Data Bulletin

Women in Construction: Employment, Business Owner, and Injury Trends

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OVERVIEW

Women are underrepresented in construction, accounting for almost half of the entire workforce in 2021 but only 11.0% of the construction workforce. This trend persists among *blue-collar workers*; only 3.7% of construction workers are women, compared to 16.5% in all industries. The continuing labor shortages in construction highlight the need for a diverse workforce and for understanding growing workforce populations, including women, Hispanics, and workers 55 years or older.

This Data Bulletin provides information on employment, business owner, and fatal and nonfatal injury trends among women in construction. Data for employment were estimated using the U.S. Bureau of Labor Statistics (BLS) Current Population Survey (CPS), which is published monthly, downloaded through IPUMS. Employment for private *nonfarm wage-and-salary* workers for major subsectors was obtained from the BLS Current Employment Statistics (CES) program, which collects monthly data from payroll establishments. Data for construction business owners were from the Annual Business Survey, Characteristics of Business Owners, administered by the U.S. Census Bureau. Data for fatal injuries from 2011 to 2021 were obtained from the BLS Census of Fatal Occupational Injuries (CFOI), a complete count of fatal injuries. Estimates of nonfatal injuries for private, *wage-and-salary* construction were obtained from the BLS Survey of Occupational Injuries and Illnesses (SOII), which is based on employer logs. Nonfatal injuries include injuries or illnesses that resulted in *days away from work (DAFW)*. Due to SOII publication frequency changing to biennially, injury data for 2021 are unavailable at this time, and as a result, charts using SOII data are limited to 2011-2020. Injury rates were calculated per 100,000 *full-time equivalent workers (FTEs)* based on BLS CPS data.

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Cover photo: Oregon Tradeswomen, Inc. / Dawn Jones Redstone

THIS ISSUE

This issue examines trends for women in construction, including employment, business owners, and fatal and nonfatal injuries.

KEY FINDINGS

From 2011 to 2022, the percentage of women in the construction workforce increased from 9% to 11%, with blue-collar women workers rising from 2% to 4%.

Chart 1

From 2021 to 2022, the number of women in construction grew faster than women employed overall (4% versus 3%), and blue-collar women workers in construction grew almost three times faster than blue-collar women workers overall (19% versus 7%).

Charts 3 and 4

From 2011 to 2022, the proportion of women construction workers who are Hispanic increased from 11% to 25% and the proportion in blue-collar jobs increased from 19% to 44%.

Chart 7

From 2011 to 2022, occupations with the highest average number of women workers were administrative support professionals for all construction (426,4000 annual average) and laborers for blue-collar construction (60,800 annual average).

Charts 9 and S2

Women accounted for 21% of construction business owners in 2020.

Chart 10

NEXT DATA BULLETIN

Employment Costs and Wages in Construction

In 2022, 10.9% of the construction workforce were women, compared to almost half (46.8%) of the workforce for all industries (chart 1). In 2022, women comprised 17.0% of all blue-collar workers but made up 4.1% of blue-collar workers in construction. From 2011 to 2022, the proportion of women increased in construction (+1.7%), blue-collar all industries (+3.1%), and blue-collar construction (+2.0%).

1. Workers by sex and industry, 2011 and 2022
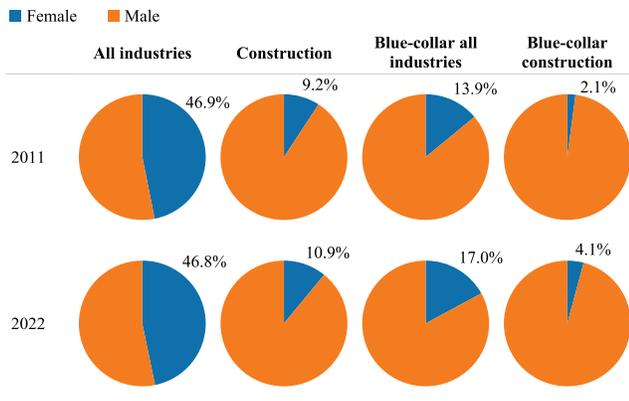
Source: Integrated Public Use Microdata Series (IPUMS), 2011-2022 Current Population Survey.

From 2011 to 2022, the proportion of women in the workforce has stayed relatively constant while rising 18.9% in construction and 22.2% in blue-collar workers for all industries (chart 2). The greatest increase in the proportion was in blue-collar construction, which doubled during the period (+100.4%).
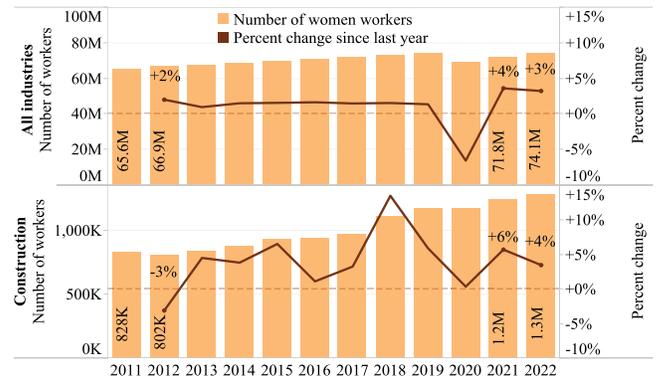
2. Change in the proportion of women employed since 2011, by industry

Source: Integrated Public Use Microdata Series (IPUMS), 2011-2022 Current Population Survey.

There was a 13.0% increase from 2011 to 2022 in women workers for all industries (65.6 million (M) to 74.1M), while their numbers in construction grew 55.1% (828 thousand (K) to 1.3M; chart 3). From 2021 to 2022, there was a 3.3% rise in women in all industries, with construction growing 3.5%.
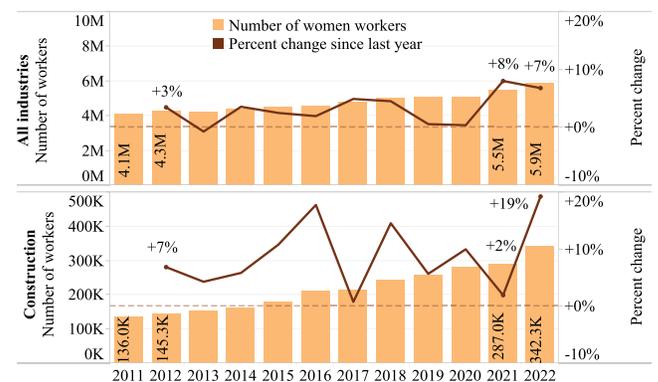
3. Women workers by year, construction versus all industries, 2011-2022

Source: Integrated Public Use Microdata Series (IPUMS), 2011-2022 Current Population Survey.

There was a 43.9% increase in blue-collar women workers (4.1M to 5.9M) from 2011 to 2022 in all industries, while the numbers in construction rose 151.7% during the same period (136.0K to 342.3K; chart 4). From 2021 to 2022, there was 6.8% growth (5.5M to 5.9M) in blue-collar women workers for all industries, while construction rose by 19.3% (287.8K to 342.3K). Women employed in construction followed employment growth for all workers, as previously documented.

4. Blue-collar women workers by year, construction versus all industries, 2011-2022

Source: Integrated Public Use Microdata Series (IPUMS), 2011-2022 Current Population Survey.

Broken out by *major subsector*, women in construction grew by 65.8% from 2011 to 2022 in Construction of Buildings (NAICS 236; 208.3K to 345.4K), while women in Specialty Trade Contractors increased by 53.9% (NAICS 238, 407.7K to 627.4K; chart 5). Heavy and Civil Engineering had the smallest growth, with women workers increasing 21.8% during the period (NAICS 237; 95.0K to 115.7K). Women employed in major construction subsectors followed trends for all employment in major construction subsectors.

5. Women employed by major subsector, 2011-2022 (Private wage-and-salary employment)
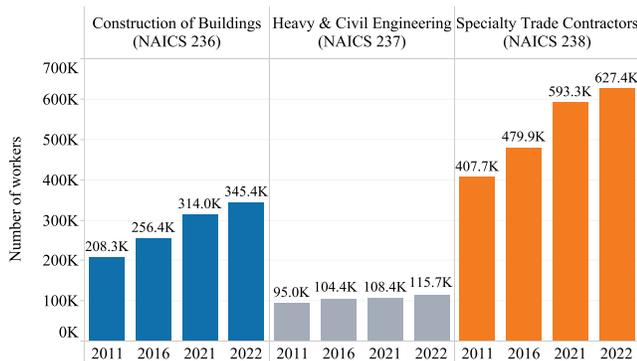
Source: U.S. Bureau of Labor Statistics, 2011-2022 Current Employment Statistics.

By major subsector, Construction of Buildings (NAICS 236) had the largest percentage of women workers at 19.7% compared to 12.7% for Specialty Trade Contractors (NAICS 238) and 10.8% for Heavy and Civil Engineering (NAICS 237; chart 6) in 2022. From 2011 to 2022, the proportion of women workers grew 15.9% (17.0% to 19.7%) in Construction of Buildings (NAICS 236) and 8.5% (11.7% to 12.7%) in Heavy and Civil Engineering (NAICS 237). During this period, there was a 5.3% decrease (11.4% to 10.8%) in the proportion of women workers for Specialty Trade Contractors (NAICS 238).

6. Women employed by major subsector, 2011-2022* (Private wage-and-salary employment)
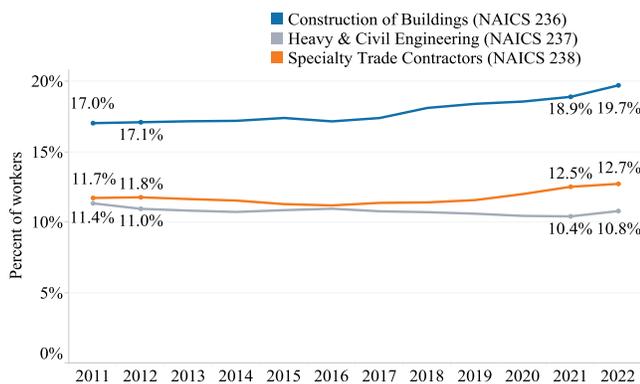

Source: U.S. Bureau of Labor Statistics, 2011-2022 Current Employment Statistics.
*Percentages calculated based on rounded employment estimates.

Next, selected demographics of women construction workers from 2011 to 2022 were examined (chart 7). The proportion of these workers who were aged 55 years or older rose 1.8% (22.8% to 23.2%); the proportion who were Hispanic grew 133.0% (10.6% to 24.7%). For blue-collar women, there was a 3.3% decrease in those aged 55 years or older (15.3% to 14.8%) and a 138.2% increase in those who were Hispanic (18.6% to 44.3%).
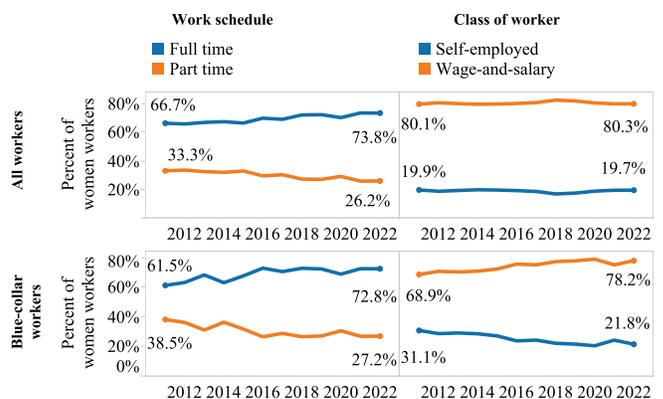
7. Demographics of women construction workers by worker type, 2011-2022
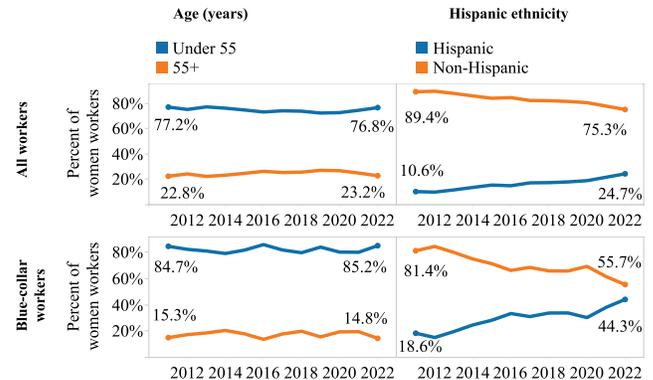
Source: Integrated Public Use Microdata Series (IPUMS), 2011-2022 Current Population Survey.

Characteristics of women construction workers were then examined by worker type (chart 8). There was a 10.6% increase in this group overall for those working full-time (66.7% to 73.8%), while the proportions of self-employed and wage-and-salary employees remained consistent from 2011 to 2022. There was an 18.4% increase (61.5% to 72.8%) in blue-collar women workers working full-time and a 29.9% reduction in those employed as wage-and-salary (31.1% to 21.8%).
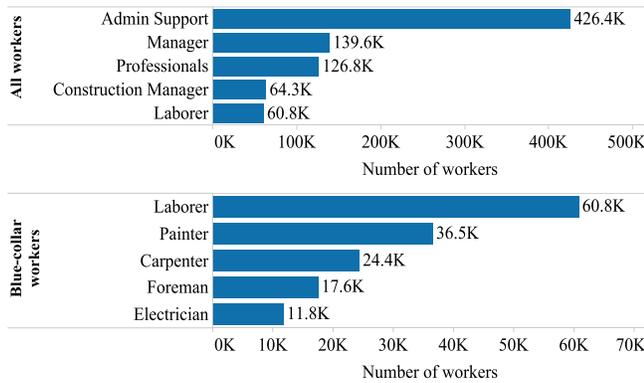
8. Work characteristics of women construction workers by worker type, 2011-2022

Source: Integrated Public Use Microdata Series (IPUMS), 2011-2022 Current Population Survey.

Women construction workers and their reported occupations were then examined. From 2011 to 2022, the occupation with the most women was administrative support professionals (average 426.4K) for all workers, while laborer was the most common occupation for blue-collar workers (average 60.8K; chart 9).

9. Occupations with the most women by worker type, average of 2011-2022

Source: *Integrated Public Use Microdata Series (IPUMS), 2011-2022 Current Population Survey.*

From 2017 to 2020, women business owners declined by 25.0% (n=31.8K; Chart 10). Their share of all construction business owners also fell by 3.3% (from 21.3% to 20.6% of business owners) for the same period.
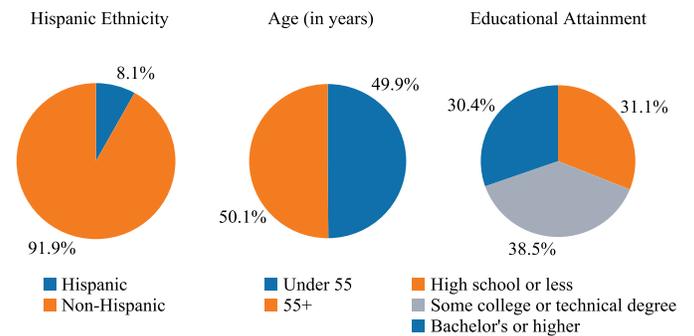
10. Number of women construction business owners and proportion of total, 2017-2020

Source: *U.S. Census Bureau Annual Business Survey 2018-2021 Characteristics of Business Owners.*

The characteristics of women construction business owners were also examined (chart 11). From 2017 to 2020, an average of 8.1% of women construction business owners were Hispanic, over half (50.1%) were 55 years or older, and 68.9% completed education beyond a high school diploma.

11. Women construction business owners by selected characteristics

Source: *U.S. Census Bureau Annual Business Survey 2018-2021 Characteristics of Business Owners.*

Finally, rates of fatal and nonfatal injuries among women construction workers were examined (chart 12). From 2011 to 2021, there was a 26.7% reduction in the rate of fatal injuries (1.5 to 1.1 per 100,000 FTEs). The rate varied throughout the time period examined, with no clear downward trend. There was also a 21.1% decrease in the rate of nonfatal injuries among women construction workers (340.9 to 269.0 per 100,000 from 2011 to 2020.

12. Rate of fatal* and nonfatal injuries among women construction workers, 2011-2021^
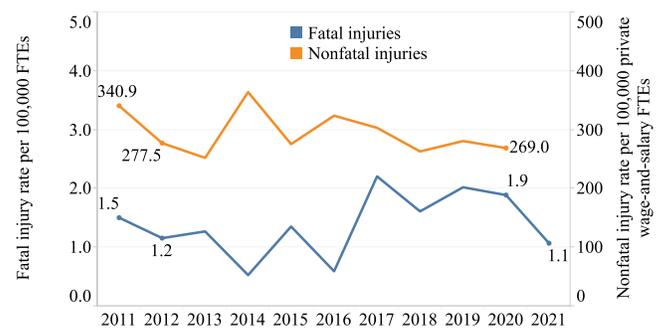
Source: *U.S. Bureau of Labor Statistics, Census of Fatal Occupational Injuries and Survey of Occupational Injuries and Illnesses; Integrated Public Use Microdata Series (IPUMS), 2011-2022 Current Population Survey.*

*Rates should be interpreted with caution as the average number of fatal injuries annually was 12.

^ Due to data changes in SOII data publication, estimates for 2021 are unavailable.

Women are a main growing demographic group in construction and accounted for 10.9% of all construction workers, 3.8% of blue-collar construction workers, and 20.6% of construction business owners in 2020. Despite this increase, women are still underrepresented in construction.

Hispanic workers are another growing demographic in construction, growing from 25% to 33% between 2011 and 2020. The proportion of women Hispanic construction workers more than doubled for the entire industry (10.6% to 24.7%), as well as for blue-collar workers (18.6% to 44.3%).

While the rate of fatal and nonfatal injuries decreased from 2011 to 2021, it varied throughout the period with no clear downward trend. It is important to monitor injuries among women construction workers to better understand the type of injuries and guide potential prevention efforts, such as PPE designed to fit.

Despite the increase of women in construction, the industry continues to face a labor shortage that will be exacerbated by the Infrastructure Investment and Jobs Act and the President's Build Back Better Framework. Together they are anticipated to add an average of 1.5 million jobs annually over the next decade, many of which will be in the construction industry. Employment trends of women in construction can help guide recruitment efforts to fill these gaps, as well as efforts to retain women in the industry.

To address the evolving needs of the growing workforce, CPWR, NIOSH, and OSHA have materials to address top and emerging concerns in construction. CPWR has a number of free resources dedicated to women in the trades, including a page dedicated to helping women find PPE that fits well. CPWR also translated many resources into Spanish, check out our "Lista de rescursos en español."

ACCESS THE CHARTS & MORE

View the charts in PowerPoint and the data underlying the charts in Excel. Downloading will start when you click on each link. These files can also be found under the Data Bulletin at: https://www.cpwr.com/research/data-center/data-reports/. See updates to our Women in Construction and Health Expenditures dashboards. In addition, see our latest Interactive Data Dashboards on Temporary Workers and Health Risk Factors.

DEFINITIONS

Blue-collar workers – *All workers, except managerial, professional (architects, accountants, lawyers, etc.), administrative support workers, and other workers. This term has historically been used interchangeably with the term production worker in the* Construction Chart Book.

Days away from work (DAFW) – *Nonfatal injury cases resulting in at least one day away from work beyond the day of injury or illness onset. A full definition with an example can be found in the* Survey of Occupational Injuries and Illnesses Handbook of Methods.

Full-time equivalent workers (FTEs) – *Determined by the hours worked per employee on a full-time basis, defined as working 2,000 hours (40 hours x 50 weeks) per year.*

Major subsector – *3-digit NAICS codes within construction, including Construction of Buildings (NAICS 236), Heavy and Civil Engineering Construction (NAICS 237), and Specialty Trade Contractors (NAICS 238).*

Nonfarm wage-and-salary – *Workers who receive wages, salaries, commissions, tips, or pay from their employer excluding farm industries.*

Wage-and-salary – *Workers who receive wages, salaries, commissions, tips, or pay from their employer.*

Women workers – *Construction workers who reported their sex as female.*

DATA SOURCES

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ABOUT THE CPWR DATA CENTER

The CPWR Data Center is part of CPWR–The Center for Construction Research and Training. CPWR is a 501(c)(3) nonprofit research and training institution created by NABTU, and serves as its research arm. CPWR has focused on construction safety and health research since 1990. The Data Bulletin, a series of publications analyzing construction-related data, is part of our ongoing surveillance project funded by the National Institute for Occupational Safety and Health (NIOSH).

Besides cpwr.com, visit CPWR's other online resources to help reduce construction safety and health hazards:

- Choose Hand Safety
  https://choosehandsafety.org/
- Construction Safety and Health Network
  https://safeconstructionnetwork.org/
- Construction Solutions
  https://www.cpwrconstructionsolutions.org/
- Construction Solutions ROI Calculator
  https://www.safecalc.org/
- COVID-19 Construction Clearinghouse
  https://covid.elcosh.org/index.php
- COVID-19 Exposure Control Planning Tool
  https://www.covidcpwr.org
- Electronic Library of Construction Occupational Safety and Health
  https://www.elcosh.org/index.php
- Exposure Control Database
  https://ecd.cpwrconstructionsolutions.org/
- Nano Safety Data Sheet Improvement Tool
  https://nanosds.elcosh.org/
- Safety Climate - Safety Management Information System (SC-SMIS)
  www.scsmis.com
- Stop Construction Falls
  https://stopconstructionfalls.com/
- Work Safely with Silica
  https://www.silica-safe.org/

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