2   02
3   03
4   04
5 - Very important   05
(Do not read) Refuse   97
(Do not read) Don’t know/Not sure   98

9ee. (If employ staff in the Commercial and Residential Lending function per Q.9e)

Are you seeing a shortage of skilled applicants in the Commercial and Residential Lending 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 Commercial and Residential Lending function per Q.9ee)

Please tell me the skill level of applicants required to meet your Commercial and Residential Lending skill shortages. Approximately what percentage of the shortages you are experiencing require high-skill applicants (those with a 4-year degree or higher); middle-skill applicants (training or education beyond high school, but less than a 4-year degree); and low-skill applicants (high school or less).

What percent of positions require...

Answers MUST total 100%

- Refuse = 97
- Don’t know/Not sure = 98

9eed. (If seeing shortage of skilled applicants in the Commercial and Residential Lending function per Q.9ed)

On a scale of 1 to 5 where 1 means "not at all important" and 5 means "very important," how important to your business is the shortage of applicants for the Commercial and Residential Lending function?

1 - Not at all important   01
2   02
3   03
4   04
5 - Very important   05
(Do not read) Refuse   97
(Do not read) Don’t know/Not sure   98

9ef. (Do not read) Only ask 9f-9ffff for companies in Healthcare Services.

Do you employ staff in the Patient Care (including MAs, CNAs, PCTs, LPNs, and RNs) function?

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

9f. (If employ staff in the Patient Care function per Q.9f)

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

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

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

9ff. (If seeing shortage of skilled applicants in the Patient Care function per Q.9ff)
Please tell me the skill level of applicants required to meet your Patient Care skill shortages. Approximately what percentage of the shortages you are experiencing require high-skill applicants (those with a 4-year degree or higher); middle-skill applicants (training or education beyond high school, but less than a 4-year degree); and low-skill applicants (high school or less).
What percent of positions require ...
Answers MUST total 100%
Refuse = 97
Don’t know/Not sure = 98
High-skill, requiring a 4-year degree or higher ______
Middle-skill, training or education beyond high school, but less than a 4-year degree ______
Low-skill, requiring high school or less ______

9g. (If employ staff in a Therapeutic Care function per Q.9g)
Are you seeing a shortage of skilled applicants in a Therapeutic 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 a Therapeutic Care function per Q.9gg)
Are you seeing a shortage of skilled applicants in a Therapeutic Care function?
Yes 01
No 02
(Do not read) Refuse 97
(Do not read) Don’t know/Not sure 98

9hh. (If seeing shortage of skilled applicants in the Diagnostic Services function per Q.9hh)
Please tell me the skill level of applicants required to meet your Diagnostic Services skill shortages. Approximately what percentage of the shortages you are experiencing require high-skill applicants (those with a 4-year degree or higher); middle-skill applicants (training or education beyond high school, but less than a 4-year degree); and low-skill applicants (high school or less).
What percent of positions require ...
Answers MUST total 100%
Refuse = 97
Don’t know/Not sure = 98
High-skill, requiring a 4-year degree or higher ______
Middle-skill, training or education beyond high school, but less than a 4-year degree ______
Low-skill, requiring high school or less ______

9h. (Do not read) Only ask Q.h-9hhhh for companies in Healthcare Services.
Do you employ staff in the Diagnostic Services function?
Yes 01
No 02
(Do not read) Refuse 97
(Do not read) Don’t know/Not sure 98

9hh. (If seeing shortage of skilled applicants in the Diagnostic Services function per Q.9hh)
Are you seeing a shortage of skilled applicants in the Diagnostic Services 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 a Therapeutic Care function per Q.9ggg)
Please tell me the skill level of applicants required to meet your Therapeutic Care skill shortages. Approximately what percentage of the shortages you are experiencing require high-skill applicants (those with a 4-year degree or higher); middle-skill applicants (training or education beyond high school, but less than a 4-year degree); and low-skill applicants (high school or less).
What percent of positions require ...
Answers MUST total 100%
Refuse = 97
Don’t know/Not sure = 98
High-skill, requiring a 4-year degree or higher ______
Middle-skill, training or education beyond high school, but less than a 4-year degree ______
Low-skill, requiring high school or less ______
9hhhh. (If seeing shortage of skilled applicants in the Diagnostic Services function per Q.9hh)

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

1 - Not at all important
2
3
4
5 - Very important
(Do not read) Refuse
(Do not read) Don’t know/Not sure

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

Answers MUST total 100%
Refuse = 97
Don’t know/Not sure = 98

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

Answers MUST total 100%
Refuse = 97
Don’t know/Not sure = 98

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

No jobs
1 to 25% of jobs
26 to 50% of jobs
51 to 75% of jobs
76 to 100% of jobs
(Do not read) Refuse
(Do not read) Don’t know/Not sure
CELEBRATING TEN YEARS
STATE OF THE ST. LOUIS WORKFORCE
ST. LOUIS COMMUNITY COLLEGE
Workforce Solutions Group
2009-2018

Researched and Developed by:

WORKFORCE SOLUTIONS GROUP
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