

Overcoming Barriers for Women in the Construction Industry: A Review

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Abstract

The U.S. construction industry has long been known to be a male dominated field. This is due to several reasons, including stereotypes that reflect deep-rooted ideas about women in the U.S. construction industry. In order for more women to enter the field, the construction industry needs to find a way to overcome the many barriers that stand in their way. The objective of this research is to provide an analysis of the Women Participation in Construction Model and to see if the model has been followed within recent years. The Women Participation in Construction Model proposes a solution to obtain and retain women within the construction industry.

The methodology used in this research is to collect data from a variety of sources, including professional journals, industry publications, construction industry leaders, construction industry organizations, and government records. Through literature and records review, information was gathered to help explain the state of the industry, highlighting women's issues. The collected data and model are combined, resulting in a series of suggestions for attracting, retaining, and promoting women in the construction industry.

The conclusions drawn from this paper provide an analysis of the Women Participation in Construction Model (WPCM) and women in the construction industry today and gives recommendations on how the construction industry can improve up following the model to better obtain and retain skilled female workers.

Keywords: Female Population, Construction Industry, Construction Management, Work Force.

1. Introduction

The construction industry has been facing an increasing crisis recently due to lack of available skilled workers. Demand for commercial construction has been high across the United States, with 93% of contractors expecting to see equal or greater profit margins in 2018. Despite demand, 60%

of contractors reported difficulty finding skilled workers in the third quarter of 2017 due to an ongoing shortage of skilled laborers (Donnelly, 2017). As the demand for labor is surpassing the supply, construction companies are turning towards a formally untapped source, women. It has long been known that there are not many women who work within the U.S. construction industry. This is due to many reasons, including stereotypes/sexism, lack of information available, physical strength, lack of daycare, flexibility of hours, a male dominated environment, and a lack of mentoring programs for women (Nielsen, Ahmed, & Yaris, 2013).

While there are many perceptions and reasons why the U.S. Construction Industry would not be a good fit for women, there are many industry job traits that should also attract a woman to the industry. Some of these include interesting and varied career opportunities, and the simple fact that women are a minority in which many firms want. Women offer a plethora of benefits for a construction company and give a unique perspective within the workplace. Educated employers know that women possess skills that will bring value to companies including strong communication skills, exceptional multitasking, more conscientious, hardworking, detail-oriented work ethic, well-organized, higher loyalty, lower turnover rates, above average listening skills, high willingness to learn, more companionate personalities, etc. (Nielsen, Ahmed, & Yaris, 2013). Another attraction for women to the construction industry could be that the gender pay gap is much narrower. In construction, women earn on average 95.7 percent of what men make (NAWIC, 2016).

These barriers preventing women from entering the industry has long hurt both females who would otherwise excel in a career in construction as well as the construction industry as a whole. Both women and the industry would greatly profit from more female workers pursuing a career in the construction industry. The 2013 article, "Women in the construction industry: Investigating current challenges faced by women in the U.S. construction industry," examined a possible solution to this problem by providing a model that shows ways in which to obtain and retain women within the industry. This model shows guidelines for educational as well as professional entities to recruit women, retain women, and increase personal growth within the construction industry (Nielsen, Ahmed, & Yaris, 2013).

2. Objectives of Study

Women as well as the construction industry would greatly benefit from more women entering the field. With the imminent need for skilled laborers in the industry, the field of construction needs women now more than ever before. The objective of this research is to provide an analysis of the Women Participation in Construction Model (WPCM) used in the 2013 article "Women in the Construction Industry: Investigating Current Challenges Faced by Women in the U.S. Construction Industry," and examine if it has been successfully used to obtain and retain women within the construction industry (Nielsen, Ahmed, & Yaris, 2013).

3. Methods

Data was collected from a variety of sources, including professional journals, industry publications, construction industry leaders, construction industry organizations, and government records. Through literature and records review, information was gathered to help explain the state of the industry, highlighting women's issues. Using a previously developed model, examples were found to show both successes and shortcomings within the industry for attracting and retaining women. The collected data and model are combined, resulting in a series of suggestions for

attracting, retaining, and promoting women in the construction industry.

4. Analysis

Table 1: 2011 vs. 2016 NAWIC Facts

Number of Women Total Year	NUMBER OF WOMEN		CHANGE	PERCENTAGE		CHANGE
	2011	2016	5 Years	2011	2016	5 Years
<i>Occupation Sector</i>						
Sales and Office	443,000	423,000	-20,000	53.5%	45.0%	-8.5%
Professional & Management	236,000	293,000	57,000	28.5%	31.2%	2.7%
Natural Resources, Construction & Maintenance	122,000	196,000	74,000	14.7%	20.9%	6.1%
Service Occupations	14,000	14,000	0	1.7%	1.5%	-0.2%
Production, Transportation & Material Moving	13,000	13,000	0	1.6%	1.4%	-0.2%

Source: Bureau of Labor Statistics — Current Population Survey at <http://stats.bls.gov>. This is an annual average based on monthly surveys of 60,000 households, equaling 150,000 people. Numbers are rounded off to the nearest thousandth.

Table 1. illustrates a comparison of NAWIC's 2011 and 2016 statistics of women in construction. Table 2. illustrates that as of 2016, Women make up 9.1 percent of the construction industry in the United States. After an analysis of the changes between 2011 and 2016, as illustrated in Table 1., it appears substantial progress has not been made in accomplishing the goal the WPCM set forth, as presented in the 2013 article "Women in the Construction Industry: Investigating Current Challenges Faced by Women in the U.S. Construction Industry" (Nielsen, Ahmed, & Yaris, 2013). Further analysis of Table 1. provides that while the number of women working in construction has increased, the number of challenges faced by women in construction has not decreased. Long work hours, unequal pay, gender bias, and issues with work-life balance are just a handful of concerns that women in the construction industry must face (Morello, Issa, & Franz, 2018). Providing further analysis of each sector of the WPCM will show what has been followed within the past 5 years and what has not, leading to the current place women are at in the construction industry today.

Table 2: Women Participation in Construction Model

Sector	Suggested Methods for Improving Participation
Hiring Employers	<input type="checkbox"/> Presentations about working in the construction industry Incorporate strong message marketing trades to girls
	<input type="checkbox"/> Promote company as female friendly company which values equal opportunity.
Professional Development	<input type="checkbox"/> Set attainable numerical goals to improve gender ratio
	<input type="checkbox"/> Highlight equal opportunity values when answering questionnaires for magazines or other marketing agents
	<input type="checkbox"/> Inform those responsible for hiring to portray realistic pictures of trades and the construction management industry to women
	<input type="checkbox"/> Make career development/ advancement opportunities available to women.
	<input type="checkbox"/> Use a mentoring program for new hires

Elementary and High School Education	<ul style="list-style-type: none"> <input type="checkbox"/> Educate women on how to advance and promote themselves within the organization <input type="checkbox"/> Try to increase female numbers to at least 15% <input type="checkbox"/> Employ more women in leadership roles to can create motivation from within the company <input type="checkbox"/> Offer more training programs and hands-on skill development for women <input type="checkbox"/> Make young girls aware of opportunities for women in construction management as well as construction trades <input type="checkbox"/> Break stereotypes by holding presentations and showing photos of women <input type="checkbox"/> Encourage girls to take trade courses in <input type="checkbox"/> Partner with Technical Schools and women construction organizations <input type="checkbox"/> Launch a campaign to educate guidance consolors on women within the construction industry. <input type="checkbox"/> Address the situation of lack of females within the industry and lack of awareness.
College and Educational Institution Sectors	<ul style="list-style-type: none"> <input type="checkbox"/> Identify sources of funding for women in construction trades and management <input type="checkbox"/> Ensure there are continuous employment training programs and workshops for women about working in the construction industry. <input type="checkbox"/> Career fairs and company promotion on campus should target females.

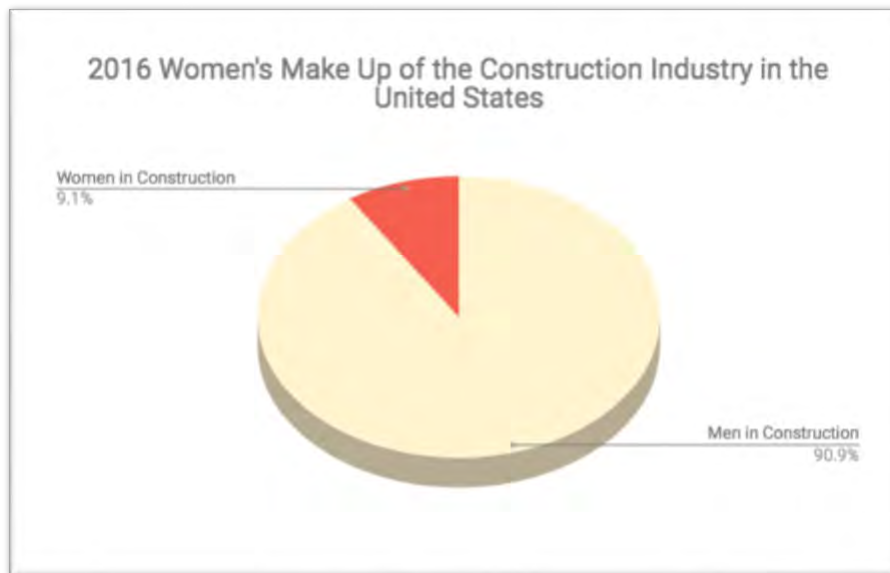
Source: Nielsen, S., Ahmed, S., & Yaris, C. (2013, July). *Women in the Construction Industry: Investigating Current Challenges Faced by Women in the U.S. Construction Industry*. Paper presented at the 2013 Creative Construction Conference.

The WPCM (Table 2.) identifies four sectors that must work together to increase the number of women working in the industry (Nielsen, Ahmed, & Yaris, 2013). The model suggests that early awareness of opportunities in construction, coupled with support from school administration and professional women’s construction organizations, women will be more interested and confident working in the construction industry. When women enter the industry, employers can retain them by focusing on mentoring and ensuring availability of career advancement opportunities.

Outreach efforts for grade school girls are grassroots in nature. Companies, colleges and universities, and female-oriented construction organizations are leading efforts to promote careers in the construction industry, from high school all the way down to the elementary school level (Filtz, 2018; Stough, 2016). By working at the local level, companies can establish relationships with schools to promote construction careers for women. According to the WPCM, this effort to make girls more aware of the construction industry should be supported by school administration and professional women’s construction organizations. Unfortunately, support from grade school administration still appears to be lacking. A study conducted by Mathew (2014) indicated that 21 out of 36 female students felt that their high school advisor had no influence on their decision to enroll in a construction management program, and two students indicated that their high school advisor had a highly negative impact. Several studies and working professionals (Bilbo, Lavy & Waseem, 2009; Caulfield, 2015; Crary, 2014; Lopez del Puerto et al, 2011) have highlighted the fact that high school counselors possess limited knowledge about construction programs and often carry a negative image of the industry. In some cases, counselors even discourage girls from entering the field because it is believed that it is not suited for them. A survey of 26 colleges and universities registered with the Associated Schools of Construction identified lack of promotion from high school counselors as a reason why women are not choosing construction management programs (Sewalk & Nietfield, 2013). Morello, Issa, and Franz (2018) conducted a survey questionnaire of 171 women working in construction-related occupations. The questionnaire was designed to collect information related to women’s participation in recruitment and mentorship programs, perception of the industry, job satisfaction, and leadership and behavioral traits. Researchers focused on the timing of when women were first interested in construction and cross-

tabulated the results with their plans to continue working in the industry. It was noted that women who became interested in construction after completing college were more often dissatisfied than the women who became interested in construction during childhood, in high school, or in college (Morello, Issa, & Franz, 2018).

A brief internet search will net a list of several professional organizations for women in construction, including: The National Association of Women in Construction (NAWIC); Women Construction Owners and Executives (WCOE); the Women Builders Council (WBC); and the National Association of Professional Women in Construction (PWC). While each organization may have a specific focus, all of them share the same basic goals: to recruit and promote retention of women in the construction industry, and to help women develop skills needed to advance in their careers. These organizations provide support through a variety of channels, including training and education, networking, and advocacy. Many successful women in the construction field feel that they could not have attained their positions without the support of an organization such as NAWIC or PWC (Freed, 2016). Morello, Issa, and Franz (2018) conducted a survey questionnaire of 171 women working in construction-related occupations. The questionnaire was designed to collect information related to women's participation in recruitment and mentorship programs, perception of the industry, job satisfaction, and leadership and behavioral traits. A majority of respondents (65%) indicated they had career mentors, and 81% of participants claimed membership in a women's organization or trade group (Morello, Issa, & Franz, 2018).



Source: Bureau of Labor Statistics — Current Population Survey at <http://stats.bls.gov>. This is an annual average based on monthly surveys of 60,000 households, equaling 150,000 people. Numbers are rounded off to the nearest thousandth.

Figure 1: Comparison of NAWIC 2011 and 2016 facts

In 2011, women made up approximately 9 percent of the construction industry; women now make up about 9.1 percent of the industry, as illustrated in Figure 1. Many professionals in the field agree that the construction industry remains hostile to women (Crary, 2014; Filtz, 2018; Freed, 2016; Stough, 2016). As a result, companies are revising their mission statements and publishing position papers to show their commitment to recruiting and retaining women in construction (Balfour Beatty, 2017; March 2018). While these efforts may not have an immediate impact that dramatically increases the number of women working in the industry, the changes do appear to

have some effect on women. Morello, Issa, and Franz (2018) found that women made up between 31 and 40% of the workforce and 31% of participants reported programs for recruitment and retention. Researchers determined that an ordinal association existed between the percentage of women in a company and the presence of recruitment and retention programs, indicating that companies with a higher percentage of women also have the highest usage of recruitment and retention programs. It should be noted that correlation does not indicate causation, so one cannot make the conclusion that the higher percentage of women in the company is caused by the recruitment and retention programs. Others report similar statistics, ranging from 34 to 40% (Filtz, 2018).

5. Recommendations

Currently, there exists a disconnect between the four sectors identified by the WPCM. This is problematic; for the model to function properly, all of the sectors must work together. Studies have shown that girls need to be exposed to construction early to become interested in it. Early exposure is likely to occur in one of two places: in the home or at school. Women working in the field have reported that they became interested in construction because one or both parents worked in the industry (Mathew, 2014). Not all girls will have a parent at home working in the industry, so it is necessary for school counselors to become more aware of the opportunities available for females in the field. Colleges and universities will need to become better advertisers of their programs and work with high schools to show the variety of career paths available to women in the construction industry. This will require cooperation and communication between faculty, staff, and administration at both high schools and colleges/universities.

Presently, there is a grassroots effort to recruit and retain women in the industry, led by women's organizations. As of now, this effort has not generated the growth results that would be expected, based on the overall growth of the construction industry. Women's organizations should help bridge the gap between grade schools and colleges/universities through career fairs and other outreach events. Women's organizations should continue to serve as advocates for women working in the construction industry, building relationships with employers to ensure that women are offered equal compensation for equal work, as well as opportunities to advance in companies. The number of campaigns aimed at attracting and retaining women in the field has increased; these efforts should continue. Employers should work with both women's organizations and schools to promote careers in construction.

Finally, and perhaps most importantly, the culture of the construction industry needs to change. Despite advances, sexism, discrimination, and bullying are still widespread problems in the industry. Companies need to address these problems and show that the behavior will not be tolerated.

6. Conclusion

If the U.S. construction industry wants to fix its labor shortage problem, it is essential that more women enter the field. This will be a hard feat to accomplish and will take much time and careful consideration, but it can be done. By utilizing all the sectors in the WPCM properly, the U.S. construction industry can successfully recruit, retain, and increase personal growth of women within the construction industry. This can only happen if all sectors of the WPCM are working together and the culture of the of the construction industry changes. With the labor shortage problem being one of the largest problems the U.S. construction industry faces today, it is time the

industry starts taking its lack of gender diversity seriously and starts focusing on significant ways to fix it.

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