

Children's Perception of Women in Construction

Angela I. Simon, MSCM, EIT, LEED AP

Wentworth Institute of Technology
Boston, Massachusetts

According to the U.S. Department of Labor, Bureau of Labor Statistics, while women currently constitute 44% of the overall workforce, they comprise only 13% of the employees in the building and construction sector. Additionally, only 1% of employed women work in natural resources, construction, and maintenance occupations. Because of the under-representation of women in the industry, the perception is that women prefer to enter either female-dominated or gender-neutral professions rather than pursue non-traditional roles for women. Studies have been conducted to determine the perception of women who work in the construction industry. This research paper focuses on children's perception of women in construction. When 104 children between the ages of 7 and 12 were surveyed to identify their perception of women working in construction, 40% responded that women do not work in construction. The majority of the children who think that women do not work in construction believe that women are not strong enough to carry out the work and that the work is too difficult for them to perform. In addition to attempting to identify children's general perception of women in construction, this research attempts to determine their opinion regarding women's work performance as compared to that of men.

Key Words: Children's perception, Woman in construction, Construction industry, Non-traditional roles for women

Introduction

The overall perception of the construction industry is poor. Many people, including youths, think that all construction jobs are hard and dirty (Maynard, 2004). "There is definitely an image issue that the construction industry is dealing with. People envision a guy with a tool belt hanging low...someone who's not very bright, maybe didn't graduate from high school or even have a GED, and that this was the best they could do" (Pratt, 2002).

Much research has been conducted that concludes that the construction industry must overcome misconceptions regarding what it means to be a construction worker. A disconnect exists between the stereotype of the industry and its reality. Studies and surveys have been conducted in order to understand the reasons for the inaccurate and misleading images. These include documentation that identify the general perception of the construction industry (Pratt, 2002), of the perception of women in construction (Chun, Arditi & Balci, 2009) (Clarke & Boyde, 2011) (Hopkins & McManus, 1998) and youth's perception of the construction industry (Moore, 2006).

The construction industry is still regarded largely as a male-dominated field, and entering this industry is a challenge for most women. According to the U.S. Department of Labor, only 8.2% of those employed as construction managers are women, and 3.1% employed as construction laborers are women. The majority of women working in the construction industry perform administrative work, while the tasks at the operative level are largely performed by men (Aulin & Jingmond, 2011). However, this does not dismiss the fact that there are women who are actively employed in all aspects of the industry. Even with an increased participation of women in this field, the general perception is that women veer towards other more traditionally female roles.

The aim of this research is to determine children's awareness and perception of women working in the construction industry. This information may be helpful in identifying why there are still so few women employed in the industry. In particular, the study focuses on elementary and middle school-aged children because at those ages, children's

perceptions are influenced by their experiences and their observations of their surroundings. Their perceptions may be an indication of what is actually occurring in the environment around them.

The objective of this research is to conduct a survey of children aged 7 to 12 to determine the following:

1. If they are aware that women work in the construction industry.
2. If they believe that women can perform construction work as good as men.
3. Why the children hold their particular perceptions.

Hypotheses

The null hypothesis (H_0) states that half the children perceive that women work in construction, and the other half perceives that women do not work in construction. The alternate hypothesis (H_A) states that female children perceive that women work in construction, and male children perceive that women do not work in construction.

A secondary H_0 states that half the children who are aware that women work in the construction industry believe that women can perform construction work as good as men. The H_A states that female children perceive that women can perform construction work as good as men, and male children believe that women cannot perform construction work as good as men.

There are many reasons why children hold their particular perceptions regarding this general topic, therefore, due to space limitations of this paper, a hypothesis was not provided for this final objective.

Methodology

A survey was verbally administered to each of 104 children who reside in an upper middle class town located in central Massachusetts. The children's ages ranged from 7 to 12 to determine if they are aware that women perform jobs as construction workers and if they believe that women can perform construction work as good as men.

This quantitative research used a questionnaire in order to explain what was observed, and the results of the survey were instantaneous and cross-sectional. The researcher was an objective observer that neither participated in nor influenced what was being studied and was detached and impartial regarding the subject matter.

Limitations of the Study

This research methodology included the following limitations:

- The subjects were from one geographical location, an upper middle class town in central Massachusetts.
- The subjects were all white and not representative of the racial mixture of the United States.
- The selection of children surveyed was not random. Only those with parental permission were interviewed.

Survey Results

One hundred and four children ($n=104$) aged 7 to 12 were individually surveyed to determine their perceptions of women in the construction industry. Of the 104 children surveyed, 58 (56%) were girls, and 46 (44%) were boys. As shown in Figure 1, the number of children surveyed in each age category was not consistent, and the number of girls and boys within each age category also varied.

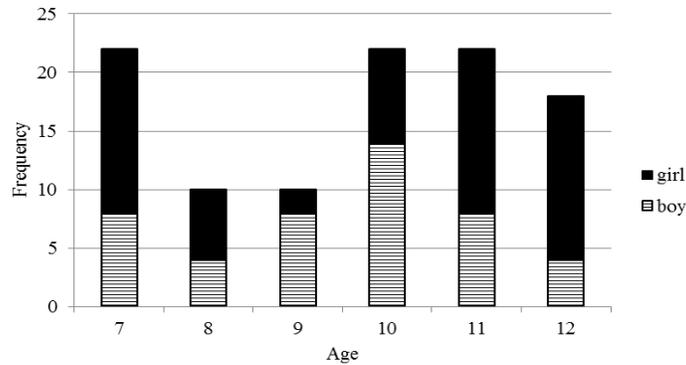


Figure 1: Age and Gender of Children Surveyed.

Parents' Occupations

Two of the 10 survey questions asked the children for their parents' occupation. Another question asked what the children want to be when they grow up. The answers to these questions provide insight into their exposure to women who work in non-traditional occupations for women. The U.S. Department of Labor defines a non-traditional occupation for women as one in which less than 25% of those employed in the field are women.

Children's perception of which occupations are acceptable for each gender is shaped by their experiences, i.e., what their parents or caregivers do for a living, and what they observe within their environment, including in the media. Children who are exposed to male hairdressers or female garbage collectors may be more likely to aspire to a profession that is not traditionally held by adults of their own gender (Auger, Blackhurst & Wahl, 2005).

Twenty-six children surveyed (25%) do not know what either their mother or father or both do for a living. Twenty-four of the children surveyed (23%) have mothers who stay home while their fathers work. Forty-two of the children surveyed (40%) have parents who both perform traditionally gender-neutral work, i.e., holds a job at a bank or insurance company, performs inventory work, is a retailer or medical writer, etc. It is interesting to note that 56% of mothers perform work in gender-neutral professions, and 63% of fathers work in traditionally male-dominated or gender-neutral professions.

Twenty-four of the children surveyed (23%) have mothers who perform work in a female-dominated profession and fathers who perform work in a male-dominated industry. For instance, one child's mother is a florist and her father is a landscaper. Another child's mother is an exercise instructor and her father is a plumber. Not included in this grouping were those children who do not know what either or both of their parents do for a living.

Only four children (4%) have parents whose mother works in a non-traditional industry for women (i.e., construction). Table 1 presents a summary of the occupation of the children's parents as relayed by each child. The data presented indicate that the children surveyed are not exposed to employment situations where their parents perform work in professions that are dominated by people different from their own gender.

Table 1

Occupation of children's parents or caregivers

Occupation	Mothers	Fathers
Don't Know	17%	24%
Stays Home	23%	2%
Gender Neutral or Male-Dominated Careers	56%	63%
Non-traditional Careers for Gender	4%	7%
Unemployed (Non-voluntary)	0%	4%

Children’s Career Aspirations

When asked what each child wants to be when they grow up, 36 (35%) stated that they want to be a professional athlete, while 20 (19%) did not know what they want to be. For the most part, the remaining children, both boys and girls, stated that they want to be professionals in gender-neutral industries, including scientists, doctors, and lawyers. The majority of the girls surveyed who state that they know what they want to be but do not want to be a professional athlete chose female-dominated or gender-neutral professions, including teacher, actress, author, or hairdresser. However, 10% of girls surveyed chose non-traditional roles for women such as horse farm owner, head cook, and architect. Table 2 presents a breakdown of the desired professions of girls versus boys.

Table 2

Desired professions of girls versus boys

Occupation	Girls	Boys
Don't Know	21%	17%
Professional Athlete	14%	53%
Gender Neutral or Female-Dominated Professions	55%	13%
Male-Dominated Professions	10%	17%

Of the 46 boys surveyed, 17% do not know what they want to be when they grow up, and 53% hope to be professional athletes. Only 17% of the boys chose professions in male-dominated industries, and 13% chose gender-neutral careers. A previous study showed that male and female children who had mothers working in non-traditional jobs showed fewer gender-typed vocational interests (Barak, Feldman & Noy, 1991). This study cannot support this finding because only 4% of mothers referenced in this research work in traditionally male-dominated industries.

Additionally, none of the children surveyed want to pursue work in the construction industry except for two boys who want to be civil engineers. This coincides with the results of a previous study that found that although children aged 7 to 10 understand what a construction worker does, and they have a positive perception of construction workers, only 2% of those surveyed want to pursue a career in construction. Similar results were determined for the 11-14 year age group (Clarke, S. & Boyd B., 2011).

Gender Perception of Professions

The next question presented a list of occupations, and each child was asked if each profession is performed only by men, only by women, or by both men and women. This helped gauge their general opinion regarding women’s participation in non-traditional roles for women. Figure 2 presents a summary of the results of this question.

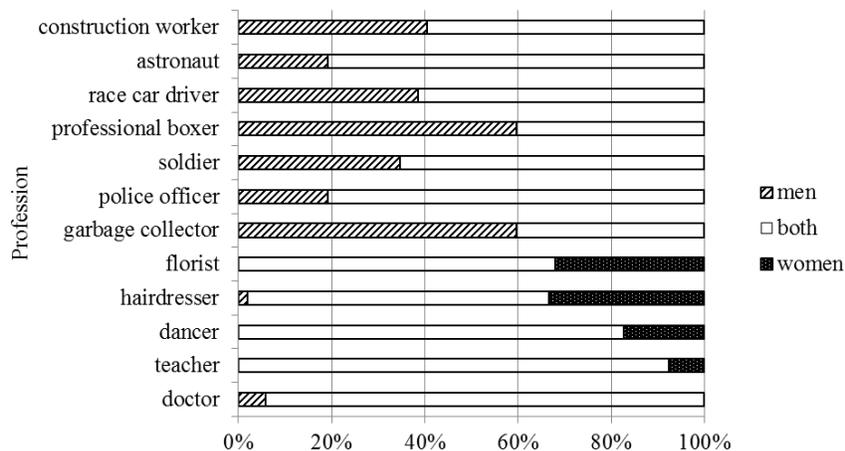


Figure 2: Children’s Perceptions of Traditionally Male and Female-dominated Professions.

Based on the results of this question, the majority of the children surveyed perceived doctors, teachers, dancers, astronauts, and hair dressers to be gender-neutral careers. The majority of the children also perceive that soldiers and police officers are gender-neutral professions, with 65% and 81% of the children indicating that soldiers and police officers are both men and women, respectively. This is in contrast to the actual gender makeup of these professions. The U.S. Department of Defense and the U.S. Coast Guard report that of the approximately 1.5 million men and women who serve in active duty within all the military branches combined only 14.5% are women. Additionally, according to the U.S. Department of Labor Women's Bureau, women comprise only 15.5% of all police officers in the country.

The majority of children surveyed perceive that both men and women are race car drivers and construction workers at 62% and 60%, respectively. Sixty percent of the children considered garbage collectors and professional boxers to be in male-dominated professions.

Children's perceptions are influenced by not only their observations of their surroundings but also by what is portrayed in the media. In this digital age of constant information dissemination, children observe the participation of women in the military and in law enforcement on television shows, news programs, computer games, and from other hard copy and digital sources.

Perception of Women in Construction

The final series of questions included those pertaining to the children's perception of women in the construction industry. As stated above, 60% of the children surveyed believe that both men and women perform construction work, but the remaining 40% believe that only men are construction workers.

Of the 42 children who stated that only men perform construction work 43% are girls, and 57% are boys. The reasons these children believe that women do not work in construction are presented in Figure 3.



Figure 3: Children's Reasons why Women do not Work in Construction.

The most common reason that children believe that construction work is performed only by men is because they perceive that women are not strong enough to undertake the work. This is followed by their perception that the work is too difficult for women. However, all but one of these children believe that women will someday work in construction.

Of the 62 children who stated that construction workers are both men and women, almost half of them believe that men perform construction work better than women. Of the 30 children who believe that men perform work better than women, 18 (60%) are male children and 12 (40%) are female children. Their reasons for this are presented in Figure 4.

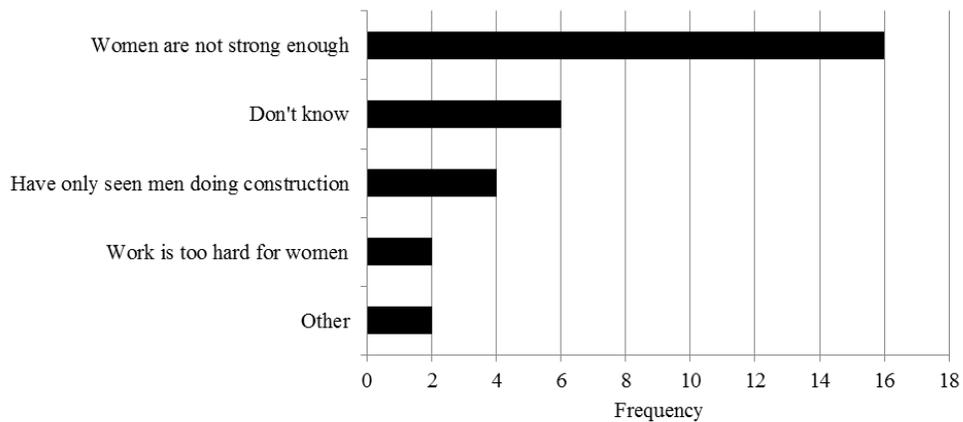


Figure 4: Children’s Reasons why Men Perform Construction Work Better than Women.

About half the children who think that men perform construction work better than women believe that women are not as strong as men and therefore, they cannot lift heavy materials at a job site. Twenty percent of children who believe that men perform the work better than women do not know why they think that.

Children’s Age versus Perception of Women in Construction

The results of the survey show a direct correlation between the survey sample’s age and the children’s perception that women work in construction. A small percentage of the youngest children surveyed perceive that women work in construction, and as they grow older, the percentage of children who believe this increases. Figure 5 shows that 44% of children aged 7 and 8 perceive that women work in construction, and 74% of children aged 11 to 12 share this perception.

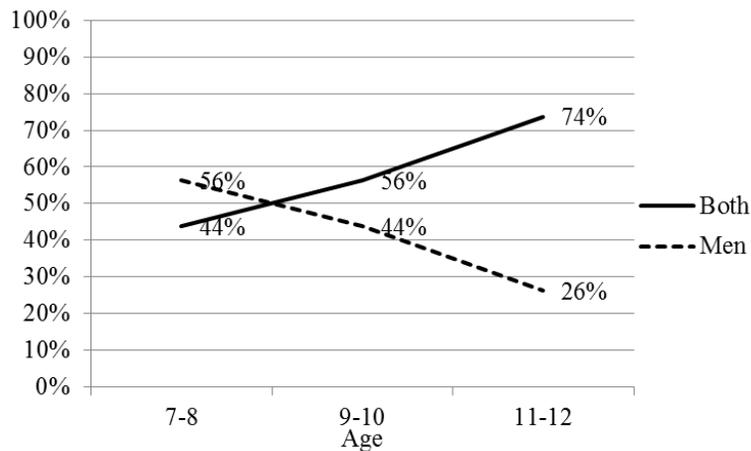


Figure 5: Children’s Age Versus their Perception that Women Work in Construction.

Conclusions

The aim of this study was to determine children’s awareness and perception of women in construction. The research showed that 60% of children surveyed between the ages of 7 and 12 believe that both women and men work in construction, and the remaining 40% believe that only men work in construction. Of those who believe that only men work in construction, 43% are female children, and 57% are male children. Of those children who believe that

both women and men work in construction, 49% believe that men perform the work better than women, and 51% believe that both genders perform the work equally. All but one child believe that women will one day work in construction.

The null hypothesis (H_0) states that half the children perceive that women work in construction, and the other half perceives that women do not work in construction. The alternate hypothesis (H_A) states that female children perceive that women work in construction, and male children perceive that women do not work in construction. With a sample size of 104, a 95% confidence level, and a margin of error of 9.61%, the research shows that the H_0 could not be disproven. However, with a 95% confidence level, the research disproves the alternate hypothesis.

A secondary H_0 states that half the children who are aware that women work in the construction industry believe that women can perform construction work as good as men. The H_A states that female children perceive that women can perform construction work as good as men, and male children believe that women cannot perform construction work as good as men. With a sample size of 104, a 95% confidence level, and a margin of error of 9.61%, the research shows that the null hypothesis could not be disproven. However, with a 95% confidence level, the research disproves the alternate hypothesis. With a sample size of 104, a 95% confidence level, and a margin of error of 9.61%, the research shows that the secondary H_0 could not be disproven. However, with a 95% confidence level, the research disproves the alternate hypothesis.

It may be concluded that one reason that only 60% of children perceive that women work in construction is that there is a persistent under-representation of women in the industry and children are aware of this within their surroundings. During conversation with the children, it was divulged that all have never actually seen a woman on a construction site. Children are influenced by culture and observations of their surroundings.

It may further be concluded that another reason for this perception is that the parents of the majority of the children hold gender-neutral jobs or perform work in industries dominated by their own gender. Only two children surveyed have mothers who work in male-dominated industries, while the mothers of 23% of the children stay home to care for them. It is interesting to note that 67% of the boys surveyed who have mothers who stay home to care for them perceive that women do not work in construction. This validates the findings of another study that showed that the degree of occupational stereotyping was significantly greater in boys whose mothers did not work outside the home than in boys whose mothers were employed outside the home (Mayer, 1998). As stated previously, children's perceptions of what is acceptable and appropriate are molded by their experiences and what they observe within their environment.

Another interesting outcome of the survey was the direct correlation between the children's age and their perception of women in construction. The majority of the children aged 7 and 8 believe that women do not work in construction with the majority of the children aged 11 and 12 believing that women perform work in construction. A little more than half the children aged 9 and 10 believe the women work in construction. Gender stereotyping occurs early in a child's development, and schools have the potential to perpetuate those stereotypes. Students who are surrounded by a school environment supportive of non-traditional choices and who are exposed to non-traditional career options are more accepting and open to viewing women in non-traditional roles. In a study comparing second and sixth graders, second graders had significantly higher sex-stereotyping scores (Billings 1992). This phenomenon was also depicted in the results of this research project. This is why it is prudent to encourage and support teachers from elementary school to high school to provide their female students with more access to hands-on science, technology, engineering, and math (STEM) programs.

Women continue to make strides into nontraditional occupations. As more women enter jobs that were once dominated by men, many jobs that were nontraditional for women in the 1980s were no longer nontraditional for women today. Some of these occupations were chemists; physicians; and lawyers. The children surveyed also perceived these professions to be gender-neutral roles. As more women enter the construction industry in visible roles such construction site supervisors and on-site engineers and managers, perhaps children's perception of women in construction will change to reflect this increase in women's participation in this field.

Finally, as American children spend an increasing amount of time with television, computers and other media, it is important for women to be portrayed in the media as able persons working in traditionally male-dominated roles, including in professions within the construction industry. The more that children are exposed to these images, the

more likely they will internalize them as acceptable situations, and the more both boys and girls of all ages will understand that women not only perform work in construction but they perform it well.

In an effort to increase the number of women in construction, providing opportunities to introduce young girls to the construction industry at an early age is necessary. This introduction must occur at an age when their minds are most pliable, and it must be consistent from elementary school to throughout their high school years. Business/industry partnerships with technical education and outreach programs are ways in which corporations can help expose school-age girls to career opportunities in construction. If female students are not exposed and encouraged to pursue an interest in this industry, they will not realize that it is a potentially rewarding career path for their future.

References

- Auger, R. W., Blackhurst, A. E., & Wahl, K. H. (2005). The development of elementary-aged children's career aspirations and expectations. *ASCA, Professional School Counseling Journal*, 8 (4), 322-329.
- Aulin, R. & Jingmond, M, (2011). Issues confronting women participating in the construction industry. *Advances in Engineering and Technology - Contribution of Scientific Research in Development*, 312 – 318.
- Barak, A., Feldman, S., & Noy, A. (1991). Traditionality of children's interests as related to their parent's gender stereotypes and traditionality of occupations. *Sex Roles*, 24, 511-524.
- Cannon, Mittie D. (2011). Women belong in construction. *The Cornerstone*, 8 October.
- Chun, B. L., Ardit, D., & Balci, G., (2009). Women in Construction Management. *CMAA CM eJournal*.
- Clarke, S. N., Ph.D., P.E. & Boyd, B. J., MCSM, (2011). *Youths' Perception of the Construction Industry: An Analysis at the Elementary, Middle, and High School Levels*. 47th ASC Annual International Conference Proceedings.
- Hopkins, K. and McManus, B., (1998). *The Perception of Women in Construction by Women in Construction*. ASC Proceedings of the 34th Annual Conference, 307-320.
- Mayer, R., (1998). *The impact of egalitarian children's literature on occupational sex role stereotyping in kindergarten and first graders*. Unpublished master's thesis, West Virginia University, Morgantown.
- Maynard, N. F. (2004). Get Smart; facing the labor shortage, builders need to explore options to fill the void. *Builder*, August 1, pNA.
- Moore, J. D., (2006). *Women in construction management: creating a theory of career choice and development*. Unpublished doctoral dissertation, Colorado State University, Fort Collins.
- Pratt, M. K. (2002). Certain Stereotypes Die Hard in the Construction Industry. *Boston Business Journal*, 9 September.
- U.S. Department of Labor Women's Bureau. (2009). *Quick Facts on Nontraditional Occupations for Women*
- Women In Military Service For America Memorial Foundation, Inc. (2010). *Statistics on Women in the Military*.