2014 Employer Needs Survey

NORTH CAROLINA ASSOCIATION OF workforce development boards

LABOR & ECONOMIC ANALYSIS DIVISION

2014 EMPLOYER NEEDS SURVEY

Produced in collaboration by the
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Executive Summary

Employers, journalists, and researchers often use the phrase "skills gap" to reflect the struggle some employers have finding qualified workers. While many generally take this "gap" as a given, the causes and the degree to which employers have hiring difficulties are more complex. The reasons given for this problem often include jobseekers' lack of skills (both "hard" and "soft" skills), certifications or training, educational attainment, and work experience. Others highlight basic employability issues such as applicants' work ethic and dependability, ability to pass a drug test, or criminal record. Some mention a struggle to attract workers into certain industries due to negative perceptions, difficult working conditions, or low pay/benefits. Finding sufficient numbers of qualified workers might also be a challenge in certain geographic areas with small populations.

The North Carolina Department of Commerce's Labor & Economic Analysis Division (LEAD) and the Business Services Representatives (BSR) of the State's Workforce Development Boards collaborated to better understand this issue. Under the guidance and direction of the NC Commission on Workforce Development, a survey of employment needs was undertaken. Nearly 800 public and private sector employers with between 10 and 499 employees were surveyed among a randomly selected sample based on the state's industry mix and geography. The study over-sampled Manufacturers (frequently cited as having hiring problems) to compare to Non-Manufacturers.

The goal of the study was to provide relevant data on employer needs to help the Commission draft policies and strategies to guide the state's workforce development system. The study was designed to answer the most common questions related to employer hiring difficulties, such as:

KEY HIGHLIGHTS

~ 45% Had Hiring Difficulty among employers hiring for at least one position in the past year

High Diversity of Industries & Occupations with Difficulties

Top Needs: Work Experience, Education Credentials & Technical Skills

~ 40% of employers with difficulties had **"Absolutely Critical"** vacancies

3 Times Longer To Hire difficult-to-fill positions than regular positions

Nearly Half use workforce development / education systems to help meet their employment & training needs

Are North Carolina's employers having hiring difficulties?

Yes, but not all employers. Nearly identical percentages –**approximately 45%** – of Manufacturers and Non-Manufacturers who attempted to hire reported difficulty, with no significant differences between rural and urban employers. This figure is not as high as some studies would suggest, despite our study's low threshold for difficulty (at least one position) and wide time period (over the past twelve months). Employers in Educational Services, Construction, Health Care & Social Assistance, Manufacturing, and Wholesale Trade most commonly reported hiring difficulties.

Across all industries, several occupations were mentioned more frequently than others, such as sales representatives, registered nurses, secondary school teachers, cashiers, maintenance workers, managers, engineers, receptionists and retail salespersons. As seen from this selection, hiring difficulties occur across a variety of occupations and skill levels. Among Manufacturers, both production and non-production occupations are reported, including machinists, maintenance and repair workers, industrial production managers, engineers, welders and production supervisors.

What reasons do employers give for hiring difficulties?

Employers cited a variety of reasons for hiring difficulties. Most frequently candidates lacked **work experience, education credentials, and technical skills**, according to over 40 percent of industry-wide employers. Manufacturers were far more likely to cite a lack of technical skills as reason for difficulties, with 70 percent citing this factor. **Insufficient numbers of applicants** (1 in 3 employers) and candidates' **unwillingness to accept the offered wages** (1 in 4 employers) were also mentioned, which may suggest issues with wage levels and/or expectations among jobseekers and employers. A lack of **soft skills**, which include skills like communication, enthusiasm, and interpersonal skills, was selected by roughly one in four employers. One in six employers identified candidates' **criminal records** as an issue, and one in 10 employers identified the **inability to pass a drug test** as a reason for hiring difficulties. **Commuting distance** (13%) and **unacceptable work conditions** (9%) were less common factors.

When asked about specific skills, employers frequently reported technical skills such as machining, skilled trades, blueprint reading, electrical skills, engineering technologies, customer service, computer operation and business/accounting. They also mentioned soft skills such as communication, enthusiasm, interpersonal skills, critical/analytic thinking and problem solving, and attendance dependability.

How important is filling these positions to employers?

Even though less than half of employers experienced hiring difficulties in the past year, those that did tended to view these positions as very important to their businesses' survival and growth. While any advertised position by a business can be assumed to represent a real desire or need, more than one-third of employers with difficulties ranked these positions as "absolutely critical" to their survival and growth. This particular set of employers represents about one out of seven hiring employers surveyed.

Another severity measure of hiring difficulties is the length of time it took to fill positions. On average, **difficult-to-fill positions took about three times longer for employers to fill** (if they did eventually fill them) — adding three to four months on average to the hiring process. This was roughly the same for both Manufacturers and Non-Manufacturers. While different industries have different needs and expectations of acceptable lengths of time to fill positions, this additional time can be a serious challenge for employers.

How are employers responding to hiring difficulties?

One common response to hiring difficulties was simply not filling the job position, with nearly 30 percent of Non-Manufacturers reporting not filling at least one difficult to fill position. **Increased recruiting** (40%) and **overtime for existing workers** (31%) were also top responses for Non-Manufacturers. Manufacturers were significantly more likely to report using **overtime for existing workers** (53%) and **not filling the job opening** (40%). Manufacturers were also significantly more likely to report **hiring a less qualified applicant** (39%) or using **temporary labor or outsourcing** (30%). **Increasing pay** was a response for less than one out of six Manufacturers and one out of nine Non-Manufacturers. In the recruiting process, Manufacturers were more likely to use a **recruiting or temp agency** and **community colleges**.

In-house/on the job training was by far the most common way employers met the overall skill needs of their workforce, with smaller numbers using seminars and conferences and online training. Nearly 44 percent of all employers and 54 percent of manufacturers used some combination of educational institutions (universities and community colleges) and the workforce development system to meet their skill needs. Manufacturers were more likely to use community colleges and apprenticeship programs than Non-Manufacturers.

Implications for North Carolina

A significant percentage of employers throughout the state have reported hiring difficulties. There are a variety of issues which contribute to hiring difficulties, and this survey provides a step in defining the challenges which exist for different industries and occupations. Not all problems identified here are about a lack of skills-work experience and education credentials are also important. Many factors are out of the control of employers; however, enhanced engagement with education and workforce development partners could help improve the supply of qualified workers who match their needs.

There is much more to learn about the needs of North Carolina's employers and jobseekers, and this research can help inform the North Carolina Commission on Workforce Development and other policymakers as they respond to employment needs and seek to improve our state.

2014 Employer Needs Survey

Introduction

Nationally and within North Carolina, there is a sense of urgency to address the difficulties some employers have finding qualified workers. Even with high numbers of unemployed individuals as a legacy of the recession, some employers claim it is difficult to find qualified employees to fill vacant positions in a variety of industries and occupations. Employers report that the North Carolina labor pool is not matching growing demand for jobs that require strong skills (both "hard skills" and "soft skills"), proper training and certification, sufficient levels of education, and previous work experience.

The "skills gap" has been used to explain this paradoxical phenomenon at both the national and state level; the explanation offered is that while there is strong demand for certain types of workers and a large supply of jobseekers in the state, the skills of applicants do not match the needs of employers. While there is no consensus on exactly which set of skills are lacking, the issue has been identified as an obstacle to lowering unemployment as well as a threat to our competitiveness. However, evidence of skills gaps are often based on anecdotal accounts and non-scientific surveys rather than on careful empirical studies.[1]

In 2013, the Labor and Economic Analysis Division (LEAD) of North Carolina's Department of Commerce developed a white paper reviewing research on the skills gap phenomenon.[2] The paper found that labor market research does not indicate a nation-wide skills gap—which would be indicated by rapidly rising wages as employers compete to attract a limited supply of workers.[3] However, there is evidence of localized skills mismatches within particular industries, occupations, or geographical areas. Despite the apparent lack of an overarching national problem, surveys measuring the perceptions of business leaders have reported the existence of various skills gaps or mismatches.[4] To some degree, this contrast may reflect differences between data analysis and perceptions of the skills gap. It may also highlight business leaders' experiences in unique localized areas with certain workforce characteristics. In addition, employers' and researchers' definitions of "skills" often differ from each other, and even scientific surveys use a variety of designs and definitions which make direct comparisons difficult.[5]

Relatively little research has been performed to identify skills mismatches in North Carolina. A 2012 statewide survey of employers conducted by the Business Services Representatives of the Workforce Development Boards identified particular issues with Customer Service and Skilled Trades.[6] In a 2012 survey of employers in the Greater Greensboro area, 79 percent of respondents reported having vacancies that were "difficult to fill," and were asked to estimate the length of time required to fill them.[7] In addition, a 2012 Boston Consulting Group study using wage data and manufacturing-job vacancy rates determined that Charlotte appeared to have significant skills gaps in certain manufacturing occupations.[8] Given this research, the state could benefit from a more comprehensive approach to understanding the needs of employers.

Instead of focusing exclusively on skills gaps, some researchers prefer to focus on "hiring difficulties." There may be additional reasons for hiring difficulties other than a lack of skills, including insufficient wages; geographic isolation; unfavorable working conditions; negative perceptions of the hiring establishment or industry; or inefficient recruitment and human resource development practices.[9] The 2014 Employer Needs Survey was a scientific survey of North Carolina's employers created to understand their needs and specific issues with recruitment and retention of workers.

Survey methodology and implementation

The 2014 Employer Needs Survey was created to assist North Carolina's Commission on Workforce Development. The Commission recognized the skill gap as an important issue needing further study and established a special task force to investigate employers' challenges in finding qualified workers and identify

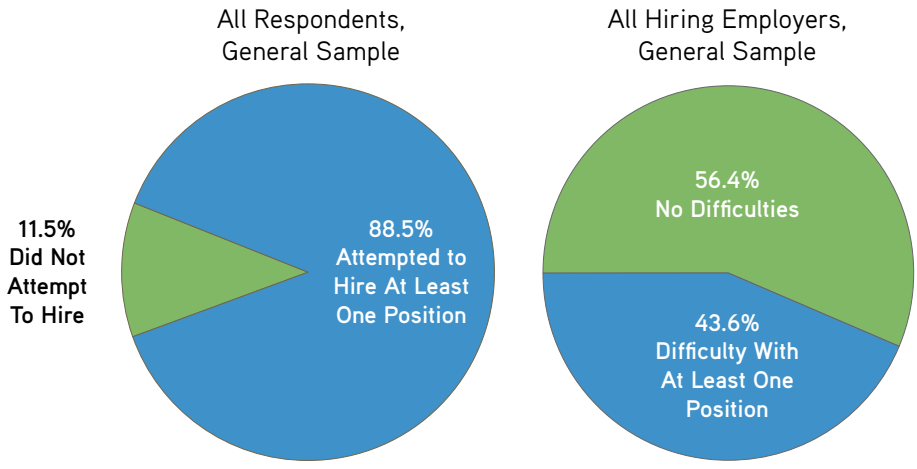
potential solutions. As part of this, LEAD collaborated with the Business Services Representatives (BSRs) of the NC's Workforce Development Boards to conduct a survey that built upon the BSR's 2012 study.[10] LEAD designed the survey in consultation with the BSRs and the task force during the summer and fall of 2013. The overall goal of the survey was to identify the needs of employers in North Carolina, with a particular emphasis on hiring difficulties and recruitment and retention practices.

A stratified random sample of 2,609 employers was drawn from the InfoGroup USA database of North Carolina Establishments identified as having between 10 and 499 employees. This establishment size range was chosen in order to include organizations that are likely to hire (above nine employees), but whose resources may be more modest than the very largest establishments (above 499 employees).[11] The sample was stratified on three key variables: Organization Size (10-49, 50-499), Industry (NAICS 2-digit), and Geography (eight Prosperity Zones), and a sample was drawn to be representative of these aspects across the state. There were several reasons for stratifying by these variables. Companies with different organizational sizes may have different needs; for example, companies with fewer than 50 may have limited human resources departments or capabilities and may have other considerations than larger companies. Companies in different industries may also have different needs and norms within their industry. Finally, companies from different geographic areas across the state may have different needs based on their local labor markets; the eight prosperity zones across the state were used to reflect this diversity.[12] A separate over-sample of 2,221 manufacturing employers across the state was also collected and stratified by both size (10-49, 50-499) and geography (Prosperity Zones). The study over-sampled Manufacturers as they are frequently cited as having hiring problems and may have particular needs.

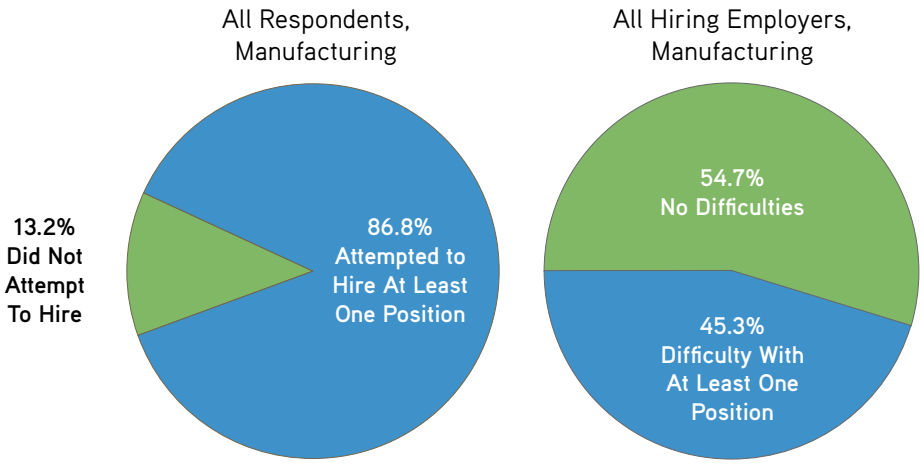
The survey was implemented during the winter of 2013/2014. An online survey collection tool as well as telephone interviews were used to collect the data, with assistance from both the Business Services Representative Network and the Center for Urban Affairs and Community Services at NC State University. The final achieved samples with sufficient data were 403 for the General sample of all industries and 376 for the Manufacturing sample, a response rate of 20.9%.[13] The achieved samples generally reflect the geographic diversity and industrial structure of organizations based on the Quarterly Census of Employment and Wages data for the state. Responses were collected from all 100 counties.

Although the survey is representative of the state's mid-sized employers as a whole, there are some limitations to what can be concluded from the data due to the scope of the survey and the number of responses. For example, it is difficult to make statements addressing several variables at once, and conclusions based on smaller geographies are not possible. Wage and education requirements, as well as detailed information on specific vacancies or numbers of difficult-to-fill positions are not available. Finally, it is important to remember this survey only captured employers' experiences, and does not include the perspective of the jobseekers necessary to provide a complete picture of the labor market.

Survey Findings



In order to identify specific hiring difficulties encountered by employers in the state, the survey began by asking whether employers attempted to hire at least one position during the previous 12 months. The survey used a low threshold for difficulty (at least one position) in order to capture any hiring difficulties experienced by employers, as well as a wide time period (over the past twelve months) rather than a snapshot in time of current vacancies. In the General sample, 88.5 percent of employers had attempted to hire at least one position, while 11.5 percent had not. For Manufacturers, the results were similar, with 86.8 percent attempting to hire and 13.2 percent not attempting.[14] There are a variety of reasons why companies may not have tried to hire, including a lack of demand for additional products or services and/or a low level of turnover which did not require replacement hires. In addition, these employers were smaller—all of the establishments which did not attempt to hire had fewer than 50 employees.



Among those who did attempt to hire at least one position, 56.4 percent of employers in the General sample did not have hiring difficulties, while 43.6 percent reported difficulty with at least one position. Among the Manufacturers, 54.7 percent of employers experienced no difficulties, while 45.3 percent experienced difficulties with at least one position. On the surface, these percentages give us a rough outline of the extent of hiring difficulties in the state—with over half of employers in both samples reporting no difficulties and a sizable minority (more than four out of ten) having difficulties with at least one position. With such a low threshold for hiring difficulties (merely one position potentially out of many), one might have expected much higher percentages of employers falling into the "difficult" category. Indeed, much of the national literature on the "skills gap" presents a picture that most or nearly all employers are having trouble finding adequate workers.[15] Recognizing that more than half of employers did not experience difficulties over the course of a year should help define the scope of the problem in the state.

However, the fact that more than four in ten employers reported a difficulty does suggest that this is a problem that warrants additional investigation. While the survey did collect additional information among those respondents experiencing no difficulties, the next series of questions were answered by the set of employers reporting difficulties.

Industries and Occupations

Not all industries reported the same degree of hiring difficulties. The following table shows the industries with the highest percentages of difficulties within the General and the Manufacturing samples:

Industries Most Cited with Hiring Difficulties	
62.5%	Educational Services (of 24 employers)
59.1%	Construction (of 22 employers)
53.3%	Health Care and Social Assistance (of 45 employers)
45.3%	Manufacturing (of 342 employers)

Manufacturing Sub-Sectors Cited with Hiring Difficulties	
65.0%	Plastics & Rubber Products Manufacturing (of 20 employers)
59.1%	Chemical Manufacturing (of 22 employers)
55.6%	Nonmetallic Mineral Product Manufacturing (of 18 employers)
54.2%	Machinery Manufacturing (of 48 employers)
52.0%	Fabricated Metal Product Manufacturing (of 50 employers)
43.5%	Furniture and Related Product Manufacturing (of 23 employers)

In addition to differences by industry group, certain occupations were more frequently cited as difficult-to-fill than others.[16] The following table lists the difficult-to-fill occupations in order of frequency:

Occupations Most Cited with Hiring Difficulties (All Industries)
Sales & Related Occupations:
Sales Representatives; Cashiers
Healthcare Practitioners Technical Occupations:
Registered Nurses; Licensed Practical & Licensed Vocational Nurses
Education, Training & Library Occupations:
Secondary School Teachers; Preschool Teachers
Office & Administrative Support Occupations:
Receptionists and Information Clerks; Customer Service Representatives
Transportation & Material Moving Occupations:
Laborers & Freight/Stock/Material Movers, Hand; Driver/Sales Workers

Occupations Most Cited with Hiring Difficulties (Manufacturing)
Production Occupations:
Machinists; Welders, Cutters, Solderers & Brazers
Architecture & Engineering Occupations:
Industrial Engineers; Electrical & Electronic Engineering Technicians
Installation, Maintenance & Repair Occupations:
Maintenance & Repair Workers General; Maintenance Workers, Machinery
Management Occupations:
Industrial Production Managers; Marketing Managers
Office & Administrative Support Occupations:
Shipping, Receiving & Traffic Clerks; Customer Service Representatives

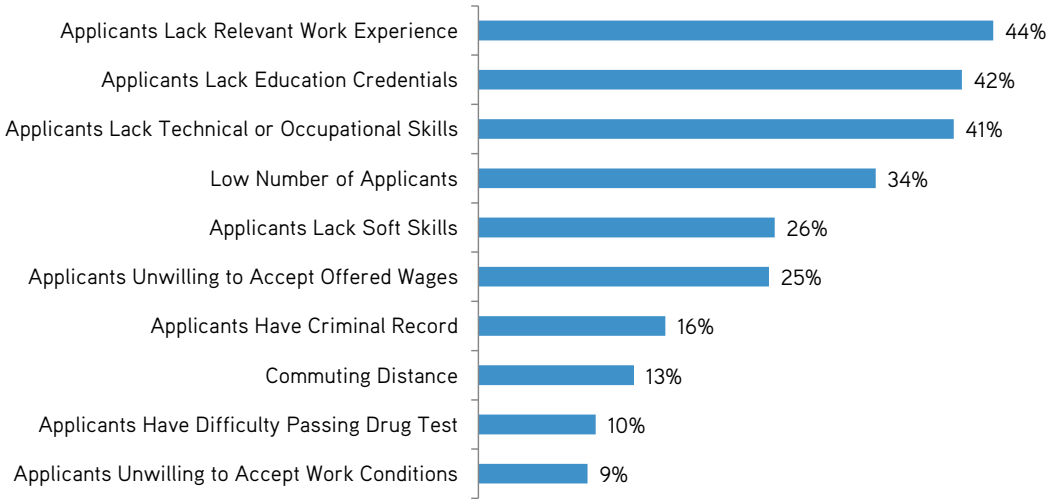
In assessing these findings, it seems that hiring difficulties occur across industries and occupations, with potentially very different issues facing employers. For example, some employers may face high turnover issues and must continually seek new workers, as in the case of retailers seeking cashiers. While these positions don't necessarily require high skill levels or education and the potential labor pool is large, the volume of new workers needed for replacement may present a challenge. Other employers may need fewer but more skilled workers; for example in occupations requiring higher levels of technical training (machinists) or education (nurses, engineers). In this case, employers must compete for these in-demand workers with other employers.

Manufacturing employers have needs for production workers, but also experience difficulties in non-production occupations such as engineers and managers. The same employer may even have difficulties filling a variety of positions for very different reasons. Therefore, there are many different hiring needs and numerous causes for hiring difficulties, making it unlikely that there is a single solution to hiring difficulties across North Carolina.

Reasons for Difficulties

What reasons do employers give for hiring difficulties? The survey allowed employers reporting difficulties to choose multiple responses. There is potential overlap among these reasons for difficulties, and it is also possible for the same employer to have different reasons for multiple positions. Within the General sample, the percentages of employers which selected the following reasons were:

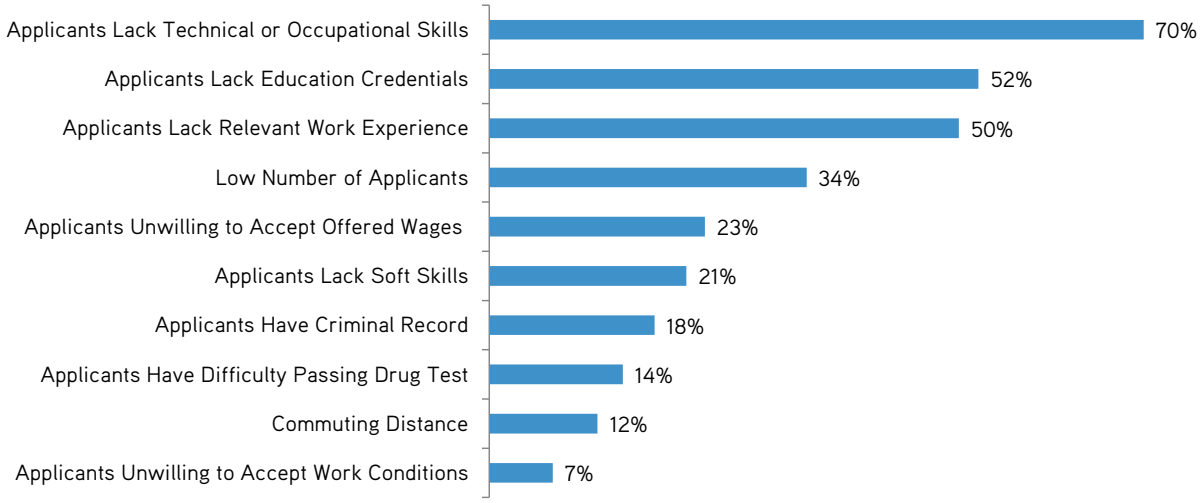
Reasons given for Hiring Difficulties (General Sample)



The top three most frequently selected reasons were a lack of relevant work experience, education credentials, and technical or occupational skills, with over 40 percent of employers experiencing difficulties choosing these reasons.[17] The next most frequently given response, a low number of applicants, has numerous potential explanations, including actual labor shortages, ineffective recruitment efforts, or demand characteristics of the jobs such as non-competitive wages or negative industry perceptions. A lack of soft skills on the part of the workers, while frequently given as a top deficiency in some surveys, appears in the middle of the list here, with one quarter of employers citing this reason for difficulties. One quarter of employers cite applicants unwilling to accept offered wages, suggesting that noncompetitive wages or unrealistic wage expectations may play a part in some hiring difficulties. Although some employers may be unable to offer the desired level of wages workers expect, there may also be an information gap on the part of employers and jobseekers about prevailing wages for certain positions. Another frequently mentioned set of reasons given anecdotally and in some surveys is a jobseeker's criminal record or inability to pass a drug test. Here, the percentages reported suggest this is less of an overall problem for employers (although it may be for certain industries and occupations).

Among the Manufacturers, the reasons given for hiring difficulties were the following:

Reasons given for Hiring Difficulties (Manufacturing Sample)



The top three most frequently cited reasons were the same as in the General sample, although in a different order. However, a lack of technical or occupational skills was significantly greater for the Manufacturers than Non-Manufacturers, with 70 percent of employers selecting this reason. A lack of education credentials and a lack of relevant work experience were also top reasons for Manufacturers. The remaining reasons selected were very similar to those in the General sample, suggesting that the main difference between the Manufacturers and Non-Manufacturers was the greater emphasis on technical or occupational skills among Manufacturers.

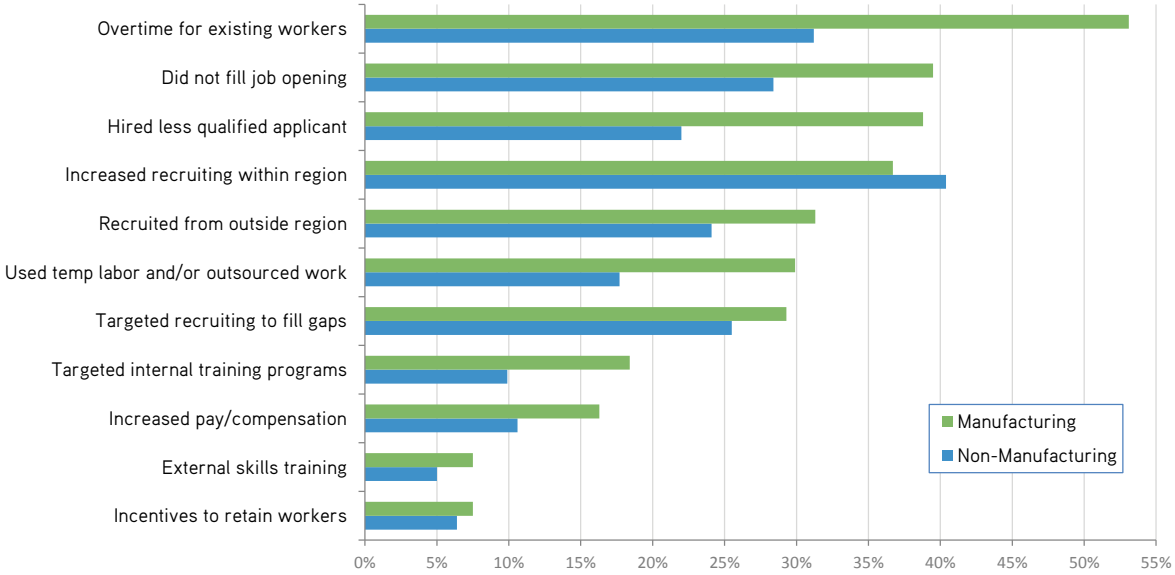
Specific Skills

Delving more deeply into which specific skills employers found lacking, the survey asked separate questions about technical, occupational, and soft skills. Here we present the results for Non-Manufacturers vs. Manufacturers in order to isolate the particular challenges facing Manufacturers (see Appendix: Tables 11, 12, 13). Among Non-Manufacturers, the technical skills categories most frequently lacking were a mix of technical skills, customer service, and computer operation. Among Manufacturers, a mix of technical skills was also cited, as well as machining and blueprint reading. Non-Manufacturers most frequently mentioned skilled trades, business/accounting, and nursing as missing occupational skills, while Manufacturers chose skilled trades, electrical/electronics, and engineering technologies. For soft skills, Non-Manufacturers chose communication skills, enthusiasm, and interpersonal skills; while Manufacturers most frequently mentioned critical/analytic thinking or problem solving, attendance record/dependability, communication skills, and enthusiasm. A mix of technical skills, skilled trades, communication skills, and enthusiasm are among the most frequently selected for both groups. While some specific skill sets are more important to certain industries and occupations, these four areas may also serve as a focus for future research and policy interventions.

Responses to Difficulties

When employers encounter hiring difficulties, how do they react? The survey asked employers to choose among a wide range of responses. Among Non-Manufacturers, the top three responses were increased recruiting within the region (40.4% of employers), using overtime for existing workers (31.2%), and simply not filling the job opening (28.4%). Among Manufacturers, the top three responses were using overtime for existing workers (53.1%), not filling the job opening (39.5%), and hiring a less qualified applicant (38.8%).

Responses to Hiring Difficulties among Manufacturers and Non-Manufacturers



Manufacturers were significantly more likely to report using overtime, hiring a less qualified applicant, or using temporary labor or outsourcing. Taken together, these findings suggest that Manufacturers may be more willing to use alternatives or lower standards when they encounter difficulties. Increasing pay/compensation (which can be a strategy for attracting higher-quality applicants) is not a commonly reported response for either group.[18] In addition, training and retention strategies for existing workers are less frequently used by employers as a response to workforce needs; although Manufacturers are more likely to use targeted internal training programs.

Importance and Severity of Difficulties

The survey also tried to measure the severity of hiring difficulties by asking how important it is to businesses to fill these positions. Employers were asked to rank their needs on a scale from one to nine with one being "not important" and nine being "absolutely critical to our survival/growth." Among both groups, employers ranked their needs as highly critical, with a mean response of 7.47 for Non-Manufacturers and 7.85 for Manufacturers. The percentage of employers choosing a "nine" (absolutely critical) was 36.3 percent for Non-Manufacturers and 40.9 percent for Manufacturers. Therefore, even though less than half of employers experienced hiring difficulties in the past year, those that did tended to view these positions as highly critical to their businesses' survival and growth.

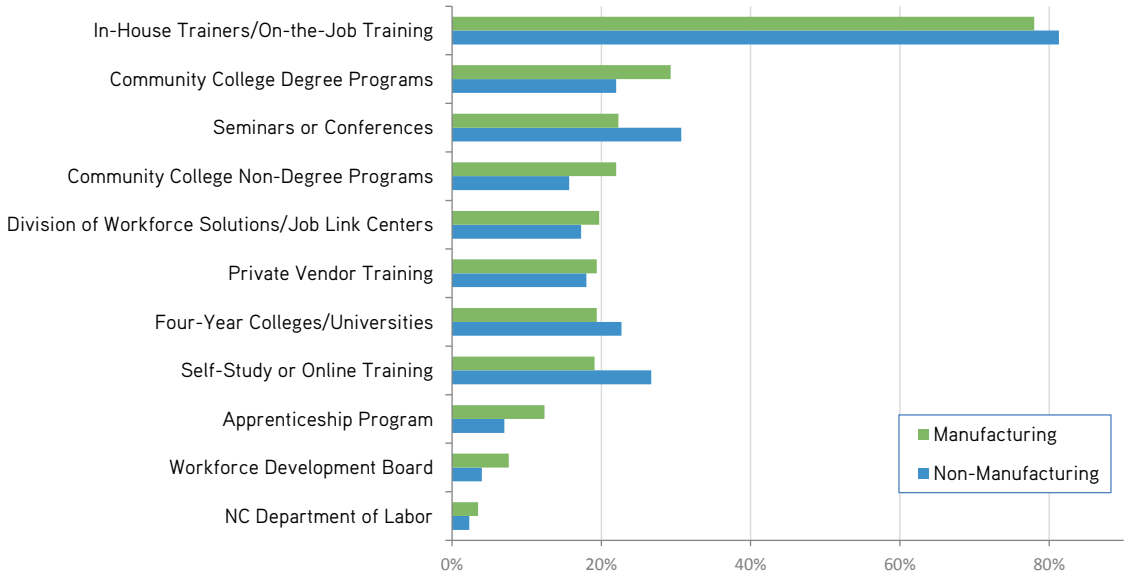
One key survey question asked employers about length of time required to fill both non-difficult and difficult positions in order to quantify the severity of hiring difficulties on employers. Within the Non-Manufacturing sample, employers reported a mean of 1.4 months to fill non-difficult positions, while difficult positions took an average of 4.3 months. The median was one month for non-difficult and three months for difficult positions. Among Manufacturers, the mean was 1.7 months for non-difficult positions and 5.4 months for difficult, with a median of one month for non-difficult positions and four months for difficult positions. The length of time to fill considered normal by employers may vary by industry and occupation, but overall difficult positions seemed to take substantially more time to fill. This extra length of time may be bearable for certain positions and unacceptable for others depending on the needs of the employer.

Meeting Skill Needs, Recruitment and Retention

In addition to the specific questions for those employers experiencing difficulty, the survey also asked a series of questions focusing on all employers' recruitment, retention, and skills development practices. When asked

which resources employers use to "meet the skill needs of your workforce," the following responses were reported:

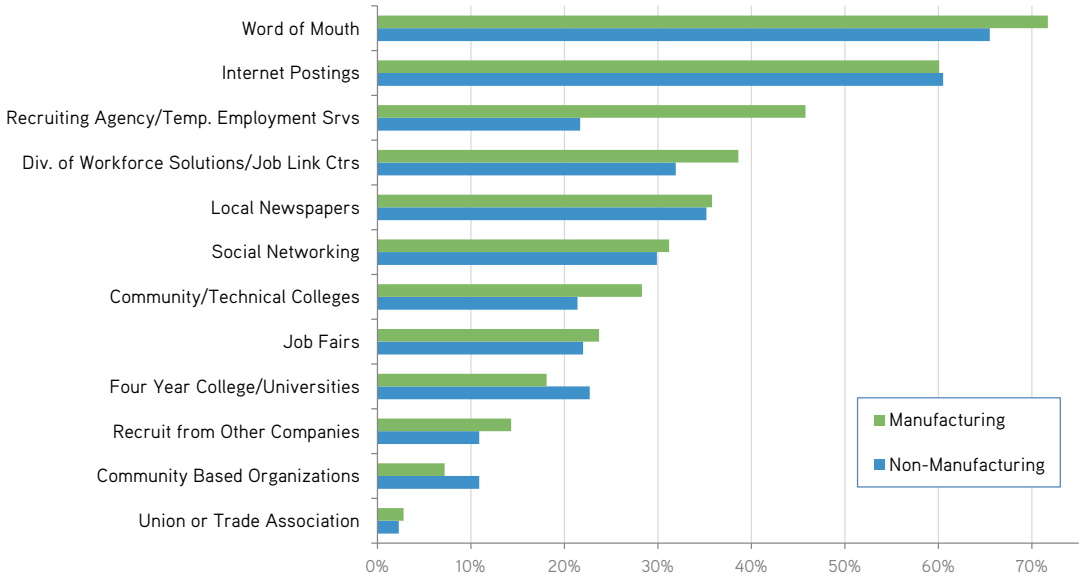
Resources used to meet Skill Needs of Workforce among Manufacturers and Non-Manufacturers



The use of in-house trainers/on-the-job training was by far the most common resource used by employers, about four out of five employers selecting this response. However, little is known about the nature of this training or its effectiveness. For example, some employers may have formalized in-house training systems in place while others may assume existing workers will provide on-the-job training to new workers informally. In general, Non-Manufacturers report higher use of conferences and self-study. Manufacturers report higher usage of community colleges (both degree and non-degree programs) and apprenticeships. However, with the exception of in-house training, all other resources are used with relatively low frequency; suggesting areas of potential underutilization of available resources.

Employers were also asked specifically about which resources they used for recruitment:

Resources used for Recruitment among Manufacturers and Non-Manufacturers



Word of mouth and internet postings were the two most frequently used resources for both groups.[19] Manufacturers' third most frequently reported answer was the use of recruiting agencies/temporary employment services; a significant difference from Non-Manufacturers. Manufacturers were also more likely to use Community/Technical Colleges in recruitment than Non-Manufacturers. These findings suggest that Manufacturers may have more formalized relationships with recruiting/temp agencies and the community college system, or simply that these resources are oriented more explicitly to Manufacturers. However, there may be opportunities for Non-Manufacturers to take greater advantages of the workforce development system.

Another question asked all employers about their overall recruitment and retention practices. Most employers felt they offered competitive wages and working conditions, offered training, promoted career growth and offered additional benefits when possible for both recruitment and retention [Appendix: Table 20]. Non-Manufacturers were more likely to offer flexible work schedules than Manufacturers, perhaps a reflection of nature of production work. Both groups reported low frequencies when asked about reducing the minimum qualifications for job vacancies, one approach some employers use to address hiring difficulties.[20]

Conclusions

Although less than half of North Carolina employers face hiring difficulties, those that do report a critical need to fill positions and grow their businesses. In addition to unrealized potential, hiring difficulties take additional time and effort away from businesses' current efforts. This survey provides a step in defining and quantifying the extent, severity, and responses to hiring difficulties, recognizing that different challenges exist for different industries (and even within the same employer). Many factors contributing to difficulties are out of the control of employers—however, enhanced engagement with education and workforce development partners could help improve the supply of qualified workers who match their needs.

Not all problems identified here are about a lack of skills—work experience and education credentials are also important. Continuous employer, education, and workforce communication could help forecast future labor supply and demand and ensure long-term solutions are not being used to meet current or short-term needs. Additional research can be carried out on a periodic basis to ensure that policymakers have access to data on changing labor market conditions that employers face across the state. There is much more to learn about the needs of North Carolina's employers. This research will serve policymakers as they respond to needs and seek to improve our state.

Finally, it is important to remember that this survey only covers half of the employment equation—the perspectives of jobseekers are equally as vital, and could provide additional insight into the challenges of successfully matching labor supply with demand in the state.

Endnotes

[1]See Barbara Kaviat's "The Big Jobs Myth: American Workers Aren't Ready for American Jobs," in The Atlantic, July 25, 2012, for the history of the "skills gap" debate and its ability to mean many things to many different audiences.
[2]Understanding the Skills Gap, North Carolina Department of Commerce, Labor and Economic Analysis Division, July 26, 2013.
[3]Cf. Faberman, R. Jason and Bhashkar Mazumder, "Is there a skills mismatch in the labor market?," Federal Reserve Bank of Chicago, July 2012 and Rothstein, Jesse, "The Labor Market Four Years Into the Crisis: Assessing Structural Explanations," National Bureau of Economic Research, March 2012.
[4]For example, Deloitte and the Manufacturing Institute reported 67 percent of Manufacturers experiencing difficulties in 2011's "Boiling point? The skills gap in U.S. manufacturing" report. The National Federation of Independent Businesses (NFIB) also conducts a monthly employer confidence survey and often reports the percentage of employers having few or no qualified applicants (43% in June 2014). Manpower International conducts a global talent shortage survey showing 35 percent of global employers having problems. Many of these surveys begin with the assumption that skills gaps exist and tend to structure survey questions in a biased fashion.
[5]Several states, including Minnesota and Oregon, carry out a Job Vacancy Survey which can assist with cross-state comparisons. MIT's 2013 Production in the Innovation Economy (PIE) survey also attempted to specify specific technical skills needed in manufacturing. However, comparing among even carefully designed surveys such as these is difficult as what is being measured varies greatly.
[6]North Carolina Association of Workforce Development Boards, "Closing the Gap: 2012 Skills Survey of North Carolina Employers," 2012.
[7]Greensboro Chamber of Commerce, Greensboro/High Point/Guilford County Workforce Development Board, and Human Resource Management Association of Greensboro, "2012 Greater Greensboro Workforce Development Survey," August 2012.
[8]Boston Consulting Group, "Skills Gap in U.S. Manufacturing Is Less Pervasive Than Many Believe," October 15, 2012.
[9]Minnesota Department of Employment and Economic Development, Labor Market Information Office, "Job Vacancy Survey," Spring 2012.
[10]North Carolina Association of Workforce Development Boards, "Closing the Gap: 2012 Skills Survey of North Carolina Employers," 2012.
[11]This range also matches the 2012 Skills Survey of North Carolina Employers.
[12]Geographic regions created by the state in 2014. See http://www.ncleg.net/Sessions/2013/Bills/House/PDF/H1031v6.pdf.
[13]Response rate calculated based on American Association for Public Opinion Research (AAPOR) standards.
[14]The following discussion of survey findings will focus on those employers which did attempt to hire in the past year, while recognizing that not all employers did try to hire and may have additional needs which this survey does not capture.
[15]For example, the Deloitte and the Manufacturing Institute reported 67% of Manufacturers experiencing difficulties in 2011's "Boiling point? The skills gap in U.S. manufacturing" report.
[16]Difficult to fill positions were listed by respondents and then coded into Standard Occupational Codes (SOC) by the analysts. Occupation groups are classified at the 2-digit SOC code, with the most frequently cited 6-digit occupations within each group listed in descending order.
[17]The high frequency of these reasons suggests a focus area for apprenticeships and a Career and Technical Education (CTE) to provide experience, skills, and credentials.
[18]Economic labor market theory suggests that raising wages when labor is in short supply should increase the supply of workers willing to take those jobs. Practically, this may mean drawing applicants from farther away, enticing higher-skilled applicants to apply or even encouraging applicants to retrain or enter new careers.
[19]The use of application screening software was reported by 21.3 percent of Non-Manufacturers and 18.0 percent of Manufacturers. Some literature has pointed to the use of this type of software as eliminating potentially qualified applicants, see for example Peter Cappelli's Why Good People Can't Get Jobs: The Skills Gap and What Companies Can Do About It, Wharton Digital Press, 2012.
[20]In some cases reducing minimum qualifications is not possible, in other cases employers may overestimate the actual qualifications required to fill a particular vacancy or may simply desire a more skilled worker.

Appendices: Survey Questions and Responses

Table 1 - Number of Establishments by Industry

Industry	# of Establishments	% of Respondents
Agriculture, Forestry, Fishing & Hunting	3	0.7%
Mining	2	0.5%
Utilities	5	1.2%
Construction	25	6.2%
Manufacturing	24	6.0%
Wholesale Trade	19	4.7%
Retail Trade	53	13.2%
Transportation & Warehousing	9	2.2%
Information	8	2.0%
Finance & Insurance	17	4.2%
Real Estate, Rental & Leasing	8	2.0%
Professional & Technical Services	26	6.5%
Management of Companies & Enterprises	1	0.2%
Administrative & Waste Services	9	2.2%
Educational Services	25	6.2%
Health Care & Social Assistance	56	13.9%
Arts, Entertainment & Recreation	4	1.0%
Accommodation & Food Services	47	11.7%
Other Services, Excluding Public Admin	26	6.5%
Public Administration	36	8.9%

Total General Sample of All Industries = 403

Approximately how many positions has your establishment tried to fill in the past 12 months?

Table 2 - Hiring in Past 12 Months

Sample Type	Hiring in the past 12 Months	# of Establishments	% of Respondents
General Sample of All Industries			
	Tried to hire in past 12 months	353	88.5%
	Did not attempt to hire in past 12 months	46	11.5%
	(Hired last year missing data)	4	
Manufacturing Sample			
	Tried to hire in past 12 months	342	86.8%
	Did not attempt to hire in past 12 months	52	13.2%
	(Hired last year missing data)	3	

Over the past 12 months, has your organization had difficulty filling any positions?

Table 3 – Hiring Difficulties in Past 12 Months

Sample Type	Establishments Attempted to Hire in Past 12 Months	# of Establishments	% of Respondents
General Sample of All Industries			
	Did not report hiring difficulty	199	56.4%
	Reported hiring difficulty for at least one position	154	43.6%
Manufacturing Sample			
	Did not report hiring difficulty	187	54.7%
	Reported hiring difficulty for at least one position	155	45.3%

Table 4 - Hiring Difficulties by Industry, General Sample of All Industries

Industry	# of Establishments with Hiring Difficulties	# of Establishments	% of Establishments with Hiring Difficulties
Agriculture, Forestry, Fishing & Hunting	2	3	66.7%
Mining	2	2	100.0%
Utilities	3	5	60.0%
Construction	13	22	59.1%
Manufacturing	9	21	42.9%
Wholesale Trade	7	16	43.8%
Retail Trade	15	45	33.3%
Transportation & Warehousing	4	8	50.0%
Information	4	7	57.1%
Finance & Insurance	4	15	26.7%
Real Estate, Rental & Leasing	3	6	50.0%
Professional & Technical Services	9	22	40.9%
Management of Companies & Enterprises	1	1	100.0%
Administrative & Waste Services	5	8	62.5%
Educational Services	15	24	62.5%
Health Care & Social Assistance	24	45	53.3%
Arts, Entertainment & Recreation	3	4	75.0%
Accommodation & Food Services	16	45	35.6%
Other Services, Excluding Public Admin	8	23	34.8%
Public Administration	7	31	22.6%
Total	**154**	**353**	**43.6%**

Table 5 - Hiring Difficulties by Industry, Manufacturing

Industry	# of Establishments with Hiring Difficulties	# of Establishments	% of Establishments with Hiring Difficulties
Food	5	17	29.4%
Beverage & Tobacco Product	2	7	28.6%
Textile Mills	2	11	18.2%
Textile Product Mills	2	5	40.0%
Apparel	5	14	35.7%
Leather & Allied Product	1	1	100.0%
Wood Product	4	8	50.0%
Paper	3	12	25.0%
Printing & Related Support Activities	4	13	30.8%
Petroleum & Coal Products	1	1	100.0%
Chemical	13	22	59.1%
Plastics & Rubber Products	13	20	65.0%
Nonmetallic Mineral Product	10	18	55.6%
Primary Metal	5	7	71.4%
Fabricated Metal Product	26	50	52.0%
Machinery	26	48	54.2%
Computer & Electronic Product	4	10	40.0%
Electrical Equipment, Appliance & Component	6	10	60.0%
Transportation Equipment	4	10	40.0%
Furniture & Related Product	10	23	43.5%
Miscellaneous	9	35	25.7%
Total	**155**	**342**	**45.3%**

Which positions have you encountered difficulty filling? (If the title is not known, provide 1-3 words describing the job function). Number of vacancies for difficult-to-fill positions.

Table 6 - Hiring Difficulties by Major Occupational Group, General Sample of All Industries

Major Occupational Group	# of Listed Occupations
Sales & Related Occupations	32
Healthcare Practitioners & Technical Occupations	30
Education, Training & Library Occupations	28
Office & Administrative Support Occupations	27
Transportation & Material Moving Occupations	26
Installation, Maintenance & Repair Occupations	25
Food Preparation & Serving Related Occupations	23
Management Occupations	22
Production Occupations	18
Architecture & Engineering Occupations	18
Business & Financial Operations Occupations	10
Community & Social Service Occupations	9
Computer & Mathematical Occupations	8
Construction & Extraction Occupations	8
Healthcare Support Occupations	7
Building & Grounds Cleaning & Maintenance Occupations	7
Life, Physical & Social Science Occupations	6
Arts, Design, Entertainment, Sports & Media Occupations	4
Protective Service Occupations	3
Personal Care & Service Occupations	3

Table 7 - Hiring Difficulties by Detailed Occupational Group, General Sample of All Industries

Detailed Occupational Group	# of Listed Occupations
Sales Representatives, Wholesale & Manufacturing, Exc. Technical & Scientific Products	12
Registered Nurses	8
Secondary School Teachers, Exc. Special & Career/Technical Education	7
Cashiers	7
Maintenance & Repair Workers, General	7
Managers, All Other	6
Engineers, All Other	6
Retail Salespersons	6
Receptionists & Information Clerks	6
Preschool Teachers, Exc. Special Education	5
First-Line Supervisors of Food Preparation & Serving Workers	5
Customer Service Representatives	5
Laborers and Freight, Stock, and Material Movers, Hand	5

Table 8 - Hiring Difficulties by Major Occupational Group, Manufacturing

Major Occupational Group	# of Listed Occupations
Production Occupations	132
Architecture & Engineering Occupations	49
Installation, Maintenance & Repair Occupations	32
Management Occupations	26
Office & Administrative Support Occupations	20
Transportation & Material Moving Occupations	10
Life, Physical & Social Science Occupations	7
Computer & Mathematical Occupations	6
Business & Financial Operations Occupations	6
Arts, Design, Entertainment, Sports & Media Occupations	6
Sales & Related Occupations	6
Construction & Extraction Occupations	5
Healthcare Practitioners & Technical Occupations	2

Table 9 - Hiring Difficulties by Detailed Occupational Group, Manufacturing

Detailed Occupational Group	# of Listed Occupations
Machinists	20
Maintenance & Repair Workers, General	17
Industrial Production Managers	12
Engineers, All Other	12
Welders, Cutters, Solderers & Brazers	12
First-Line Supervisors of Production & Operating Workers	10
Production Workers, All Other	10
Multiple Machine Tool Setters, Operators & Tenders, Metal and Plastic	9
Industrial Engineers	8
Electrical & Electronic Engineering Technicians	7
Molding, Coremaking & Casting Machine Setters, Operators & Tenders, Metal & Plastic	7

Table 10 - Reasons Reported for Hiring Difficulties

Reason	All Industries		Manufacturing	
	# of Establishments	% of Establishments	# of Establishments	% of Establishments
Applicants Lack Relevant Work Experience	66	44.3%	74	50.3%
Applicants Lack Education Credentials	62	41.6%	77	52.4%
Applicants Lack Technical or Occupational Skills	61	40.9%	103	70.1%
Low Number of Applicants	51	34.2%	50	34.0%
Applicants Lack Soft Skills	38	25.5%	31	21.1%
Applicants Unwilling to Accept Offered Wages	37	24.8%	34	23.1%
Applicants Have Criminal Record	24	16.1%	26	17.7%
Commuting Distance	20	13.4%	17	11.6%
Applicants Have Difficulty Passing Drug Test	15	10.1%	21	14.3%
Applicants Unwilling to Accept Work Conditions	14	9.4%	10	6.8%

General Sample of All Industries (n=149); Manufacturing Sample (n=147)

Which technical skills were lacking in your job candidates? Mark all that apply.

Table 11 – Detailed Technical Skills Lacking

Technical Skill Missing	Non-Manufacturing		Manufacturing	
	# of Establishments	% of Establishments	# of Establishments	% of Establishments
Accounting	5	3.5%	2	1.4%
Blueprint Reading	0	0.0%	26	17.7%
Computer Aided Drafting & Design	1	0.7%	10	6.8%
Computer Operation	14	9.9%	11	7.5%
Computer Programming	3	2.1%	8	5.4%
Customer Service	18	12.8%	4	2.7%
Fork Lift Operation	1	0.7%	6	4.1%
General Maintenance	7	5.0%	17	11.6%
Integrated Systems Technology	1	0.7%	9	6.1%
Lean/Six Sigma/Process Improvement	2	1.4%	11	7.5%
Machining	3	2.1%	39	26.5%
Office Machine Skills	7	5.0%	0	0.0%
Project Management	6	4.3%	13	8.8%
Welding	1	0.7%	16	10.9%
Mix of Technical Skills	18	12.8%	62	42.2%

Non-Manufacturing Sample (n=141); Manufacturing Sample (n=147)

Which occupation-related skills were lacking in your job candidates? Mark all that apply.

Table 12 – Detailed Occupational Skills Lacking

Occupational Skill Lacking	Non-Manufacturing		Manufacturing	
	# of Establishments	% of Establishments	# of Establishments	% of Establishments
A/C, Heating & Refrigeration	4	2.8%	4	2.7%
Business/Accounting	10	7.1%	4	2.7%
Chemical/Biotech	2	1.4%	8	5.4%
Civil Engineering/Surveying	1	0.7%	0	0.0%
Electrical/Electronics	4	2.8%	31	21.1%
Engineering Technologies	3	2.1%	28	19.0%
Environmental/Hazmat	3	2.1%	2	1.4%
Graphic Arts & Imaging	4	2.8%	5	3.4%
Health Information & Medical Records	7	5.0%	1	0.7%
Mechanical Engineering	4	2.8%	24	16.3%
Medical Assisting	3	2.1%	0	0.0%
Medical Laboratory Testing	2	1.4%	0	0.0%
Nursing	8	5.7%	0	0.0%
Paralegal	2	1.4%	0	0.0%
Physical Therapy	0	0.0%	0	0.0%
Skilled Trades (Electrician, Plumber, Pipe Fitter, etc)	16	11.3%	33	22.4%

Non-Manufacturing Sample (n=141); Manufacturing Sample (n=147)

Which "soft skills" were lacking in your job candidates? Mark all that apply.

Table 13 – Detailed Soft Skills Lacking

Soft Skill Lacking	Non-Manufacturing		Manufacturing	
	# of Establishments	% of Establishments	# of Establishments	% of Establishments
Attendance Record/Dependability	31	22.0%	39	26.5%
Communication Skills	55	39.0%	31	21.1%
Critical & Analytical Thinking or Problem Solving	26	18.4%	45	30.6%
Customer Service	28	19.9%	10	6.8%
Enthusiasm	40	28.4%	31	21.1%
Interpersonal Skills	33	23.4%	15	10.2%
Leadership/Managerial Potential	22	15.6%	27	18.4%
Reading & Using Information	12	8.5%	23	15.6%
Teamwork	18	12.8%	18	12.2%
Writing	19	13.5%	10	6.8%

Non-Manufacturing Sample (n=141); Manufacturing Sample (n=147)

When you had difficulty finding qualified applicants, how did your establishment respond? Mark all that apply.

Table 14 – How Establishments Responded to Hiring Difficulties

Response	Non-Manufacturing		Manufacturing	
	# of Establishments	% of Establishments	# of Establishments	% of Establishments
Increased recruiting efforts within the region	57	40.4%	54	36.7%
Overtime for existing skilled workers	44	31.2%	78	53.1%
Did not fill the job opening	40	28.4%	58	39.5%
Targeted recruiting to fill identified gaps	36	25.5%	43	29.3%
Recruited from outside the region	34	24.1%	46	31.3%
Hired a less qualified applicant	31	22.0%	57	38.8%
Used temporary labor or outsourced work	25	17.7%	44	29.9%
Increased pay/comp. to attract more applicants	15	10.6%	24	16.3%
Targeted internal training programs	14	9.9%	27	18.4%
Incentives to retain skilled workers	9	6.4%	11	7.5%
External skills training	7	5.0%	11	7.5%
Moved some operations out of region	1	0.7%	3	2.0%

Non-Manufacturing Sample (n=141); Manufacturing Sample (n=147)

On a scale of 1-9 (1 being "not important" and 9 being "absolutely critical to our survival/ growth"), how important is it to your establishment to fill these difficult-to-fill positions?

Table 15 – Critical Nature of Difficulty in Hiring

Measure	Non-Manufacturing	Manufacturing
Mean	7.47	7.85
Median	8	8
% of Establishments with '9'	36.3%	40.9%

Non-Manufacturing Sample (n=135); Manufacturing Sample (n=142)

What was the average length of time it took your establishment to fill positions (in months) ?

Table 16 – Length of Time to Fill

Measure	Non-Manufacturing	Manufacturing
	Months	Months
Mean Time to Hire Difficult-to-Fill Positions	4.3	5.4
Median Time to Hire Difficult-to-Fill Positions	3.0	4.0
Non-Manufacturing Sample (n=134); Manufacturing Sample (n=141)		
Mean Time to Hire Easy-to-Fill Positions	1.4	1.7
Median Time to Hire Easy-to-Fill Positions	1.0	1.0
Non-Manufacturing Sample (n=304); Manufacturing Sample (n=310)		

How does your establishment meet the skill needs of your workforce? Mark all resources that apply.

Table 17 – Meeting Skill Needs

Method of Meeting Skill Needs	Non-Manufacturing		Manufacturing	
	# of Establishments	% of Establishments	# of Establishments	% of Establishments
In-House Trainers/On-the-Job Training	244	81.3%	245	78.0%
Seminars or Conferences	92	30.7%	70	22.3%
Self-Study or Online Training	80	26.7%	60	19.1%
Four-Year Colleges and Universities	68	22.7%	61	19.4%
Community College Degree Programs	66	22.0%	92	29.3%
Private vendor training	54	18.0%	61	19.4%
DWS and Job Link Centers	52	17.3%	62	19.7%
Community College Non-Degree Programs	47	15.7%	69	22.0%
Apprenticeship Program	21	7.0%	39	12.4%
Workforce Development Board	12	4.0%	24	7.6%
NC Department of Labor	7	2.3%	11	3.5%

Non-Manufacturing Sample (n=300); Manufacturing Sample (n=314)

What resources has your establishment used in recruiting efforts? Mark all that apply.

Table 18 – Resources Used for Recruitment Efforts

Type of Resources	Non-Manufacturing		Manufacturing	
	# of Establishments	% of Establishments	# of Establishments	% of Establishments
Word of mouth	199	65.5%	230	71.7%
Internet, electronic job boards & NCWorks online	184	60.5%	193	60.1%
Local Newspapers	107	35.2%	115	35.8%
DWS & Job Link Centers	97	31.9%	124	38.6%
Social networking	91	29.9%	100	31.2%
Four-year colleges & universities	69	22.7%	58	18.1%
Job fairs	67	22.0%	76	23.7%
Recruiting agency/temporary employment services	66	21.7%	147	45.8%
Community/technical colleges	65	21.4%	91	28.3%
Recruit from other companies	33	10.9%	46	14.3%
Community based organizations	33	10.9%	23	7.2%
Unions or trade associations	7	2.3%	9	2.8%

Non-Manufacturing Sample (n=304); Manufacturing Sample (n=321)

Does your establishment use application screening software?

Table 19 – Establishments Use of Screening Software

Response	Non-Manufacturing		Manufacturing	
	# of Establishments	% of Establishments	# of Establishments	% of Establishments
No	223	70.8%	260	79.5%
Yes	67	21.3%	59	18.0%
Don't Know	25	7.9%	8	2.4%

How does your establishment recruit or retain employees? Mark all that apply.

Table 20 – Methods of Recruiting Employees

Response	Recruitment			
	Non-Manufacturing		Manufacturing	
	# of Establishments	% of Establishments	# of Establishments	% of Establishments
Offer competitive pay/compensation	213	71.0%	253	80.3%
Offer training	199	66.3%	220	69.8%
Offer good working conditions	223	74.3%	258	81.9%
Offer flexible work schedules	148	49.3%	100	31.7%
Offer additional benefits	150	50.0%	185	58.7%
Reduce minimum qualifications for vacancies	35	11.7%	39	12.4%
Promote career growth opportunities	165	55.0%	177	56.2%

Non-Manufacturing Sample (n=300); Manufacturing Sample (n=315)

Table 21 – Methods of Retaining Employees

Response	Retention			
	Non-Manufacturing		Manufacturing	
	# of Establishments	% of Establishments	# of Establishments	% of Establishments
Offer competitive pay/compensation	214	71.3%	268	85.1%
Offer training	210	70.0%	243	77.1%
Offer good working conditions	224	74.7%	266	84.4%
Offer flexible work schedules	159	53.0%	118	37.5%
Offer additional benefits	163	54.3%	204	64.8%
Reduce minimum qualifications for vacancies	16	5.3%	25	7.9%
Promote career growth opportunities	187	62.3%	210	66.7%

Non-Manufacturing Sample (n=300); Manufacturing Sample (n=315)

Table 22 - Organizational Size for Establishments that Hired in Last 12 Months

Organizational Size	Non-Manufacturing		Manufacturing	
	# of Establishments	% of Establishments	# of Establishments	% of Establishments
10-19	146	44.0%	100	29.2%
20-49	97	29.2%	83	24.3%
50-99	44	13.3%	67	19.6%
100-249	38	11.4%	58	17.0%
250-499	7	2.1%	34	9.9%

Non-Manufacturing Sample (n=332); Manufacturing Sample (n=342)
Organizational Size is based on Infogroup Business Data