



2017 Central Texas Manufacturing Workforce Study

Final Report

DECEMBER 2017



This study was commissioned by the Austin Regional Manufacturers Association. ARMA is a membership driven organization dedicated to strengthening area manufacturing. We support a thriving, unique industry through advocacy, workforce development, and networking. Our goals are to:

- Ensure that city officials and policy makers understand what's important for manufacturers to thrive.
- Promote manufacturing in schools and in the community.
- Examine the workforce with the aim to ensure that companies get great applicants, that employed workers have the opportunity for professional development, and that in the next ten to fifteen years, that the labor pool will have the skills necessary to support growth in industry.
- Host events that provide relevant information on key issues affecting business and create forums to build relationships across companies and industries.

To learn more, visit our website at arma-tx.org.

This study was conducted by the Ray Marshall Center for the Study of Human Resources at the Lyndon B. Johnson School of Public Affairs at the University of Texas at Austin.

The Ray Marshall Center identifies and fosters creative solutions to challenging education, workforce, and social problems through applied research, policy analysis, and innovative program design.

This study was authored by the Center's Director, Dr. Heath Prince, and Visiting Researcher Sarah Oldmixon. Additional research support was provided by Chance Nettles and Charles Demakis.

To learn more about the Center, visit raymarshallcenter.org.

Additional support for this survey was provided by:





CONTEXT: THE CENTRAL TEXAS LABOR MARKET

Demand for Central Texas manufacturing talent is expected to continue to grow over the next ten years, albeit at a slower rate than the overall Central Texas labor force.

The overall annual wages for manufacturing are above average for the MSA (see right). However, the average hourly wages for production jobs (\$16.94) are below the overall average hourly wage (\$24.44) for the MSA. They are above the hourly wages for Food Service (\$11.56), Property Maintenance (\$12.45) and Transportation (\$15.73) jobs, but below Office & Administrative Support (\$18.32), Construction (\$19.30), and Installation (\$20.46) jobs.

Hourly Wage Data: May 2017 News Release #17-662-DAL, BLS Southwest Information Office; JobsEQ data courtesy of Workforce Solutions Capital Area

Austin-Round Rock MSA: JobsEQ Highlights as of Q2 2017	Manufacturing	All Jobs
Employment	57,646	1,042,518
Average Annual Wages	\$93,110	\$57,199
Total Change Over the Last 5 Years	5,463	180,399
Average Annual % Change in Employment (Q2 2012-Q2 2017)	2.0%	3.9%
10 Year Forecasts		
Total Approximate Replacement Demand	13,956	281,756
Total Growth Demand	5,302	259,127
TOTAL	19,258	540,883
Average Annual Growth Percentage	0.9%	2.2%



PROFILE: 2017 STUDY PARTICIPANTS

Overview

The 2017 Central Texas Manufacturing Workforce Study consisted of two components:

- An online survey available to the public from June 12, 2017 through September 22, 2017, which generated a total of 156 responses. The survey captured a wide range of perspectives from companies throughout the region.
- A small focus group attended by eight senior representatives of regional manufacturing firms, including three females, five males, five individuals who identified as White/Anglo; one African American; one Latina; and one bi-racial participant. The focus group provided an opportunity for the research team to dive more deeply into some of the topics that stood out in the survey responses.

Survey Participants Represented Companies Throughout Central Texas

Respondents reported they operate facilities located in:

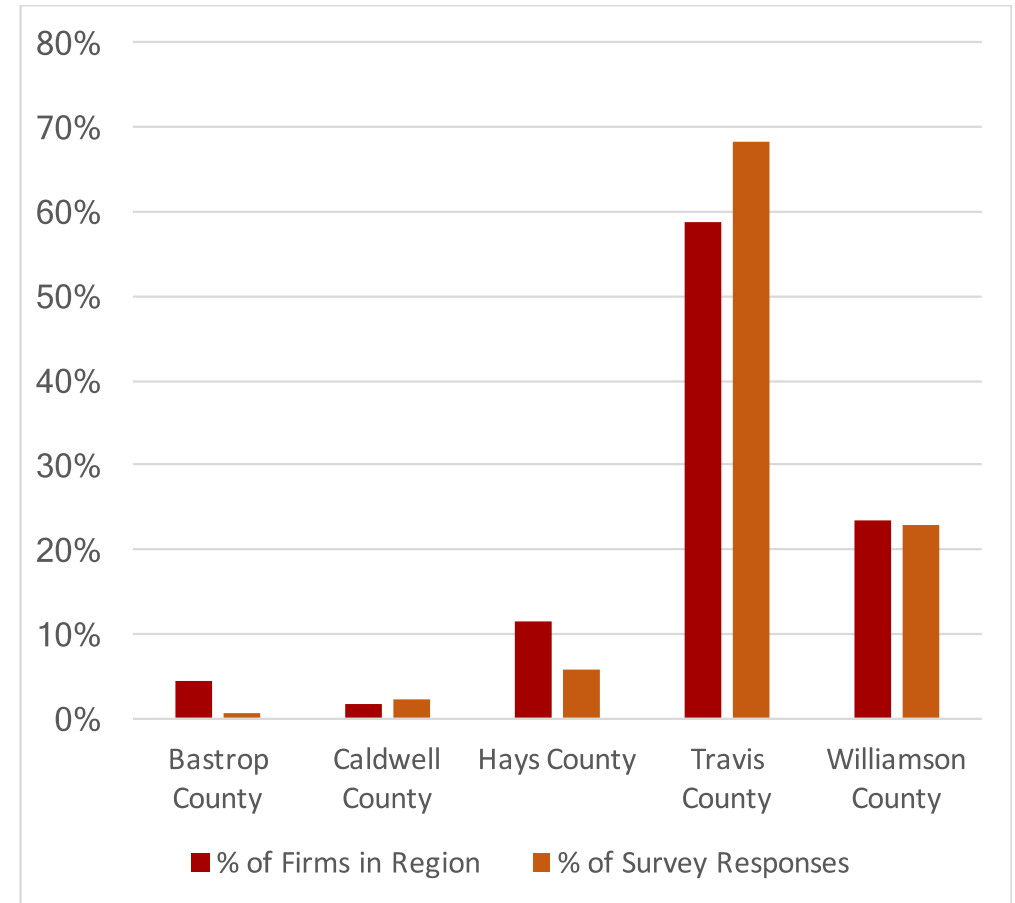
- Travis County - 68 percent (92)
- Williamson County – 23 percent (31)
- Hays County – 6 percent (8)
- Caldwell County – 2 percent (3)
- Bastrop County – 1 percent (1)

Overall, the distribution of responses generally aligns with regional distribution of manufacturing firms. Based on 2015 County Business Patterns data from the US Census Bureau:

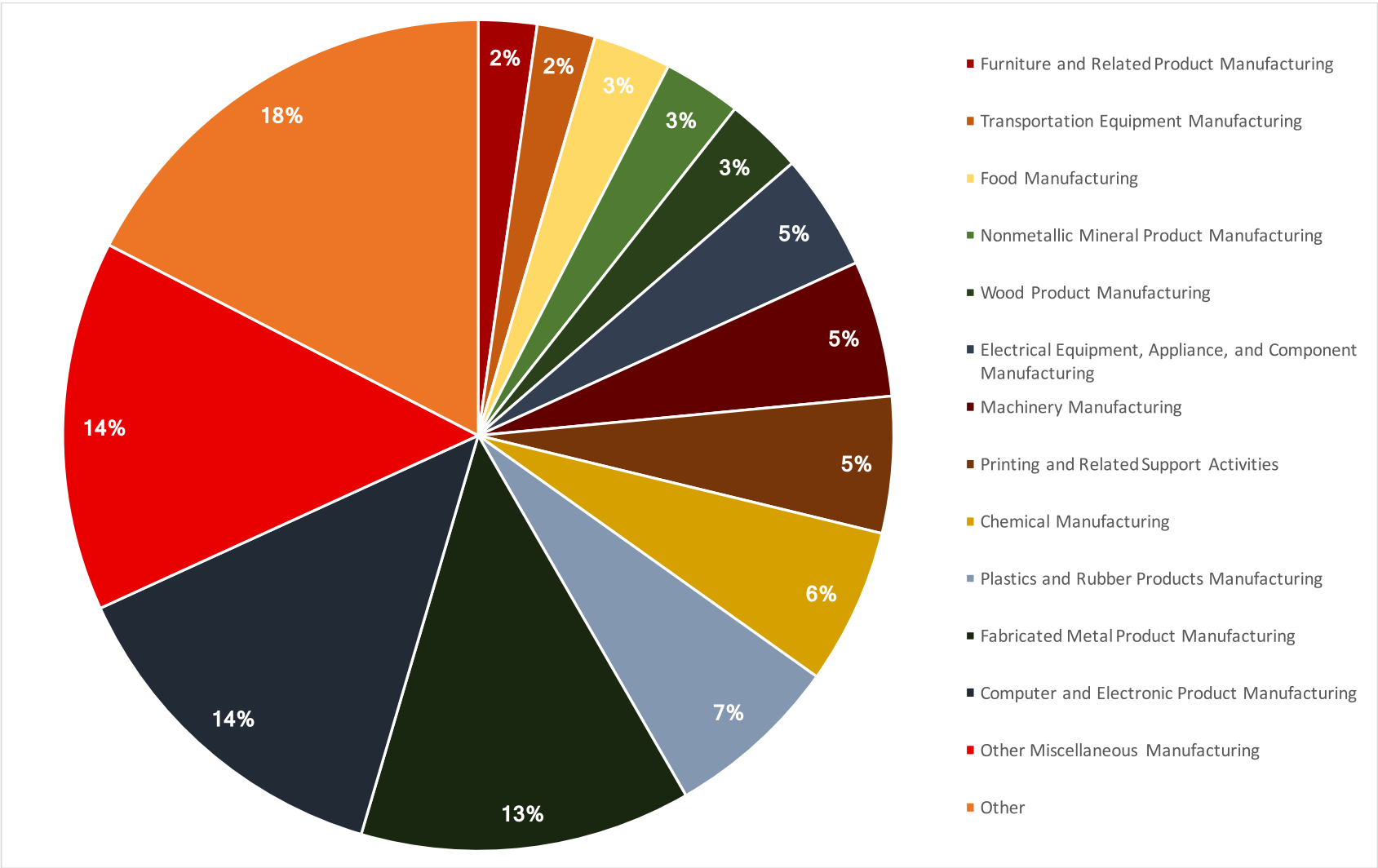
- Bastrop and Hays County were somewhat underrepresented in the sample
- Travis was somewhat overrepresented

Ten companies reported they had facilities located in more than one Central Texas county.

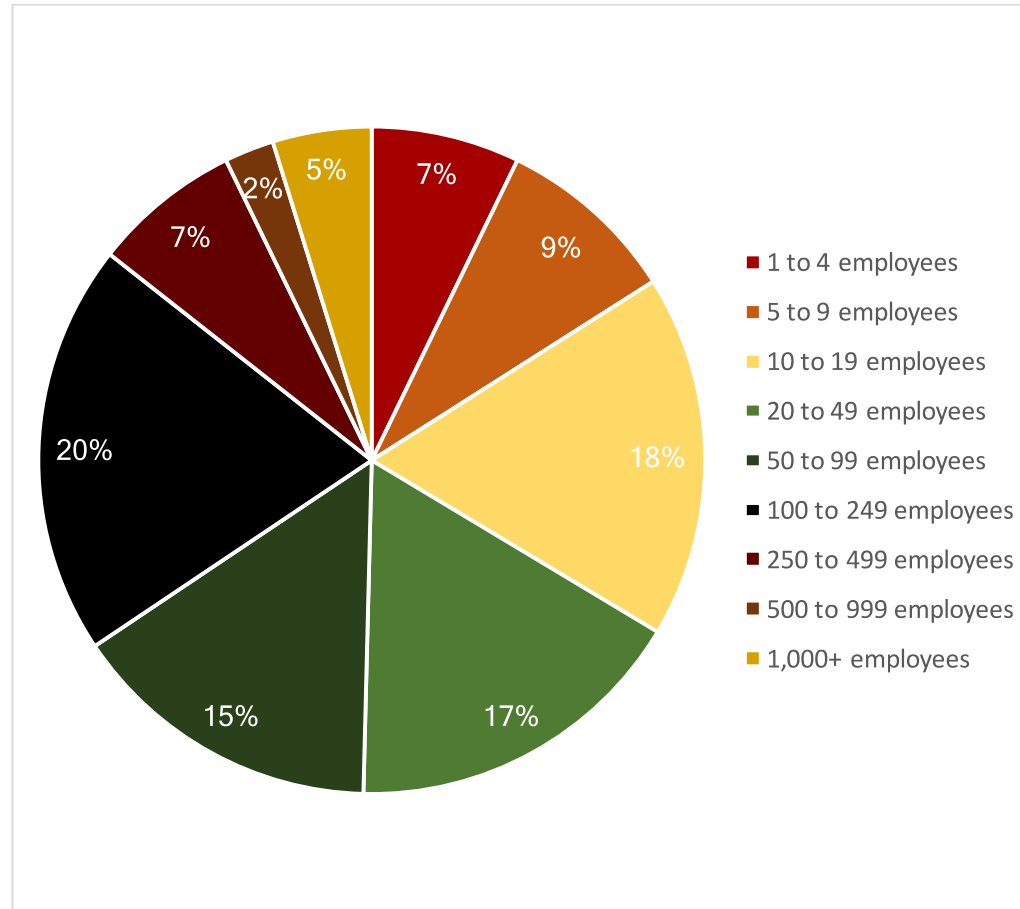
76 companies (58 percent) reported facilities within the City of Austin



The diversity of the Central Texas manufacturing sector can be seen in the range of sub-sectors whose representatives participated in the survey.



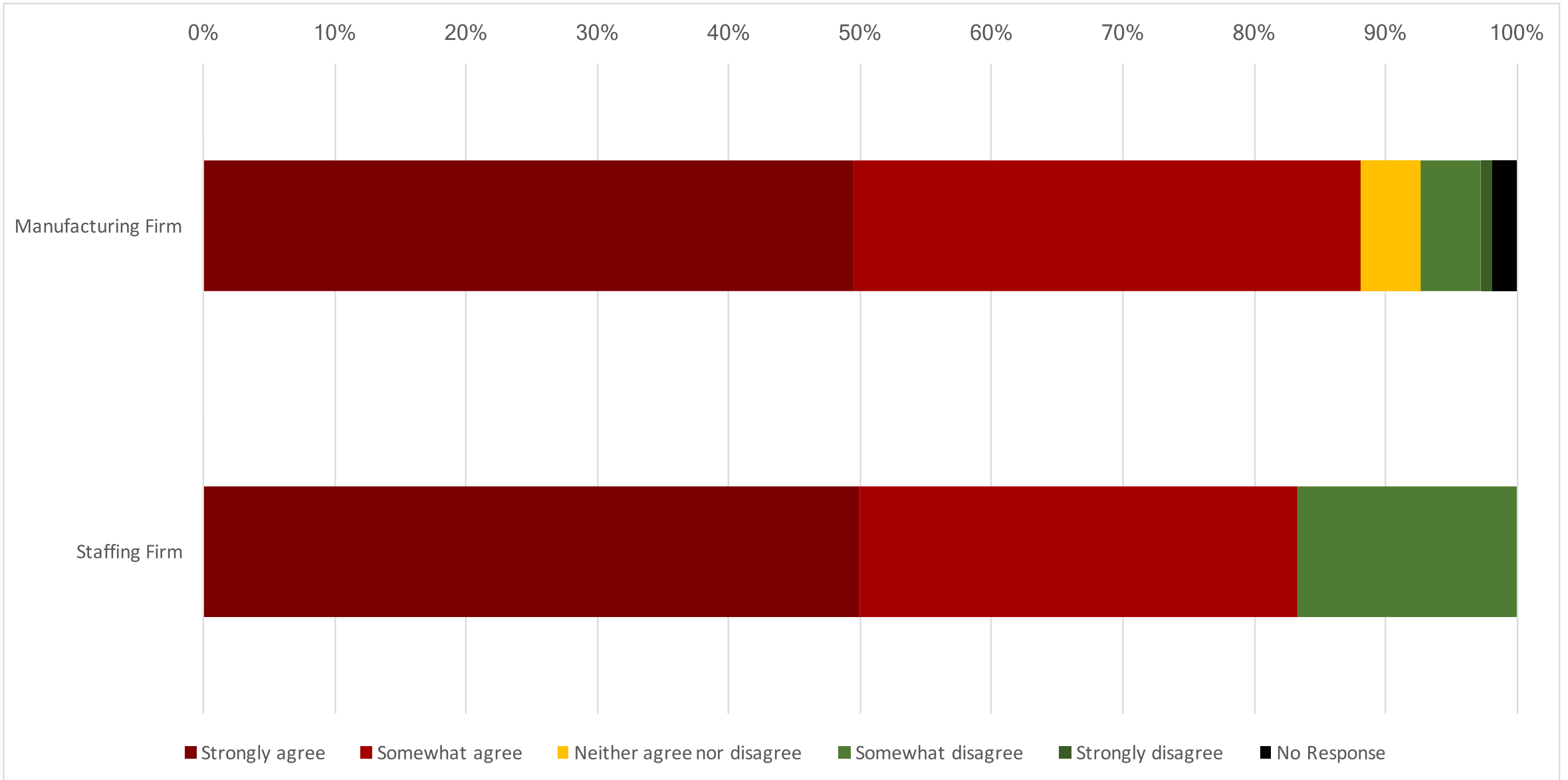
The Survey Captured Information from Central Texas Manufacturing Companies of All Sizes



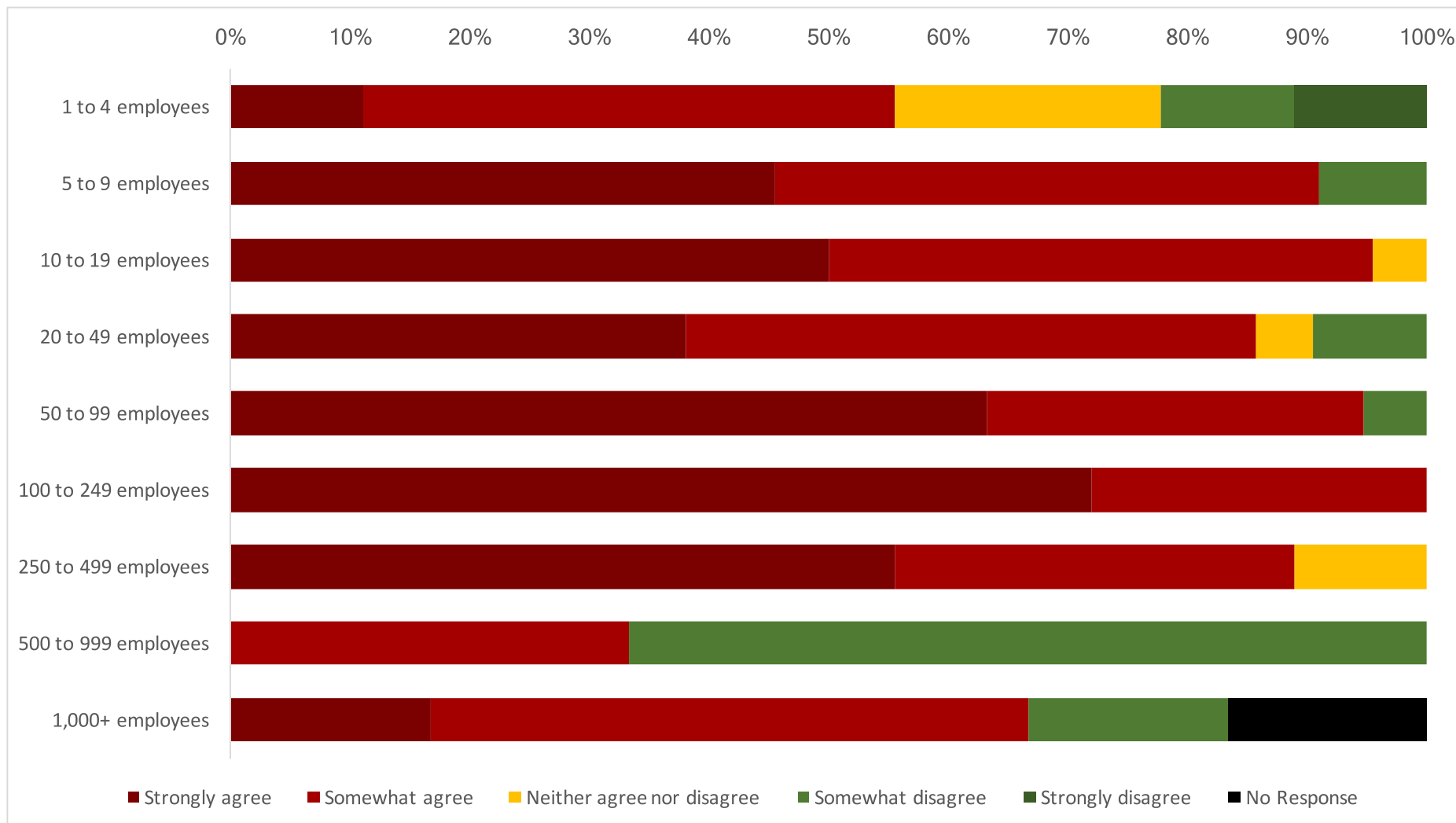


KEY FINDINGS: RECRUITMENT

A clear majority (88%) of respondents agreed that
“Recruiting qualified workers has been a challenge for our company.”



The Smallest and Largest Firms Were More Likely to Report Fewer Challenges



Common Recruitment Challenges

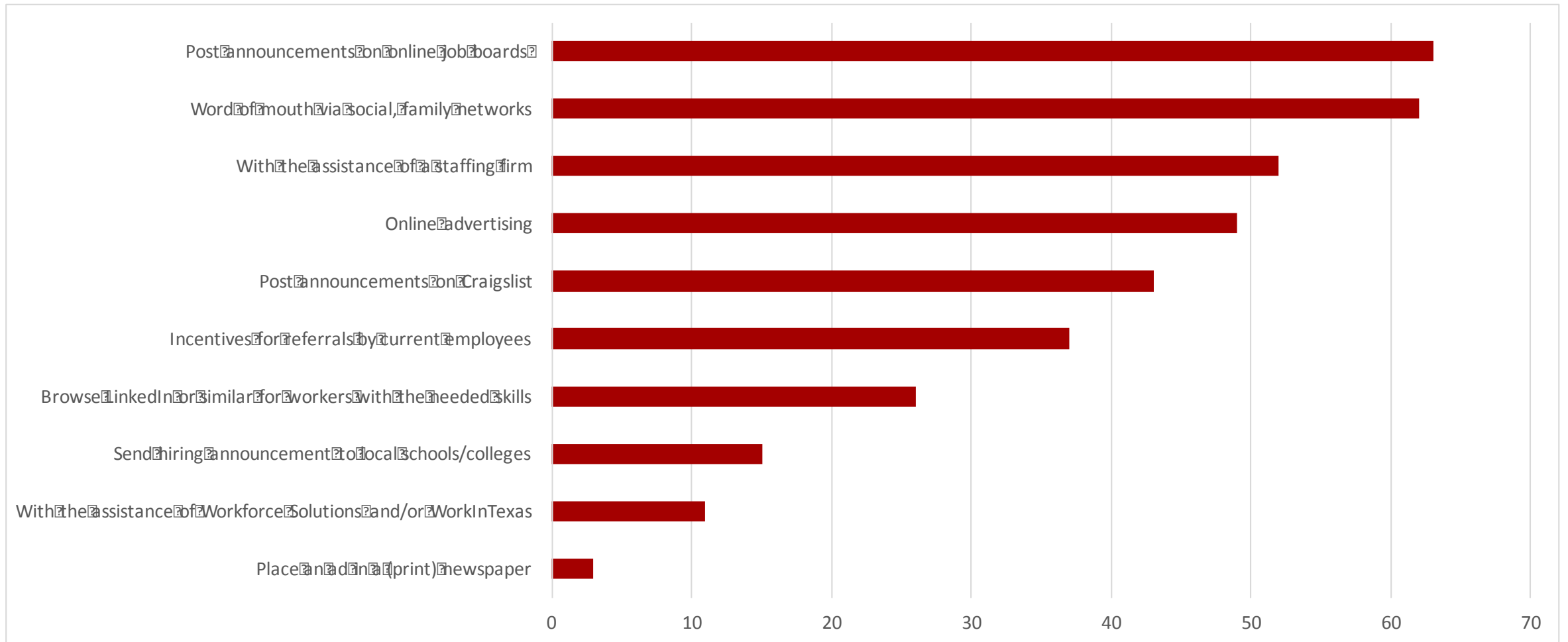
WORKFORCE CHALLENGES

- Availability of Qualified Workers, Particularly Entry-Level Talent
- Not Enough Relevant Training Programs/Relevant Training Slots Available
- Low Unemployment/Tight Job Market/Competition for Workers
- Workers Find Work Hours/Location/Conditions Unappealing
- Must Recruit Outside Central Texas for Needed Skills
- Cannot Find Versatile Employees
- Candidate Awareness of Manufacturing Jobs
- Cultural Fit of Candidates
- Competition from Oil and Gas
- Seasonal/Intermittent Demand
- Stigma of Manufacturing Careers
- Satisfying Background Check/Drug Test Requirements
- Awareness of Job Requirements
- Generational differences (Millennials)

COMPANY CHALLENGES

- Vetting candidates efficiently/effectively
- Workforce planning
- Managing growth
- Finding the right balance of seasonal contract/permanent labor
- Finding time/bandwidth to address workforce issues
- Developing accurate job descriptions
- Identifying appropriate recruitment incentives
- Expense of recruiting
- Time to recruit
- Developing accurate job descriptions
- Identifying Appropriate Recruitment Incentives

Central Texas Manufacturing Companies Use Both Technology-Based and Traditional Recruiting Strategies...



...But Still Struggle to Find Effective Strategies

It can be difficult to identify productive technologies:

- *“I think the frontline production employees probably aren’t on LinkedIn.”*
- *“Our challenge with those sites is that, you know, we’ll put ten requirements on it and then get 300 applicants – the last position I posted, we had like 300 applicants – zero answered yes to all the questions. They still get paid. I didn’t get a single applicant out of \$500 but people are applying for a position that they just have no qualifications for at all.”*

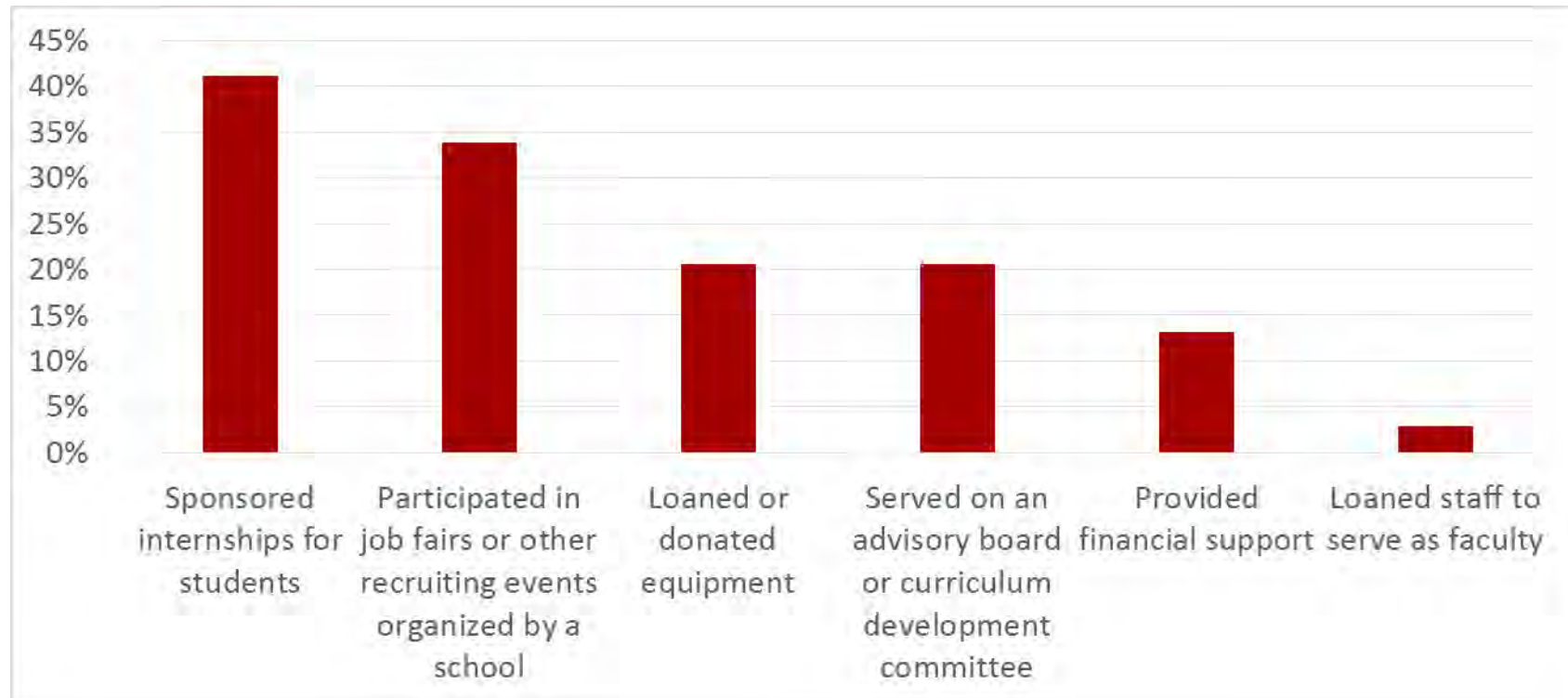
Many companies have limited or no HR capacity:

- *“I worked for much larger companies – Fortune 500 companies – and they had HR staffs at the same size of our whole operation at 50 people and if you needed a job description and a spec and a resource pool and all that, it was provided. I find myself going to salary.com and Indeed and all these things and trying to piece that together myself because we don’t have a dedicated HR person.”*

While many companies valued the opportunity to try out new workers via temp-to-hire arrangements, several also expressed concerns about the work-readiness and motivation of some temporary workers:

- *“They’re not necessarily looking for a full-time job. They’re looking for...that job at that minute that will get me a check next week. Maybe I’ll come back, maybe I won’t come back. Which is why we normally wait a longer time before we make them full-time hired employees.”*
- *“We’re transitioning from temp-to-hire to direct-hire and finding that we’re going to have to do that more often, because what we’re seeing is that [good people] are not going to leave full-time jobs for a temp position.”*
- *“They don’t really want to work when they get there. They’re just there for this assignment. And then when you run them off, the temp service puts them in another door and they’ll stay until they get ran off there. So this contract labor is a revolving cycle of not really productive resources is what I’m seeing.”*

Many Central Texas Manufacturing Businesses are Partnering with Education and Training Providers Like Austin Community College, The University of Texas at Austin, and Local K12 Districts to Develop Talent...



Other examples cited included Job Shadowing, Coaching, Mentoring, Facility Tours, and Teacher Externships

This was a successful recruiting strategy for several businesses, but not without challenges

COMMONLY CITED CHALLENGES

- Program Graduates Don't Have Enough Skills or Experience
- Partnering with Schools is Challenging
- Training Takes Too Much Time
- Training is Too Expensive
- Training Does Not Address Needs of Small/Mid-Sized Companies
- Worker Retention Issues Post Training
- Inconsistent Quality

THE ADVANTAGES OF EDUCATIONAL PARTNERSHIPS

"In working with these schools, we were able to build relationships that helped to develop training curriculum and have a pool of potential future hires."

"[Student] Candidates are typically motivated and on a career track!"

"Built great relationships where [education partners] consistently send me candidates who are looking for work."

“The reality of where we’re going to have to go if we can’t fix this is to become less people dependent and to invest in capital and to have fewer people that are manual laborers and to have people that can program and operate and maintain equipment. And we’re not going to have as many bodies. We’re going to have less people and higher capital costs.”



KEY FINDINGS: TURNOVER & RETENTION

Highlights

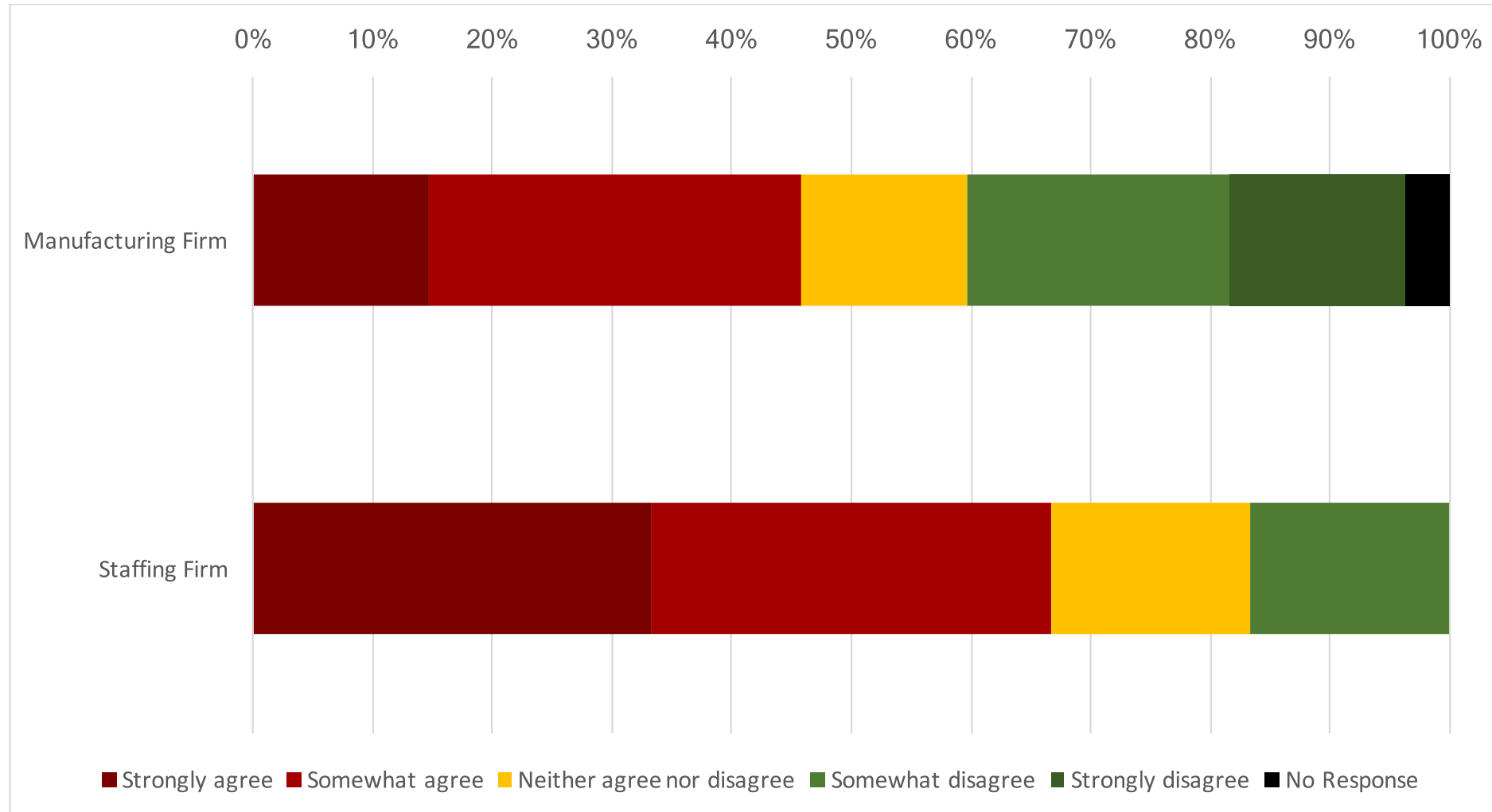
46 percent of manufacturers and 67 percent of staffing firms reported that retaining workers has been a challenge for their company

Somewhat contrary to national trends, companies were mixed on whether retirements are a key turnover challenge, with only 50 percent of manufacturing companies agreeing

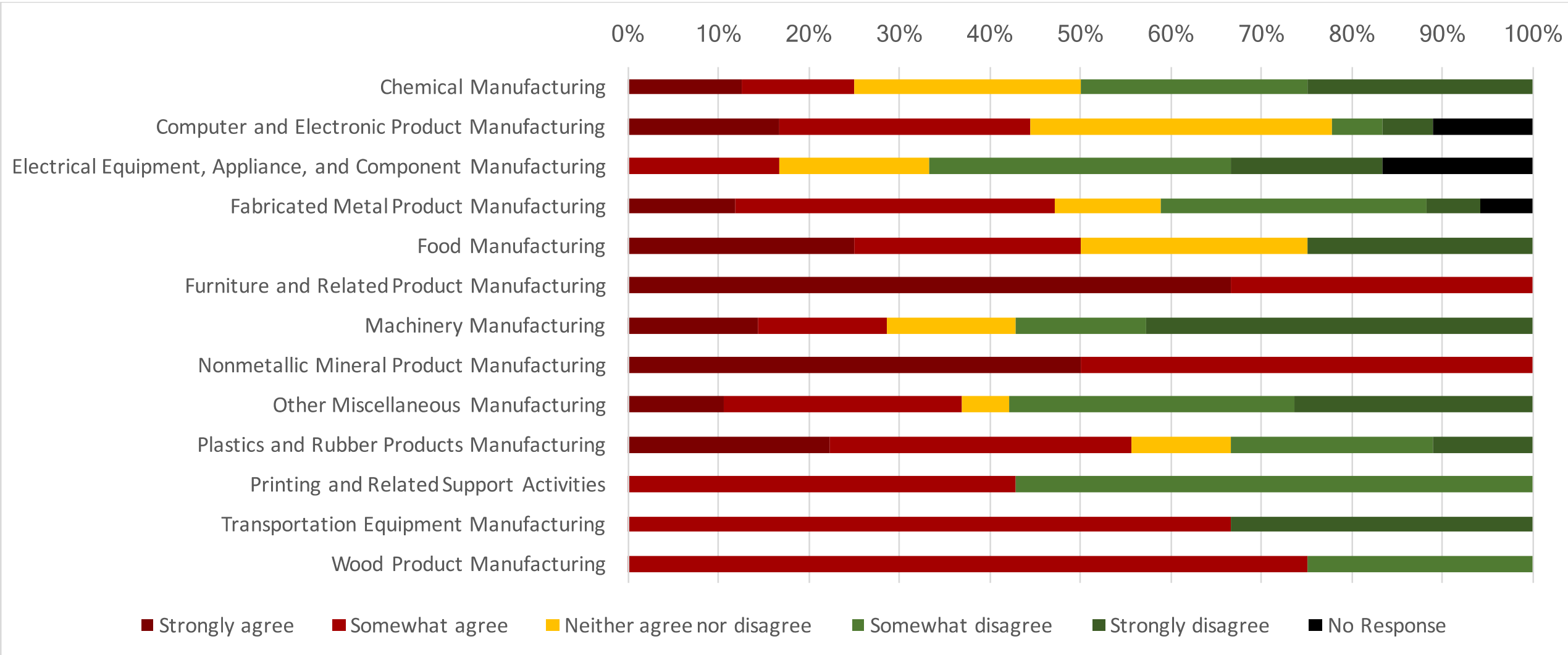
Retention challenges largely mirrored recruitment challenges and included:

- Cost of Living/Wage Pressures
- Working Conditions
- Low Unemployment/Tight Job Market/Competition for Workers
- Worker Eagerness for Advancement
- Cultural Fit
- Soft Skills

Respondents were divided whether
“Retaining employees has been a challenge for our company.”

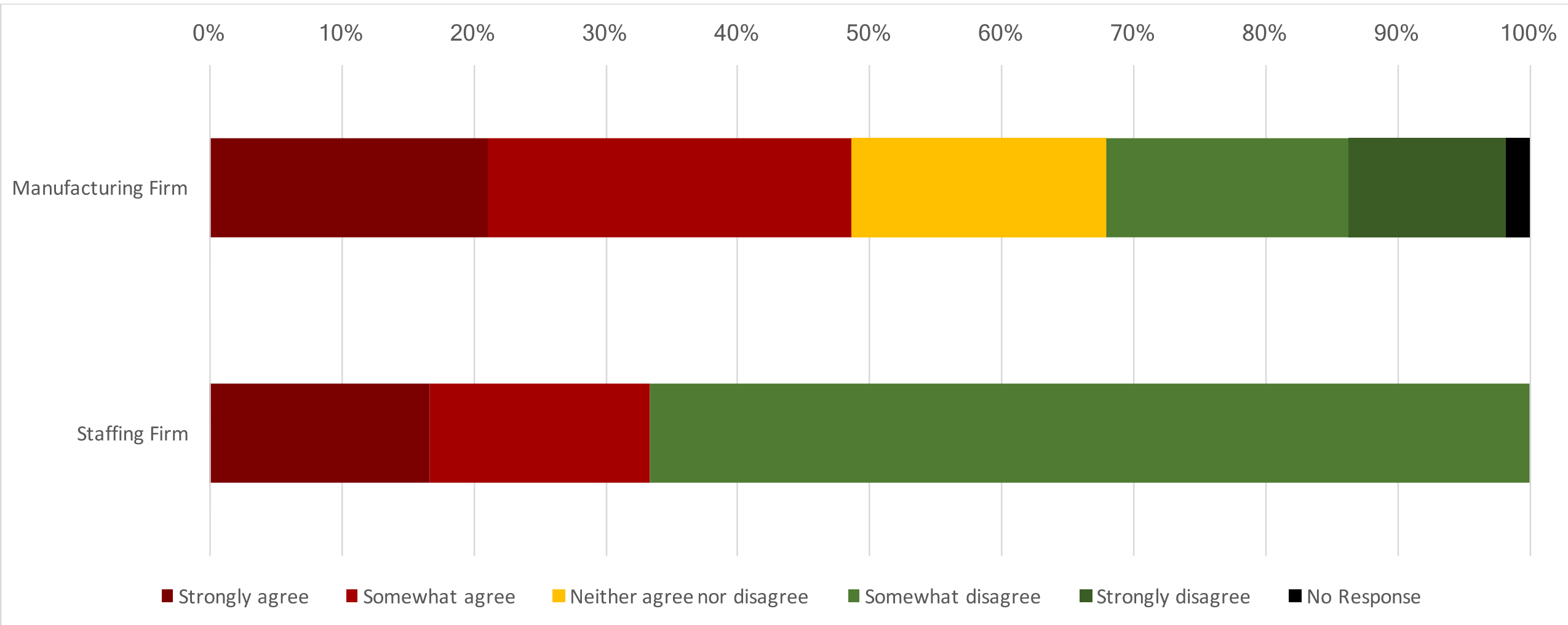


Retention Challenges Both Varied Across and Within Sub-Sectors, Suggesting Both Internal and External Factors are Driving Turnover

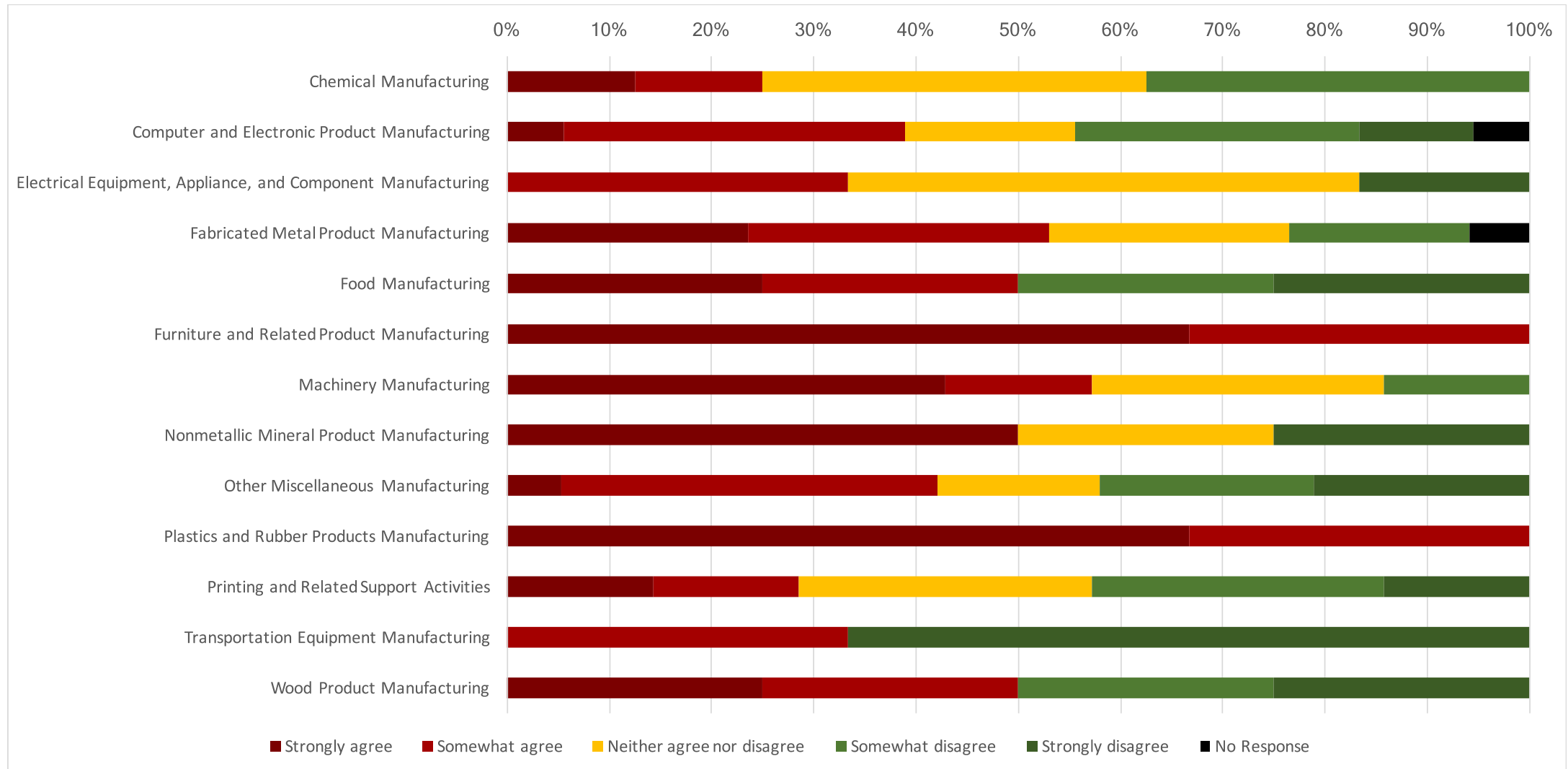


Respondents were mixed on retirement challenges

“Turnover due to retirements has been a challenge for our company.”



And Retirement Challenges Varied Somewhat by Sub-Sector

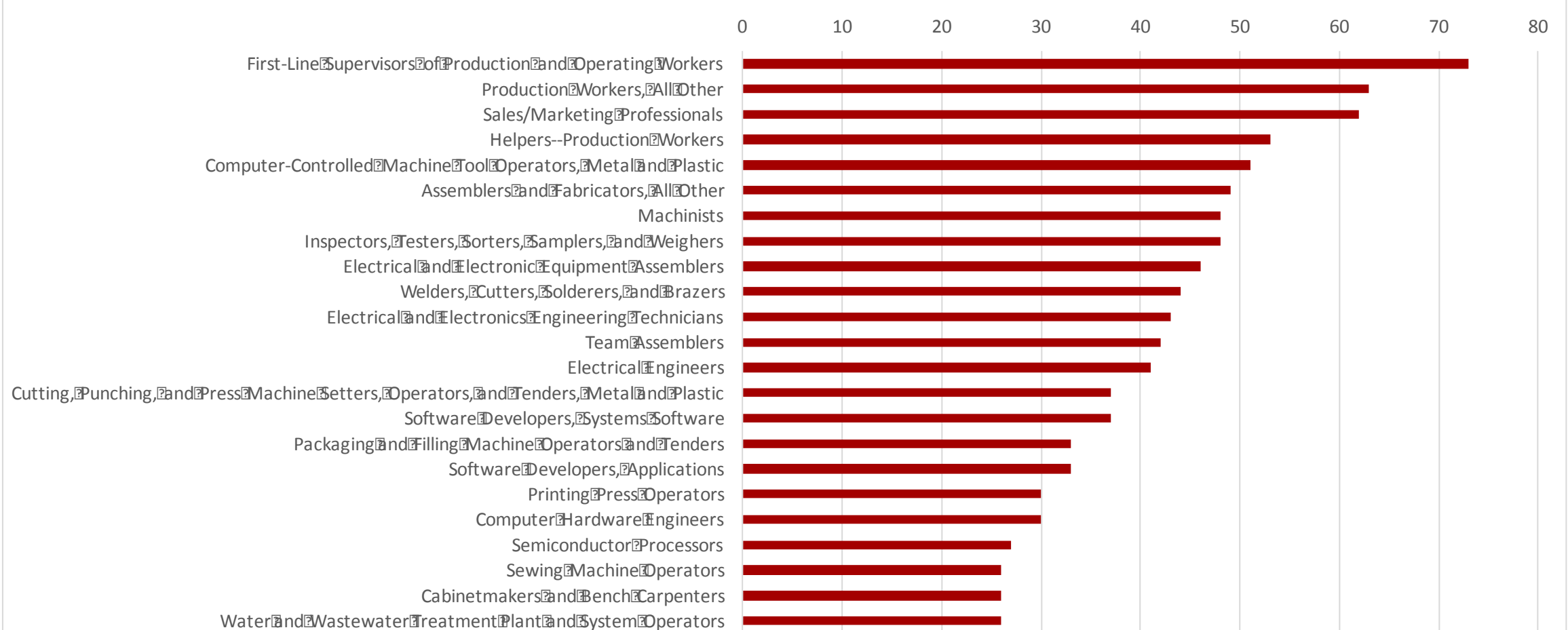




KEY FINDINGS: IN-DEMAND SKILLS & OCCUPATIONS

The average respondent reported that they plan to hire for at least seven different high-demand manufacturing occupations within the next three years.

of Companies Planning to Hire Within Next Three Years



Occupations with the Highest Reported Demand

MOST FREQUENTLY CITED

1. First-Line Supervisors of Production and Operating Workers
2. Production Workers, All Other
3. Sales/Marketing Professionals
4. Helpers--Production Workers
5. Assemblers and Fabricators, All Other
6. Computer-Controlled Machine Tool Operators, Metal and Plastic
7. Machinists
8. Inspectors, Testers, Sorters, Samplers, and Weighers
9. Electrical and Electronic Equipment Assemblers
10. Welders, Cutters, Solderers, and Brazers

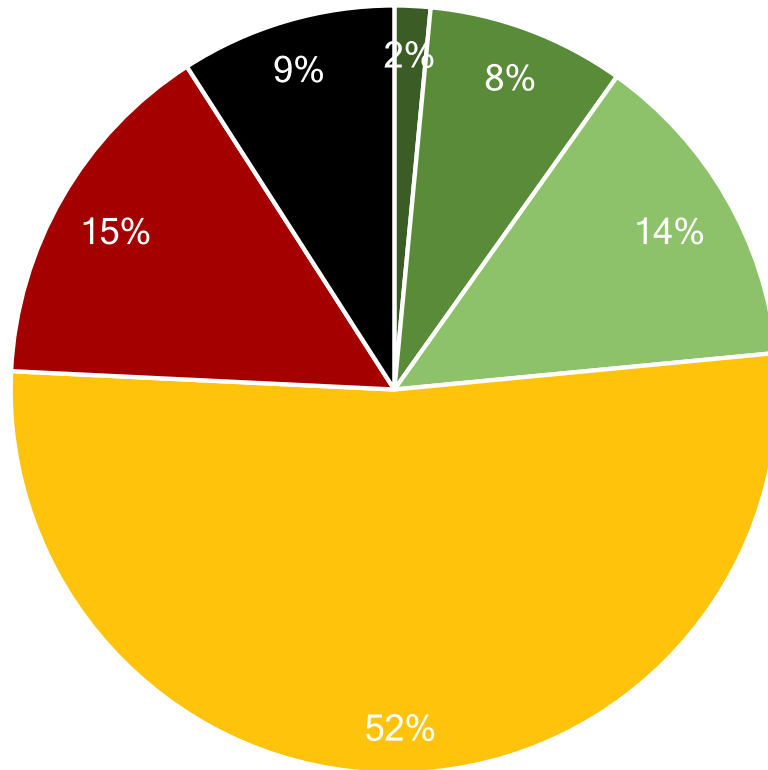
HIGHEST ESTIMATED HIRING VOLUME

1. Production Workers, All Other (936)
2. Electrical and Electronic Equipment Assemblers (558)
3. Helpers-Production Workers (463)
4. Semiconductor Processors (427)
5. Electrical and Electronics Engineering Technicians (405)
6. Assemblers and Fabricators, All Other (340)
7. Sales/Marketing Professionals (244)
8. Computer-Controlled Machine Tool Operators, Metal and Plastic (241)
9. Inspectors, Testers, Sorters, Samplers, and Weighers (234)
10. Welders, Cutters, Solderers, & Brazers (194)

MOST DIFFICULT TO FILL

1. Sales/Marketing Professionals
2. Production Workers
3. Machinists
4. Engineers
5. Welders
6. Assemblers
7. First-Line Supervisors
8. Software Developers
9. Maintenance Personnel/Mechanics
10. Entry-Level Workers

Respondents Reported that Industry-Recognized Certifications Generally Have Limited Influence Over Hiring Decisions



■ Always ■ Most of the time ■ About half the time ■ Sometimes ■ Never ■ No Response

“These [certifications] are all great. But we don’t have enough of a resource pool to be selective.”

Many Employers Reported Strong Demand For Employees with Basic, Entry-level Skills

- Soft Skills
 - Timeliness
 - Reliability
 - Communication
 - Team Work
 - Professionalism
- Entry-Level Manufacturing Skills
 - Reading Drawings
 - Taking Measurements
 - Reading Shop Paperwork
 - Safety Concepts
 - Lean Manufacturing Process Familiarity
 - Forklift Operation
 - Microsoft Excel
 - Soldering



KEY FINDINGS: ONBOARDING & UPSKILLING

Highlights

A modest majority - 58 percent - of Central Texas manufacturers agreed that onboarding new employees is a challenge

Commonly cited onboarding hurdles included:

- Limited in-house training capacity
- Locating appropriate curriculum/training materials
- Concerns about onboarding costs in light of turnover
- Duration of onboarding process

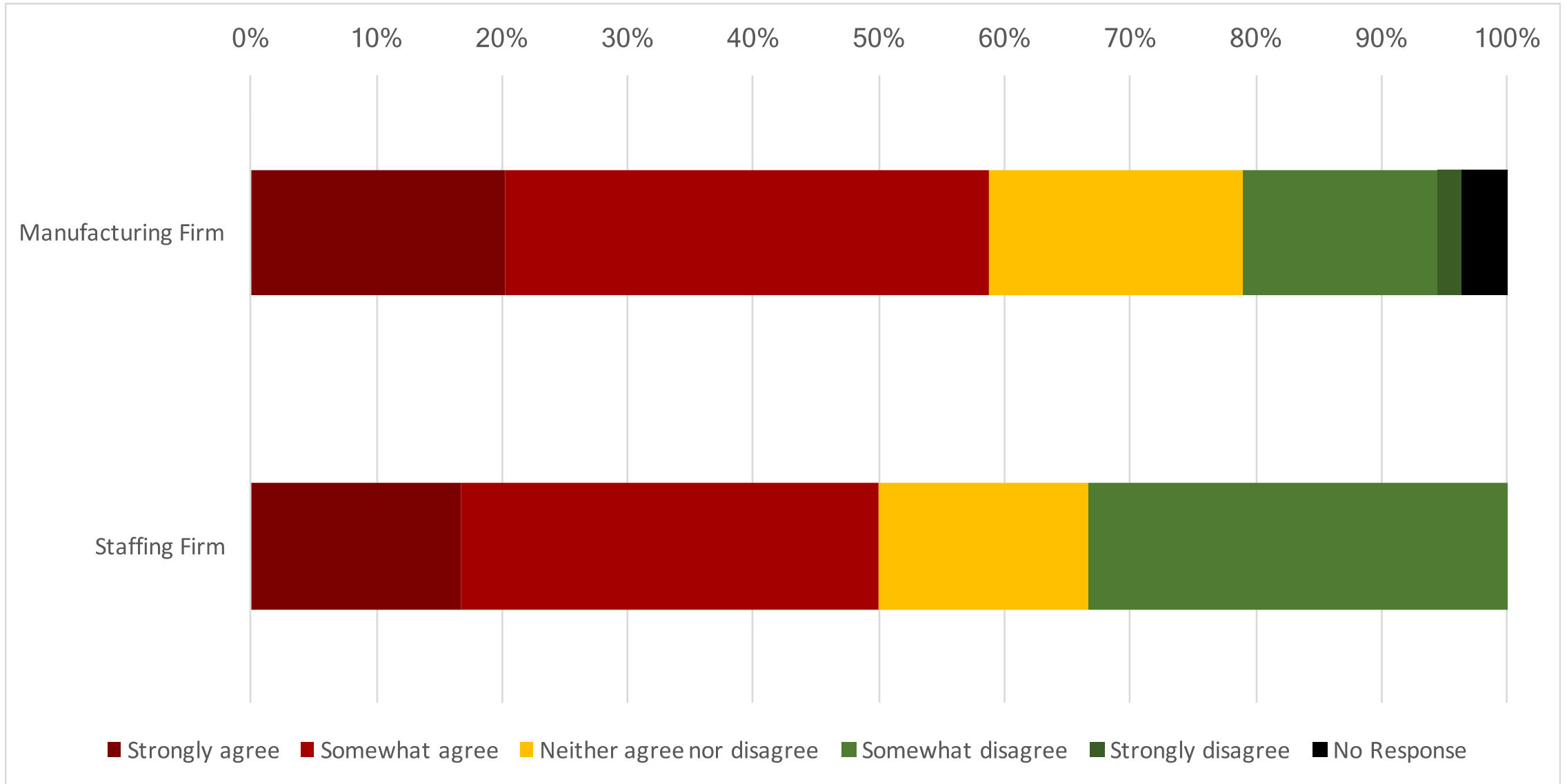
“We train our employees “on-the-job” due to the uniqueness of our company.”

“We have a solid training curriculum that enables us to develop workers.”

“Talking to the temp people – “Yeah, they can do this, this...” then they show up and, you know, that’s a caliper? A tape measure? You want me to what?”

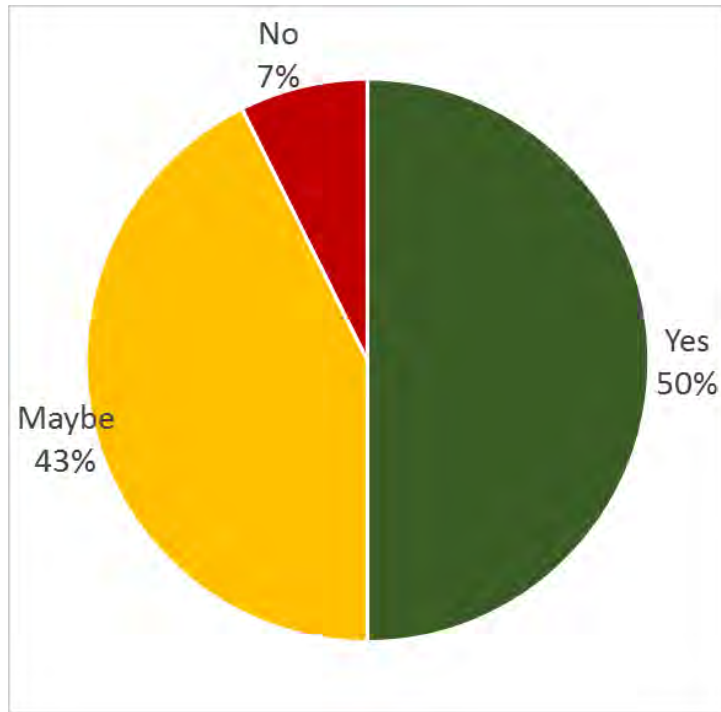
Most respondents agreed that

“Onboarding new employees has been a challenge for our company.”



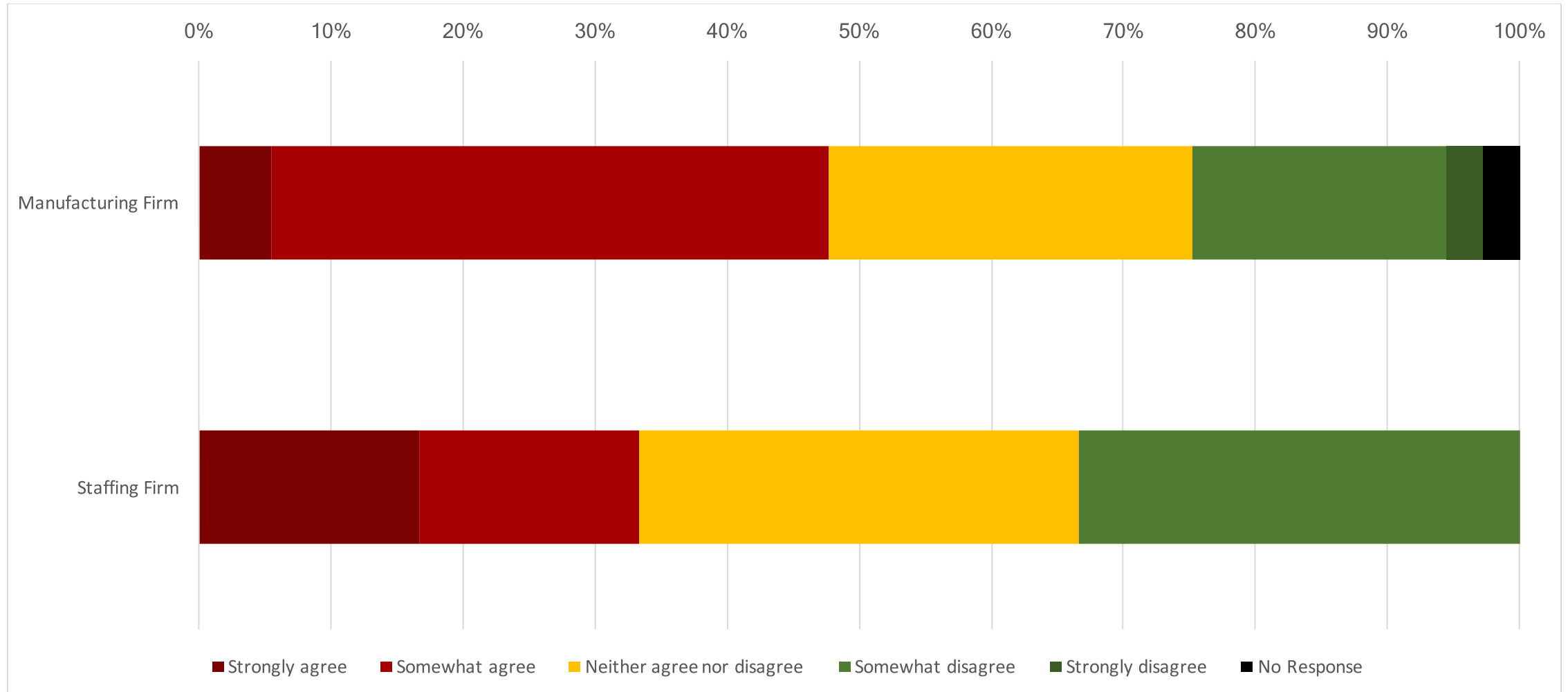
Central Texas Companies Invest in the Skills of their Workers...

Plans to expand education and training for current workers?



"I've made a conscious effort with all of the guys that are interested...if they want to take an extra class or something, to pay them to do that. Because we're so small, the more talent there is, the better it is. While one week that might be really painful because they're not getting work out the door, in the long-term it works out... If they want to do that, I'm 100% supportive of it."

But many respondents reported that
“Keeping the skills of our current workers up-to-date has been a challenge for our company.”





RECOMMENDATIONS

“Since I’ve been doing this for a long time, I was part of the era of outsourcing of jobs. It’s awesome to see ‘em coming back, but we’re not ready for it. And people don’t want to do it. It’s an interesting time to be in manufacturing.”

Opportunities to Strengthen the Central Texas Manufacturing Talent Pipeline

1. Coordinate local efforts via a manufacturing workforce partnership.
2. Launch a campaign to increase awareness of manufacturing careers.
3. Pilot a short-term certification to vet and prepare entry-level workers.
4. Explore apprenticeship for small volume, hard-to-hire positions
5. Support efforts to advance policy changes when necessary.

1. Coordinate Local Efforts via a Manufacturing Workforce Partnership

The Challenge:

- Companies don't know where to turn for help - current efforts are not coordinated
- Workforce development investments are often driven by the availability of funding rather than businesses' real-world needs
- Smaller companies feel like they don't have a voice in setting local workforce priorities

The Solution:

- Manufacturing Workforce Partnership
 - Aggregates demand for shared workforce needs across multiple employers
 - Strength in Numbers: Gives small and mid-sized firms more voice, influence
 - Provides a forum for sharing data
 - Coordinates joint solutions
 - Streamlines collaboration with K12, college, university, and nonprofit partners
 - More cost efficient – companies, public sector, philanthropy can jointly invest vs. individual companies footing the bill
 - Strengthens overall industry
 - Recognizes the interconnectedness of the challenge – companies are all drawing from the same labor pool
 - Provides a forum for sharing ideas, lessons learned with peers

2. Launch a campaign to increase awareness of manufacturing careers.

The Challenge:

- Manufacturing still has a stigma as dirty, dangerous, low-paid jobs
- Students and workers are unaware that manufacturing offers high-quality jobs in Central Texas

The Solution:

- Jointly invest in efforts to raise awareness about manufacturing careers
 - Continue to grow local participation in Manufacturing Day
 - Develop compelling outreach/educational materials (video, social media) that raise awareness about Central Texas manufacturing companies to complement national manufacturing career awareness resources (e.g., Dream It Do It)
 - Consider launching an Ambassadors Program using the model developed by the Manufacturing Institute

3. Pilot a short-term certification to vet and prepare entry-level workers

The Challenge:

- Businesses cannot find workers who have the skills and competencies required to perform basic entry-level manufacturing tasks
- Businesses cannot find workers who are motivated to work in a manufacturing environment
- Motivated workers may not be familiar with pathways to manufacturing careers that don't require post-secondary education

The Solution:

- Pilot a short-term certification program that introduces workers to core concepts and expectations
- Leverage existing curriculum and certifications – there is no need to re-invent the wheel
- Helps to vet which workers are truly motivated to succeed in manufacturing
- Participation in training programming allows companies to preview workers
- Can reduce recruitment and onboarding costs

Example: In Louisville, Kentucky, the Kentucky Manufacturing Career Center worked with local businesses to develop two short-term certifications earned via an intensive two-week program:

Manufacturing Training and Employment Connection (M-TEC):

- MSSC Safety Training Certificate
- OSHA 10 Card
- Electric/Pallet Jack Forklift Certificate
- Lean Manufacturing Certificate
- Career Readiness Training Certificates (soft skills)

Manufacturing Training for English Language Learners (M-TELL)

- English Language Instruction for Manufacturing
- OSHA 10 Card
- Career Readiness Training Certificates (soft skills)
- Electric/Pallet Jack Forklift Certificate
- Supervisory Skills

4. Explore Apprenticeship for Small Volume, Hard-to-Hire Positions

The Challenge:

- Some local companies require highly specialized training from new employees, yet do not hire enough workers locally to substantiate the launch of new training programs at community or technical colleges

The Solution:

- Apprenticeship
 - Allows for specialized training related to company needs
 - Combines hands-on, on-the-job learning with didactic (classroom-style, virtual, textbook) instruction
 - Allows workers to “learn and earn,” enhancing job retention
 - Incremental pay gains aligned with skill development
 - No student loans
 - Results in a portable credential, sometimes college credit
 - Incentives may be available – apprenticeships are a priority for both the US Department of Labor and many philanthropies

5. Support efforts to advance policy changes when necessary.

Some Central Texas manufacturing workforce challenges require broader public policy solutions

- Housing affordability/cost-of-living
- Transportation gridlock
- Healthcare costs

“We’ve had three mid-level managers quit just in the last year just to move closer to home. The traffic is so bad. If I’ve got an hour drive, I’ll take an equal wage. Nothing to do with the company.”

“Health insurance is one of our biggest challenges. We’re a little under 100 people. We can offer it, but it’s still extremely expensive.”

Notes

Methodology Notes

Survey responses were collected through an online survey based on the Qualtrics survey platform. The survey was accessed via a link on the ARMA website.

The survey was open for responses from June 12, 2017 through September 22, 2017.

The primary audience for the survey was senior-level executives at regional manufacturing firms who have familiarity with their company's Central Texas workforce needs. Sample job titles for these individuals included CEO, Regional President, Senior Vice President for Human Resources, and Chief Talent Officer, among others.

Survey participants were recruited using a variety of targeting strategies designed to reach a broad array of Central Texas manufacturing companies, including:

- ARMA email distribution list outreach (with targeted phone follow-up)
- Purchased Hoovers email list outreach (with targeted phone follow-up)
- ARMA, WFSCA, ACC, City direct email outreach
- Email outreach via regional business and industry associations
- Social media advertising on LinkedIn, Twitter, Facebook

Methodology (cont.)

SAMPLE SIZE

There were 133 qualifying responses from a total of 156 responses

- 109 responses came from representatives of manufacturing companies
- 23 responses came from representatives of staffing agencies, vendors, and other stakeholders who reported that they had manufacturing-related workforce needs

Per the most recent data available, the Austin-Round Rock MSA is home to 1,138 manufacturing firms with paid employees

- Source: U.S. Census Bureau, 2015 Annual Survey of Entrepreneurs, July 2017 data release

With 1,138 as baseline, a sample size of 109 would suggest that the results of this survey are accurate at approximately the 90 percent confidence level plus or minus 7.5 percent

DATA LIMITATIONS

Responses are representative only of the knowledge and opinions of the respondents at the time of the survey.

Responses were not weighted to reflect firm size, revenue, or any other variables.

The public availability of up-to-date contact information for the appropriate staff at regional manufacturing firms limited the reach of the survey

There were variations in responsiveness to the survey across different Central Texas counties.

Survey research literature indicates that response rates to online surveys during the summer months may be constrained by the large number of workers who take time off.

For More Information



Ed Latson
Executive Director
Austin Regional
Manufacturers Association
ed@arma-tx.org



Heath Prince PhD
Ray Marshall Center for
the Study of Human Resources
LBJ School of Public Affairs
The University of Texas at Austin
heath.prince@raymarshallcenter.org



Sarah Oldmixon
Ray Marshall Center for
the Study of Human Resources
LBJ School of Public Affairs
The University of Texas at Austin
sarah.oldmixon@raymarshallcenter.org