



## EPiC Series in Built Environment

Volume 3, 2022, Pages 174–182

ASC2022. 58th Annual Associated Schools  
of Construction International Conference



# Women in the Construction Industry Preferences to Working in the Field vs. in the Office

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This study aims to gain insight into the preference of field versus office jobs for women in the construction industry. As more women enter this workforce, identifying the reasons for their choices may provide valuable information to remove barriers to their success. Many factors exist that create barriers for women entering the construction field, thus keeping the percentage of females in construction lower than other industries. Likewise, many women in the industry have successful careers and can identify the factors that influenced their preference for field or office. The survey respondents were limited to females that worked or currently work in the construction industry in the U.S. This study found that women in construction preferred work locations depending on their work experience, but they tended to prefer the field when they had experience in both field and office. The intended audiences for this study are construction companies and human resources professionals who would like insight into the factors that influence women's decisions related to jobs in the industry. Globally, this sector faces a shortage of skilled workers, and creating a more welcoming environment for women workers may alleviate this issue.

**Key Words:** Construction industry, Female preference, Field job, Office job

## Introduction

Women have made significant strides in the workplace over the past decade, and today approximately half of the world's workforce is women. In 2018, about 51 percent of the U.S. population was female, and they made up approximately 57 percent of total employment across all industries, which was close to 76 million (U.S. Bureau of Labor Statistics, 2019). The construction industry is one of the growth engines for a country's infrastructure, and industrial development is among the world's largest industrial employers. However, it is typically a male-dominated industry and presents a major challenge for equal opportunities for women.

Construction has an unenviable status of being the industry with the lowest representation of women. According to the BLS report (U.S. Bureau of Labor Statistics, 2019), only 1,102,000 (9.89 percent) out

of 11,181,000 people working in the construction industry were women in 2018. The U.S. Bureau of Labor Statistics (2019) reported the following data regarding women's participation in the construction industry, as well as overall employment for the year 2018 in Figure 1 below. The percentage of women workforce in the construction industry was far lower than in other industries. Over the years, there has been a steady but small rise in the number of women entering the workforce in professional engineering/management positions. Despite this small increase, the construction industry is still an extreme case with of the lack of women engineering/ management professionals.

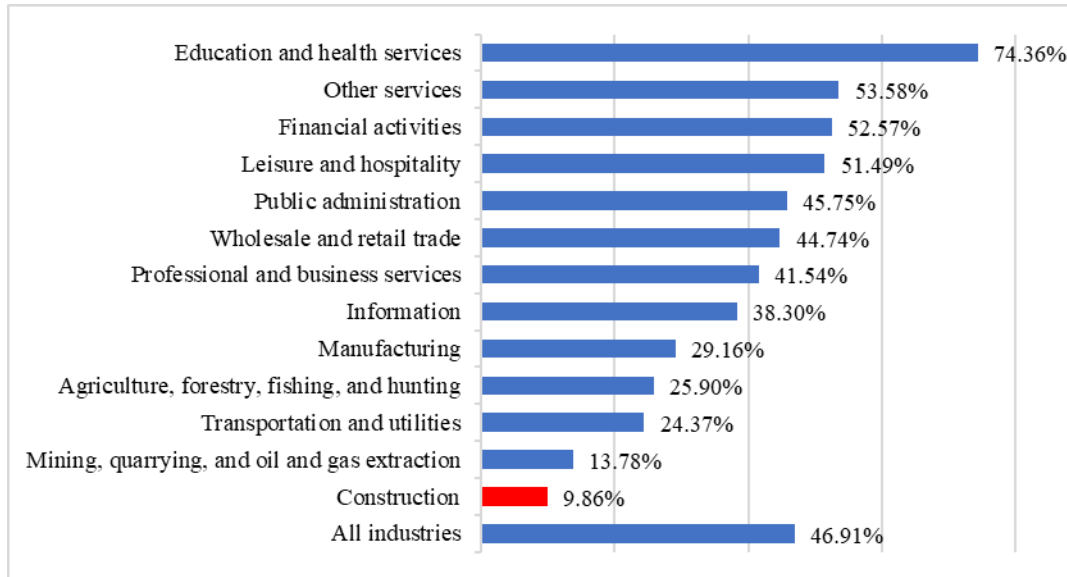


Figure 1. Percentage of women working in construction in 2018 (Data source: U.S. Bureau of Labor Statistics, 2019)

As in any other profession, the options are diverse in the construction sector ranging from various administrative, managerial positions to consultants, site engineers/inspectors, superintendents, and laborers. However, the construction field finds most of its female employees concentrated either in the clerical/secretarial positions, sales agents, or in positions in the design offices. It is rare to find women contractors and site engineers in the construction sector or women in any other positions directly involved with the building process (Menches & Abraham, 2007). Therefore, this research aims to identify the influences and barriers for work environment preference of women in the construction industry between the office and field jobs.

## Literature Review

### *Work Features in Construction Field*

The construction industry is commonly described as a traditional, male-dominated, heavy industrial environment, showing gender-specific features (Malone & Issa, 2013). Therefore, there is a perception that women may experience problems being accepted into the male-dominated work environment (Dainty & Lingard, 2006). In addition to the nature of the work environment, the work culture can be affected by several factors, such as work location and family situation. There are big differences in tasks

between field and office work. The features of tasks in construction sites show masculine works, inflexibility, and rigid work schedule (Alvanchi et al., 2012). Furthermore, according to a study in the U.K., work hours differ depending on work locations (on- and off-site) and family situations. Women working on the site tended to work longer hours (55.6 hours/week) than those working off-site (43.9 hours/week), and working-hours were also affected by the family situation, showing that women having children work shorter hours (42.1 hours/week) compared to the ones without children (47.1 hours/week) (Dainty & Lingard, 2006). In addition to this, some workers have suffered from physical and mental fatigue as well as a decrease in performance caused by prolonged working hours (Alvanchi et al., 2012).

Flexibility in work schedule and location enhances work-life balance (Dizaho et al., 2017). However, due to the high investment costs, construction sites try to keep the overall construction schedule as short as possible, which leads to dynamic working hours, including night shifts and overtime. Many people employed in the construction sector and their families find this trait somewhat difficult to cope with. Furthermore, a lack of work-life balance sometimes causes mental health issues (Kotera et al., 2020). Therefore, occupational health and organizational effectiveness related to work-life balance in the construction industry should be of the utmost importance regardless of gender (Lingard et al., 2007). A study by Hill et al. (2008) found that it is more difficult for women to balance family and work than men, and the difficulty was also observed in the construction field (Watts, 2009). The study revealed that one of the main reasons that women left the construction industry was the imbalance between family and work (Malone & Issa, 2013).

Besides, working in the construction industry requires travel, especially in the field. Some women find it difficult to deal with the responsibilities of a family and stay within the construction industry. For example, the nature of a project-based industry necessitates the employment of a transient workforce, which can move from one project location to the next. These characteristics are particularly problematic for women with dependents since separation from the family remains central to the demands of the construction industry. Construction work and particularly site-based roles are demanding and can impinge on social activities and family responsibilities. Some women thus perceive that they must make a tough choice between a career and a family-oriented lifestyle, resulting in women preferring family to career, especially if they are married or have children (Dabke et al., 2008).

The construction industry is known to have extreme working conditions that put workers at risk daily, even when complying with safety regulations. Workers are subject to heights, chemicals, noise pollution, heat exhaustion, and other high-risk factors. According to the U.S. Bureau of Labor Statistics (2020), 5,333 workers died in 2019, which increased by 2 percent from 2018. With the high fatality rate, it is effortlessly concluded that construction has numerous unfavorable conditions that could cause a worker's life. Beyond the fatality rate, women are more likely to suffer from musculoskeletal disorders in the neck, upper back, shoulder, elbow, wrist, and hip (Merlino et al., 2003). Overall, men and women both suffer from short-term and long-term health issues, but women are prone to more issues at a higher rate.

### *Attraction Factors to Construction Industry*

A labor shortage is one of the challenges that the construction industry faces. The need for employment in construction is projected to grow steadily into the year 2022 by a 21.4% increase from 2012, making it an easy career choice (U.S. Bureau of Labor Statistics, 2013). The gross underrepresentation could help solve some of the labor shortages. More recently, universities nationally have been offering coursework, degrees, and graduate studies in construction administration, construction engineering, and construction management. From a survey targeting students majoring in construction management in

higher education, over 90% of both male and female students planned to work in the construction industry after graduation (Bigelow et al., 2018). As a result, more women are getting exposed to the construction industry, showing an average of 13.02% of female students completing bachelor's level educations in 2019 (Data USA, 2020).

Additionally, studies were conducted to find factors to attract people to the construction industry, focusing on gender differences. Perrenoud, Bigelow, and Perkins (2020) examined the factors that attract people in the electrical construction industry depending on gender. Male and female workers commonly reported salary as an influential factor. Additionally, male workers reported the family was the following influential factor while women stated career opportunities as the following factor.

Work environments in the construction industry vary, such as office and field, and can influence the decision to work in the construction industry. Therefore, it is important to examine influences and barriers for each workplace type, field vs. office, to attract and retain women in the construction field.

## **Methods**

Data was gathered through a three-step process. First, a categorization of what jobs are considered field vs. office was created. Next, a survey was developed to measure job preference. The survey items were formulated based on literature review, past professional experience, and panel interviews from professional construction organizations geared toward women, including the Professional Women in Building and Women in Construction, and also four national builders were consulted. The developed survey items were primarily for women in the construction industry working in management position. A survey item asked the respondents' experience working in the office, field, or both. The next questions were about the factors that influenced them to work in either office or field and barriers to prevent them from working in the one they did not prefer. The list of influences and barriers is provided in the result section. The respondents were asked to choose all that apply. The online survey was distributed to females who currently work or have worked in the construction industry to collect their experience and preference on working in the office vs. field. These surveys were distributed to national construction associations databases, such as the National Association of Women in Construction, Professional Women in Building, Design-Build Institute of America, national builders, and construction management faculty and students via email between July 2017 and October 2017.

## **Results**

A total of 95 females participated in the survey. From the survey data, 6% of respondents had an experience in working in the field, 31% of respondents in the office, while 63% of respondents worked in both the field and office (Figure 2).

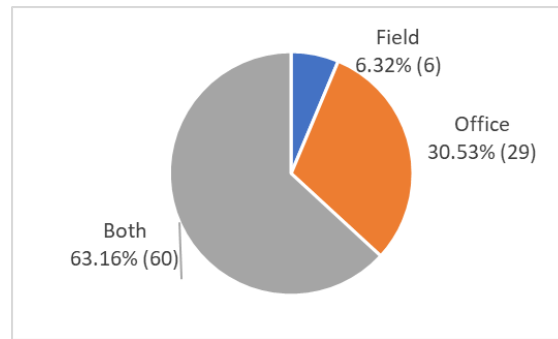


Figure 2. Experience of the Respondents

The difference of preference for experience regarding site or office yielded statistically significant results ( $n = 95$ ,  $df = 2$ ; Likelihood Ratio Chi-Square = 27.660,  $p < .0001$ ). As seen in Table 1 below, women who had experience only in the field preferred the field, women who only had experience in the office preferred the office. Still, interestingly, over 70 percent of women who had experience in both field and office preferred the field to the office.

Table 1

*Percent of women who prefer the field or the office*

Experience Location	Prefer Field	Prefer Office	Total
Field	5 (83.33%)	1 (16.67%)	6 (100%)
Office	4 (14.81%)	23 (85.19%)	27 (100%)
Both	44 (70.97%)	18 (29.03%)	62 (100%)

A total of 53 respondents preferred to work in the field, and choices were given in the survey as to why the respondent’s preference was the field (Table 2). These choices were as follows: the work environment, job schedule, I like being outside, working with tools, interacting with the workforce, casual dress instead of office wear, hands-on work, learning opportunities, I do not like being confined to an office, personal satisfaction, and other. From all the reasons listed, interacting with the workforce was the number one reason why respondents preferred the field, with the job schedule being the least reason. Any barriers that prevented one from working in the office were asked with the following choices: lack of education, lack of experience, job availability, work schedule, No, I just prefer the field, and others. In this scenario, about 66% of the respondents chose they just preferred the field with the least barrier being tied between work schedule and lack of education.

Table 2

*Influences to working in the field and barriers to working in the office (n of respondents = 53)*

Influences ( <i>n of responses = 287</i> )	%	Barriers ( <i>n of responses = 59</i> )	%
Interacting with the workforce	71.70%	No, I just prefer the field	66.04%
The work environment	64.15%	Job availability	11.32%
I do not like being confined to an office	64.15%	Lack of experience	9.43%
Personal satisfaction	64.15%	Lack of education	3.77%
I like being outside	62.26%	Work schedule	3.77%

Learning opportunities	56.60%	Others	16.98%
Hands-on work	54.72%		
Casual dress instead of office wear	39.62%		
Working with tools	32.08%		
Job schedule	15.09%		
Others	16.98%		

A total of 42 respondents reported that they preferred to work in an office. Choices were also given in the survey as to why the respondent preferred the office (Table 3). These choices were as follows: indoor plumbing, the work environment, job scheduling, interacting with the workforce, working with computers, dressing in business attire, learning opportunities, conceptual nature of work, I like having personal workspace, I like being inside, personal satisfaction and fulfillment, and others. Of all the reasons listed, the work environment was the number one reason why respondents preferred the office, with others (not given) being the least reason. Any barriers that prevented one from working in the field were asked with the following choices: lack of education, lack of training, physical limitations, job availability, none, I just prefer the office, or other. In this scenario, about 57% of the respondents chose they just preferred the office, with the least barrier being job availability.

Table 3

*Influences to working in the office and barriers to working in the field (n=42)*

<i>Influences (n of responses =137)</i>	<i>%</i>	<i>Barriers (n of responses = 47)</i>	<i>%</i>
The work environment	45.24%	None, I just prefer the office	57.14%
Working with computers	38.10%	Lack of training	14.29%
Learning opportunities	33.33%	Physical limitations	9.52%
Personal satisfaction and fulfillment	30.95%	Lack of education	7.14%
Conceptual nature of work	30.95%	Job availability	0%
I like having a personal workspace	28.57%	Others	23.81%
Job schedule	26.19%		
Interacting with the workforce	23.81%		
I like being inside	23.81%		
Indoor plumbing	16.67%		
Dressing in business attire	16.67%		
Others	11%		

## Discussion and Conclusion

Women are traditionally placed in secretarial, administrative, and clerical roles in the construction industry but rarely in the field. The results of the study indicate that women who have experience working in the field prefer the field, those that work in the office prefer the office. Still, women who have experience with both the field and office overwhelmingly prefer the field. In order to attract more women to the construction field, it is important to encourage them to be exposed to and experience fieldwork. Furthermore, women in the field can provide different perspectives and ideas. According to case studies, women help improve team performances when involved in the workforce. It was noted that women offer new or alternative solutions to approach challenges in the workplace. Teams comprised of males and females had higher intelligence overall (Goodman, 2016). Women will bring

more diversity in the workforce and further encourage innovation with new ideas for the construction market and thereby benefit the whole industry.

The findings of this study highlight that the overwhelming majority of women who have experienced both working in the field and the office preferred working in the field. Women who prefer the field expressed that interacting with the workforce is one of the main reasons for their preference of the field. They also liked the outdoor work environment, learning opportunities, and hands-on work in the field. On the other hand, women who chose to remain in the office noted that the work environment contributed to their work preference. While it is known that challenges faced by on-site female professionals were physical strength, behavior at the workplace, unisex sanitary standards, and limited promotion opportunities (Elmer, 2014), both groups who preferred the field vs. office stated that no real barriers kept them from either the field or the office positions in the construction industry; it was rather a personal preference. After that, lack of training was the most significant barrier to working in the field. Thus, providing more formal training, such as employee training and job rotation, or informal training, such as mentorship, can help alleviate the training barrier.

This cross-sectional study poses several limitations. First, the majority of the survey respondents were in managerial positions, including superintendents, site engineers/inspectors, construction managers, and consultants. Thus, “field” jobs refer to these different levels of managerial engagement in the field rather than skilled trade positions. Considering that there is a great shortage of skilled workforce in the construction section, it would be interesting to understand the challenges and opportunities to attract more women in those skilled trades. Second, due to the scope of the study, the use of advanced technologies and new employment opportunities for women to work with advanced technologies in the construction field are not included in this study. However, it is expected to see more diverse job opportunities and changes of how work is done related to advanced technologies, from modular construction, pre-fabrication (including 3D printing), construction 4.0, to construction robotics. In addition, the female workforce may engage in these different parts of construction innovation processes. Additionally, a larger sample size will benefit the statistical power of the study results. Lastly, a deeper investigation of employee turnover rates and necessary training and skills to work in the field would supplement the findings of this study.

Importantly, the direct measure of discrimination and harassment on the job is not assessed in this study; however, the matter of sexual harassment and gender-based discrimination should be properly assessed in future studies given the ingrained male-dominant culture at the construction work sites. These two factors affect women in several different ways: job satisfaction, physical, mental, and social health and well-being. Ultimately, companies should provide equal opportunities to women to encourage them and pass on the message that they are welcome and needed in this field. As found in the survey results, women want to work in the construction industry, more importantly in fields. More should be done to get these women in the workforce.

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