



# 2024 Career Advancement in Manufacturing Report

Xometry | The Women in Manufacturing Association

Joint Survey Report



# Key Insights

In collaboration with the Women in Manufacturing Association, Xometry conducted our fourth joint annual survey on career advancement and women in the manufacturing sector, revealing the following key trends from 997 qualified responses:

- 81% of women recommend a career in manufacturing (compared to 74% of men), a number that has remained steady YoY.
- 83% of respondents report labor shortages, particularly for entry-level positions. Companies need to find ways to encourage women to intentionally seek out manufacturing as a career option and offer student programs such as internships and apprenticeships for female students.
- 71% of women enter the manufacturing industry unintentionally, compared to 56% of men. Most women report joining the industry through job postings, co-op programs, and recruitment, whereas most men join the industry through family businesses, apprenticeships or internships, and STEM programs. Companies need to intentionally create educational and career opportunities for women and introduce manufacturing as a career to young women early.
- 90% of women believe that diversity improves business outcomes. It's not just about recruiting women – it's also about ensuring women's voices are heard at every level of an organization.

Collectively, the data shows that women may not intentionally choose manufacturing as their field of choice, but once they are in, they are satisfied or very satisfied with their careers and are a voice for change.

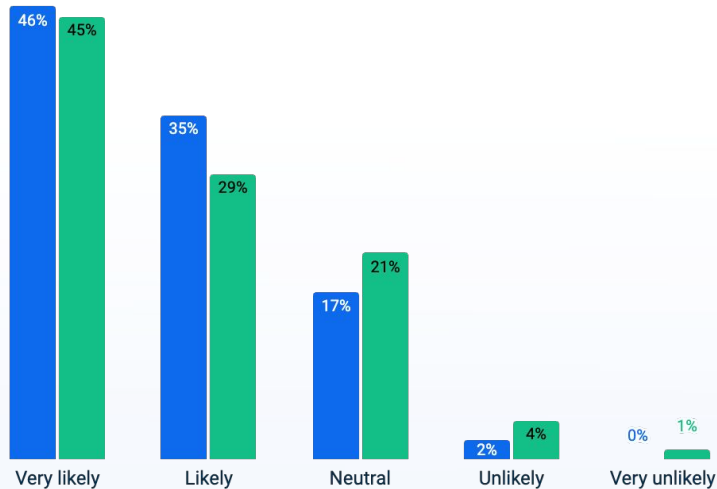
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# Key Insights



# Most Women in Manufacturing Recommend a Career in Manufacturing

How likely are you to recommend a career in manufacturing?



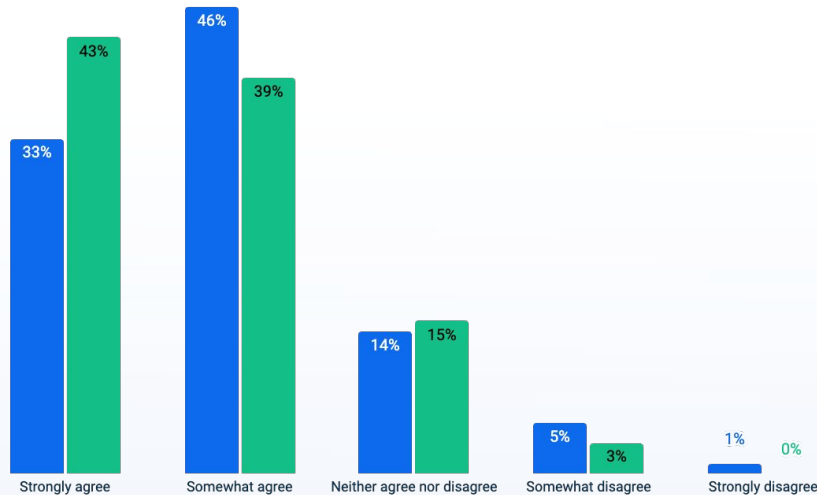
- 81% of women are likely or very likely to recommend a career in manufacturing, which is consistent with 2023 numbers and up from 75% in 2021.
- 74% of men would recommend a career in manufacturing, a decrease from 2022 (80%).
- Only 2% of women are unlikely to recommend a career in manufacturing, compared to 8% in 2023, showing that women are feeling more positively or neutral toward manufacturing careers over time.

Female Male

Total Response Count: n=824; Female n=706; Male n=118; Non-Binary n=1; Sample size of <10 is omitted from report visualization.

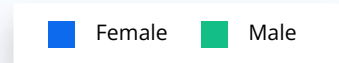
# Optimism About Women’s Progress in the Manufacturing Industry Remains at an All-Time High

Do you agree or disagree with the following statement: Women have made significant progress in the manufacturing industry over the last five years.



→ 79% of women are optimistic about women’s progress in manufacturing, with 33% strongly agreeing with the statement, “Women have made significant progress in the manufacturing industry over the last 5 years.” It’s a notable change from 2020 (17%) and 2021 (27%) and consistent with 2023 data.

→ 82% of men agreed with the statement, consistent with 2023 data.

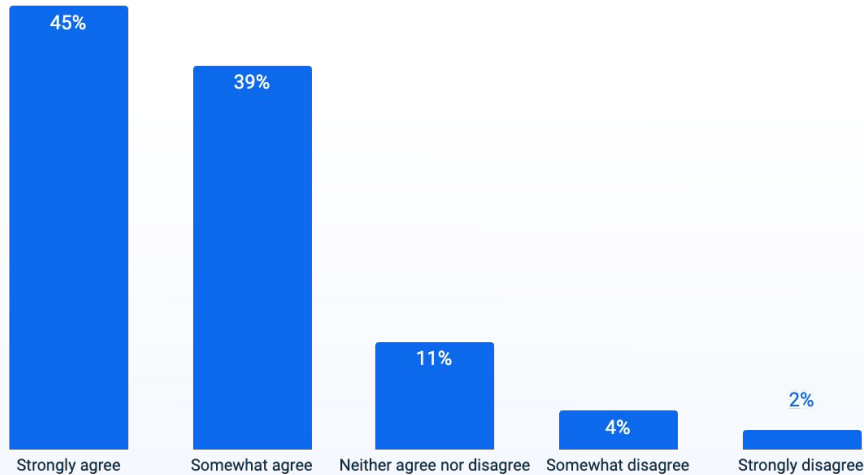


Response Count Women: n=332 (2020); n=442 (2021); n=560 (2023); n=670 (2024)  
Response Count Men: n=134 (2020); n=113 (2021); n=351 (2023); n=116 (2024) Non-binary and other responses are omitted due to n<10.

# Most Manufacturing Companies Are Experiencing Labor Shortages

Do you agree or disagree with the following statement:  
We are experiencing labor shortages.

83% of manufacturing companies are experiencing labor shortages with 45% strongly agreeing with the statement, “We are experiencing labor shortages.”

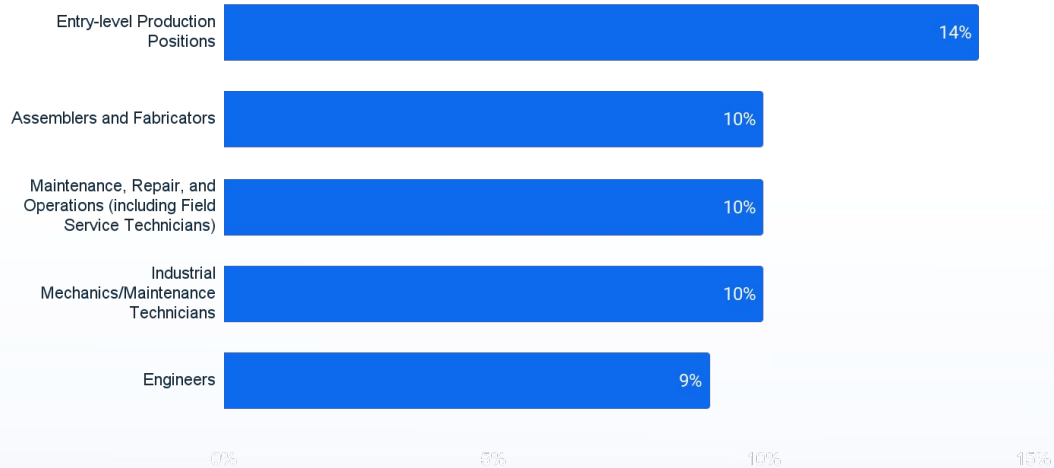


Total

Response Count: n=895

# Job Shortages Across Positions

Which job positions are the hardest to fill in your field today?



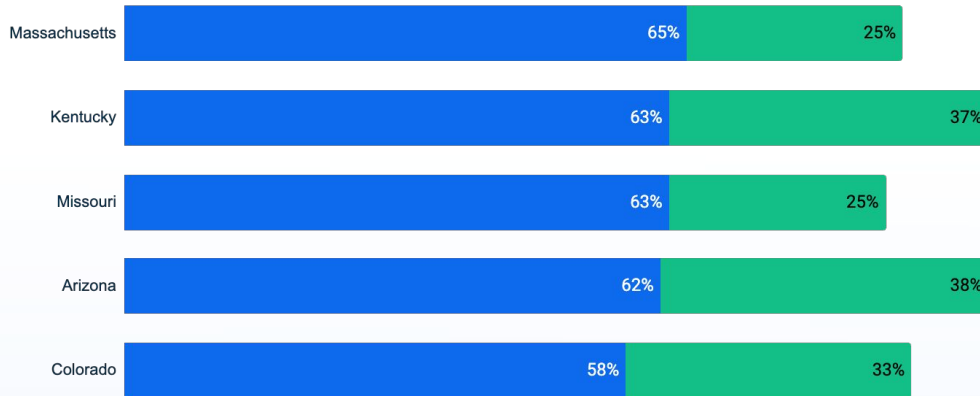
The hardest roles to fill are entry-level positions; assemblers and fabricators; maintenance, repair, and operations; industrial mechanics and maintenance technicians; and engineers.

Total

Response Count: n=895

# Labor Shortages: By the Numbers

Do you agree or disagree with the following statement:  
We are experiencing labor shortages.



MA, KY, and MO report the most acute labor shortages

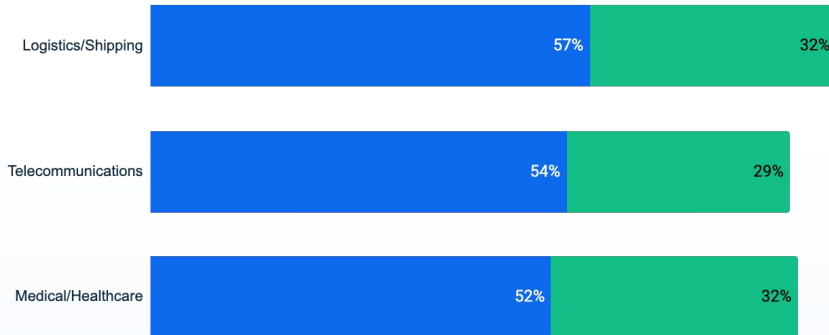
Strongly agree Somewhat agree

Response Count: n=882; Omitted states with <10 responses. Response Count by State: AZ n=13; CA n=38; CO n=12; CT n=27; DE n=11; FL n=16; GA n=45; IL n=55; IN n=25; KY n=19; MD n=18; MA n=20; MI n=76; MN n=34; MO n=16; NJ n=30; NY n=27; NC n=38; OH n=73; PA n=57; SC n=20; TN n=11; TX n=39; VA n=39; WA n=17; WI n=48;



# Labor Shortages: By the Numbers

Do you agree or disagree with the following statement:  
We are experiencing labor shortages.



Logistics, Telecommunications,  
Medical/Healthcare Are Experiencing  
the Most Acute Labor Shortages

Strongly agree Somewhat agree

Response Count: n=903; Industry Specific Responses Count: Other — Please specify n=104; Oil & Gas n=152; Construction n=223; Electronics n=178; Food & Beverage n=237; Transportation n=150; Agriculture n=180; Manufacturing n=589; Energy/Utilities n=184; Automotive n=261; Aerospace & Defense n=256; Environmental n=109; Medical/Healthcare n=195; Telecommunications n=84; Logistics/Shipping n=99;

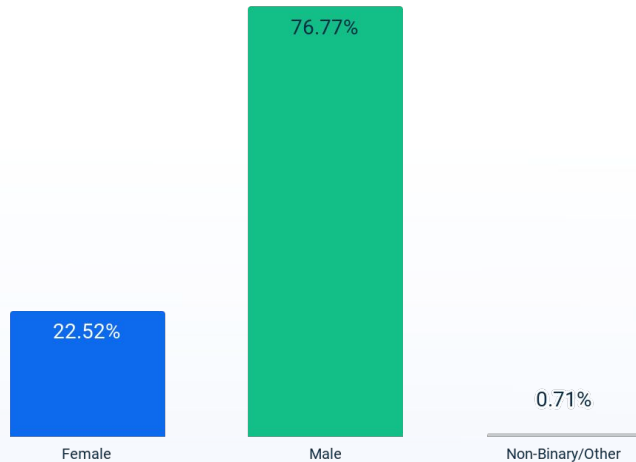
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# Women's Participation in Manufacturing



# 23% of Manufacturing Business Leaders Are Female

Average the percentage of employees on your company's leadership team by gender:



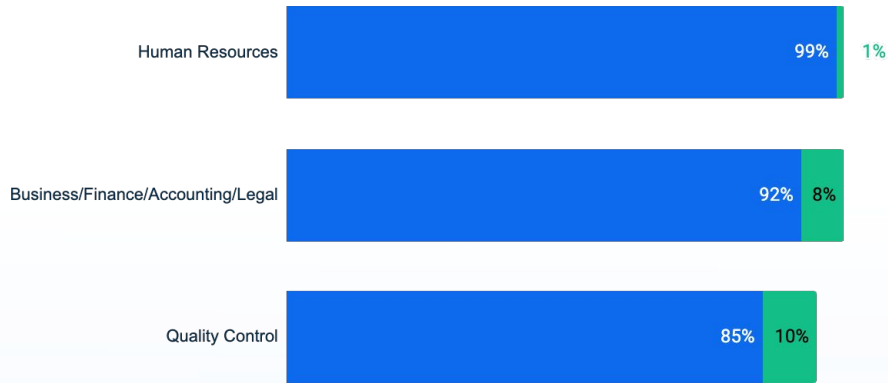
The percentage of female business leaders in manufacturing has not significantly changed since 2021

- Female
- Male
- Non-Binary/Other

Response Count: n=937

## By the Numbers: Job Function

Which option best describes the department you work in?



HR, Business Functions, and Quality Control are the top three job functions in manufacturing with the highest percentage of female representation, consistent with 2023

Female Male

Response Count: n=738; Human Resources n=75; Business/Finance/Accounting/Legal n=39; Quality Control n=41; Operations/Plant/Facilities/Production n=140; Purchasing/Procurement n=43; Engineering n=147; Marketing/Sales n=102; Executive n=75. Omitted job functions with n<25.

# By the Numbers: Female Leadership by State

Please estimate the percentage of employees on your company's leadership team by gender.



**Female Leadership:** TN, DE, and NY have the highest percentage of female leadership in manufacturing

Female

Response Count: n=802; Omitted states with <10 responses. Response Count by State: DE n=11; TN n=11; CO n=11; AZ n=11; MO n=11; WA n=11; FL n=11; KY n=11; MD n=11; MA n=11; SC n=11; IN n=11; CT n=11; NY n=11; NJ n=11; MN n=11; CA n=11; NC n=11; TX n=11; VA n=11; GA n=11; WI n=11; IL n=11; PA n=11; OH n=11; MI n=11;

# By the Numbers: Female Leadership by Industry

Please estimate the percentage of employees on your company's leadership team by gender.



### Female Leadership:

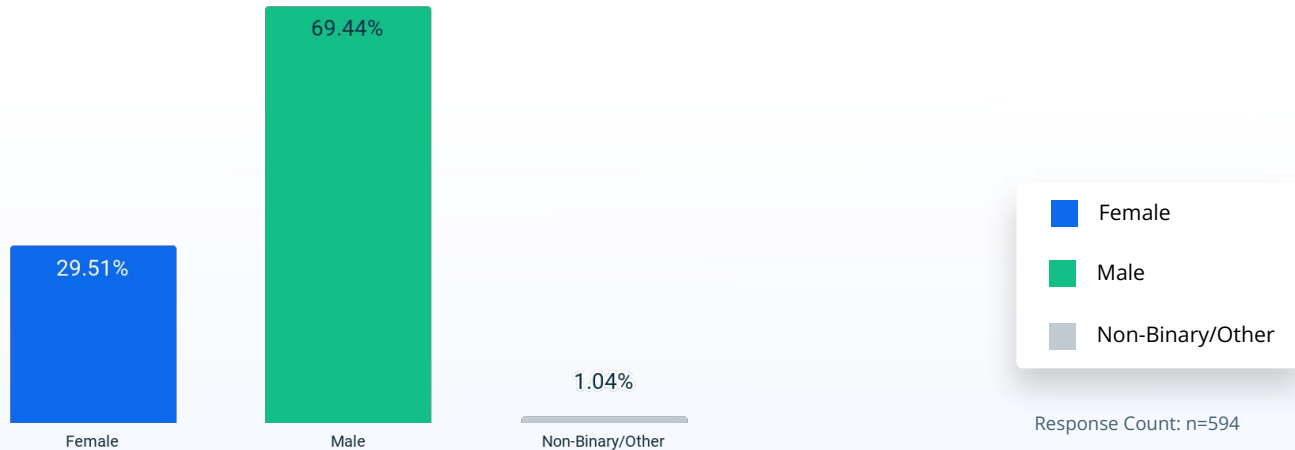
Medical/Healthcare, Environmental, and Telecommunications have the highest percentage of female leadership in manufacturing

Female

Response Count: n=792; By Industry: Aerospace & Defense n=236; Agriculture n=164; Automotive n=241; Construction n=199; Electronics n=165; Energy/Utilities n=166; Environmental n=100; Food & Beverage n=212; Oil & Gas n=136; Logistics/Shipping n=91; Manufacturing n=542; Medical/Healthcare n=179; Telecommunications n=75; Transportation n=133.

# An Estimated 30% of Employees in Manufacturing Are Female, with No Significant Change Since 2021

Please estimate the percentage of employees in your entire company by gender.



## By the Numbers: Female Representation by State

Please estimate the percentage of employees in your entire company by gender:



Indiana, New Jersey, and California have the highest percentages of women in manufacturing

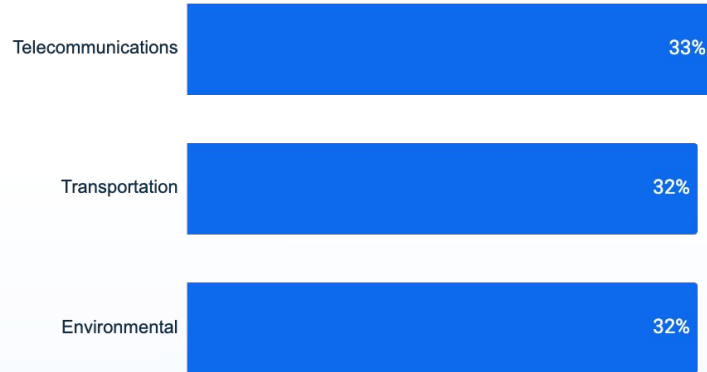
Total

Response Count: n=477; Omitted states with <10 responses. Response Count by State: CA N=17; CT N=23; FL N=11; GA N=33; IL N=34; IN N=20; KY N=14; MD N=11; MA N=14; MI N=53; MN N=24; NJ N=23; NC N=32; OH N=55; PA N=33; SC N=14; TX N=20; WA N=11; WI N=35;



# By the Numbers: Female Representation by Industry

Please estimate the percentage of employees in your entire company by gender.



Telecommunications, Transportation, and Environmental industrial companies have the highest percentages of female employees

Total

Response Count: n=792; By Industry: Aerospace & Defense n =258; Agriculture n =182; Automotive n =263; Construction n =225; Electronics n =180; Energy/Utilities n =185; Environmental n =110; Food & Beverage n =240; Logistics/Shipping n =100; Manufacturing n =594; Medical/Healthcare n =197; Oil & Gas n =155; Telecommunications n =84; Transportation n =150;

# Quoted Responses from Industry Professionals on How to Bring More Women into Manufacturing: Recruiting & Career Development

*“We need to cast a wider net and be more purposeful. It starts with young girls and young women in school. We need to be encouraging STEM participation for them and recruiting them into internships before they go to college, so they consider careers in engineering, supply chain, etc., when choosing their colleges.”*

*“We need to continue to recruit women early in their careers. Also, providing employee resource groups or organized mentor programs between other women in the company are helpful to offer an outlet and network for women.”*

*“Continual outreach on available benefits to women. For instance, we are in the process of building a childcare facility. We have an active women's group on-site. We have maternity and paternity leave. We offer subsidies for childcare services today. Sending females out into the local community to do STEM activities and keep their interests piqued for what manufacturing offers females.”*

The above represents a cross-section of responses.

# Quoted Responses from Industry Professionals on How to Bring More Women into Manufacturing: Recruiting & Career Development

*“Offer flexible working hours and fair maternity / parental leaves and actively hire women in the early entry-level positions. Actively offer leadership training programs to a higher percentage of women.”*

*“Show the benefits, like good pay, the industry’s influence on the environment in the future (sustainability, resource-saving techniques, electric vehicles, etc.), and show that industry no longer means “heavy and dirty.”*

*“Use gender-neutral words for job postings. Use skill-based requirements in hiring.”*

The above represents a cross-section of responses.

# Quoted Responses from Industry Professionals on How to Bring More Women into Manufacturing: Retention & Culture

*"I believe that the two biggest factors in recruitment and retention of women in these fields are 1) having a welcoming work environment (where women have the tools and support needed to succeed, men treating them with respect, etc.) and 2) having a manager that is supportive and treats the women with respect. We found that most of the women who left departed due to lack of respect from a direct manager."*

*"Achieve gender equality at the VP level and above to show women that they have a seat at the table. Many women stay in middle management. Feature examples of success stories of women in all sectors/areas, not only in those with majority of women (i.e. quality). Dedicate time and resources to women's empowerment and development."*

*"Focus on site cultures in order to create an environment where women don't feel 'other' in the manufacturing workplace."*

The above represents a cross-section of responses.

# Quoted Responses from Industry Professionals on How to Bring More Women into Manufacturing: Retention & Culture

*“Require employees to participate in diversity and inclusion training. I’ve had to do IT security training at least every other year, but in the entire 4.5 years in my current role, there has never been training to educate all employees on how to make sure their coworkers and subordinates feel respected and included. D&I training opens the door for people to address their unconscious biases, have better empathy towards people unlike themselves, and create awareness of what discrimination looks like. At a minimum, managers and above should be required to participate in diversity and inclusion training because their unconscious biases have some of the greatest repercussions.”*

*“Create spaces for women and minorities to come together and build fellowship with people who understand their struggles. Beyond women-only spaces, there are opportunities for spaces for POC, people with mental and physical disabilities, and LGBTQIA people. These spaces are a great way for people to feel connected with their coworkers, and create a venue where people find the word to describe the inclusion problem they are experiencing.”*

The above represents a cross-section of responses.

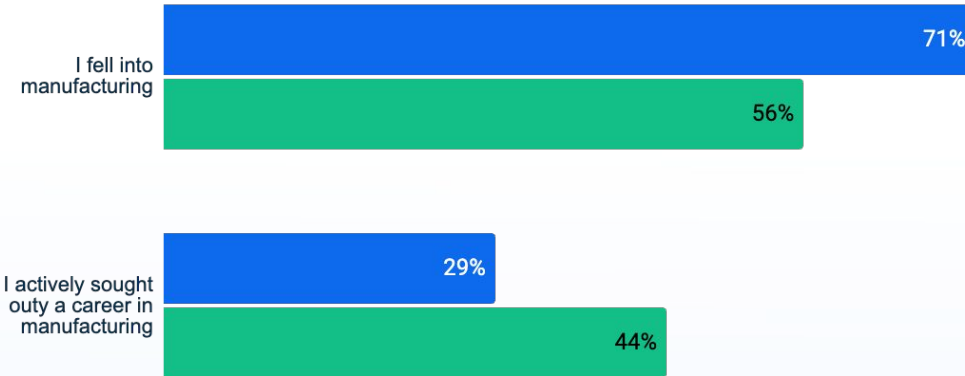
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# How to Retain and Engage Talent



# Most People Unintentionally Enter the Manufacturing Industry

How did you enter the manufacturing field?



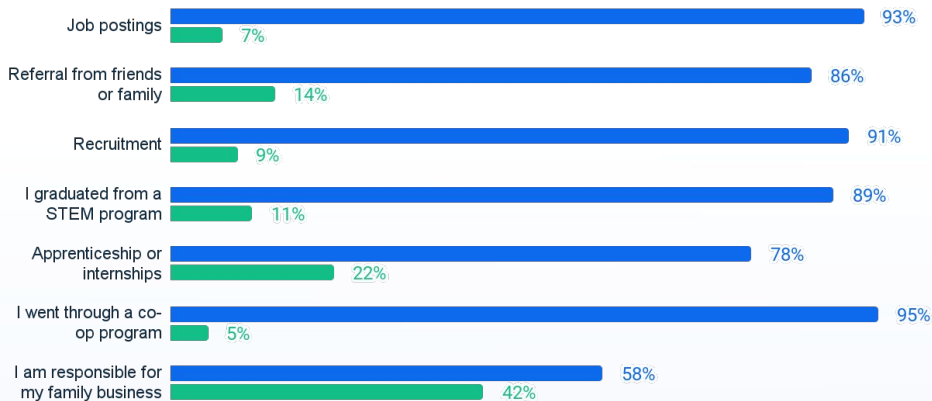
71% of women enter the manufacturing industry unintentionally, compared to 56% of men, consistent with 2023 data

Female Male

1 Response Count: n=839; By Gender: Female n=706; Male n=119; Non-binary, Other, or Prefer Not to Answer n=14.  
2 Survey respondents identifying as Non-binary or Other constituted were not included due to sample size.

# Women and Men Seek out Manufacturing Careers for Different Reasons

How did you end up in this industry?



→ Women cite job postings (93%), co-op programs (95%), and recruitment (91%) as the top reasons for how they joined the industry.

→ Men cite responsibility for a family business (42%), apprenticeships or internships (22%), and STEM programs (11%) as their top reasons for how they joined the industry.

Female Male

1 Response Count: n=825; By Gender: Female n=706; Male n=119; Non-binary, Other, or Prefer Not to Answer n=9.  
2 Survey respondents identifying as Non-binary or Other constituted n<10 and were not included due to sample size.  
3 Other includes salary, family influence, circumstance, and looking for new opportunities.



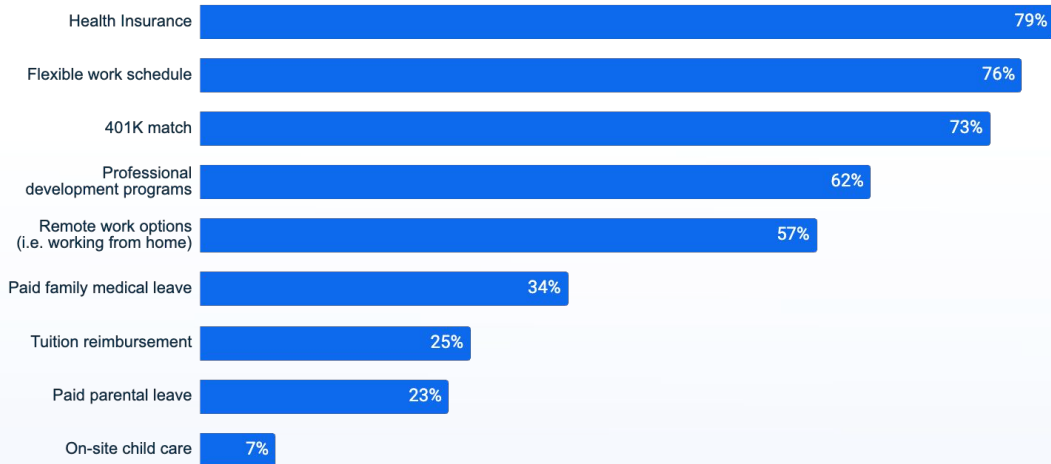
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# Talent Retention: Benefits and Attitudes



# Employees Value Health Insurance, Flexible Work Schedules, and 401(k) Match

Please select the employee benefits that are the most important to you: (select all that apply)



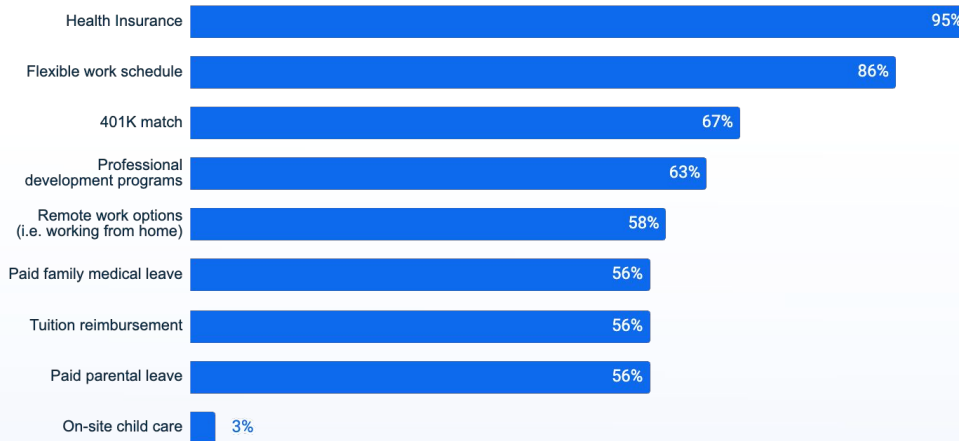
- Most employees highlight health insurance as their No. 1 desired benefit for the second year in a row
- 76% of employees cite flexible work schedules in 2024 compared to 72% in 2023.
- 73% of employees are looking for 401(k) matches compared to 66% in 2023.

■ Total

Response Count: n=844

# Top Benefits Offered Today Include Health Insurance, 401(k) Match, and Tuition Reimbursement

Please select the employee benefits that your company offers today: (select all that apply)



- Almost all of those surveyed (95%) work for an employer that offers health insurance
- 86% of those surveyed work for an employer that offers a 401(k) match
- More than half work for employers that offer tuition reimbursement (67%), remote work options (63%), and flexible work schedules (58%).

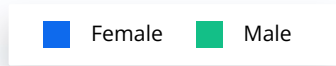
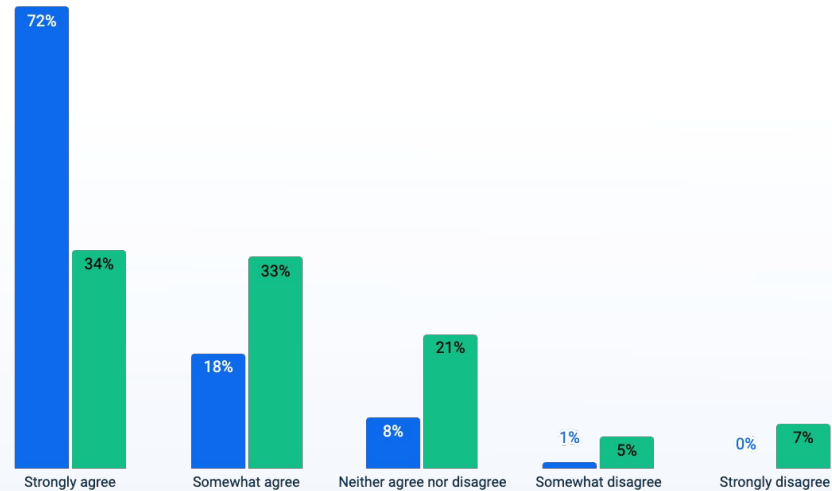
Total

Response Count: n=837

# Most People Agree that Workplace Diversity Improves Business Outcomes

Do you agree or disagree with the following statement: Workplace diversity improves business outcomes (i.e. improved products, increased revenue, less staff turnover, etc.)

- 90% of women agree or strongly agree with the statement, “Workplace diversity improves business outcomes (i.e. improved products, increased revenue, less staff turnover, etc.)”
- 66% of men agree with the statement



Response Count: n=796

Male n= 115; Female n=668; non-binary n=1; prefer not to answer n=12; non-binary and prefer not to answer omitted

# Quoted Responses from Respondents Showcasing the Breadth of Training Programs Available for Career Advancement

*Operations leadership training, shop floor to entry-level office role development, external senior-level leadership development opportunities, and paid MBAs.*

*Reskilling, mentoring, coaching, flex positions, rotational programs, and business partnerships for external professional development.*

*Women's leadership, executive leadership, and technician leader development, as well as college grad development rotational programs.*

*I'm enrolled in a professional development program that lets me rotate through different positions for one year, providing master's level business courses and international professional experience.*

*We offer access to programs in welding, hydraulics, supervisor training, EQ, DEI, and more.*

*Mentorship programs, change management training, lean manufacturing training, and Six Sigma training.*

The above represents a cross-section of responses.

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# Methodology



# Methodology

This survey was conducted over a 26-day period from January 3 to January 29, 2023.

A total of 1,057 respondents participated, and 997 were qualified for the survey. Due to the conditional and multiple choice nature of the survey, some datasets may contain a different respondent number which is annotated in the footnotes for clarity.

## Invited Participants:

- **Qualifiers:**
  - ◆ Complete, non-duplicate entry
  - ◆ Required to work in the manufacturing or industrial sector globally
- **Recruitment:**
  - ◆ Respondents were invited to participate via Thomas, Women in Manufacturing, and Inbound Logistics emails. The invitation pool was incentivized with an executive summary report of the survey findings.

## Respondents' Firmographics:

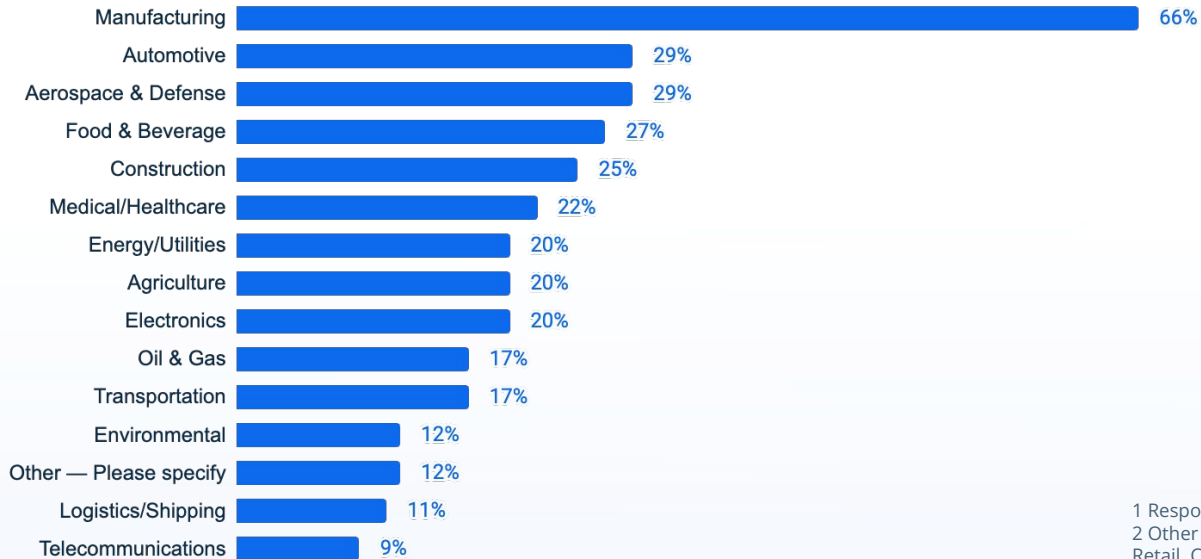
- **Revenue:** Business revenues span from less than \$1 million to more than \$1 billion.
- **Employees:** Company size spans from 1 to more than 15,000 employees.
- **Company Location:** Identified by country and state/province.

## Survey Information:

- **Survey Administration:** Qualtrics, online survey
- **Survey Language:** English
- **Questions:** 34 questions were included

# Respondents Are from a Variety of Industries

Which industrial sectors does your business serve? (select all that apply)



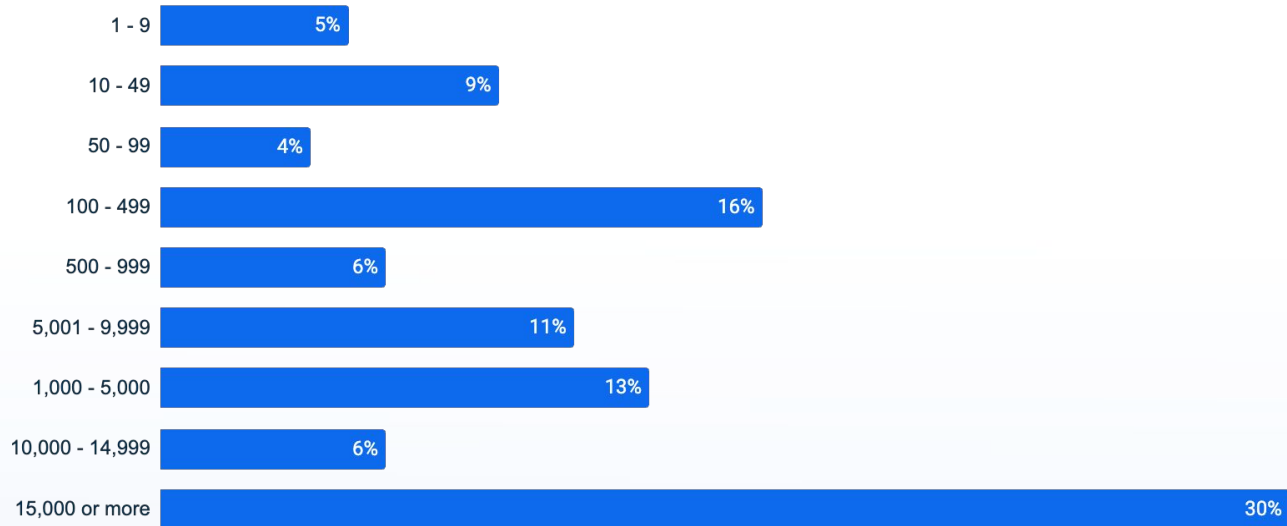
1 Response Count:n=1,125.

2 Other includes Education, Government, Retail, Chemicals, and Consumer Goods.



# Participating Organizations by Company Size

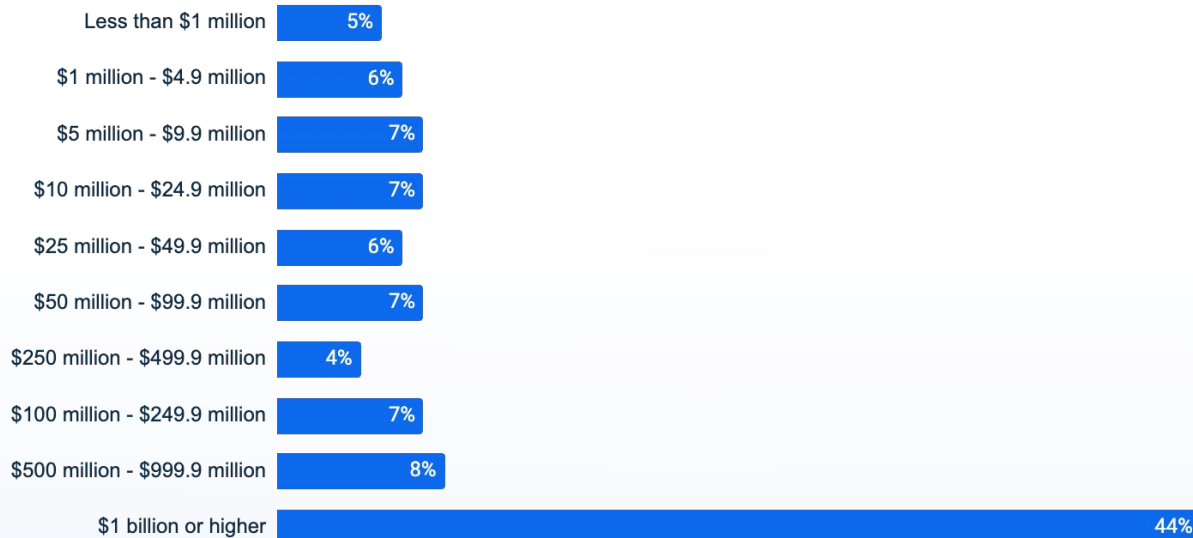
How many employees does your organization have?



1 Response Count: n=791.

# Participating Companies by Annual Gross Revenue

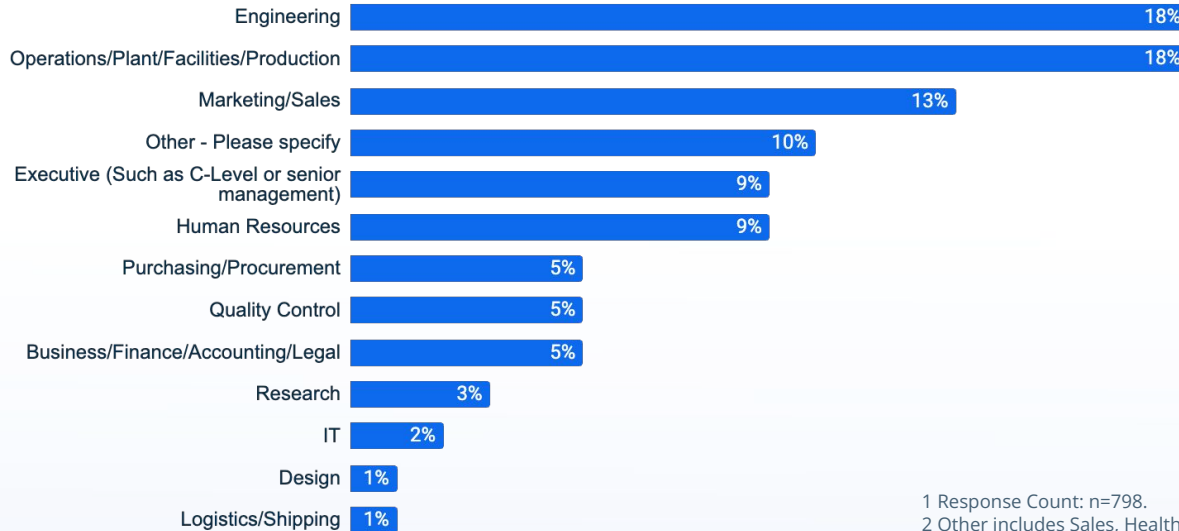
What is the annual gross revenue of your business? (entire company)



1 Response Count: n=746.

# Respondents Represent a Variety of Business Departments

Which option best describes the department you work in?

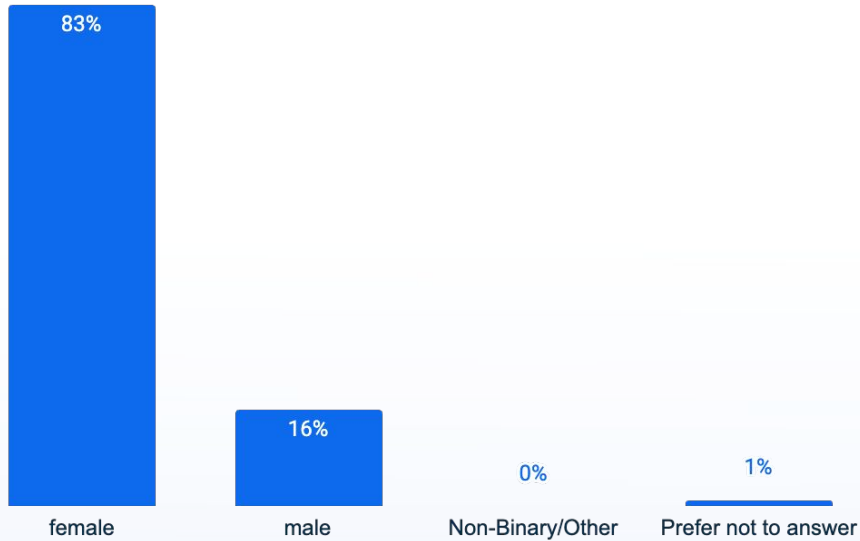


1 Response Count: n=798.

2 Other includes Sales, Health & Safety, Management, and Customer Service.

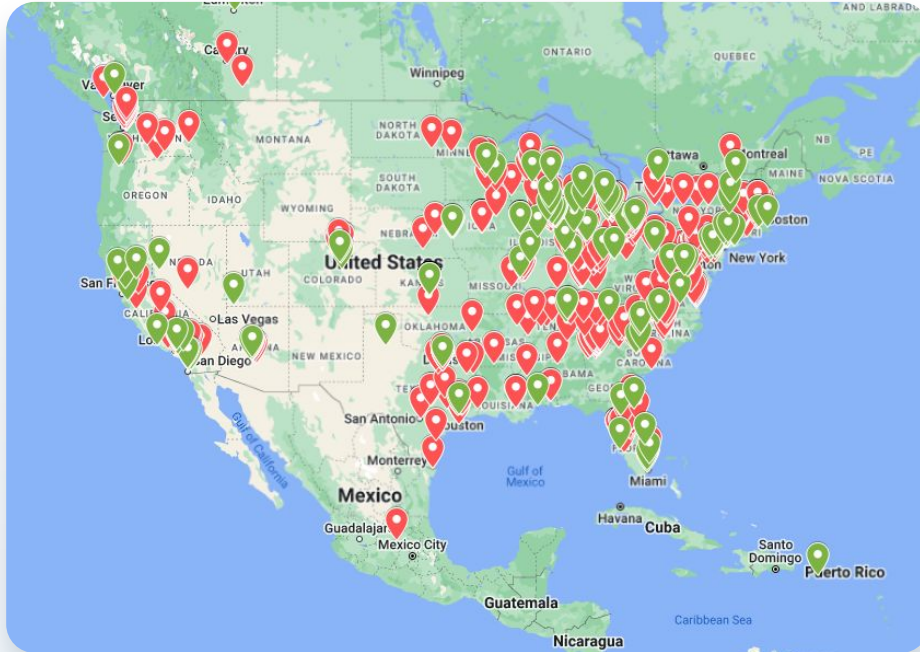
# Respondent Count by Gender

What is your gender?



1 Response Count: n=887.

# Survey Respondents Reside Across the United States



Every state is represented except for Alaska, Hawaii, Idaho, Maine, Montana, and Wyoming

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# About Xometry and the Women in Manufacturing Association



wim | women in  
manufacturing®



Women in Manufacturing (WiM) is the only national trade association dedicated to providing year-round support to women who have chosen a career in the manufacturing industry.

WiM members benefit from exclusive access to educational programming, networking opportunities, bimonthly webinars, a customized job board, a robust searchable directory, and much more.

[womeninmanufacturing.org](https://womeninmanufacturing.org)

# Unlock Global Capacity & AI-Powered Efficiency with Xometry



**10K+ vetted and verified supplier network**

located across **5** countries and **3** continents

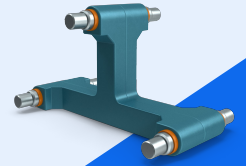


**1K+ local and global engineers and manufacturing experts**



## With Regional Headquarters

- North America**  
*North Bethesda, MD, USA*
- Asia**  
*Shanghai, China*
- Europe**  
*Munich, Germany*



**48K+ Active Buyers**

Across all transformative industries

Nasdaq: **XMTR**

Founded in 2013, HQ in MD, USA

**Managed Services**

Full production lifecycle expertise

Home of

**II THOMAS™**

A Xometry Company



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