

A close-up, profile view of a woman wearing a yellow hard hat and clear safety glasses. She is looking towards the right side of the frame. The background is a blurred construction site with blue and white tones.

# A FUTURE WORTH BUILDING

What Tradeswomen  
Say about the  
Change They Need  
in the Construction  
Industry



**INSTITUTE  
FOR WOMEN'S  
POLICY  
RESEARCH**

**Ariane Hegewisch  
Eve Mefferd**



## ABOUT THIS REPORT

Careers in the construction trades can provide high earnings and good benefits, often through a learn-while-you-earn apprenticeship. In 2020, more than 300,000 women worked in the trades—the largest number ever. Yet while their numbers are growing, women still make up fewer than one in twenty of workers in construction occupations. This report draws on the voices and experiences of 2,635 tradeswomen and non-binary tradespeople who answered the 2021 IWPR Tradeswomen's Retention and Advancement Survey. The report discusses what factors help and hinder tradeswomen's advancement in the trades, describes what it is like to be a parent in the trades, and reports on the perspectives of women apprentices. The report highlights changes that are required to help the construction industry build and sustain a skilled workforce that reflects the population of the 21st century.

## ABOUT THE INSTITUTE FOR WOMEN'S POLICY RESEARCH

We win economic equity for all women and eliminate barriers to their full participation in society. As a leading national think tank, we build evidence to shape policies that grow women's power and influence, close inequality gaps, and improve the economic well-being of families. IWPR is a 501(c)(3) tax-exempt organization that also works in affiliation with the Program on Gender Analysis in Economics at American University.

**INSTITUTE FOR WOMEN'S POLICY RESEARCH**  
1200 18th Street NW, Suite 301  
Washington, DC 20036  
[www.iwpr.org](http://www.iwpr.org)  
IWPR #C508

© Copyright November 2021 by the Institute for Women's Policy Research

Photo credit: mediaphotos/Getty Images (cover)

## BOARD OF DIRECTORS

**Nadia Allaudin, Chair**  
Merrill Lynch

**Martha Darling, Vice Chair**  
Boeing (retired)

**Marci B. Sternheim, Secretary**  
Sternheim Consulting

**William M. Rodgers III, Treasurer**  
Institute for Economic Equity

**Daisy Chin-Lor**  
Daisy Chin-Lor & Associates

**Hilary Doe**  
NationBuilder

**Beth Grupp**  
Beth Grupp Associates

**Darrick Hamilton**  
The New School

**Mary Hansen**  
American University

**Esmeralda O. Lyn**  
Worldwide Capital Advisory Partners LLC

**Joan Marsh**  
AT&T

**Eve Rodsky**  
Author, Activist, and Attorney

**Kristin Rowe-Finkbeiner**  
MomsRising

**Paula Sammons**  
W.K. Kellogg Foundation

**Elizabeth Shuler**  
AFL-CIO

**C. Nicole Mason, President**  
Institute for Women's Policy Research

**Cynthia Hess, Vice President**  
Institute for Women's Policy Research

## ACKNOWLEDGMENTS

This report would not have been possible without the tradespeople who generously gave their time to share their experiences. To safeguard their privacy, they remain anonymous. We also thank the following organizations for their feedback on survey drafts, assistance with piloting the survey, and outreach support throughout this project: Apprenticeships and Nontraditional Employment for Women (ANEW), Chicago Women in Trades (CWIT), National Taskforce for Tradeswomen's Issues, Nontraditional Employment for Women (NEW), Missouri Women in Trades (MOWIT), Moore Community House Women in Construction (WinC), Oregon Tradeswomen, Tradeswomen, Inc., Vermont Women in Trades, West Virginia Women Work (WVWW), and Women in Non-Traditional Employment Roles (WINTER). Special thanks go to Liz Skidmore of North Atlantic States Regional Council of Carpenters for her feedback on the survey instrument, and to Vicki O'Leary, Chair of North America's Building Trades Unions (NABTU) Tradeswomen Committee, and other members of this committee, for helping with the dissemination of the survey. Melina Harris, founder of Sisters in the Building Trades, went above and beyond to help with social media dissemination of the survey. The authors would also like to thank Connie Ashbrook of Ashbrook Consulting LLC and Brigid O'Farrell, as well as our colleagues Chandra Childers, Study Director, and Adrienne Smith, VP for Research, for their invaluable comments and insights on the report. Chuxuan Sun and Acadia Hall provided research assistance. We also want to express appreciation to Erin Currier, W.K. Kellogg Foundation (WKKF) Program Officer, for her support, and to Tameshia Bridges Mansfield, a former program officer at WKKF and now Vice President of Workforce Innovation at Jobs for the Future, for her inspiration and encouragement for this project.

*This report was made possible by the generous support of the W.K. Kellogg Foundation (WKKF). The report is part of a broader project on women's retention and advancement in construction and manufacturing.*

# CONTENTS

Executive Summary.....	1
Introduction.....	4
I. Working in the Trades: What Attracts Women, and How Do They Fare?.....	7
II. Pushed Out: What Is Driving Women Out of the Trades?.....	17
III. Tackling Care: Parenthood as a Challenge for Retention.....	21
IV. The Next Generation of Skilled Workers: How Are Apprentices Faring?.....	24
V. Staying Power: What Helps Women Succeed in the Trades?.....	30
Conclusion: Building a Future that Works.....	34
Appendix A: Methodology.....	37
Appendix B: Data Tables.....	40
References.....	45

# LISTS OF FIGURES AND TABLES

Figure 1. Why Did You Start to Work in the Trades? Top Reasons Rated as "Very Important".....	7
Figure 2. How Did You Find Out About Opportunities in the Trades?.....	9
Figure 3. How Often Is There At Least One Other Woman on the Job Site? If You are a Woman of Color, How Often Is There Another Woman of Color on the Job Site?.....	10
Figure 4. Do You Think You Are/Were Being Treated Equally to Men?.....	11
Figure 5. How Often Do You/Did You Experience the Following While Working in the Trades, Directed at You Personally?.....	14
Figure 6. How Often Do You/Did You Personally Experience Racial Harassment While Working in the Trades? .....	15
Figure 7. How Often Do You/Did You Encounter Porn, Offensive Graffiti, Racist, or Antisemitic Symbols While Working in the Trades?.....	16
Figure 8. What Were/Are Your Main Reasons for Leaving or Thinking about Leaving the Trades?.....	18
Figure 9. How Important Were These Work/Family-Related Reasons for Leaving or Thinking about Leaving the Trades?.....	22
Figure 10. As an Apprentice, How Often Are You Treated Equally to Men?.....	27
Figure 11. Apprentices: Most Common "Very Important" Reasons for Thinking about Leaving the Trades.....	28
Figure 12. Factors Reported "Somewhat" or "Very" Important to Help Respondents Succeed in the Trades.....	31
Table B1. Demographics of Survey Respondents.....	40
Table B2. Summary Table for Respondents by Race and Ethnicity.....	42
Table B3. Top Five Reasons for Considering Leaving the Trades by Race and Ethnicity.....	43
Table B4. Respondents (Percent) Answering Yes to Have You Ever Considered Leaving the Trades.....	44

# EXECUTIVE SUMMARY

Work in the construction trades can mean a high-paying, family-sustaining career with health care and pension benefits, accessed through learn-while-you-earn apprenticeships rather than college degrees and student debt. In 2020, over 300,000 women—the largest number ever—worked in construction occupations, reflecting growth even during the COVID-19 pandemic. But women remain highly underrepresented in the trades, accounting for just 4 percent of all workers in construction occupations. Women’s low share of construction jobs represents failures to recruit *and* to retain those who are recruited. This lack of gender diversity is costly to women because they will be much less likely than men to benefit from the substantial public funds that will likely be invested in infrastructure over the coming decade. The lack of diversity also hurts the construction industry, which is already struggling with recruitment difficulties and an aging workforce. To build a sustainable workforce for the future, the industry must recruit women from all racial and ethnic backgrounds and ensure that they can stay and thrive in the industry.

This report draws on the 2021 IWPR Tradeswomen’s Retention and Advancement Survey—answered by 2,635 tradeswomen and non-binary tradespeople—to examine what helps and hinders their advancement in the trades, and what needs to change to help the construction industry build and sustain a skilled workforce that reflects the population and needs of the 21<sup>st</sup> century. IWPR administered the survey in the winter of 2021 through networks of tradeswomen, tradeswomen’s organizations, union women’s committees, and social media. While the survey is not random and therefore not a representative sample of the national tradeswoman population, it reflects a diversity of experiences across age, race and ethnicity, education, sexuality, parental status, trade, qualification, union membership, sector, and geography.<sup>1</sup>

The report seeks to provide advocates, policymakers, and industry stakeholders with evidence-based research findings to improve the advancement and retention of women and non-binary people in the trades. To date, most policies have focused on improving women’s access to the trades. This report addresses improvements that should be made to ensure that women who entered the trades want to stay and can prosper. The report fills an important gap in the research by examining tradeswomen and non-binary tradespeople’s insights and experiences on what drew them to the trades, what it is like to work in the trades, what might drive them out, and what helps them stay. The report also examines the experiences of parents and apprentices in the trades. The report concludes with recommendations for improving women’s advancement and retention in the trades.

---

<sup>1</sup> Union members and respondents from states with tradeswomen’s organizations are overrepresented.

## Key Takeaways

The report shows just how important and transformative a career in the trades can be, while also highlighting that workplace culture and practices need to change if the industry wants to attract and retain women.

### **The tradeswomen workforce is very diverse.**

- Tradeswomen are a very diverse group, and this is reflected in responses to the survey. Of the 2,635 respondents, 17.8 percent identified as Latina, 15.5 percent as Black, 5.0 percent as Asian American and Pacific Islanders, 4.2 as Native American, and 54.3 as White.
- Parenthood is common among survey respondents. Half (50.0%) have children younger than 18, and more than one in five (21.9 percent) have children younger than six. Single mothers make up one in four (25.0 percent) of those with kids under 18.

### **While many tradeswomen feel respected and well-treated, still others face discrimination and harassment.**

- Many women who work in the trades feel respected and enjoy their work and their community of co-workers. At the same time, far too many tradeswomen (47.7 percent) report that they are held to a different standard than their men co-workers, face discrimination in many aspects of their work, and sometimes contend with an unsupportive if not hostile work environment.
- Harassment is a constant for too many. More than a quarter of respondents (26.5 percent) report that they are always or frequently harassed just for being a woman; 23.6 percent report always or frequently face sexual harassment; 21.0 percent of women of color report that they are always or frequently racially harassed; and 19.0 percent of LGBTQ respondents say that they always or frequently face harassment based on sexual orientation.

### **Lack of respect, discrimination, and harassment are driving too many women out of the trades.**

- If the industry wants to improve the retention of women, it needs to tackle unequal treatment. More than four in ten respondents (44.4 percent) say that they have seriously considered leaving the industry. For those, lack of respect or discrimination is the most cited reason for wanting to leave, with 47.2 percent rating it very important.
- Respondents also report being frustrated about the lack of effective follow-up when issues are raised. Almost four in ten respondents who are thinking about leaving the trades say that the problems they raised were not taken seriously (38.8 percent).

### **For parents, difficulties with finding child care and lack of supports during pregnancy and maternity are the most important reasons for considering leaving the trades.**

- The large percentage of mothers among respondents suggests that it is problematic to assume that just becoming a parent will cause women to leave the industry. The majority of those with children younger than six (55.1 percent) or with children under 18 (59.7 percent) have not considered leaving the trades.

- But lack of work-family supports pushes out many tradeswomen. Among parents with children under 18 who seriously considered leaving the trades, more than two-thirds (69.3 percent) mention difficulties finding child care, and almost as many (63.4 percent) mention lack of pregnancy accommodations as very or somewhat important reasons for leaving. Notably, these also rank highly as reasons for leaving among tradeswomen who are younger than 35 and do not have children.

**Apprentices—the new generation of skilled tradespeople—are increasingly diverse by gender and race. Many face a concerning lack of equal treatment at work and in training.**

- Between 2016 and 2019, women’s numbers grew more strongly than men’s for apprentices in each major racial and ethnic group. Despite strong growth, only 3.6 percent of all construction trade apprentices were women.
- Inequity at the core of the apprenticeship model makes it harder for apprentices to become fully skilled workers. Over one in five respondents (21.6 percent) report that they are rarely or never treated equally with men on work assignments, and just under one-fifth (19.4 percent) report lack of equal treatment when it comes to on-the-job training.

**The tradeswomen community, support from their union locals, and policies to create more inclusive workplaces are key to success.**

- Respondents point to many factors that help them succeed in the trades, including supports from their union local (described as “very important” by 45.9 percent of union members), union women’s committees and tradeswomen’s organizations (by 32.6 percent), and participation in a women-focused pre-apprenticeship program (by 42.4 percent of women who attended such programs).
- Workplace policies (e.g., anti-harassment policies) were identified as “very important” to success in the trades by over four in ten respondents (44.6 percent), followed by having an employer committed to diversity goals (38.5 percent) and project owners with incentives or hiring goals for women (37.9 percent).

Survey respondents highlight the significant benefits of working in the trades, yet their responses also make clear that the industry needs to change if it wants to retain and grow the number of women it employs and create a thriving and more diverse workforce. Efforts focused on creating inclusive, harassment-free workplaces, mentorship and community supports, more outreach to women, and family-friendly policies to support all workers can help the industry build a sustainable workforce for the future.



# A FUTURE WORTH BUILDING

## WHAT TRADESWOMEN SAY ABOUT THE CHANGE THEY NEED IN THE CONSTRUCTION INDUSTRY

### INTRODUCTION

Despite the COVID-19 crisis, the number of women working in construction occupations in 2020 increased to over 300,000, the highest number ever. This reflects a 33.3 percent growth—or 100,000 more women—over the last five years alone.<sup>2</sup> Indeed, the Construction and Utilities industries were the only industries in the summer of 2021 in which women's jobs numbers were higher than before the COVID-19 pandemic began (Hegewisch and Mefferd 2021a). Work in the construction trades can mean a high-paying, family-sustaining career with health care and pension benefits. Such careers can be accessed through earn-as-you-learn apprenticeships. Apprenticeships combine paid employment with classroom instruction and on-the-job learning and provide a route to acquiring highly valued industry-recognized qualifications without the need for college debt. For women as much as men, a trades career can be a pathway to economic mobility and financial security for themselves and their families (Childers, Hegewisch, and Jackson 2021; Hegewisch and Ahmed 2019).

But change begins at a very low point. Even after the impressive recent growth, women still make up fewer than one in 20 (4.0 percent) workers in construction occupations—an increase from just three percent in 2015. According to the U.S. Bureau of Labor Statistics (2021), men continue to dominate the trades.

This lack of gender diversity is costly to women, who are much less likely than men to benefit from the substantial public funds to be spent on infrastructure over the coming decade. It is also costly to the construction industry, which was already being held back by recruitment difficulties prior to the COVID-19 pandemic as the industry failed to rebuild its skilled workforce coming out of the Great Recession (Markstein 2017; Associated General Contractors of America 2019). Such difficulties have been exacerbated during the COVID-19 pandemic and will likely worsen given the pending retirement of many skilled workers (Cohen 2021; Ngo 2021). Unless the industry tackles the current lack of gender and racial diversity in its workforce, it will likely lack the ability to meet the demands of the future, including substantial new investments to rebuild the nation's physical infrastructure.<sup>3</sup>

---

<sup>2</sup> IWPR calculation based on data for "Construction and Extraction Occupations" from Table 11 in U.S. Bureau of Labor Statistics (BLS) 2021a. Over the same period, total employment in the trades grew by just 0.8 percent; the BLS does not publish data on the change in the racial and ethnic composition by gender.

<sup>3</sup> See the Infrastructure Investment and Jobs Act (H.R.3684).

This report draws on the **2021 IWPR Tradeswomen’s Retention and Advancement Survey** to examine tradeswomen’s<sup>4</sup> perspectives about what helps and hinders their advancement in the trades, and what needs to change to help the construction industry build and sustain a diverse and skilled workforce. The survey asked what attracts women to the trades, how they learned about careers in the trades, and what it is like to work in the trades, particularly concerning their perceptions regarding equal treatment compared to men.

The survey focused on the issue of retention. While no gender-specific data on attrition are available, the industry is known to have particularly high staff turnover rates (Heard 2020). This also applies to apprenticeship programs, the route into well-paid skilled jobs in the industry. Data suggest that women are more likely than men to discontinue their apprenticeship programs (Reed et al. 2012; Wilkinson and Kelly 2018). Given the difficulties of surveying a sizeable sample of women who have left the trades and directly hearing their reasons for leaving, the survey adopts a proxy method by asking whether respondents have considered or are considering leaving the trades, and then asking what factors are making them consider leaving. Finally, the survey asks what helps women succeed in the trades, and what policy changes they want to see.

The online survey was disseminated in the winter of 2021 through networks of tradeswomen, tradeswomen organizations, union women’s committees, and social media. It was answered by 2,635 tradeswomen and non-binary tradespeople—almost one percent of all women working in trade occupations. The survey is not random and therefore not a representative sample of the national tradeswoman population. It overrepresents union members, apprentices, and respondents from states with women-focused pre-apprenticeship programs or tradeswomen’s organizations.<sup>5</sup>

Lastly, responses likely overrepresent the most skilled and committed among tradeswomen. One in two respondents to the survey (49.8 percent) currently serve as foreman or supervisor, or in the past have held those or other leadership positions.<sup>6</sup> Many respondents also currently hold positions of trust and authority in their unions or have done so in the past. Among all workers in construction and extraction occupations, approximately one in ten are first-line supervisors, and women’s share—at 3.5 percent of first-line supervisors—is below their overall share of construction jobs (U.S. Bureau of Labor Statistics 2021b).

IWPR’s survey is the largest sample of tradeswomen ever surveyed. Respondents reflect a diversity of experiences across age, race and ethnicity, education, sexuality, parental status, trade, status, union membership, sector, and geography. Responses were received from every state and Washington, D.C. For more details on the survey methodology, see Appendix A. The responses to the survey highlight the diversity of women in the construction workforce.

---

<sup>4</sup> The report refers to individuals who responded to the survey as “respondents” or “tradespeople,” because the individuals are either women (cisgender and transgender) or non-binary people. When referring more broadly to policies and conditions in the trades, we use “tradeswomen” rather than “tradeswomen and non-binary tradespeople” for the sake of brevity, and because the scope of this paper and its policy recommendations is limited and does not address policies and issues specific to non-binary people working in the trades. We are unable to report on non-binary tradespeople specifically in this report because the sample size is too small (30 respondents identified as non-binary/gender nonconforming, and 16 as both female and gender nonconforming). Further research is needed on the experiences of transgender and non-binary tradespeople in the trades.

<sup>5</sup> Respondents from California are 15.6 percent of all respondents, followed by responses from Illinois (6.0 percent) and New York (5.8 percent); see Hegewisch and Mefferd 2021b for full survey and results. See also Appendix A for an overview of methodology.

<sup>6</sup> One in seven (14.0 percent) are currently superintendents or have held that position in the past; three in ten (30.1 percent) are working as instructors or have done so in the past; 26.1 percent as shop stewards, and 20.3 percent as union officers; see Hegewisch and Mefferd 2021b for full survey and results. See also Appendix A for an overview of methodology.

**Our sample highlights the diversity of tradeswomen.** One in six respondents (17.8 percent) identified as Latina, almost as many (15.5 percent) as Black, and one in ten (12.4 percent) as Asian, Indigenous Hawaiian or Pacific Islanders, Indigenous Mainland American or Alaska natives, or two or more races, and slightly over half identified as White non-Hispanic (54.3 percent) (see Table B1). Compared to the underlying composition of the tradeswomen workforce, Latinas are underrepresented, and Black women overrepresented in this sample (Hegewisch and Ahmed 2019).<sup>7</sup>

**Parenthood is common among survey respondents.** A substantial majority of respondents (64.0 percent) are parents, half (50.0 percent) have children younger than 18, and more than one in five (21.9 percent) have children younger than six years old. Single mothers make up one in four (25.0 percent) of those with kids under 18. Respondents are as likely to be parents as women in the workforce overall.

**Survey responses show just how important and transformative a career in the trades can be, yet it is often elusive for many women.** Respondents highlight that workplace culture and practices need to change if the industry wants to retain women, with more than four in ten respondents (44.4 percent) reporting that they have seriously considered leaving the trades, and with “lack of respect/harassment” being the most prevalent reason for thinking about leaving.

**To ensure a healthy, vibrant workplace in the trades that sets women up for success, broader efforts to create more inclusive workplaces are needed.** Survey respondents shared their challenges—from harassment to poor advancement opportunities and a lack of work-family supports— and pointed to recommendations to tackle these.

Drawing on the survey results, this report highlights what attracts women to careers in the trades in the first place, and then turns to an overview of women’s experiences in the trades, with a focus on the factors that still push too many out of these jobs, including harassment, discrimination, and a lack of support for advancement. The report then considers the experiences of apprentices—the next generation of skilled workers—followed by a deeper look at parenthood, child care, and other care responsibilities. After describing respondents’ perspectives on what drives and supports their success in the trades, the report concludes with specific recommendations for building a more welcoming and sustainable construction industry that works for all workers.

---

<sup>7</sup> In 2018, Latinas were 32 percent, and Black women 8 percent, of all women working in construction occupations (Hegewisch and Ahmed 2019).

# I. WORKING IN THE TRADES:

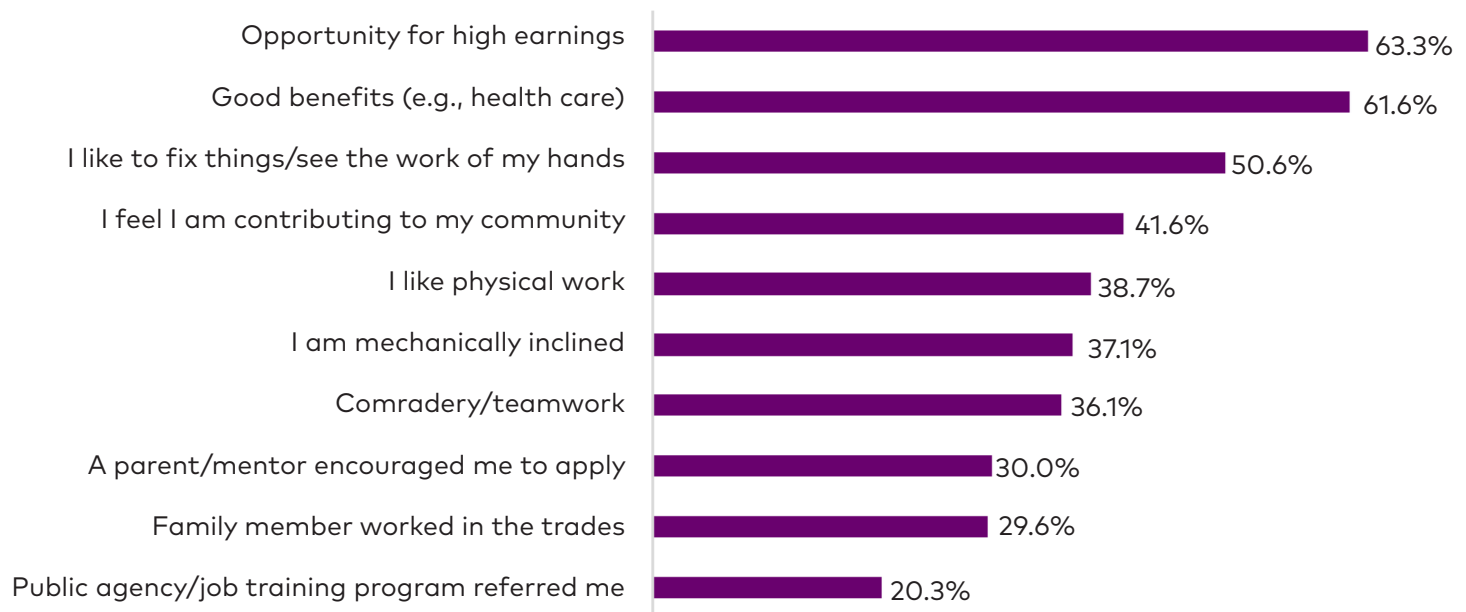
## WHAT ATTRACTS WOMEN, AND HOW DO THEY FARE?

*"Great pay, love working with my hands... and I believed I could make a change."*  
Journeyworker,<sup>8</sup> Union, Black

*"I'm a single mother and needed to make good money to survive."*  
Apprentice, Union, White

Women enter the trades for all kind of reasons but first and foremost because of the pay and benefits that are available in construction jobs. Over six in ten respondents said high earnings and good benefits were very important to their decision to enter the trades (Figure 1). Of the individuals who answered the survey, 55.0 percent earned at least \$50,000 per year in 2019 (before COVID-19), and almost three in ten respondents (28.8 percent) earned at least \$75,000 (data not shown elsewhere in this report). By comparison, the median annual earnings for all women in 2019 were just under \$36,000 (Semega, Kollar, Shrider, and Creamer 2020).

**FIGURE 1. Why Did You Start to Work in the Trades? Top Reasons Rated as "Very Important"**



**Notes:** Respondents could rate items as: very important; somewhat important; slightly important; or not important. The percentages shown here are based on those who chose "very important."

**Source:** 2021 IWPR Tradeswomen's Retention and Advancement Survey.

<sup>8</sup> A "journeyworker" is a licensed tradesperson who has successfully completed an apprenticeship in their trade. Apprenticeships combine paid work with on-the-job training and classroom instruction. Depending on the trade, an apprenticeship lasts approximately two to six years, requiring between 4,000 and 12,000 hours of paid employment.



There is a noticeable difference between union and non-union respondents both when it comes to identifying earnings as a “very important” reason for entering the trades and in terms of reported earnings, which likely reflects the fact that pay and benefits are substantially higher in construction jobs that are covered by collective bargaining agreements than in those that are not. Seven in ten union respondents (70.3%) compared with just over half (53.4%) of non-union respondents said that this was “very important.” A national analysis of the full-time earnings of construction workers in 2016 to 2018 found that women construction workers not covered by a union contract earned 40.1 percent less than women who were covered by such a contract; for men, the corresponding gap was slightly smaller, at 34.0 percent (calculated based on Hegewisch and Ahmed’s 2019 analysis of Bureau of Labor Statistics data).<sup>9</sup> Survey respondents reported similar differences; more than six in ten union respondents (63.5 percent) earned at least \$50,000 in 2019 compared with four in ten non-union respondents (40.7 percent). The higher rating of opportunities for high earnings by union members thus likely is a direct outcome of the higher earnings that are available to union than non-union members.

The differences between union and non-union respondents were even starker when it came to “good benefits.” Nearly three quarters (73.8 percent) of union respondents described such benefits as very important, compared with just 41.8 percent of non-union respondents. Here, too, responses likely reflect the fact that benefits are much more common in the union sector. According to 2015 data, union construction workers were almost twice as likely to receive health insurance benefits as non-union workers (72.2 compared with 38.3 percent); similarly, union construction workers are also more likely to have access to and participate in retirement plans (Center for Construction Research and Training 2018).

While money matters, doing the work—the joy of working with ones’ hands, doing physical work, and contributing to their community—was also ranked as very important by many respondents (Figure 1). As one of them explained, “I enjoy building and love working with my hands. It brings me great joy to be a part of the development of my community.”

### How Do Women Find out About Careers in the Trades? Haphazardly.

*“[I] overheard a recruiter talking to a group of men.”*

—Apprentice, Union, Other Race

*“If I had known about the trades and what they offer in high school,  
I would’ve been a journeywoman by now.”*

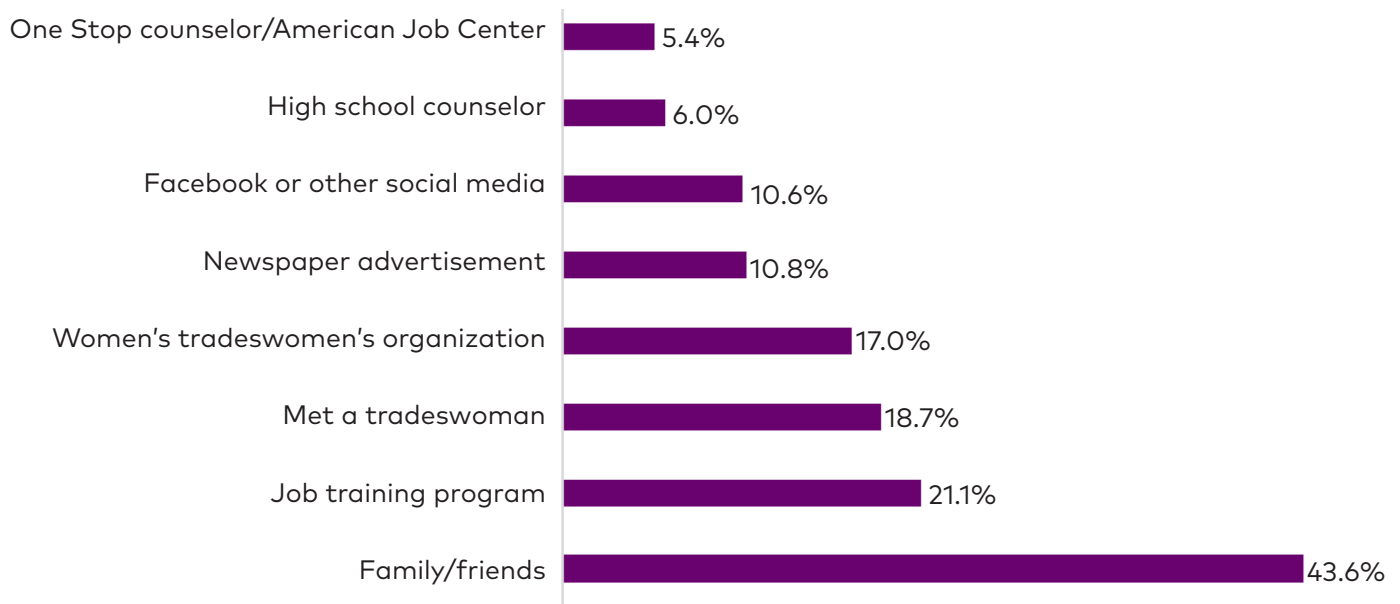
—Apprentice, Union, Black

For too many women, finding out about opportunities in the trades is still an accident. Family and friends are by far the most common reference point for learning about the trades, mentioned by more than four in ten respondents (Figure 2). Job training programs, high school counselors, and American Job Centers generally failed to alert respondents to opportunities in the trades even though these institutions are formally tasked with providing students and clients with guidance about career options leading to jobs with family-sustaining pay, including careers that are

<sup>9</sup> The Bureau of Labor Statistics distinguishes between union members (the category captured in IWPR’s 2021 Survey) and workers represented by unions. Data for the earnings of women union members alone are not available. In 2020, 95% of workers “represented by unions” in construction and extraction occupations were also union members, although these data are not published by gender (U.S. Bureau of Labor Statistics 2021b).

nontraditional for their gender. Just 6.0 percent of respondents said that their high school counsellor ever told them that the trades might be an option for them (Figure 2). While respondents younger than 35 are somewhat more likely to have heard from career counsellors about trades opportunities than those over 45 (6.9 compared with 2.3 percent; data not shown elsewhere in this report), the role of career counselors continued to be very limited. The role of job training programs has changed somewhat over time; job training programs were a source of information or referral to the trades for over a quarter of respondents younger than 35 (25.6 percent) but for fewer than one in ten (9.2 percent) respondents 45 years and older (data not shown elsewhere).

**FIGURE 2. How Did You Find Out About Opportunities in the Trades?**



**Note:** Respondents could select all options that applied to them.

**Source:** 2021 IWPR Tradeswomen's Retention and Advancement Survey.

## What Is It Like for Women in the Trades?

Many women who work in the trades feel respected and enjoy their work and the support and comradery of their co-workers. At the same time, far too many face isolation, are held to a different standard than their male co-workers, and must contend with an unsupportive if not downright hostile working environment.

### *Being the Only Woman*

*"Until this year during Covid, I have never worked side by side with another female in my company. This year I have three women on my team!"*

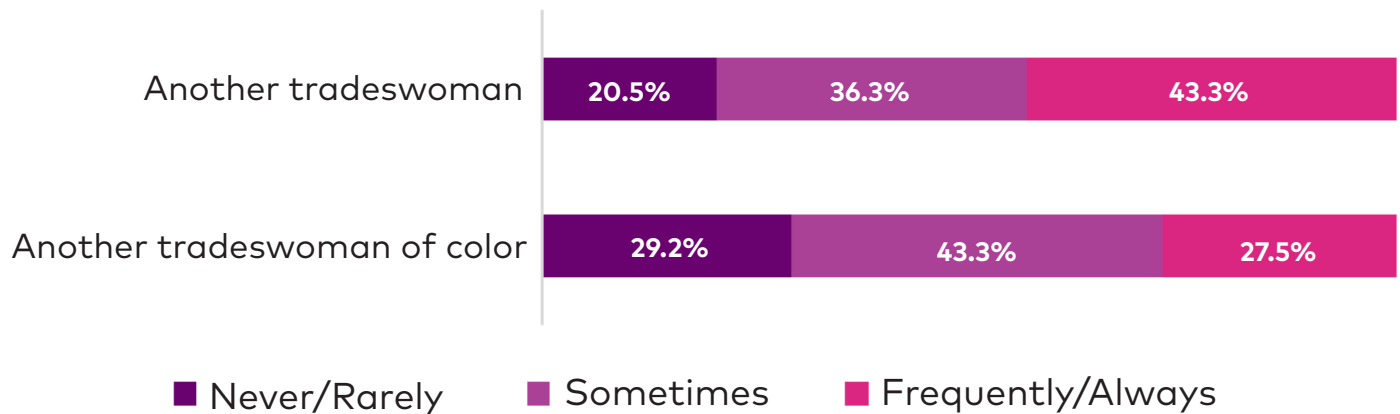
*Experienced Tradeswoman, Non-Union, White*

Given that nationally only four percent of construction workers are women (U.S. Bureau of Labor Statistics 2021a), and fewer than two percent are women of color (Hegewisch and Ahmed 2019), the odds of being on a job site with other tradeswomen are low. However, at least among survey respondents, working with another woman and, for women of color, with another woman of color, is not as rare as the national data would suggest. More than four in ten survey respondents (43.3

percent) say that there is "always" or "frequently" another tradeswoman on the job site, whether in their own or in a different trade, and more than a quarter (27.5 percent) of respondents of color say there always or frequently is another woman of color on the job site (Figure 3). This is likely a consequence of the proactive policies pursued by tradeswomen's groups and women-focused pre-apprenticeship programs<sup>10</sup>, generating cohorts of women to work in the same region, and working with contractors and public authorities to increase gender diversity more generally (Hegewisch and Ahmed 2019; Shaw and Hegewisch 2018).<sup>11</sup>

Yet, at the same time, one in five respondents (20.5 percent) rarely or never work with another tradeswoman, and almost three in ten tradeswomen of color (29.2 percent) rarely or never are with another tradeswoman of color when they work (calculated based on Figure 3). This isolation can be alienating for women working in the trades and can also prove dangerous. Men-dominated workplaces are a risk factor for workplace sexual harassment and assault (Hegewisch, Forden, and Mefferd 2021).

**FIGURE 3. How Often Is There At Least One Other Woman on the Job Site? If You are a Woman of Color, How Often Is There Another Woman of Color on the Job Site?**



**Notes:** Combines highest frequency from two questions: "in your trade" and "in another trade." Respondents who identified as White non-Hispanic were excluded from analysis of answers for "Another tradeswoman of color."  
**Source:** 2021 IWPR Tradeswomen's Retention and Advancement Survey.

**Many Tradeswomen Feel Respected and Treated Equally to Men**

*"I have been very lucky to work for an incredible company and for an owner that wants us to all succeed to our maximum potential. He believes our success is his success."  
 —Journeyworker, Union, Native American*

Respondents identified several features affecting their feelings of being treated equally to their men coworkers. A substantial number of respondents report that frequently or always there is no difference in the way they are treated at work compared to the men who work with them.

<sup>10</sup> For a list of tradeswomen's groups and women-focused pre-apprenticeship programs, see <https://tradeswomentaskforce.org/about-us>.

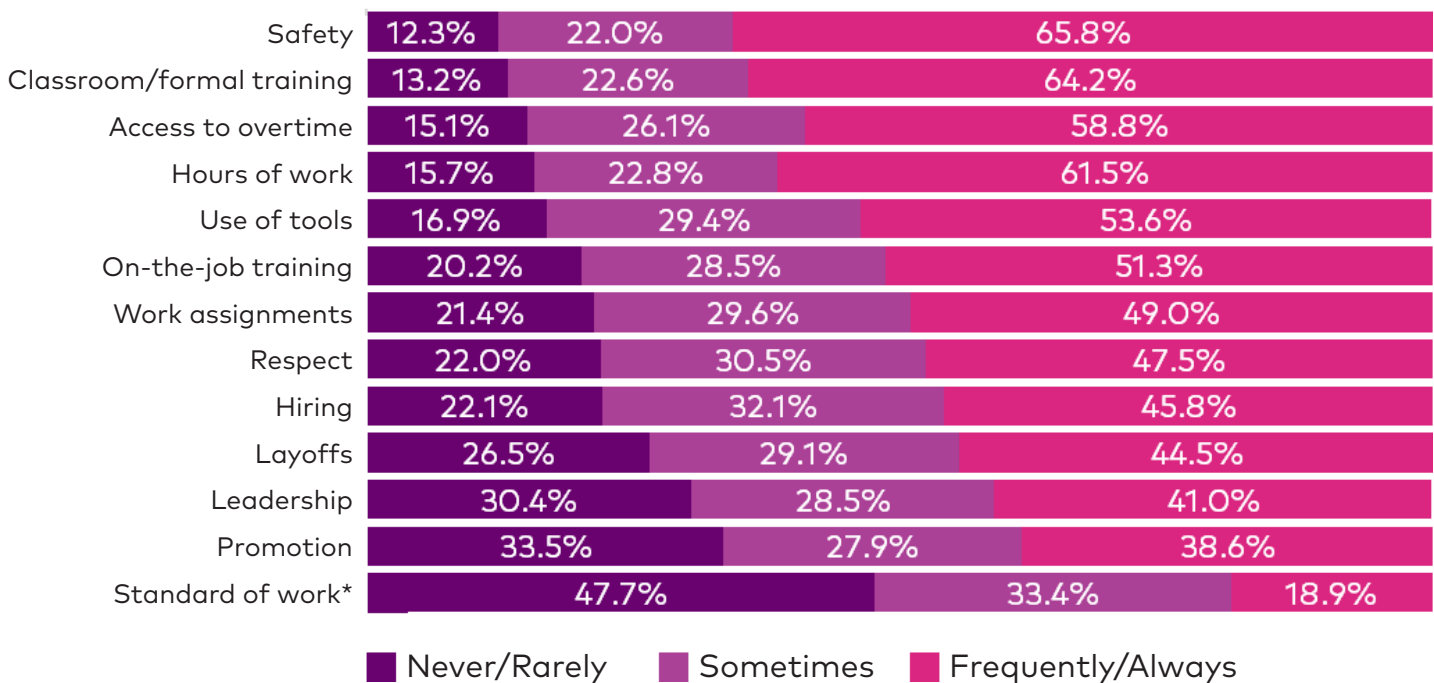
<sup>11</sup> Given that the survey was distributed with the help of tradeswomen's organizations and union women's committees, and thus was more likely to reach women who benefit from those groups' interventions, it may also overrepresent progress in the industry.

Respondents are most likely to report being treated equally when it comes to "safety" with almost two thirds (65.8 percent) saying this is always or frequently the case (calculated based on Figure 4). The construction industry has a poor safety record, accounting for 20 percent of on-the-job fatalities but just six percent of the work force and comparatively high injury rates in many sectors (U.S. Occupational Safety and Health Administration 2020; 2021). Thus, being treated equally to men is not the same as being treated well. However, it is encouraging to see that at least the majority of respondents do not report feeling adversely treated when it comes to safety at work.

Majorities of respondents also report that they always or frequently feel treated equally when it comes to access to hours (61.5 percent) and access to overtime (58.8 percent; Figure 4). In the construction industry only a minority of workers are employed as permanent core staff—most move from contract to contract and job site to job site. How many hours one can work, and how many are premium-paid overtime hours, is crucial for having enough resources to get through periods with little or no work, for accruing pension benefits, and for receiving health insurance coverage. Nearly half of survey respondents (49.0 percent) say that they are treated mostly equally when it comes to work assignments (important for highlighting one's skills and securing future work), respect (47.5 percent), hiring (45.8 percent), and layoffs (44.5 percent; calculated based on Figure 4).

These responses show the feasibility of providing a decent and respectful working environment for women in the trades. Nevertheless, the number of individuals reporting that equal treatment is not a standard experience of their working lives is disconcertingly high (Figure 4).

**FIGURE 4. Do You Think You Are/Were Being Treated Equally to Men?**



**Notes:** \*Reverse coded, where "I am always held to a different standard of work" is converted to "I am never treated equally on my standard of work."

**Source:** 2021 IWPR Tradeswomen's Retention and Advancement Survey.



## **Too Many Women Experience Unequal Treatment**

*“Being a female in the trades is hard on every level because all the cards are stacked against us with shop hours starting before any daycare opens, [or] simple things like PPE not fitting or calendars of nude women, etc.”*

Apprentice, Non-Union, Latina

Nearly nine in ten respondents (84.4 percent) report that they were never or rarely treated equally compared to men in at least one aspect of the work and learning experiences shown in Figure 4.

Lack of equal treatment—on top of being a minority in the workforce—creates a work environment where women, especially women of color, are under constant pressure not only to be good but to be better than their male coworkers. Nearly half (47.7 percent) report that they are rarely or never held to the same standard as men. Fewer than one in five (18.9 percent) feel that they can frequently or always rely on basic equality in standards and expectations (Figure 4).

The gender-based differences in standards and expectations are described across a wide range of experiences. Fully one-third of respondents (33.5 percent) report lack of equality in promotions and three in ten (30.4 percent) report never or rarely being treated equally in leadership development. More than one in five respondents say they are rarely or never treated equally in relation to layoffs (26.5 percent), hiring (22.1 percent) or work assignments (21.4 percent). Over one in seven report never or rarely being treated equally to men with respect to hours of work (15.7 percent) and overtime (15.1 percent) (calculated based on Figure 4).

Promotion, leadership development, and standard of work all relate directly to individuals' ability to advance in their trades careers, earn higher income, and take on leadership positions—important aspects of women's economic wellbeing. Perceived inequality in layoffs is also of serious concern. Finding consistent work is already difficult for many people working in the construction trades. Laying off women and non-binary people in an unequal way compared to their male counterparts puts them at a further disadvantage. Respondents' experiences with workplace safety are particularly disconcerting. More than one in ten respondents (12.3 percent) say they are never or rarely treated equally when it comes to workplace safety (Figure 4), while nearly three in ten (28.2 percent) report that they are never or rarely provided with gloves or safety equipment in their sizes (data not reported elsewhere).

## **A Minority of Respondents from Each Racial and Ethnic Group Experience Unequal Treatment**

Differences by race and ethnicity are remarkably small when it comes to respondents reporting that they rarely or never get equal respect for their work; responses range from 19.7 percent of Asian and Pacific Islander respondents to 22.8 percent of Native American respondents (data not shown elsewhere). Likewise, differences between racial/ethnic groups are small when it comes to always or frequently being held to a higher standard than men; responses range from 43.6 percent of Black respondents to 49.6 percent of Asian and Pacific Islander respondents (data not shown elsewhere). The similarity in these experiences is notable given the differences in age, union membership, and experience levels between the different racial and ethnic subsamples discussed above (see also Tables B2 and B3).

Differences across racial/ethnic groups also appear in reports of unequal treatment in hiring, layoffs, access to hours, and overtime. Native American respondents are most likely to report never or rarely being treated equally in hiring (32.4 percent), layoffs (32.4 percent), and access to hours of work (20.5 percent). Native American respondents are also most likely to report never or rarely being treated equally when it comes to promotions (37.8 percent) or leadership development (32.7 percent; data not shown elsewhere).

Black respondents are more likely than others to report rarely or never being treated equally in the allocation of overtime (21.1 percent) and also report comparatively high inequality when it comes to layoffs (31.6 percent) and promotions (36.0 percent). Asian and Pacific Islander, Latina, and White respondents are comparatively less likely to report unequal treatment, with, respectively, 17.1 percent, 14.7 percent, and 14.8 percent reporting never or rarely being treated equally in access to hours of work, a fifth reporting never or rarely being treated equally in hiring (21.3, 22.1 and 20.4 percent, respectively), and 22.2 percent of Asian and Pacific Islander respondents, 24.4 percent of White respondents, and 27.6 percent of Latina respondents reporting inequality in layoffs. Notably, the proportion of White respondents reporting unequal treatment in promotions (33.2 percent) and leadership development (31.9 percent, data not shown elsewhere) are almost as high as those reported by Native American respondents.

To some extent, these different experiences of unequal treatment reflect differences in the demographic composition of the subsamples.<sup>12</sup> For example, White respondents include the highest share of older tradespeople (Table B2), which may give them more standing in the workplace. However, working in the trades for longer may also explain White respondents' greater frustration and exposure to unequal treatment regarding promotions. Black respondents, on the other hand, include the highest proportion of apprentices, followed by Native respondents. Latinas and Asian respondents include higher numbers of journey-level workers (Table B2). Thus, Black survey respondents' reports of comparatively high levels of unequal treatment in access to overtime, layoffs, and promotions may reflect their status as apprentices in addition to discrimination. Interviews with Black, Latina, and Afro-Latina apprentices and early career tradeswomen suggest that, while White men receive the most preferential treatment regardless of their status, apprentices face greater unequal treatment than journey-level workers and Black and Afro-Latina tradeswomen faced greater levels of discrimination than White women (Childers, Hegewisch, and Jackson 2021). Future research will investigate the underlying factors in greater detail.

## Harassment and Discrimination are Common Experiences

*"I have a target on [my] back for being both female and Black.  
There's constant harassment and I'm not taken seriously about learning and working."  
Apprentice, Union, Black*

While some experienced tradeswomen noted in their comments that, over the years, harassment and discrimination had become less severe, harassment is still a serious issue for many tradeswomen.

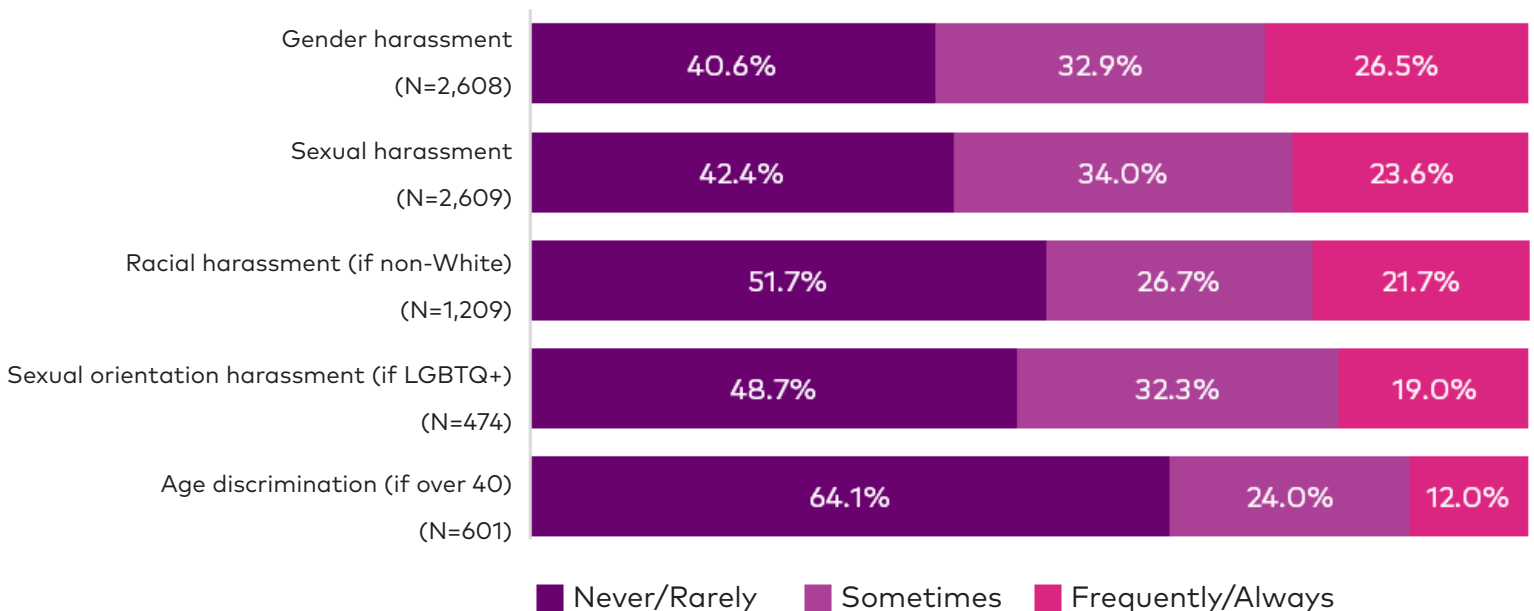
---

<sup>12</sup> As discussed in the Methodology (Appendix A), all data are presented unweighted because there is no underlying nationally representative data set on women working in the trades by race, ethnicity, state, and apprentice/ journey/other experience levels.

Far too many respondents describe near-constant harassment at work. More than a quarter of respondents (26.5 percent) report that they always or frequently experience gender harassment.<sup>13</sup> Nearly as many (23.6 percent) always or frequently experience sexual harassment, while over one in five respondents who are people of color (21.7 percent) always or frequently experience racial harassment (Figure 5). Native American respondents are most likely to report always or frequently experiencing racial harassment (Figure 6).

Harassment based on sexual orientation is also high, with close to one in five LGBTQ respondents (19.0 percent) reporting that this is always or frequently the case (calculations based on Figure 5). As one respondent commented, "Being a lesbian makes it even harder...don't talk or tell is the rule for me just to make my job easier."

**FIGURE 5. How Often Do You/Did You Experience the Following While Working in the Trades, Directed at You Personally?**

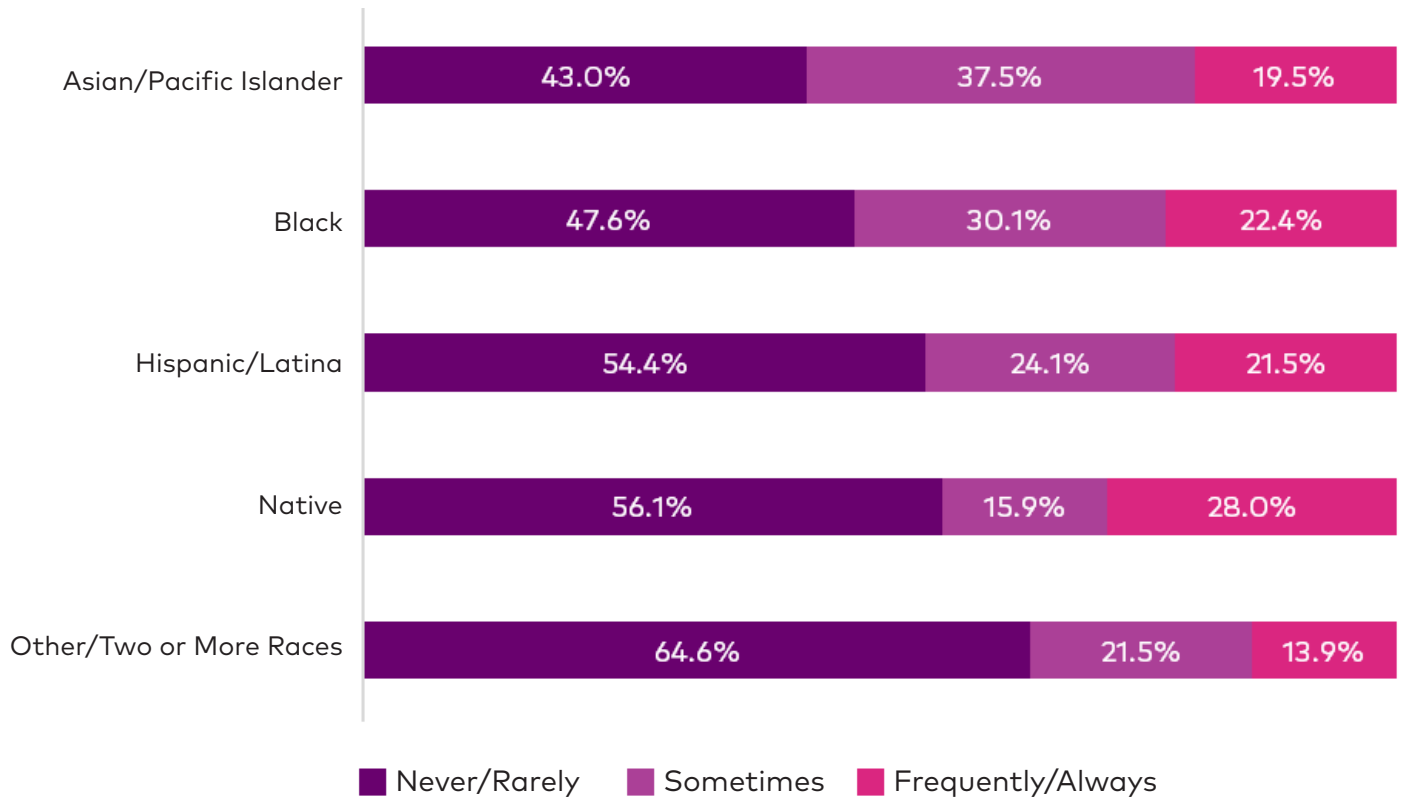


**Notes:** For definitions of LGBTQ and of racial and ethnic groups, see Appendix A for methodology.

**Source:** 2021 IWPR Tradeswomen's Retention and Advancement Survey.

<sup>13</sup> The survey did not provide a definition of 'gender discrimination' and thus it is not possible to say with certainty how respondents interpreted this item, whether as sex discrimination or as gender identity discrimination; see also U.S. Equal Employment Opportunities Commission (n.d.).

**FIGURE 6. How Often Do You/Did You Personally Experience Racial Harassment While Working in the Trades?**



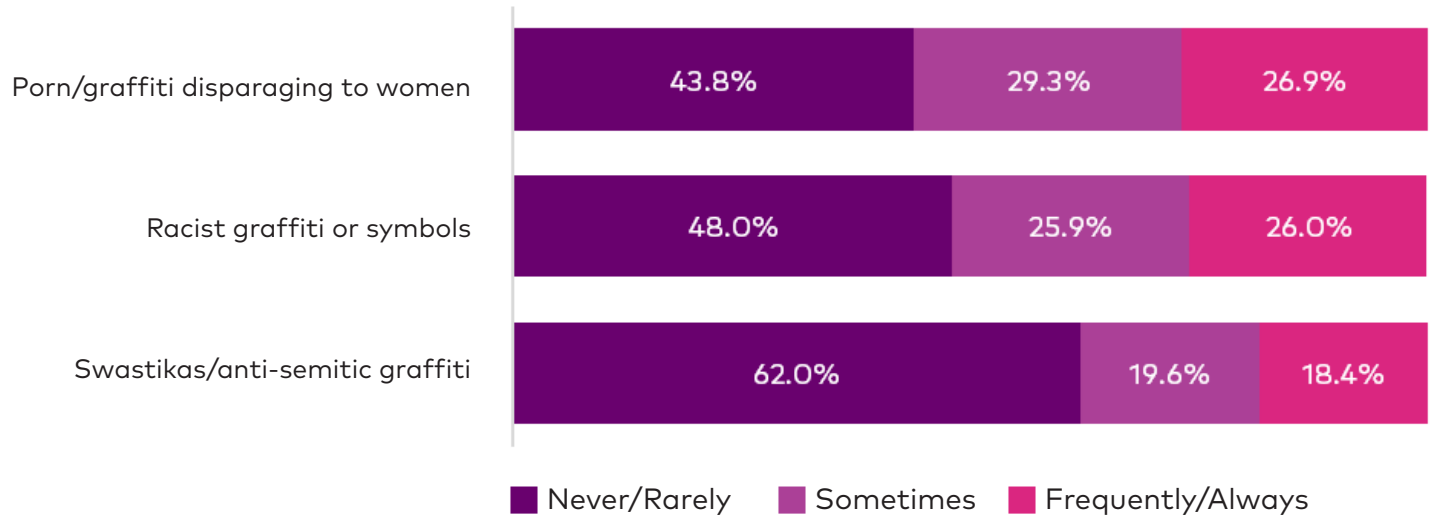
**Note:** For definitions of racial and ethnic groups, see Appendix A for methodology.  
**Source:** 2021 IWPR Tradeswomen’s Retention and Advancement Survey.

Graffiti and offensive symbols such as nooses are one aspect of the harassment and discrimination and a reminder of the aggression and contempt that many tradeswomen face at work. Fewer than half of all respondents report that their worksites are mostly free of disparaging porn, graffiti, and other symbols of hate. More than one in four report that seeing porn or graffiti disparaging to women (26.9 percent), racist graffiti or symbols (26.0 percent),<sup>14</sup> or swastikas/antisemitic graffiti (18.4 percent) are a constant of their working environment (Figure 7).

<sup>14</sup> The percent of those reporting that they are always or frequently exposed to racist graffiti or symbols is highest for Native respondents (31.5 percent); Latinas (29.8 percent); and Black respondents (29.0 percent). Among White and Asian respondents, the shares drop to 25.0 percent and 14.3 percent, respectively.



**FIGURE 7. How Often Do You/Did You Encounter Porn, Offensive Graffiti, Racist or Antisemitic Symbols While Working in the Trades?**



**Source:** 2021 IWPR Tradeswomen’s Retention and Advancement Survey.

Another way of putting women and minorities in their place is to tell them that they are on the job solely to fill a quota; more than a quarter of respondents (25.2 percent) reported that this happens to them always or frequently.

Thus, while many respondents report that they are largely treated equally and work in an environment that is mostly free from discrimination and harassment, for too many this is not the case. Even when harassment and discrimination are inflicted on coworkers rather than directly at an individual, working on a jobsite with a toxic and discriminatory culture is bad for all employees (Sprigg et al. 2019; Deloitte 2019; Johnson, Widnall, and Benya 2018). Such dysfunctional workplace practices and cultures can also drive workers out of the industry. The next section will consider tradeswomen’s intentions to leave the trades.

## II. PUSHED OUT:

### WHAT IS DRIVING WOMEN OUT OF THE TRADES?

*"It was as if no matter what I did, I was a joke. I loved my job but I became so discouraged I figured I would go try something new."*

Journeyworker, Non-Union, Black

*"To 'journey out' is supposed to be a joyful occurrence and an achievement, but it only means that you've got to defend yourself more than ever from the constant questioning of your abilities. [...] I am starting my own business not because I particularly want to but because I know it will be easier on my mental health to work alone."*

Journeyworker, Non-Union, White

Given the extent of worksite hostility and harassment, it is not surprising that more than four in ten respondents (44.4 percent) say that they have left or seriously considered leaving the trades.<sup>15</sup> The share of respondents who have left or seriously considered leaving is particularly high for LGBTQ respondents (54.3 percent), Native American respondents (52.8 percent), and respondents who do not have children (50.3 percent). Also notable is that union members are substantially more likely to think about leaving than non-union respondents (47.3 compared with 39.4 percent; Table B4).

These high rates are potentially very costly. In addition to the economic costs borne by women and non-binary people who are forced out of the trades and may end up unemployed or in lower-paying jobs, employers and unions also take substantial losses. Every time a tradeswoman is forced out of the trades, particularly when she is an experienced journeywoman or several years into her apprenticeship, the industry loses her skills along with thousands of dollars that were invested in her training (Hegewisch 2020). Given the construction industry's current recruitment difficulties, these costs are multiplied through potentially lost contracts and delays in scheduled work (Associated General Contractors of America 2019; U.S. Chamber of Commerce 2021).

### Harassment and Discrimination are the Most Prevalent Factors Driving Women out of the Trades

*"Despite a lot of men who are great to work with, the overall environment makes me miserable and exhausted. I want to feel valued and respected for my abilities. I can't have that if I stay in the field."*

Journeyworker, Union, White

Among those who express serious intentions to leave the trades, the most commonly cited reason—rated as "very important" by close to half (47.2 percent) of those who express serious leave intentions—is lack of respect/harassment (Figure 8). It is the most common reason ranked as most important by Black and White non-Hispanic respondents, and the second most common reason for Latina respondents (Table B4). One in three (32.9 percent) say that they got tired of the yelling culture and disrespect.

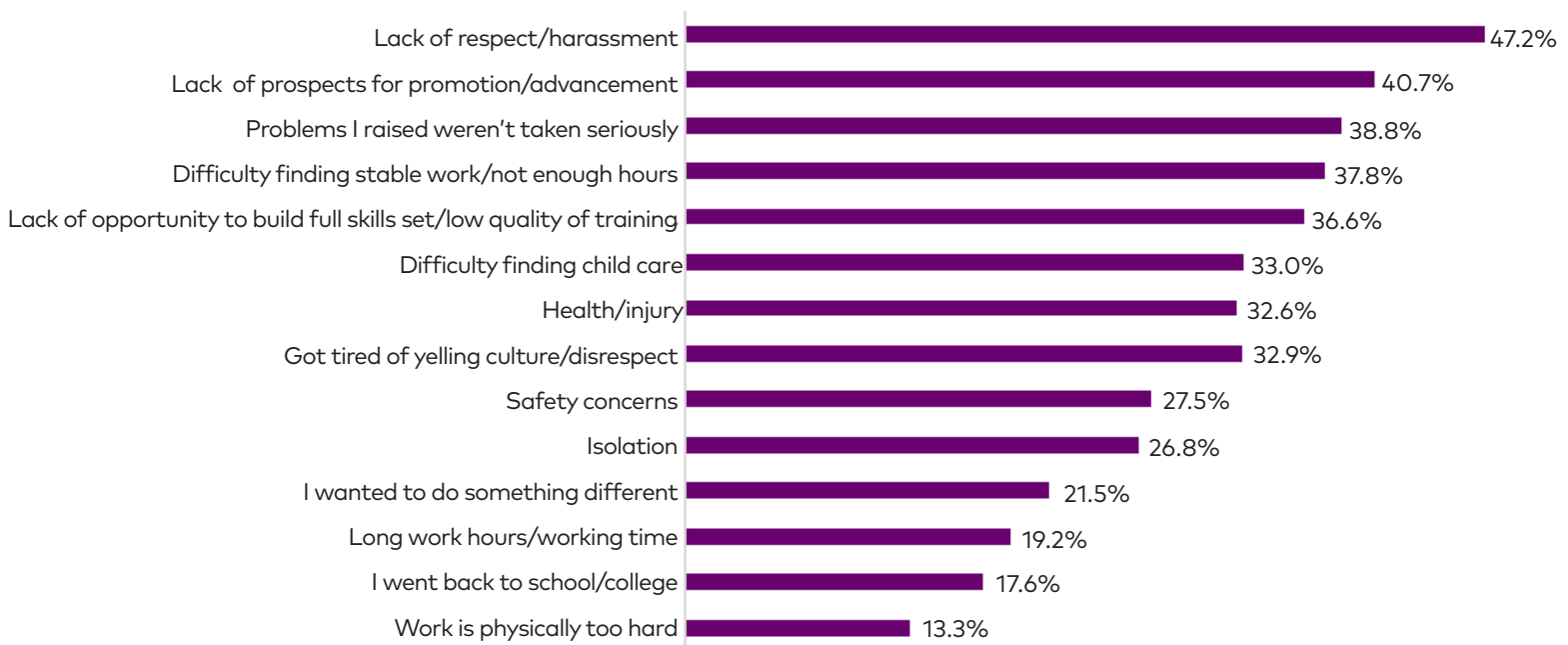
---

<sup>15</sup> Among respondents, 171 (6.6%) left the trades, 873 (33.6%) say that they have seriously considered leaving but are still in the trades, and 110 (4.2%) replied that they left the trades and returned (see Hegewisch and Mefferd 2021b).

Compared to others, respondents who have seriously considered leaving the trades are also more than twice as likely to report unequal treatment in hiring (32.7 percent compared with 13.7 percent), more than twice as likely to report unequal treatment when it comes to work assignments (30.8 percent compared with 14.1 percent), and almost twice as likely to report unequal treatment when it comes to layoffs (37.0 percent compared with 18.1 percent; data not shown elsewhere in this report).

Nearly four in ten respondents (38.8 percent) say that they are driven out of the trades because the problems they raised were not taken seriously (Figure 8). Research suggests that only a tiny fraction—just 6 to 13 percent—of harassment incidents are formally reported (Cortina and Berdahl 2008). Indeed, many respondents explained that they had not officially reported incidents of harassment or discrimination because they feared retaliation and ostracism. In this context, a high 55.7 percent of respondents report at some point notifying a supervisor or foreman, human resource manager or other company official, their business agent (senior union official) or staff overseeing their apprenticeship program (data not shown elsewhere). As discussed at the outset, survey respondents are likely to be particularly experienced and committed to the trades, and thus may not be typical of the general construction workforce. The majority (57.9 percent) of those who stepped up and notified someone in authority say that the incident of harassment or discrimination was not addressed effectively (data not shown elsewhere).

**FIGURE 8. What Were/Are Your Main Reasons for Leaving or Thinking about Leaving the Trades?**



**Note:** Analysis limited to those who left or considered leaving the trades.  
**Source:** 2021 IWPR Tradeswomen's Retention and Advancement Survey.

Research reflects that harassment situations are often escalated because of either a lack of clear reporting procedures or a failure to respond by those formally responsible for doing so (see Hegewisch, Forden, and Mefferd 2021 for a review). The financial costs to workers who are driven out

of their jobs due to harassment are high, with lifetime effects on their economic security. Harassment often leads to periods of unemployment or lack of work as the individual is trying to recuperate and regain the mental strength to return to work. It often leads to career changes to avoid the toxic circumstances that characterized the workplace where harassment occurred. The costs to individual who are pushed out of work due to harassment can run into several hundred thousand dollars over a lifetime. A 30-year-old apprentice pushed out of her union apprenticeship into a non-union job in another field faces financial costs of more than a million dollars over her lifetime (Hegewisch, Forden, and Mefferd 2021).<sup>16</sup>

### Many are Frustrated with Lack of Advancement Opportunities

*"When I had an opportunity to become supervisor, my business agent shot it down and put one of his guys in that position with less years than me."*

Journeyworker, Union, White

*"We have no members that are in any position of power that are Black. We don't have any women in positions of power that actually have a voice that is respected or responded to."*

Journeyworker, Union, Black

Another prominent theme for respondents who are thinking about leaving was a lack of support for promotion and advancement; 40.7 percent of those who have considered leaving say that this is a very important reason (Figure 8). This is the most common reason chosen as important by Latina respondents, and the second most common reason by Black respondents (Table B3).

Here, too, there is a close connection to unequal treatment with men; more than twice as many (47.9 compared to 22.1 percent) of those who seriously think about leaving report that they are never or rarely treated equally in promotions or leadership development (45.1 compared with 18.9 percent; data not shown elsewhere).

Inadequate training for leadership roles is a related issue. Among respondents who held leadership positions such as shop steward, trainer or instructor, foreman/supervisor, or superintendent, those who left or considered leaving were less likely to report they had been well trained for their positions than others (17.1 compared with 30.6 percent). This highlights the importance of tradeswomen feeling they have been prepared for leadership roles and that they have the tools and training needed to succeed therein.

The respondents who are frustrated with lack of access to promotions are likely to represent workers who are already more experienced, and willing to step up to take more responsibility. This is at a time when the industry reports difficulties with filling positions, including leadership position (Markstein 2017; Associated General Contractors of America 2019). In comments, many respondents do not just report frustration with lack of advancement opportunities generally, but more specifically with the bias and discrimination that taint promotion decisions. Among respondents to the survey 58.3 percent reported never or rarely working under a woman supervisor or foreman. As an experienced

---

<sup>16</sup> Case studies with detailed cost estimates of the financial costs of harassment are available at [https://iwpr.org/wp-content/uploads/2021/07/Lifetime-Costs-of-Sexual-Harassment-Estimates\\_2021.xlsx](https://iwpr.org/wp-content/uploads/2021/07/Lifetime-Costs-of-Sexual-Harassment-Estimates_2021.xlsx).

Latina tradeswoman and union member notes, "It helps to have other, experienced women in leadership positions assist less experienced women coming up the rank and file." Having more women in positions of leadership in the industry can send important signals to less experienced women or women considering joining the trades. By pushing out tradeswomen who are ready to step up through biased and discriminatory promotion decisions, the industry loses both valuable skills and opportunities to develop a more diverse future workforce.

### Lack of Economic Stability and Poor Workplace Policies Can Drive Women Out of the Trades

*"Men get all the hours!!! Women only work [part-time].  
First year journeymen make more than I do [in the] same job."  
Journeyworker, Union, White*

*"I realize I wouldn't be ALLOWED to work enough to survive."  
Journeyworker, Union, Latina*

Another important reason that women consider leaving the trades is economic instability and inability to obtain enough stable work or hours (37.8 percent; Figure 8). Not surprisingly, the share of those who are thinking about leaving is substantially higher among those who did not work full-time, full-year in 2019 than among those who did (68.3 compared with 56.5 percent; data not shown elsewhere).

Work in the construction industry is highly cyclical, including seasonal downturns. But those who say they are thinking about leaving are also much more likely than others to say that they are not treated equally with men when it comes to hours of work. Those who seriously consider leaving are almost twice as likely to report that they are never or rarely treated equally, compared with those who are not considering leaving the trades. Almost twice as many of those who consider leaving say that they are never or rarely treated equally in access to hours of work (21.7 compared with 11.0 percent; data not shown elsewhere).

As is true across all occupations, some survey respondents may choose to leave their jobs in order to do something else. Some respondents are considering a return to education, while others contemplate a different occupational pathway. Given the often-hard physical nature of work, as well as the fact that the survey was conducted during the COVID-19 pandemic, it is perhaps not surprising that health or injury was mentioned as "very important" by about a third of respondents (32.9 percent; Figure 8). This is the most common reason for Native American respondents to the survey (Table B3). A third of respondents (33.0 percent; Figure 8) pointed to difficulties with finding child care (an issue that will be discussed in greater detail in the next section). But the most frequently cited reasons are clearly linked to a poor workforce environment.

As this section highlights, a serious potential issue for the construction industry persists: Many tradeswomen are seriously considering leaving the industry. Those who are thinking about leaving are substantially more likely than others to report unequal treatment, lack of advancement opportunities, and a failure to tackle problems raised. High leave intentions, thus, are not an inevitable facet of the industry, but the result of poor policies and practices that are exacerbating skill shortages and squandering talent.

### III. TACKLING CARE: PARENTHOOD AS A CHALLENGE FOR RETENTION

*"I wanted a career to support me and my kids. I was tired of working and looking for jobs that lead nowhere and paid me nothing."*

Apprentice, Union, Asian

*"I don't know if it is possible for me to start a family while working in the trades. Do we even get maternity leave? I am head of household. I wonder how would I survive for 9 months without work."*

Journeyworker, Union, Black

The majority of tradespeople in this sample are parents. One in two have children younger than age 18, and one in five have children under six years of age. Many mothers thrive in the trades, and a majority of parents (58.8 percent), including those with children younger than six (55.1 percent), answered "no" when asked whether they have seriously considered leaving the trades. Indeed, respondents with school-aged kids (6 to 17) are much less likely than the average to voice leave intentions (33.6 percent compared with 44.4 percent; Table B3). While the survey results almost exclusively capture those parents who stayed in the trades (and thus cannot claim to be representative of all mothers in the trades), they do suggest that it is simply wrong to assume that becoming a parent will cause women to leave the industry. Indeed, the financial needs associated with having children may make trades jobs even more attractive to many mothers. That said, pregnancy, maternity, and child and eldercare responsibilities clearly present problems for many tradeswomen and lead some to consider leaving the trades.

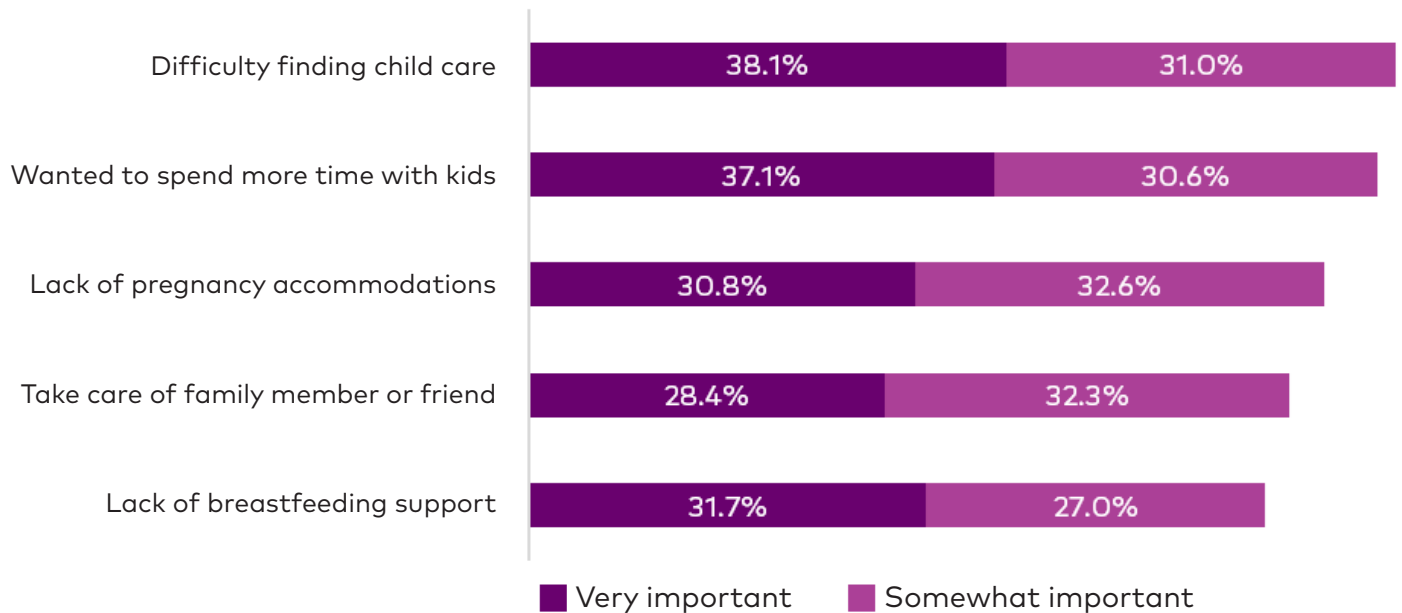
The lack of a federal right to maternity and parental leave and the high costs of child care in the United States create high burdens for many families and drive many women out of good jobs, if not out of the workforce altogether (see for example ChildCare Aware 2020; Malik et al 2018; Rossin-Slater and Stearns 2020; U.S. Department of Labor 2015). These difficulties are amplified for women working in the construction trades. The physical nature of much of the work makes pregnancy accommodations, including paid time off if temporary light duty is not available, particularly important. When it comes to child care, construction hours—often involving early starts as well as lengthy commutes—pose the added logistical challenge of finding care solutions before schools or traditional child care centers open (Hegewisch 2019; 2020). Workers may have to work at more than one site within one week or even every day, facing different starting and commuting times; additionally, periods of intense work are often interspersed with being laid-off and waiting for work. Finding child care to fit those patterns is difficult; child care centers need stability, with guaranteed attendance and pay, while it can be hard for tradeswomen to continue to pay the child care center while they are on lay-off.

Such difficulties are reflected in parents' reasons for leaving or seriously considering leaving the trades. Seven in ten (69.1 percent) of respondents with children say that difficulty with finding child care is a very or somewhat important reason for considering to leave, two-thirds (67.7 percent) say they want to spend more time with their kids, almost two thirds (63.4 percent) report that lack of pregnancy accommodation is/was very or somewhat important for thinking about leaving, and 58.7 percent note lack of breastfeeding support (Figure 9).

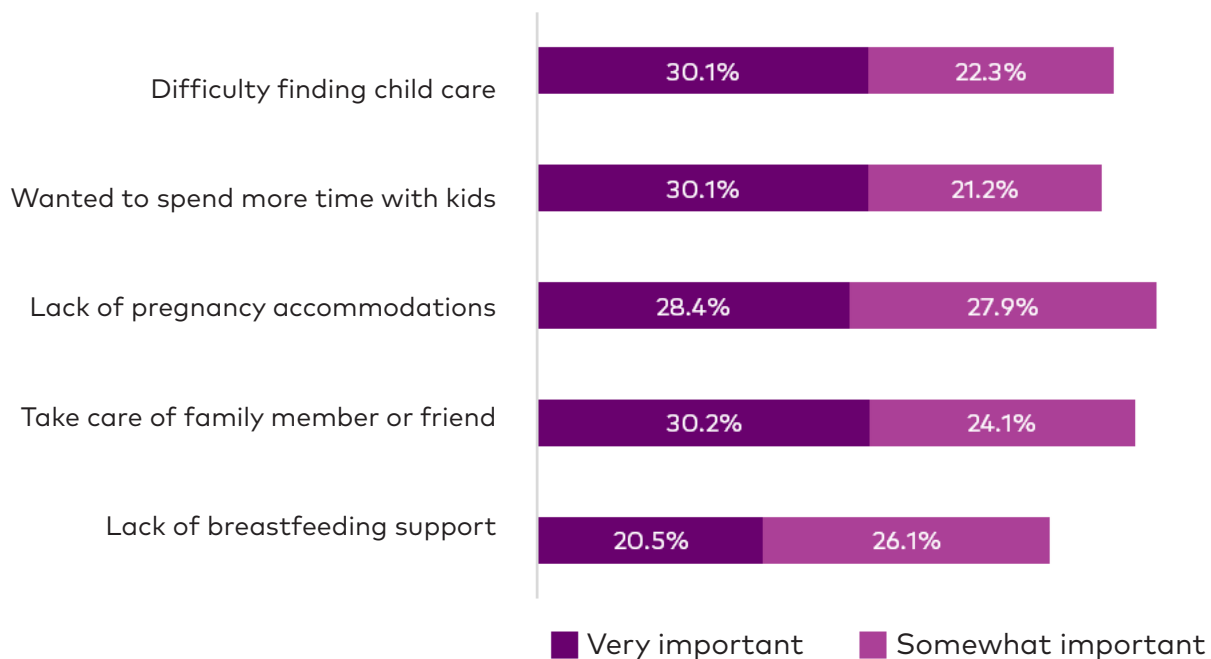


**FIGURE 9. How Important Were These Work/Family-Related Reasons for Leaving or Thinking about Leaving the Trades?**

Parents with Children Under 18 Who Have Seriously Considered Leaving the Trades



Respondents Under Age 35 Who Do Not Have Children and Who Have Seriously Considered Leaving the Trades



**Source:** 2021 IWPR Tradeswomen’s Retention and Advancement Survey.

Notably, lack of support for pregnant workers or parents is also a considerable concern for respondents who do not have children. As one apprentice commented, “It does scare me that in the future when I decide to have children, the carpenters union doesn’t have paid maternity leave/job protection for journeymen and ESPECIALLY for apprentices.” Those who are younger than 35

and may consider having children at some point are almost as likely as respondents with children under 18 to cite the lack of work-family supports and difficulties of finding enough time for family as important or somewhat important reasons for leaving (Figure 9).

Without federally required paid parental leave, unions and their employer partners are beginning to take on the responsibility of ensuring the physical and financial well-being of their pregnant workers. To cite one example, the Ironworkers—the first union to introduce such a benefit jointly with management (Hegewisch 2018)—provide six months of paid leave at two-thirds of the worker’s usual pay (capped at \$800 per week; Ironworker Management Progressive Action Cooperative Trust 2021). In 2018, the North Central States Regional Council of Carpenters began to offer a similar policy: up to \$800/week for 26 weeks of pregnancy and 6 weeks maternity leave (Nolasco-Gomes 2018). Others have followed since. These programs help workers to stay in the trades when pregnant and parenting, thus lowering worker turnover and augmenting the number of women in trade work. Paid pregnancy leave also ensures that pregnant workers are not unjustly fired or required to work in unsafe conditions.

Notably, union members are less likely than non-members to identify work/family issues as important reasons for leaving or seriously considering a departure from the trades. Among those with children under 18, union members are more likely than non-union members to rate lack of pregnancy accommodations (40.3 and 30.1 percent respectively), lack of breastfeeding support (48.3 compared with 33.0 percent) or wanting to spend more time with kids (36.8 compared with 26.3 percent) as not important or only slightly important reasons for thinking about leaving the trades (data not shown elsewhere).

Finding child care remains difficult for parents in the trades regardless of union status; union members are as likely as their non-union counterparts to point to difficulties with finding child care. However, recent initiatives in Oregon and Massachusetts are exploring new solutions to the need for child care during construction hours (IWPR and National Taskforce on Tradeswomen’s Issues 2021; Hegewisch 2020).

As noted in other discussions of leave intentions, those parents who responded to the survey have found a way to make parental responsibilities work in the trades. The voices of those who permanently left the trades because they were unable to find child care, or who never considered the trades because they could not envision how to be a parent in this field, are largely missing. Better capturing their experiences, including whether or how they might be persuaded to return to construction, is a task for future research.

## IV. THE NEXT GENERATION OF SKILLED WORKERS: HOW ARE APPRENTICES FARING?

*"A paid apprenticeship without the burden of more college debt was hugely important for me! I wanted a career change but didn't want tens of thousands of dollars of debt."*

Apprentice, Union, White

*"I am not being properly trained. Being a woman of color, I see how we are treated: last hired, first laid off. Never working with a journeyman so I can learn my craft.*

*Always working alone."*

Apprentice, Union, Black

Apprentices, who made up one in five survey respondents, are of particular interest because they represent the next generation of tradeswomen. Recruitment, advancement, and retention of a diverse group of women apprentices now will determine the representation of women as journeyworkers and experienced tradespeople, shop stewards, foremen, supervisors, and other leaders in the future.

Apprenticeships combine classroom instruction and on-the-job learning, offering an earn-as-you-learn opportunity to acquire highly valued, industry-recognized qualifications. Entering or developing a career through an apprenticeship can benefit workers significantly, as they avoid college debt and have a ready-made opportunity to earn a living while studying. The time spent as an apprentice before qualifying or "journeying out" depends on the trade, but apprenticeships typically last at least three to four years, the equivalent of 6,000 to 8,000 hours worked. Another key component of apprenticeship is wage progression, with hourly pay increasing after every 1,000 hours worked and satisfactory classroom performance. Apprentices typically also receive health care insurance and pension fund contributions as part of their benefits (U.S. Department of Labor Office of Apprenticeship 2021; NABTU 2021).

The large majority of apprenticeship programs are joint union labor-management programs (NABTU 2021), which is reflected in the comparatively high union membership of apprentice respondents—72.5 percent were members of a trade union (data not shown elsewhere).

### **Apprentice Diversity is Growing, Albeit from a Low Starting Point**

The apprentices who answered this survey (23.0 percent of all respondents; Table B1) demonstrate the racial diversity of the current group of apprentices. Among apprentices responding to the survey, 54.9 percent are White non-Hispanic, 17.9 percent are Black, 16.4 percent are Hispanic/Latina, 3.1

percent are Asian, 2.7 percent are Native American, and 1.9 percent are Pacific Islander (each racial category is race alone, non-Hispanic; Hispanic/Latina can be of any race). The composition of the sample closely matches the racial and ethnic composition of women apprentices in 2019.<sup>17</sup>

In recent years, the trades have made some progress in attracting more women to apprenticeship programs. IWPR's analysis of data for the 25 states participating in the federal Office of Apprenticeship's apprenticeship database from 2016 to 2019 finds that the number of women apprentices increased at almost twice the rate as the number of all apprentices in the construction trades (57.7 compared with 29.8 percent). Growth rates have been pronounced for women apprentices across race and ethnicity, with Latina apprentices seeing the largest increases, almost doubling their numbers between 2016 and 2019; women in each group experienced stronger growth than men.<sup>18</sup> But strong growth rates must be viewed in the context of the low starting point. Women still made up only 3.6 percent of all construction trade apprentices, and Black and Latina women just 0.7 and 0.6 percent, respectively, of all construction trades apprentices.<sup>19</sup> More progress has been made in three states not included in these data, each with policies actively focused on apprentice diversity (see, for example, Oregon Department of Transportation 2020; Kelly and Wilkinson 2020; Shaw and Hegewisch 2018; Policy Group on Tradeswomen's Issues (PGTI) 2021). In Massachusetts, home of PGTI and pre-apprenticeship Building Pathways, women were 8.7 percent of apprentices in 2019.<sup>20</sup> In both Oregon, home of Oregon Tradeswomen, and Washington, home of ANEW, women were 7.5 percent of construction apprentices.<sup>21</sup>

When it comes to age, apprentices are a relatively homogeneous group. Respondents rarely entered apprenticeships straight out of high school. Fewer than one in ten women apprentices (8.9 percent) are younger than 25, and over four in ten (43.2 percent) are 35 years or older. This likely reflects the fact that many younger women are not aware of the opportunities offered in the trades—or that these are suitable and potentially lucrative opportunities for women as well as men. The apprentice population also varies regarding parental status—52.4 percent have children, and, of those who are parents, the majority have school-age children between six and seventeen (54.9 percent), while more than a third have children under 6 (35.1 percent).

---

<sup>17</sup> In 2019, of 11,724 women apprentices in the 25 states included in the U.S. Office of Apprenticeships database, White non-Hispanic women made up 52.1 percent, Black women 18.7 percent, Latinas or Hispanic women 17.6 percent, Asian & Pacific Islander women 3.3 percent, American Indian & Alaskan Native women 2.3 percent, and Other women 6.0 percent (IWPR analysis of registered apprentices in the 25 states included in the U.S. Department of Labor Office of Apprenticeship Registered Apprenticeship Partners Information Management Data System (RAPIDS) database). The U.S. Department of Labor does not publish gender breakdowns for apprentices by occupation or industry (U.S. Department of Labor Employment and Training Administration 2021). The RAPIDS data base does not include data from some states with state-level apprenticeship registration programs, including Massachusetts, New York, Oregon, or Washington. Data are included from California, the state with the highest number of apprentices that also independently operates overseas registered apprenticeship programs through its State Apprenticeship Agency (U.S. Department of Labor Employment and Training Administration 2021).

<sup>18</sup> Between 2016 and 2019, the number of Latina apprentices increased by 91.9% to 2,059, and respectively by 58.2% to 6,110 White non-Hispanic, 53.2% to 2,193 Black, 45.7% to 274 Native, and by 38.1% to 384 Asian and Pacific Islander women apprentices; IWPR analysis of registered apprentices in the 25 states included in RAPIDS database, as above.

<sup>19</sup> IWPR analysis of RAPIDS database, as above.

<sup>20</sup> Massachusetts data are for last quarter of 2019, compiled by the Policy Group for Tradeswomen's Issues (PGTI) from the state's Division of Apprenticeship Standards <[www.mass.gov/orgs/division-of-apprentice-standards](http://www.mass.gov/orgs/division-of-apprentice-standards)> (April 2020); data are not available by gender, race, and ethnicity. Most recent data, for the first quarter of 2021, show sustained progress, with women reach 8.8 percent of all construction apprentices, and 10.3 percent of apprentices in joint union programs (PGTI 2021).

<sup>21</sup> Oregon data provided by Oregon Industry & Labor for apprentices active during 2019 calendar year; Washington data is also for the calendar year and was downloaded from Washington Department of Labor at <<https://data.wa.gov/Labor/ARTS-Public-Data/mcr6-ujqw>> (accessed May 2020).

## Routes into Apprenticeships

Apprentices were most likely to have been introduced to the trades through family or friends (42.3 percent). More formal institutional routes designed to help individuals identify possible career paths are notably uncommon, with just 6.2 percent of respondents saying they learned about the trades from a high school career counselor, and only 3.2 percent through a One Stop/American Jobs Center. These formal career advisory services appear not to alert women to such potentially rewarding career options. By contrast, gender diversity is increasing in career and technical education: nearly one in three apprentices (27.9 percent) reported that they took a trade-related shop (or CTE) class in high school, while more than a quarter (19.1 percent) completed a trades-related class at a community college.

The results also point to the important role played by women's/tradeswomen's organizations and women-focused pre-apprenticeship programs in helping women learn about and enter apprenticeships in the trades (although of course these responses may also reflect the help provided by such groups in disseminating the survey; see Appendix A). Close to one in five respondents (18.1) said they learned about the trades through a women's or tradeswomen's organization, and one in three (31.9 percent) entered an apprenticeship program after having completed a women-only pre-apprenticeship program. Frequently offered by community-based training organizations, such programs provide women with basic knowledge of the trades and help them decide whether—and which—trades are of interest. Completing these programs does not guarantee entry to an actual apprenticeship program. However, some apprenticeship programs give credit or points for completing a pre-apprenticeship program, providing an advantage during the competitive selection process (see for example Hegewisch and Anderson 2017; U.S. Department of Labor Women's Bureau 2021). In 2015, IMPACT, the Ironworkers, began offering a national ironworker-specific, women-only pre-apprenticeship program (Hegewisch 2018; University of Iron 2021).

Nearly one-third of apprentices (31.9 percent) who responded to the survey completed a women-only program, likely reflecting pre-apprenticeship programs' assistance in disseminating the survey, while three in ten (29.8 percent) attended a mixed gender program. Many union apprenticeship programs run their own pre-apprenticeship programs that improve participants' preparation for their trade. By contrast, women-focused pre-apprenticeship programs typically provide a more general introduction to the trades, helping participants to identify the trade that best suits them before they enter an apprenticeship program.

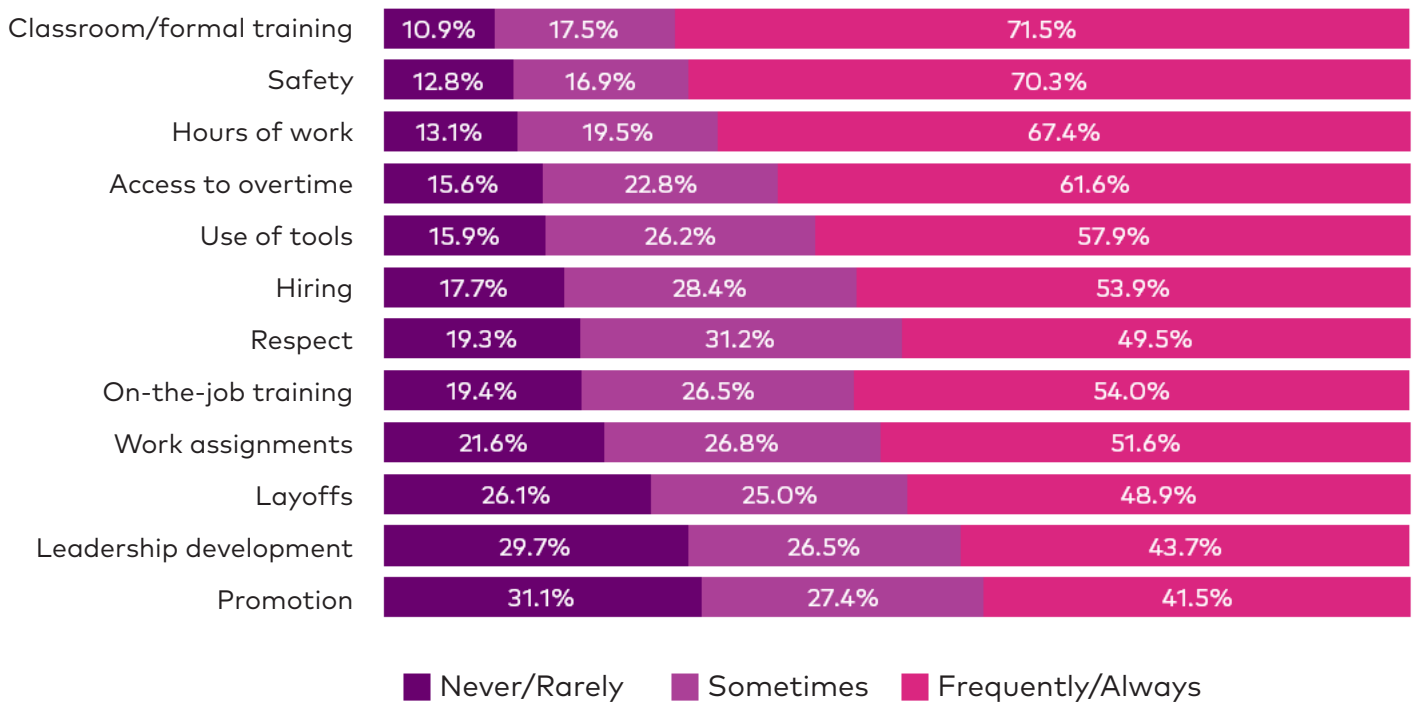
## Many Apprentices Feel Treated Equally, yet a Disconcerting Number Report Discrimination

Like their experienced tradeswomen and journeywomen counterparts, many apprentices report that they feel treated equally and enjoy working in the trades. The majority of respondents report that they are treated equal to their male colleagues in the classroom and on the job, especially related to safety at work, hours of work, use of tools, on-the-job-training, and work assignments (Figure 10). But many also experience persistent and worrisome workplace disparities.

Equal treatment is most commonly reported during classroom learning (71.5 percent), suggesting that the more formal classroom environment with trained instructors and possibly more oversight by educators promotes an equitable learning environment. But far too many apprentices report that they are rarely or never treated equally, especially in three crucial aspects of the apprenticeship

model. These include opportunities to learn about and use the tools of their trade (15.9 percent say they are never or rarely treated equally); on-the-job training received from more experienced colleagues in their trade (19.4 percent), and allocation of work assignments that allow them to learn different aspects of their trades (21.6 percent; see Figure 10). As one apprentice explained, "I'm treated very differently from my male coworkers. As a fourth year I was told to pick up trash while the first years were allowed to work."

**FIGURE 10. As an Apprentice, How Often are You Treated Equally to Men?**



**Source:** 2021 IWPR Tradeswomen's Retention and Advancement Survey.

In interviews, Black, Latina, and Afro-Latina women apprentices point to the deep frustration felt with such unequal treatment, which prevents them from becoming fully rounded tradesworkers and able to find work and thrive once they have completed their apprenticeship (Childers, Hegewisch, and Jackson 2021).

Too many respondents (13.1 percent) report they are never or rarely treated equally when it comes to the number of hours they are able to work. While some apprentices have a permanent employer, more move from contract to contract; some programs require apprentices to find their own work, while others refer apprentices to existing projects. Progress through the apprenticeship (and to increases in hourly pay) depends on completing a set number of hours. Every time a woman apprentice works fewer hours than a comparable man, not only does she earn less that week, but she is disadvantaged in the longer term.



## Many Apprentices are Thinking of Leaving

*"It's really hard being a woman and over-hearing conversations that are so obscenely sexist or racist or homophobic."*

Apprentice, Union, White

*"Target on back for being both female and Black, constant harassment and not taken serious about learning and working."*

Apprentice, Union, Black

This kind of work environment leads many individuals to consider leaving the trades. More than four in ten apprentices (42.8 percent) have left the trades or considered leaving at some point (data not shown elsewhere). Retention thus remains a significant barrier to increasing the number of women in the trades.

More than half (50.6 percent) of apprentices who have left or seriously considered leaving the trades cited harassment/lack of respect as their reason. Similarly, over a third of respondents (35.7 percent) said that problems they raised were not taken seriously, while a similar fraction (34.3 percent) pointed to the yelling culture and lack of respect. Creating a respectful working environment, with processes in place to ensure that any problems are identified and addressed promptly, remains an issue in the industry. Also very important are the lack of opportunities to build a full skillset or the low quality of training (cited by 40.3 percent), lacking access to enough hours of work (36.6 percent), and a lack of prospects for promotion and advancement (33.5 percent). A third of respondents (33.7 percent) cite child care difficulties (Figure 11).

**FIGURE 11. Apprentices: Most Common "Very Important" Reasons for Thinking about Leaving the Trades**



**Source:** 2021 IWPR Tradeswomen's Retention and Advancement Survey.

Apprenticeships represent a considerable investment for both the industry (average annual costs per apprentice are estimated at \$8,000 to \$10,000) and the apprentice (Hegewisch 2020). The apprentices who responded to the survey are largely still in the trades. However, apprenticeship data suggests that attrition is a real problem, with many apprentices leaving their program before they have completed it. While attrition is worse for women, many men, too, fail to complete their programs (see for example Kelly and Wilkinson 2020; Reed et al. 2012). The large majority of the problems named by those who are frustrated and thinking about leaving are related to workplace culture, and thus are in the purview of the industry to address.

This section highlighted the rapid growth and diversity in the number of women apprentices. As discussed, there are several avenues for action to help sustain and accelerate this momentum. These include ensuring that career advice in schools and job centers includes information about career pathways in the trades, as well as increasing access to women-focused pre-apprenticeship programs. While many apprentices report good experiences, responses also show a disconcertingly high level of discrimination and unequal treatment in key aspects of the apprenticeship experience, including on-the-job training and work assignments. Given the high costs of training apprentices, and the fact that those who report discrimination and harassment are much more likely to consider leaving the trades, addressing discrimination and harassment should be a high priority for the industry.

## V. STAYING POWER:

### WHAT HELPS WOMEN SUCCEED IN THE TRADES?

*"Women encouraging and supporting each other in the trades [helps women stay in the trades]."*  
Apprentice, Union, Black

*"Having women in leadership positions in the trades to be advocates for awareness, role models and a doorway for more women into the ranks."*  
Journeyworker, Union, Latina

*"A mentor of either gender, but a true mentor whom I can trust to be honest and direct with me and not sexually harass me."*  
Apprentice, Non-Union, Two or More Races

Many women thrive in the trades. Survey respondents highlighted several factors that are important to their success in the trades. Top among these are high earnings and good benefits (Figure 12). Not only do these factors attract women to the trades, they help tradeswomen to be good at their job. Other factors that help tradeswomen succeed include support from their union locals and the tradeswomen community, and policies and practices designed to ensure equitable access and a respectful working environment.

#### **Women-Focused Pre-Apprenticeship Programs, Union Locals and Women's Committees, and Tradeswomen Community**

Support and mentorship from other tradeswomen contribute to women's success in the trades. For example, three-quarters of respondents who completed a women-focused pre-apprenticeship program (75.1 percent), said that it was very or somewhat important to their success in the trades (Figure 12). As discussed above, such programs can help women gain skills, learn about apprenticeships and job opportunities, access financial support, and build community. One in five union members (20.7 percent) and three in ten non-union members (29.4 percent) participated in a women-focused pre-apprenticeship program (data not shown elsewhere). The fact that fewer union than non-union members participated in women-focused pre-apprenticeship programs suggests that unions may be underutilizing the support such programs could provide in improving the recruitment and retention of women in the trades.

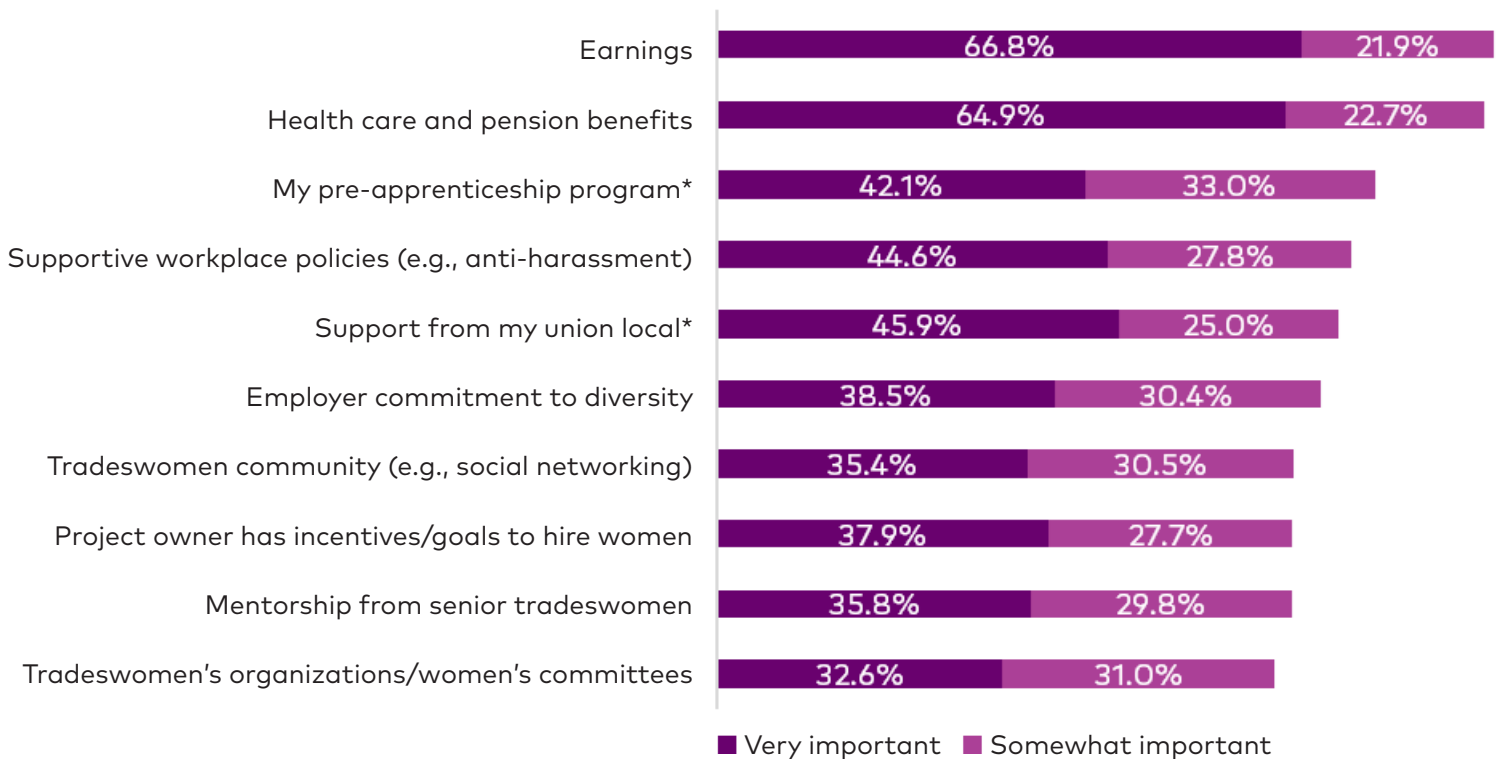
Over seven in ten union members (71.1 percent) identify support from their union local as important to their success (Figure 12); many tradeswomen feel supported by the men in their unions. Union women's committees can also help women navigate the trades, connect them with job opportunities, and provide mentorship, support and community (Shaw and Hegewisch 2017). The survey data reinforce this finding. Among union members with access to women's committees, two-thirds (66.4 percent; data not shown elsewhere) describe such committees as very or somewhat important to their success.

The majority of respondents identified mentorship as an important factor in their recruitment, advancement, and retention in the trades. Almost two-thirds (65.6 percent) of respondents reported that mentorship from senior tradeswomen was very or somewhat important to their success. Such supports can be provided by women’s committees, women-focused pre-apprenticeship programs, and tradeswomen’s organizations. However, while social media have greatly improved access to the tradeswomen’s community, and events such as the annual Tradeswomen Build Nations conference—which drew 2,700 tradeswomen in 2019<sup>22</sup>—allow women to make connections beyond the conference, many areas of the country do not have yet have access to the more systematic supports that can be provided by women focused pre-apprenticeship programs, women’s committees, and tradeswomen’s organizations.

### Policies Matter

As discussed in the previous sections, high earnings and good benefits alone are not enough to keep women in the trades if the overall working environment is perceived as unsupportive if not hostile. Thus, respondents identify supportive workplace policies (such as anti-harassment policies) (44.6 percent) and having an employer or contractor who is committed to diversity (38.5 percent) as very important for their success. Nearly as many respondents (37.9 percent) also say that hiring goals for women help them succeed (Figure 12).

**FIGURE 12. Factors Reported “Somewhat” or “Very Important” to Help Respondents Succeed in the Trades**



**Note:** \*For “Pre-apprenticeship program,” percent is out of those who participated in a pre-apprenticeship program (N=1,543). For “support from my union local,” percent is out of union members (N=1,524).

**Source:** 2021 IWPR Tradeswomen’s Retention and Advancement Survey.

<sup>22</sup> The 2020 and 2021 conferences had to be cancelled because of the COVID-19 pandemic; the next conference is scheduled for October 2022. See <https://nabtu.org/twbn/>.

These survey responses suggest that efforts to change the construction industry with more formal commitments to diversity, policies to prevent harassment, and hiring goals are beginning to have an impact. Such efforts include U.S. Department of Labor (DOL) funding for programs that increase apprentice diversity, as well as efforts led by tradeswomen's organizations in several cities and localities. For example, with support from DOL, organizations such as the National Center for Women's Equity in Apprenticeship and Employment at Chicago Women in the Trades have provided technical support to employers and contractors on preventing harassment and ensuring more equitable employment practices (see also Sugerma 2017). Pre-apprenticeship program ANEW in Seattle developed RISE UP, a respectful workplace program tailor-made for the construction trades (ANEW 2021). Tradeswomen's organizations have also worked with the North American Building Trades Unions (NABTU) and NABTU's Women's Committee to assemble a toolkit for diversifying apprenticeships. The toolkit highlights the need to tackle harassment and create welcoming work environments (NABTU 2017). The Ironworkers' "Be that One Guy" campaign encourages and empowers men co-workers to step up and stop harassment on their worksites (Ironworker 2018).

Recent efforts to improve the use of hiring goals for women are also making a difference. During the last decade, organizations such as PGTI in Boston and Oregon Tradeswomen in Portland have had considerable success with encouraging public and private owners and developers to set and meet diversity goals. Since the early 1980s, the City of Boston has had specific goals for the employment of women, minorities, and City residents on larger private- and all public-funded construction projects. Currently, these goals call for women to work 10 percent of all hours, and for women apprentices to work 12 percent of all apprentice hours (City of Boston 2021). In 2011, the Policy Group for Tradeswomen's Issues (PGTI) was formed to strengthen the implementation of these goals (Shaw and Hegewisch 2018; PGTI 2021). While the goal for women's hours has yet to be reached—in 2020 women worked 7 percent of hours in the City (City of Boston 2021)—this is almost twice as high as women's share of construction jobs nationally. Data for apprenticeships are not published on the City's website; statewide, women are now close to 10 percent of all trade apprentices, well over double the national rate (PGTI 2021).

The City of Portland, Oregon has recently followed a similar approach of instituting goals for women's hours on publicly funded projects (Espinoza 2019). The new policy aims to ensure more equitable growth of the region's economy, including better access to careers in construction for women and people of color. The project provided estimates of how many women and people of color would need to be trained in apprenticeships to ensure the construction trades could meet both general workforce needs and more specific equity goals on planned publicly funded construction projects (Worksystems, Inc. et al. 2017). This complements efforts by the state of Oregon to diversify the highway construction workforce. In 2010, the state began funding initiatives to diversify the highway workforce by using one-half of one percent of federal highway funding (Hegewisch et al. 2014). These funds have been used to provide direct supports to apprentices (including for child care and transportation), to support outreach and pre-apprenticeship programs, and to fund training and other initiatives to create a more equitable and welcoming working environment (Kelly and Wilkinson 2020). While statewide data on women in construction is not available, the share of women apprentices in construction in Oregon, at 7.9 percent, is almost twice the national level.

Safe from Hate, an Oregon-based initiative started by Oregon Tradeswomen with contractors and other industry stakeholders, was developed in response to the 2020 murder of George Floyd and incidents of racist symbols such as nooses on job sites. Since its foundation, Safe from Hate has grown into an alliance of employers, contractors and subcontractors, unions, apprenticeship and

pre-apprenticeship programs, and trade associations committed to fighting racism, sexism, and other forms of harassment and discrimination in the construction industry. The group is working to advance implementation of anti-harassment policies.

While other statewide efforts so far have been more limited, other tradeswomen's organizations and pre-apprenticeship programs have successfully worked to improve women's numbers and experience in the trades. Examples include ANEW's work in Seattle with the Puget Sound Transit expansion, Chicago Women in the Trades' work with the Obama Center, and Nontraditional Employment for Women's (NEW) work on the new Ford Foundation Building or their work with the Sheet Metal Workers' apprenticeship program (SoundTransit 2020; Moore 2021; Walker 2018; Hegewisch 2017). On each of these projects, tradeswomen's organizations have worked with unions, owners, and developers to provide monitoring and oversight and help build working environments that support tradeswomen's success.

The 2021 survey captured a snapshot of tradeswomen's views on what helps them succeed and grow in the trades. Respondents highlight two factors: the tradesworkers' community—union locals, union women's committees, or women-focused pre-apprenticeship programs and tradeswomen's groups—and formal policies designed to ensure equity and nondiscrimination on worksites. Their experiences suggest that change is happening and point to ways to expand on these changes to reach more worksites and work environments that continue to marginalize and push out tradeswomen.



# CONCLUSION:

## BUILDING A FUTURE THAT WORKS

Skilled jobs in the trades can provide workers with high earnings, healthcare, economic security in retirement, the chance to own a home, and the ability to offer financial support for their families. More women than ever work in the construction trades. The women construction workforce is highly diverse and becoming more so as growing numbers of women of all racial and ethnic backgrounds are pursuing apprenticeships in order to become skilled tradesworkers. Yet, such change comes from a low starting point; fewer than one in twenty construction trade apprentices or workers are women.

The construction industry is facing both current and future skill shortages, as it needs to replace more experienced workers nearing retirement and prepare for growth in the future. Part of this challenge is to grow a workforce that more closely resembles the working population of the 21<sup>st</sup> century, both in who the industry recruits and how it retains and develops them. This report has drawn on the voices and experiences of tradeswomen to learn what helps and hinders their advancement in the trades, and what could or should be done help the trades continue to diversify.

Importantly, many of the tradeswomen and non-binary tradesworkers who answered the survey in the trades are satisfied with their work, enjoy good pay and benefits, and intend to stay in the trades. This includes many mothers, including mothers of children younger than 18. At the same time, more than two in five respondents say that they have seriously considered leaving the trades. The report highlights many fields where the industry and key stakeholders can and need to make improvements to recruit and retain women. Policy and programmatic recommendations include:

- **More systematic outreach:** This begins with more systematic outreach to inform women, including young women, that the trades are a viable career path for women. At present, schools and American Jobs Centers are unlikely to expose women to such options. Tradeswomen's groups and women-focused pre-apprenticeship programs are making substantial contributions to increasing awareness of these career options. This report suggests that union apprenticeship programs in particular could benefit from closer cooperation with such programs. As federal and state policymakers focus on expanding apprenticeship programs and on offering dual learning pathways at earlier ages, they should prioritize providing career counselors with a better understanding of construction trade opportunities for young women (see also Francis and Prosser 2013).
- **Eliminating harassment and discrimination:** Survey respondents highlight the need to tackle unequal treatment, harassment, and discrimination experienced by women. Nearly all respondents report always or frequently being treated unequally to men in at least one major aspect of their working life. For far too many, harassment and discrimination are constant experiences; and far too many who have notified those in a position to address discrimination and harassment report that the issue they raised was not addressed in a satisfactory manner. Such work environments are unacceptable; they are also the most commonly cited reason for thinking about leaving the trades.

At the same time, however, the report highlights that it is possible to provide a respectful working environment. Indeed, many respondents for much of the time feel respected and treated well and point to anti-harassment and related policies as an important reason for the ability to thrive in the trades. Industry stakeholders have access to industry-specific toolkits, resources, and technical advice to ensure that workplaces are welcoming and are not driving out women.<sup>23</sup>

- **Improving equitable access to jobs and hours worked:** Too many respondents report experiencing unequal treatment in hiring, allocation of hours of work, access to overtime, and layoffs. These are issues at the core of economic stability in the trades. It is important to set diversity goals and targets, integrate these targets into project management, and ensure sufficient monitoring and oversight to prevent the targets from becoming empty promises. Targeted policies in Massachusetts and Oregon and in individual apprenticeship program such as the Sheet Metal Workers in New York and Long Island have improved gender and racial diversity in the industry.
- **Promoting more women to leadership positions:** The presence of more women in positions of leadership can send important signals to others that the industry is serious about gender equity. It can also help the industry retain experienced women workers who note their frustration with the lack of advancement opportunities they receive, and with an environment where promotion decisions too often seem to depend on who you know (or are related to) rather than what you have proven you can do in your work. A related issue is that many respondents who have held leadership positions felt that they received insufficient training for their positions. While more research is needed, concerns with inadequate or low-quality training are likely not limited to women. Better management training for those in supervisory/foreman positions may also improve retention and contribute to a more productive and equitable work environment.
- **More effective oversight of apprenticeship programs:** Reports of discrimination, harassment, and lack of respect are as common among apprentices as among other respondents to the survey, and leave intentions are also high. Apprenticeship programs can take steps to ensure greater equity such as setting and monitoring annual participation goals for women by race and ethnicity and sharing these publicly; using gender-neutral training and instruction methods; stating their commitment to working environments free of bullying, hazing, or harassment, and providing on-going training on respectful workplaces; identifying an ombudsperson who can support women and mediate issues of equity and inclusion; establishing an equity and inclusion committee; and acquiring technical assistance on complying with Equal Employment Opportunity requirements (29 CFR Part 30) for registered apprenticeship programs (Childers, Hegewisch, and Jackson 2021).
- **Making the trades more family friendly.** While it is notable that motherhood is not the main factor pushing women out of the trades, difficulties related to being pregnant or a mother in the trades rank highly among the factors that cause tradeswomen to consider leaving the trades. Importantly, such parenthood-related reasons also rank highly for younger women who do not have children as reasons for not being able to see a future in the trades. The industry needs to assure women that they can have safe pregnancies, hygienic spaces for pumping breastmilk, and some help with finding child care that covers construction hours. Several labor-management programs have begun to tackle these by ensuring that health benefits cover pregnancy and maternity leave. A small number of pilot programs have been developed to tackle

---

<sup>23</sup> See examples provided in previous section of this report.

the issue of child care, including during early morning "construction hours" (Mefferd 2021). Last not least, many women who are thinking of leaving the trades point to wanting to spend more time with their kids but cannot see how this is possible given the industry's expectation of early starts, long hours, and overtime at very short notice. Other industries have made more progress in developing more work-family friendly practices (see, for example, Fagan, Hegewisch, and Pillinger 2006; Kodz, Kersley, and Strebler 1998; Lingard and Francis 2009).

- **Supporting the tradeswomen community.** Many respondents said that the tradeswomen's community has helped them succeed in the trades. This includes women-focused pre-apprenticeship programs, whether they are general or trade-specific such as the Ironworkers program, women's committees in unions, the NABTU Tradeswomen Build Nations conference, and tradeswomen's groups. These groups and organizations provide mentorship, career advice, networking about job opportunities, advice on how to handle difficult aspects of the work or working environment, and a sense of community to counteract the isolation that many women face in their day-to-day working lives. While such programs can play a very substantial role in helping to improve recruitment and retention in the trades, they remain rare, with the majority of states lacking women-focused pre-apprenticeship programs or tradeswomen's groups.

Intentional policies, including a focus on creating welcoming harassment-free workplaces, mentorship and community supports, data tracking and oversight to ensure equitable access to work hours, and work-family policies that acknowledge that many workers of all genders have families, can help the industry build on the current momentum and recruit and retain a more diverse workforce.

# APPENDIX A: METHODOLOGY

The 2021 Tradeswomen's Advancement and Retention Survey collected responses from women and non-binary people working in the construction trades to learn how and why women enter the trades, women's experiences while working in the trades (including experiences of unequal treatment, harassment, and discrimination), whether and why women are or have considered leaving the trades, what helps women succeed in the trades, women's experiences working in the trades during the COVID-19 pandemic, and demographic information about the tradeswoman population.

The survey design was informed by focus groups and individual interviews with tradeswomen. Given difficulties of identifying a sample of women who left the trades, the survey instead uses a proxy method by asking respondents whether they "have ever seriously thought about leaving the trades" (and following up with a question on whether they no longer work in the trades, left and returned, or have seriously thought about leaving but are still in the trades). This method was informed by the 2016/2017 Women in the Trades project of the provincial government of British Columbia, Canada, on the retention of women in the trades (Gyarmarti, Pakula, Ngyuen, and Leonard 2017). The survey draws on and updates the 2013 IWPR Tradeswomen Survey survey (Hegewisch and O'Farrell 2015). Survey questions were reviewed by IWPR partners from tradeswomen organizations and were piloted with both union and non-union tradeswomen. Survey questions and distribution methods were approved by the Institutional Review Board of American University. The survey was only available in English. The survey was hosted on Qualtrics.

## Dissemination

The survey was extensively advertised and shared on social media on tradeswomen's Facebook pages as well as distributed via email and social media in English and Spanish, using a snowball convenience sampling method, encouraging tradeswomen to share the report with others. Tradeswomen's organizations, including the National Taskforce on Tradeswomen's issues, Apprenticeships and Nontraditional Employment for Women (ANEW), Chicago Women in Trades, Nontraditional Employment for Women (NEW), Missouri Women in Trades, Moore Community House Women in Construction, Nevada Women in Trades, the North East Center for Tradeswomen's Equity, Oregon Tradeswomen, Tradeswomen Inc., Texas Women in the Trades, Vermont Women in Trades, West Virginia Women Work, and Women in Non-Traditional Employment Roles (WINTER), shared the survey with their contact lists and posted the survey on their social media pages. Members of the North America's Building Trades Unions (NABTU) Women's Committee also disseminated the survey. As a result, responses overrepresent union members as well as individuals who entered the trades after completing women-focused pre-apprenticeship programs.

Individuals who participated in the survey had the option to enter to win one of 200 gift cards for \$50. Entry into the raffle did not require completion of the survey. The survey was open for three months, starting in the middle of December 2021.

## Data Cleaning

The dataset was cleaned extensively to identify and eliminate bot and fraudulent responses based on the following flagging criteria: responses that did not come from a unique IP address, identical responses (where all write-in answers were the same and multiple-choice answers were the same or similar), responses with a very short duration, and nonsense write-in responses. These criteria were used to cross-examine suspicious responses and remove those with significant evidence to suggest fraud. IWPR partners from tradeswomen's organizations contributed their intimate knowledge of the trades for case-by-case cleaning decisions. Respondents who identified as cisgender men and respondents outside the United States were also excluded from this analysis. Altogether, 4,607 responses were received, of which 1,972 were excluded from the dataset. Through this cleaning and review process 2,635 genuine responses were identified and included in the analysis. The cleaned survey data were subsequently analyzed in STATA. All data are presented unweighted.

Union members are overrepresented: 63 percent of respondents are union members, while nationally approximately one-in-five women in construction occupations are covered by unions.<sup>24</sup> The sample overrepresents apprentices who are 23 percent of respondents, whereas nationally they are likely between five and ten percent of the female construction workforce.<sup>25</sup> The survey further overrepresents respondents from states with women-focused pre-apprenticeship programs and tradeswomen's groups. Respondents from California are 15.6 percent of all respondents, followed by responses from Illinois (6.0 percent) and New York (5.8 percent). The survey includes responses from all major trades, but underrepresents laborers, painters, and plasterers—nationally the trades with the highest number of women, according to the U.S. Bureau of Labor Statistics (2021)—and overrepresents responses from electricians and carpenters; see Hegewisch and Mefferd 2021b for full survey and results.

While the survey is not random and therefore not a representative sample of the national tradeswoman population, respondents reflect a diversity of experiences across age, race and ethnicity, education, sexuality, parental status, trade, status, union membership, and geography (see Table B1 and Hegewisch and Mefferd 2021b). This contributes valuable insight to the lives, concerns, and priorities of women working in the trades.

## Definitions of Demographic Groups

This report follows the U.S. Census Bureau definitions for major racial and ethnic groups; racial groups are non-Hispanic, and those who indicated that they are Hispanic or Latina can be of any race. In the text, "Asian and Pacific Islanders" are non-Hispanic respondents who indicated Asian/Asian American or Native Hawaiian Asian and Pacific Islander; "Black" are non-Hispanic respondents

---

<sup>24</sup> In 2020, 17.7 percent of all construction and extraction workers were union members, and 18.7 percent were covered by a union contract (U.S. Bureau of Labor Statistics 2021b). The BLS does not publish these data broken down by gender. In 2016 to 2018, 20.7 percent of women and 19.2 percent of men working in construction occupations were covered by a union contract (Hegewisch and Ahmed 2019). Assuming in 2020 women in construction and extraction occupations were as likely to be union members as men, the 1,607 union women survey respondents represent 2.95 percent of union women in these occupations.

<sup>25</sup> Comprehensive national data on the number of women in construction apprenticeships are not available; according to IWPR analysis of registered apprentices in the 25 states included in the U.S. Department of Labor Office of Apprenticeship's Registered Apprenticeship Partners Information Management Data System (RAPIDS) database, in 2019 there were 11,724 women apprentices; the database includes California, the largest state-directed apprenticeship system, but does not include data for Massachusetts, New York, Oregon, and Washington (U.S. Employment and Training Administration 2021).

who indicated Black/African American; "Native American" are non-Hispanic respondents who are American Indian or Alaska Native; and "White" are non-Hispanic respondents who indicated White. Latina or Hispanic respondents can be of any race. "Other" is defined to include those who indicated "Two or more races," or "Other." Where the term "Respondents of Color" is used, it refers to anyone who is not White non-Hispanic; a fuller breakdown of responses is included in Table B1. Only subgroups with at least 100 respondents are explicitly discussed in the text.

The definition of single mothers also follows the U.S. Census Bureau and includes respondents who are parents of children under the age of 18 and are single and never married, divorced/separated/widowed, or living with a partner/cohabitating.

LBGTQ+ refers to respondents who indicated that they are gay or lesbian, bisexual, transgender, or gender non-conforming.

The report refers to individuals who responded to the survey as "respondents" or "tradespeople" because the individuals are either women (cisgender and transgender) or non-binary people. When referring more broadly to policies and conditions in the trades, we use "tradeswomen" rather than "tradeswomen and non-binary tradespeople" for the sake of brevity, and because the scope of this paper and its policy recommendations is limited and does not address policies and issues specific to non-binary people working in the trades. We are unable to report on non-binary tradespeople specifically in this report because the sample size is too small (30 respondents identified as non-binary/gender nonconforming, and 16 as both female and gender nonconforming). Further research is needed on the experiences of transgender and non-binary tradespeople in the trades.



# APPENDIX B: DATA TABLES

**TABLE B1. Demographics of Survey Respondents**

<b>Race and Ethnicity*</b>	<b>Percent (%)</b>	<b>Freq.</b>
Asian	2.8	72
Black	15.5	398
Hispanic/Latino/a	17.8	459
American Indian or Alaska Native, Hispanic/Latino/a	6.3	56
Asian, Hispanic/Latino/a	3.8	27
Black, Hispanic/Latino/a	18	60
Native Hawaiian/Pacific Islander, Hispanic/Latino/a	3.2	27
White, Hispanic/Latino/a	61.7	167
Other, Hispanic/Latino/a	2.9	56
Two or more races, Hispanic/Latino/a	4.1	40
Indigenous Mainland American/Alaskan	4.2	108
Indigenous Hawaiian/Pacific Islander	2.2	57
White	54.3	1,398
Other	0.7	17
Two or more races	2.6	67
<b>Age</b>	<b>Percent (%)</b>	<b>Freq.</b>
Under 25 years	3.2	83
25 to 34 years	35.5	932
35 to 44 years	37.7	989
45 to 54 years	12.9	339
55 and older	10.7	282
<b>Gender Identity</b>	<b>Percent (%)</b>	<b>Freq.</b>
Women, no other gender identity specified	97.9	2,554
Women and nonbinary people, specified trans and/or nonbinary identity	2.5	64
<b>Sexual Orientation</b>	<b>Percent (%)</b>	<b>Freq.</b>
Gay or Lesbian	10.2	260
Bisexual	8.4	214
Straight	81.3	2,064
<b>Education</b>	<b>Percent (%)</b>	<b>Freq.</b>
Some high school or less (Grades 1-11)	2.5	65
High School diploma or equivalent	17.8	466
Vocational school/training, some college	54.7	1,432
BA degree	21.2	555
Master's Degree or more	3.9	102

<b>Union Member</b>	<b>Percent (%)</b>	<b>Freq.</b>
No	36.9	941
Yes	63.1	1607
<b>Status</b>	<b>Percent (%)</b>	<b>Freq.</b>
Apprentice	23	598
Experienced tradeswoman	23.3	606
Journey	46.3	1,201
Other	7.4	191
<b>Parent</b>	<b>Percent (%)</b>	<b>Freq.</b>
No	36	935
Yes	64	1,660
Youngest child 5 years or younger	34.2	568
Youngest child 6 to 17 years	43.9	728
Youngest child 18 and older	21.9	363

**Note:** All race categories are that race alone, not Hispanic/Latino/a. Hispanic/Latino/a can be of any race. Under Hispanic/Latino/a, races are broken down by percent of total Hispanic/Latino/a responses.

**Source:** 2021 IWPR Tradeswomen's Retention and Advancement Survey.

**Table B2. Summary Table for Respondents by Race and Ethnicity**

		Asian/Pacific Islander (Non-Hispanic)		Black (Non-Hispanic)		Hispanic or Latina (Any Race)		Native American (Non-Hispanic)		White (Non-Hispanic)	
		Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
<b>Total Respondents</b>		5.0%	129	15.5%	398	17.8%	459	4.2%	108	54.3%	1,398
<b>Union</b>		51.3%	58	57.0%	217	63.3%	278	41.2%	40	66.6%	919
<b>Age</b>	<b>Under 35</b>	48.4%	62	35.2%	140	48.3%	221	56.5%	61	35.1%	491
	<b>35 to 55</b>	50.0%	64	59.0%	235	45.0%	206	39.9%	43	50.5%	706
	<b>55 and older</b>	1.6%	2	5.8%	23	6.8%	31	3.7%	4	14.3%	200
<b>Status</b>	<b>Apprentice</b>	23.2%	29	26.7%	105	21.2%	96	14.8%	16	23.2%	322
	<b>Journey</b>	31.2%	39	22.4%	88	29.6%	134	30.6%	33	20.9%	289
	<b>Experienced</b>	44.0%	55	47.1%	185	41.9%	190	50.9%	55	47.3%	656
	<b>Other</b>	1.6%	2	3.8%	15	7.3%	33	3.7%	4	8.6%	119
<b>Children under 18</b>		59.7%	77	63.3%	252	52.5%	241	62.0%	67	43.3%	606
<b>Earnings above \$50K</b>		42.0%	53	46.8%	305	52.0%	308	42.1%	43	58.3%	1,052
<b>Considered leaving the trades</b>		37.8%	48	39.9%	157	45.0%	204	52.8%	57	44.7%	618

Source: 2021 IWPR Tradeswomen’s Retention and Advancement Survey.

**TABLE B3. Top Five Reasons for Considering Leaving the Trades by Race and Ethnicity**

		Percent (%)	Number (#)
<b>Asian/ Pacific Islander</b> (Non-Hispanic)	Lack of training	38.3%	18
	Not enough stable work/hours	35.0%	14
	Difficulty finding child care	31.7%	13
	Safety concerns	29.2%	14
	Wanted to spend more time with kids	28.9%	11
<b>Black</b> (Non-Hispanic)	Harassment, lack of respect	50.0%	72
	Lack of promotion/advancement	45.2%	66
	Lack of training	39.9%	59
	Problems I raised weren't taken seriously	38.0%	54
	Not enough stable work/hours	36.0%	49
<b>Hispanic or Latina</b> (Any Race)	Lack of promotion/advancement	43.7%	86
	Harassment, lack of respect	40.7%	79
	Not enough stable work/hours	38.9%	70
	Health/injury	38.2%	71
	Problems I raised weren't taken seriously	36.6%	68
<b>Native American</b> (Non-Hispanic)	Health/injury	48.1%	26
	Lack of breastfeeding support	46.8%	22
	Lack of training	46.3%	25
	Safety concerns	44.6%	25
	Harassment, lack of respect	44.4%	24
<b>White</b> (Non-Hispanic)	Harassment, lack of respect	49.6%	293
	Problems I raised weren't taken seriously	39.6%	215
	Lack of promotion/advancement	39.5%	225
	Not enough stable work/hours	38.3%	212
	Yelling culture, disrespect	36.2%	204

**Source:** 2021 IWPR Tradeswomen's Retention and Advancement Survey.

**TABLE B4. Respondents (Percent) Answering "Yes" to "Have You Ever Considered Leaving the Trades?"**

<b>ALL RESPONDENTS</b>	<b>44.4%</b>
Under 35 years	43.0%
35 to 44 years	41.4%
45 and older	49.0%
LGBTQ	54.3%
Union member	47.3%
Not a union member	39.4%
Experienced tradeswoman	37.3%
Apprentice	42.8%
Journey	47.8%
Youngest child under 6	44.9%
Youngest child 6 to 17	33.2%
Youngest child 18 and older	45.5%
No children	50.3%
Asian/Pacific Islander	37.2%
Black, non-Hispanic	39.4%
Latina (any race)	44.4%
Native American (Indigenous Mainland American/Alaskan)	52.8%
White, non-Hispanic	44.2%
Other or two or more races	54.8%
Mostly work in:	
Commercial sector	48.8%
Institutional (hospitals, universities)	39.6%
Industrial sector (factories, shipyards, mines)	44.3%
Residential sector	40.2%
Service or maintenance	39.2%

**Source:** 2021 IWPR Tradeswomen's Retention and Advancement Survey.

## REFERENCES

- ANEW. 2021. "The RISE UP Advantage." Seattle, WA: ANEW. <<https://files.constantcontact.com/006cfc13601/9d5d9f75-830a-4538-baf8-feff3ad0b476.pdf>>.
- Associated General Contractors of America. 2019. "2019 Worker Shortage Survey Analysis." Arlington, VA: Associated General Contractors of America. <<https://www.agc.org/sites/default/files/Files/Communications/2019%20Worker%20Shortage%20Survey%20Analysis.pdf>>.
- Center for Construction Research and Training (CPWR). 2018. *The Construction Chart Book, 6th edition*. Silver Spring, MD: CPWR. <[https://www.cpwr.com/wp-content/uploads/publications/The\\_6th\\_Edition\\_Construction\\_eChart\\_Book.pdf](https://www.cpwr.com/wp-content/uploads/publications/The_6th_Edition_Construction_eChart_Book.pdf)>.
- Child Care Aware. 2020. *The US and the High Price of Child Care: 2019*. Arlington, VA: Child Care Aware of America. <<https://www.childcareaware.org/our-issues/research/the-us-and-the-high-price-of-child-care-2019/>>.
- Childers, Chandra, Ariane Hegewisch, and Lark Jackson. 2021. *Here to Stay: Black, Latina, and Afro-Latina Women in Construction Trades Apprenticeships and Employment*. Chicago: National Center for Women's Equity in Apprenticeship and Employment at Chicago Women in the Trades. <<https://iwpr.org/iwpr-publications/heretostay-black-latina-and-afro-latina-women-in-construction-trades-apprenticeships-and-employment/>>.
- City of Boston. 2021. "The Boston Residents Jobs Policy on Construction Projects." Boston.gov, July 26. <<https://www.boston.gov/government/cabinets/equity-and-inclusion-cabinet/supplier-diversity/boston-residents-jobs-policy-construction-projects>> (accessed September 2021).
- Cohen, Arianne. 2021. "Why Finding Workers Is Getting Harder for U.S. Homebuilders." *Bloomberg*, January 15. <<https://www.bloomberg.com/news/articles/2021-01-15/finding-workers-is-getting-harder-for-busy-u-s-homebuilders>> (accessed September 2021).
- Cortina, Lilia M., and Jennifer L. Berdahl. 2008. "Sexual Harassment in Organizations: A Decade of Research in Review." In *Sage Handbook of Organizational Behavior*, 469. London: Sage. <[https://sk.sagepub.com/reference/hdbk\\_orgbehavior1/n26.xml](https://sk.sagepub.com/reference/hdbk_orgbehavior1/n26.xml)>.
- Deloitte. 2019. *The Economic Costs of Sexual Harassment in the Workplace*. Canberra, Australia: Deloitte Access Economics. <<https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economic-costs-sexual-harassment-workplace-240320.pdf>>.
- Espinoza, Amber. 2019. "Metro Council Adopts a Policy Framework to Diversify Greater Portland's Construction Industry." *Metro News*, October 29. <<https://www.oregonmetro.gov/news/metro-council-adopts-policy-framework-diversify-greater-portland-s-construction-industry>> (accessed September 2021).
- Fagan, Colette, Ariane Hegewisch, and Jane Pillinger. 2006. *Out of Time: Why Britain Needs a New Approach to Working-Time Flexibility*. London, UK: Trades Union Congress.
- Francis, Valerie, and Adele Prosser. 2013. "Career Counselors' Perceptions of Construction as an Occupational Choice." *Journal of Professional Issues in Engineering Education and Practice* 139, no. 1 (January): 59–71.

- Haviland, Sara, and Steven Robbins. 2021. *Career and Technical Education as a Conduit for Skilled Technical Careers: A Targeted Research Review and Framework for Future Research*. Princeton, NJ: Educational Testing Service. <<https://onlinelibrary.wiley.com/doi/10.1002/ets2.12318>>.
- Heard, Moody. 2020. "Why is Employee Turnover So High in Construction?" *Buildforce* (blog), June 9. <<https://buildforce.com/blog/why-is-employee-turnover-high-in-construction>>.
- Hegewisch, Ariane. 2017. *Forging Gender Equity in the Sheet Metal Workers Local 28: The Importance of Leadership, Goals, and Regular Review*. Chicago: National Center for Women's Equity in Apprenticeship and Employment at Chicago Women in the Trades <[https://womensequitycenter.org/wp-content/uploads/2017/10/Sheetmetal-Workers-Best-Practice\\_Revision1.pdf](https://womensequitycenter.org/wp-content/uploads/2017/10/Sheetmetal-Workers-Best-Practice_Revision1.pdf)>.
- . 2018. *Bridging the Gender Gap: Creating a National Pre-Apprenticeship Program to Prepare Women for the Iron Working Industry*. Chicago: National Center for Women's Equity in Apprenticeship and Employment at Chicago Women in the Trades. <[https://womensequitycenter.org/wp-content/uploads/2017/10/Ironworkers-Best-Practice\\_Revision1.pdf](https://womensequitycenter.org/wp-content/uploads/2017/10/Ironworkers-Best-Practice_Revision1.pdf)>.
- . 2019. *Pregnancy and Maternity Leave in the Trades: Good Practices for Apprentices*. Chicago: National Center for Women's Equity in Apprenticeship and Employment at Chicago Women in the Trades. <[https://iwpr.org/wp-content/uploads/2020/07/Pregnancy-and-Maternity-in-the-Trades\\_revision2.pdf](https://iwpr.org/wp-content/uploads/2020/07/Pregnancy-and-Maternity-in-the-Trades_revision2.pdf)>.
- . 2020. *Child Care Supports for the Construction Trades: Building and Sustaining Diversity in Oregon*. Washington, DC: Institute for Women's Policy Research <<https://iwpr.org/iwpr-publications/briefing-paper/child-care-supports-for-the-construction-trades-building-and-sustaining-diversity-in-oregon/>>.
- Hegewisch, Ariane, and Tanima Ahmed. 2019. *Growing the Numbers of Women in the Trades: Building Equity and Inclusion Through Pre-Apprenticeship Programs*. Briefing paper. Chicago: National Center for Women's Equity in Apprenticeship and Employment at Chicago Women in the Trades. <<https://womensequitycenter.org/best-practices/>>.
- Hegewisch, Ariane, and Julie Anderson. 2017. *Women Only Pre-Apprenticeship Programs: Meeting Skills Needs and Creating Pathways to Good Jobs for Women*. Briefing paper. Chicago: National Center for Women's Equity in Apprenticeship and Employment at Chicago Women in the Trades. <<https://womensequitycenter.org/best-practices/>>.
- Hegewisch, Ariane, Jessica Forden, and Eve Mefferd. 2021. *Paying Today and Tomorrow: Charting the Financial Costs of Workplace Sexual Harassment*. Report. Washington, DC: Institute for Women's Policy Research. <<https://iwpr.org/iwpr-publications/paying-today-and-tomorrow-report/>>.
- Hegewisch, Ariane, Jane Henrici, Elyse Shaw, and Thomas Hopper. 2014. *Untapped Resources and Untapped Labor Pools: Using Federal Highway Funds to Prepare Women for Careers in Construction*. Boston, MA: Jobs for the Future and Institute for Women's Policy Research. <[https://iwpr.org/wp-content/uploads/2020/12/Untapped-Resources\\_FINAL.pdf](https://iwpr.org/wp-content/uploads/2020/12/Untapped-Resources_FINAL.pdf)>.



- Hegewisch, Ariane, and Eve Mefferd. 2021a. "Construction and Utilities Are the Only Industries Where Women Have Added Jobs Since COVID. Now the Task Is to Make Them Want to Stay." In the Lead (IWPR blog), September 9. <<https://iwpr.org/media/in-the-lead/construction-and-utilities-are-the-only-industries-where-women-have-added-jobs-post-covid-now-the-task-is-to-make-them-want-to-stay/>>.
- . 2021b. "2021 IWPR Tradeswomen's Retention and Advancement Survey." *A Future Worth Building: What Tradeswoman Say about the Change They Need in the Construction Industry*. Washington, DC: Institute for Women's Policy Research. <[https://iwpr.org/wp-content/uploads/2021/11/Tradeswomens-Retention-Advancement-Survey\\_2021.pdf](https://iwpr.org/wp-content/uploads/2021/11/Tradeswomens-Retention-Advancement-Survey_2021.pdf)>.
- Hegewisch, Ariane, and Brigid O'Farrell. 2015. *Women in the Construction Trades: Earnings, Workplace Discrimination, and the Promise of Green Jobs*. Report, IWPR #C428. Washington, DC: Institute for Women's Policy Research. <<https://iwpr.org/wp-content/uploads/2020/10/C428-Women-in-Construction-Trades.pdf>>.
- Ironworker. 2018. "Be That One Guy: The Ironworkers Leading the Industry in Diversity and Inclusion." *Ironworker* 18 (no. 8): 4–6. <[http://onlineeditions.themosaicteam.com/publication/?i=526730&article\\_id=3189415&view=articleBrowser&ver=html5](http://onlineeditions.themosaicteam.com/publication/?i=526730&article_id=3189415&view=articleBrowser&ver=html5)>.
- Ironworker Management Progressive Action Cooperative Trust (IMPACT). 2021. "Maternity Program: Member Programs." Washington, DC: IMPACT. <<http://www.impact-net.org/member-programs/ironworkers/maternity-program>>.
- Institute for Women's Policy Research (IWPR) and National Taskforce on Tradeswomen's Issues. 2021. "Child Care Strategies that Work for Tradeswomen." Webinar recording, September 28. <<https://youtu.be/mlQBi9q5rRE>>.
- Johnson, Paula A., Sheila E. Widnall, and Frazier F. Benya. 2018. *Sexual Harassment of Women Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine*. Washington, DC: The National Academies Press. <<https://doi.org/10.17226/24994>>.
- Kelly, Maura, and Lindsey Wilkinson. 2020. *2020 Evaluation of the Highway Construction Workforce Development Program, Final Report*. Portland, OR: Portland State University. <[https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1151&context=soc\\_fac](https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1151&context=soc_fac)>.
- Kodz, Jenny, Barbara Kersley, and M.T. Strebler. 1998. *Breaking the Long Hours Culture*. Brighton, UK: Institute for Employment Studies. <<https://www.employment-studies.co.uk/system/files/resources/files/352.pdf>>.
- Lingard, Helen, and Valerie Francis. 2009. *Managing Work-Life Balance in Construction*. London, UK: Routledge.
- Malik, Rasheed, Katie Hamm, Leila Schochet, Cristina Novoa, Simon Workman, and Steven Jessen-Howard. 2018. *America's Child Care Deserts in 2018*. Washington, DC: Center for American Progress. <<https://www.americanprogress.org/issues/early-childhood/reports/2018/12/06/461643/americas-child-care-deserts-2018/>>.
- Markstein, Bernard M. 2017. "Employment in Construction: Where are the Skilled Workers?" *ESI Econsult Solutions, Inc.* (blog), May 5. <<https://econsultsolutions.com/employment-in-construction-where-are-the-skilled-workers/>>.
- Mefferd, Eve. 2021. "Building Blocks: Child Care Solutions that Work for Tradeswomen." In the Lead (IWPR blog), October 7. <<https://iwpr.org/media/in-the-lead/childcare-webinar/>>.

- Moore, Natalie. 2021. "Obama Center Will Be Built by Some Who've Long Been Locked Out Of Construction Jobs." WBEZ Chicago, March 11. <<https://www.wbez.org/stories/obama-center-will-be-built-by-some-whove-long-been-locked-out-of-construction-jobs/4e705138-146e-45d8-b889-c432848354ec>>.
- Ngo, Madeleine. 2021. "Skilled Workers Are Scarce, Posing a Challenge for Biden's Infrastructure Plan." *New York Times*, September 9. <<https://www.nytimes.com/2021/09/09/us/politics/biden-infrastructure-plan.html>>.
- Nolasco-Gomes, Filiberto. 2018. "Carpenters Union Launches Paid Maternity Leave Benefit." *Workday Minnesota*, March 29. <<https://workdayminnesota.org/carpenters-union-launches-paid-maternity-leave-benefit/>>.
- North America's Building Trades Unions (NABTU). 2021. *Enhance Your Skills: Advance Your Life*. Washington, DC: NABTU. <[https://nabtu.org/wp-content/uploads/2019/02/NABTU\\_ApprenticeshipPrograms.pdf](https://nabtu.org/wp-content/uploads/2019/02/NABTU_ApprenticeshipPrograms.pdf)>.
- North America's Building Trades Unions (NABTU) and NABTU's Women's Committee. 2017. *Diversity Toolkit*. Washington DC: NABTU. <<https://nabtu.org/wp-content/uploads/2017/06/Diversity-Toolkit-draft-6-15-17.pdf>>.
- Oregon Department of Transportation. 2020. *Report on the Use of Federal Funds to Increase Diversity and Prepare those Entering the Highway Construction Workforce (ORS 184.866)*. Portland, OR: Oregon Department of Transportation. <<https://www.oregon.gov/odot/About/GR/Highway%20Construction%20Workforce%20Development%20Report.pdf>>.
- Pape, Elizabeth, and Gordon Friedman. 2020. *Equity in Construction Contracting: Some Goals Achieved Despite Mismanagement, Waste, and Gamesmanship*. Audit Services. Portland, OR: Portland City Auditor < <https://www.portlandoregon.gov/auditservices/article/765110>>.
- Policy Group on Tradeswomen's Issues (PGTI). 2021. "Women's Participation in MA Union Apprenticeship Reaches 10.30%, as of Q2 2021." Boston, MA: PGTI. <<https://policygroupontradeswomen.org/>>.
- Reed, Debbie, Albert Yung-Hsu Liu, Rebecca Kleinman, Annalisa Mastri, Davin Reed, Samina Sattar, and Jessica Ziegler. 2012. *An Effectiveness Assessment and Cost-Benefit Analysis of Registered Apprenticeship in 10 States*. Oakland, CA: Mathematica Policy Research. <[https://wdr.doleta.gov/research/FullText\\_Documents/ETAOP\\_2012\\_10.pdf](https://wdr.doleta.gov/research/FullText_Documents/ETAOP_2012_10.pdf)>.
- Rossin-Slater, Maya, and Jenna Stearns. 2020. "Time on with Baby and Time Off from Work." *Future of Children* 30 (2) 35–51.
- Seleznow, Eric, and Latitia McCane. 2021. "It's Time to Close Apprenticeship's Long-Overlooked Equity Gaps." *The Hill*, August 30. <<https://thehill.com/blogs/congress-blog/labor/569939-its-time-to-close-apprenticeships-long-overlooked-equity-gaps>>.
- Semega, Jessica, Melissa Kollar, Emily A. Shrider, and John Creamer. 2020. *Income and Poverty in the United States: 2019*. Washington, DC: Census Bureau, 60–270. <<https://www.census.gov/library/publications/2020/demo/p60-270.html>>.
- Shaw, Elyse, and Ariane Hegewisch. 2017. *Women's Committees: A Key to Recruiting and Retaining Women Apprentices*. Briefing paper. Chicago: National Center for Women's Equity in Apprenticeship and Employment at Chicago Women in the Trades. <<https://womensequitycenter.org/best-practices/>>.

- Shaw, Elyse, and Ariane Hegewisch. 2018. *Massachusetts Supply and Demand Strategy: A Successful Model for Increasing Gender Diversity in the Trades*. Washington, DC: Institute for Women's Policy Research. <[https://womensequitycenter.org/wp-content/uploads/2017/10/BIP-Equity-Best-Practice\\_revision2.pdf](https://womensequitycenter.org/wp-content/uploads/2017/10/BIP-Equity-Best-Practice_revision2.pdf)>
- Sprigg, C. A., Karen Niven, Jeremy Dawson, Samuel Farley, and Christopher Armitage. 2019. "Witnessing Workplace Bullying and Employee Well-Being: A Two-Wave Field Study." *Journal of Occupational Health Psychology* 24 (2): 286–296. <<https://doi.org/10.1037/ocp0000137>>.
- SoundTransit. 2020. "Building Diverse Partnerships to Deliver for the Region." Sound Transit Contractor Expo, December 11. <<https://www.soundtransit.org/sites/default/files/documents/building-diverse-partnerships-to-deliver-for-the-region.pdf>> (accessed September 2021).
- Sugerman, Lauren. 2017. "#MeToo in Traditionally Male-Dominated Occupations: preventing and addressing Sexual Harassment." Briefing paper. Chicago: National Center for Women's Equity in Apprenticeship and Employment at Chicago Women in the Trades. <<https://womensequitycenter.org/best-practices/>>.
- U.S. Bureau of Labor Statistics. 2020. *Women in the Labor Force: A Databook*. Washington, DC: U.S. Department of Labor. <<https://www.bls.gov/opub/reports/womens-databook/2020/home.htm>>.
- . 2021a. "Table 11. Employed Persons by Detailed Occupation, Sex, Race, and Hispanic or Latino Ethnicity; Various Years." Washington, DC: U.S. Department of Labor. <<https://www.bls.gov/cps/tables.htm>>.
- . 2021b. "Table 42. Union Affiliation of Employed Wage and Salary Workers by Occupation and Industry." Washington, DC: U.S. Department of Labor. <<https://www.bls.gov/cps/tables.htm>>.
- U.S. Chamber of Commerce. 2021. *Q3 2021 Commercial Construction Index*. Washington, DC: U.S. Chamber of Commerce. <[https://www.uschamber.com/sites/default/files/q3\\_cci\\_report\\_final.pdf](https://www.uschamber.com/sites/default/files/q3_cci_report_final.pdf)>.
- U.S. Congress. 2021. *Infrastructure Investment and Jobs Act*. HR 3684. 117th Cong., 1st sess. Introduced in House June 4, 2021. <<https://www.congress.gov/117/bills/hr3684/BILLS-117hr3684eas.pdf>>.
- U.S. Department of Labor. 2015. *The Cost of Doing Nothing: The Price We All Pay Without Paid Leave Policies to Support America's 21st Century Working Families*. Washington, DC: U.S. Department of Labor. <<https://www.dol.gov/sites/dolgov/files/OASP/Cost-of-Doing-Nothing.pdf>>.
- . 2021. *Registered Apprenticeship National Results Fiscal Year 2020 10/01/2019 to 9/30/2020: Data and Statistics*. Employment and Training Administration. Washington, DC: U.S. Department of Labor. <<https://www.dol.gov/agencies/eta/apprenticeship/about/statistics/2020>>.
- U.S. Department of Labor Office of Apprenticeship. 2021. "Apprenticeship." Washington, DC: U.S. Department of Labor. <<https://www.dol.gov/agencies/eta/apprenticeship>>.
- U.S. Department of Labor Women's Bureau 2021. "Advancing Opportunities for Women through Apprenticeship: A Case-Based Resource Guide." Washington, DC: U.S. Department of Labor. <<https://www.dol.gov/sites/dolgov/files/WB/media/AdvancingOpportunitiesWomenthroughApprenticeship-jan2021.pdf>>.

- U.S. Equal Employment Opportunities Commission. n.d. *Sex-Based Discrimination*. Washington, DC: U.S. Equal Employment Opportunities Commission. <<https://www.eeoc.gov/sex-based-discrimination>>.
- U.S. Occupational Safety and Health Administration. 2020. *Commonly Used Statistics*. Washington, DC: U.S. Department of Labor. <<https://www.osha.gov/data/commonstats>>.
- U.S. Occupational Safety and Health Administration. 2021. "Survey of Occupational Injuries and Illnesses Data Injuries, Illnesses, and Fatalities." Washington, DC: U.S. Department of Labor. <<https://www.bls.gov/iif/#news>>.
- University of Iron. 2021. "Women in the Trades." Benicia, CA: Field Ironworkers Apprenticeship and Training Program. <<https://www.universityofiron.org/womeninthetrade.html>>.
- Walker, Darren. 2018. "Introducing the Ford Foundation Center for Social Justice." New York: Ford Foundation. <<https://www.fordfoundation.org/just-matters/just-matters/posts/introducing-the-ford-foundation-center-for-social-justice/>> (accessed September 2021).
- Wilkinson, Lindsey, and Maura Kelly. 2018. *Continuing to Build a More Diverse Workforce in the Highway Trades: 2018 Evaluation of the ODOT/BOLI Highway Construction Workforce Development Program*. Portland, OR: PDXScholar. <[https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1095&context=soc\\_fac](https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1095&context=soc_fac)>.
- Worksystems, Inc., Oregon Employment Department, Maura Kelly, JM Woolley & Associates, Oregon Tradeswomen, and National Association of Minority Contractors of Oregon. 2017. *Portland Metro Region Construction Workforce Market Study*. Portland, OR: Worksystems, Inc. <<https://www.oregonmetro.gov/sites/default/files/2018/07/02/C2P2-regional-construction-workforce-market-study-07022018.pdf>>.

## **OUR MISSION | A just future begins with bold ideas.**

**We win economic equity for all women and eliminate barriers to their full participation in society. As a leading national think tank, we build evidence to shape policies that grow women's power and influence, close inequality gaps, and improve the economic well-being of families.**

