

# Youths' Perceptions of the Construction Industry: An Analysis at the Elementary, Middle, and High School Levels

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This research paper identifies youths' perceptions of the construction industry as compared to those enrolled in a Construction Management program at the university level. Furthermore, it goes on to identify whether or not youths understand the different roles and responsibilities one might have working in the construction industry. There are many forecasts that predict a shortage in craftworkers over the next decade. The thought is that most youths do not see construction careers as being professional, honest, or trustworthy. The information in the analysis was compiled by surveying youths at the Elementary, Middle, and High School levels. They were then categorized into 3 groups, 7-10 year olds, 11-14 year olds, and 15-18 year olds. Also, current Construction Management majors were surveyed at Clemson University. In the survey, youths and Clemson University students were asked questions regarding their perceptions of a worker in the construction industry. Youths were also asked if they understood the different roles one working in construction may have and how many actually wanted to pursue a career in construction. This paper presents the data, data analysis, and then suggests how this information may be used in order to get more youths involved in the construction industry.

**Key Words:** Construction, Youths, Perceptions and Image, Construction Careers, Survey

## Introduction

The basis for this survey is to find out kids perceptions of the construction industry at the Elementary, Middle, and High School levels as compared to those individuals already enrolled in a Construction Management program. The aim of this study is to find out at what levels the largest percentage of youths are interested in construction and therefore, know when the industry should target these youths. "The average age of the construction worker is 52, and in four years, there will be 1 million construction jobs available" (Morgan, 2008). As construction continues to grow in the U.S. the need for qualified craft workers will only increase. "Even as the economy slumps and unemployment rises, strong demand for power plants, oil refineries and export goods has many manufacturers and construction contractors scrambling to find enough skilled workers to plug current and future holes" (Troianovski, 2008).

There are a few reasons that contribute to the shortage of labor. "Fewer young people are considering construction as a career choice" (Maynard, 2004). Most youths think that all construction jobs are hard and dirty, they would rather go into fields that are cleaner like computers (Maynard, 2004). Too many youths are not aware of the different paths that a career in construction could take them. The overall perception of the construction industry is poor. This is another reason for the shortage in the workforce. "The construction industry faces a tough challenge in terms of making the industry attractive to prospective candidates" (Maynard, 2004). Construction can be a hard way to earn a living depending on what type of job you have and the industry must overcome these barriers. Maynard (2004) also states, "The industry still faces an image problem, too. By in large, most people in construction are good and honest, but you always see these horror stories of builders or remodelers who cheated their clients." We rarely hear the good stories about contractors, it seems that the bad stories are covered by the media. "These perceptions risk deepening an industry-wide image problem that is aggravating recruitment, undermining skills and training and increasing dependence on part-time workers" (Hamid, 2001). Another issue with the perception of the industry is its workers, Hamisah Hamid (2001) states, "Evidence from various parts of the world indicates that construction workers do not view their employment favorably because it is regarded as low-status job." This challenges the industry to overcome the industry perceptions. Troianovski (2008) believes that the challenge is to overcome the perception that blue-collar trades offer less status, money and chance for advancement than white-collar jobs and that college is the best investment for everyone.

It is clear that there is a need for skilled construction workers. There is by far a shortage of skilled workers in the industry. The industry needs to take action now. "If there was ever a time to start working on a solution, that time is now. The economy has hit many construction segments hard – particularly residential construction – but utility and infrastructure construction and rehabilitation isn't going away" (Morgan, 2008). One of the ways is to target the younger children. Emma Penny (2007) concedes, "The industry had an image problem and it needed to target children at a younger age. We acknowledge the recruitment challenge faced by the industry and we must target young people at an earlier age to overcome the perception barrier."

## **Methodology**

### *Survey for Construction Science and Management students at Clemson University*

The survey for Construction Science and Management students is shown in Appendix A. It was intended to be filled out in 5-10 minutes by students who are currently enrolled in the program at the undergraduate level at Clemson University. Fifty-four students completed the surveys, however only 51 were used in the data analysis as 3 of the students were enrolled in other programs. The survey was designed to find out the following about students who are pursuing a career in construction:

1. For those students studying construction, what are their perceptions of individuals working in the construction industry? The null hypothesis was that students entering the construction field believe that the industry is professional, skilled, trustworthy, honest, and important. In order to obtain this information, t-Tests were performed assuming unequal variances at a 95% confidence level.
2. At what point in time did the students first become interested in the construction industry?
3. At what age did the students decide to pursue a career with the industry?

This information will be used to come up with a benchmark of information from students who are actually studying construction.

### *Survey to students at the Elementary, Middle School, and High School Levels*

The survey for these students, shown in Appendix B, was given to students in elementary school (7-10 year olds), middle school (11-14 year olds), and high school (15-18 year olds). The surveys were mailed to teachers throughout South Carolina who then administered the survey to their students: two at the high school level, three at the middle school level, and four at the elementary school level.

The survey was designed to find out the following regarding the students:

1. What were the students' perceptions of individuals who work in the construction industry? The null hypothesis was that there will be a significant difference between the beliefs of those enrolled in the Construction Management program and the youths. In order to obtain this information, t-Tests were performed at a 95% confidence level.
2. Do they actually understand the roles and responsibilities of a project manager, superintendent, and construction worker? The null hypothesis was that the youths do not understand the roles and responsibilities of a project manager, superintendent, and construction worker.
3. What percent of students actually see themselves working in the construction industry?

There were 55 students surveyed in the 7-10 year old age category, 104 students in the 11-14 year old age category, and 101 students in the 15-18 year old age category.

## **Analysis**

The focus of the findings is mainly on the results of the Construction Management students' perceptions of the industry as compared to the youths at every level. The goal is to distinguish what perceptions the youths have at

each level in order to find out where the construction industry should focus its efforts. The students were asked to answer the multiple-choice, multiple-response question, "I believe a person working in construction to be: A Professional, A Non-Professional, Skilled, Trustworthy, Corrupt, Honest, Dishonest, Important, Not Important." The students were instructed to check all that applied, therefore the sum does not add up to 100%. The results are summarized in Table 1.

Table 1

<i>Percentage of Students that Believe a Person Working in Construction to Be</i>				
	7-10 year olds	11-14 year olds	15-18 year olds	College students
Professional	87%	62%	49%	88%
Non-Professional	5%	2%	5%	2%
Skilled	85%	81%	84%	92%
Trustworthy	75%	55%	27%	45%
Corrupt	4%	5%	2%	2%
Honest	84%	52%	28%	43%
Dishonest	5%	1%	3%	2%
Important	76%	48%	51%	75%
Not Important	5%	3%	6%	0%

### *Professionalism*

Of those surveyed, 88% of the college students, 87% of 7-10 year olds, 62% of 11-14 year olds, and 49% of 15-18 year olds believed that those working in construction industry were professional. When comparing college students to 7-10 year olds, there was no significant difference between their perceptions of professionalism. When comparing college students to 11-14 year olds, there was a significant difference between their perceptions of professionalism. When comparing college students to 15-18 year olds, there was a significant difference between their perceptions of professionalism.

### *Non-Professionalism*

Of those surveyed, 2% of college students, 5% of 7-10 year olds, 2% of 11-14 year olds, and 5% of 15-18 year olds believed that those working in construction industry were non-professional. When comparing college students to 7-10 year olds, there was no significant difference between their perceptions of professionalism. When comparing college students to 11-14 year olds, there was no significant difference between their perceptions of professionalism. When comparing CSM students to 15-18 year olds, there was no significant difference between their perceptions of professionalism.

### *Skilled*

Of those surveyed, 92% of the college students, 85% of 7-10 year olds, 81% of 11-14 year olds, and 84% of 15-18 year olds believed that those working in construction industry were skilled. When comparing college students to 7-10 year olds, there was no significant difference between their perceptions of professionalism. When comparing college students to 11-14 year olds, there was a significant difference between their perceptions of professionalism. When comparing college students to 15-18 year olds, there was no significant difference between their perceptions of professionalism.

### *Trustworthy*

Of those surveyed, 45% of college students, 75% of 7-10 year olds, 55% of 11-14 year olds, and 27% of 15-18 year olds believed that those working in construction industry were trustworthy. When comparing college students to 7-10 year olds, there was a significant difference between their perceptions of professionalism. When comparing

college students to 11-14 year olds, there was no significant difference between their perceptions of professionalism. When comparing college students to 15-18 year olds, there was a significant difference between their perceptions of professionalism.

### *Corrupt*

Of those surveyed, 2% of college students, 4% of 7-10 year olds, 5% of 11-14 year olds, and 2% of 15-18 year olds believe that those working in construction industry were corrupt. When comparing college students to 7-10 year olds, there was no significant difference between their perceptions of professionalism. When comparing college students to 11-14 year olds, there was no significant difference between their perceptions of professionalism. When comparing college students to 15-18 year olds, there was no significant difference between their perceptions of professionalism.

### *Honest*

Of those surveyed, 43% of college students, 84% of 7-10 year olds, 52% of 11-14 year olds, and 28% of 15-18 year olds believed that those working in construction industry were honest people. When comparing college students to 7-10 year olds, there was a significant difference between their perceptions of professionalism. When comparing college students to 11-14 year olds, there was no significant difference between their perceptions of professionalism. When comparing college students to 15-18 year olds, there was a significant difference between their perceptions of professionalism.

The question regarding Honesty correlates with that one of Trustworthiness. When asking those surveyed about Honesty and Trustworthiness, their response was pretty much the same. They had the same opinions about both of the questions that were asked. The same percentages were obtained for all groups, as shown in Table 2.

Table 2

<i>Trustworthiness compared to Honesty</i>		
	<b>Trustworthy</b>	<b>Honest</b>
College students	45%	43%
7-10 year olds	75%	84%
11-14 year olds	55%	52%
15-18 year olds	27%	28%

### *Dishonest*

Of those surveyed, 2% of college students, 5% of 7-10 year olds, 1% of 11-14 year olds, and 3% of 15-18 year olds believed that those working in construction industry were dishonest.

When comparing college students to 7-10 year olds, there was no significant difference between their perceptions of professionalism. When comparing college students to 11-14 year olds, there was no significant difference between their perceptions of professionalism. When comparing college students to 15-18 year olds, there was no significant difference between their perceptions of professionalism.

### *Important*

Of those surveyed, 75% of college students, 76% of 7-10 year olds, 48% of 11-14 year olds, and 51% of 15-18 year olds believed that those working in construction industry are important.

When comparing college students to 7-10 year olds, there was no significant difference between their perceptions of professionalism. When comparing college students to 11-14 year olds, there was a significant difference between their perceptions of professionalism. When comparing college students to 15-18 year olds, there was a significant difference between their perceptions of professionalism.

Here too when asked about Importance, it was the younger kids whose perceptions were in line of those of the

college students. They see construction workers as being important while comparatively only roughly 50% of the 11-14 year olds and 15-18 year olds see construction workers as being Important.

### *Not Important*

Of those surveyed, 0% of college students, 5% of 7-10 year olds, 3% of 11-14 year olds, and 6% of 15-18 year olds believed that those working in construction industry were professional. When comparing college students to 7-10 year olds, there was a significant difference between their perceptions of professionalism. When comparing college students to 11-14 year olds, there was a significant difference between their perceptions of professionalism. When comparing college students to 15-18 year olds, there was a significant difference between their perceptions of professionalism.

### *When did CSM Students become interested in Construction, and decided to pursue a career?*

18% of the students became interested in construction in elementary school, 14% in middle school, and 53% during high school. As well, 14% became interested after getting to college and 2% did not know. 4% of the students decided to pursue a career in construction in elementary school, 2% in middle school, and 47% during high school. As well, 47% became interested after getting to college.

These results will serve as a basis to find out when exactly students decide to pursue a career in construction. This will help in determination when youths should be targeted.

### *Youths understanding of the roles and responsibilities of a Project Manager, Superintendent, Construction Worker*

When answering the question regarding Project Manager only 13% of the 7-10 year olds answered correctly, 16% of the 11-14 year olds answered correctly, and 18% of the 15-18 year olds answered correctly.

When answering the question regarding Superintendent 33% of the 7-10 year olds answered correctly, 30% of 11-14 year olds answered correctly, and 23% of 15-18 year olds answered the question correctly.

However, when asked what a Construction Worker did 95% of the 7-10 year olds were able to understand what exactly a construction worker did, while 83% of 11-14 year olds answered correctly, and 87% of 15-18 year olds answered correctly. 7-10 year olds were able to distinguish what exactly a construction worker did more than the other two groups of kids.

### *Those Youths wanting to work in construction*

Only 2% of the 7-10 year olds want to pursue construction as a career. 9% of the 11-14 year olds want to pursue construction as a career. 3% of 15-18 year olds want to go into construction as a career. These results are consistent with past research on this subject. It is quite clear that most kids do not see themselves pursuing a career in the construction industry.

## **Findings**

Statistical tests were performed on data gathered from surveys. Most important findings were about the different perceptions college students have on those working in construction and that of the youths. Also, the data on youths and their knowledge of the roles and responsibilities of Project Managers, Superintendents, and Construction Workers is quite interesting.

Some of the most surprising statistical results came from whether or not students perceived construction workers as trustworthy. One would think that college students would have the highest percentage. However, only 45% of the college students believe construction workers to be trustworthy. There was no significant difference between the 11-14 year olds and college students. The 7-10 year olds actually had a higher percentage than the college students.

75% of the 7-10 year olds believe that construction workers are trustworthy. On the other hand, in the 15-18 year olds, the significant difference came from the fact that they had a lower percentage and therefore, believe construction workers not be trustworthy at all. This same sort of results was found when asking about honesty. There was a significant difference at the 7-10 year old level and 15-18 year old level. The younger youths thought more highly of those in the construction industry. 84% believed the construction workers were honest while only 43% of college students believed construction workers to be honest.

Regarding questions directed only at the youths, most of them did not understand exactly what a Project Manager does on a construction site. The most was 18%, which came from the 15-18 year olds. Although, a few more youths did understand what a Superintendent does on a project. Surprisingly, the highest percentage came from the 7-10 year olds, which was 33%. The lowest was that of the 15-18 year olds where only 23% of them knew what a Superintendent did on a construction site. More of the 15-18 year olds knew more about what a Project Manager did and less about what a Superintendent does on a project. At the same time, most kids knew exactly what a construction worker did on the job site. The lowest percentage of 83% came from the 11-14 year olds. The results show that 95% of 7-10 year olds know what a construction worker does. It is clear that they understand exactly what a construction worker does on the job.

Results of some of the other data obtained and analyzed were as to be expected. Very few youths see themselves working in the construction industry. The highest percentage of youths came from 11-14 year olds at only 9%. It was perceived that youths had a poor perception of the construction industry as a whole and that was one of the factors contributing to the problem of attracting them to the industry. The results of this study showed that 7-10 year olds had a better perception of the construction industry as compared to the current college students. They both believe construction workers to be professional; however, the 7-10 year olds believe construction workers to be more trustworthy and honest than the college students.

## Conclusions

The aim of this study was to find out at what levels the largest percentage of youths are interested in construction and therefore, know when the industry should target these youths. This study showed that youths ages 7 to 10 had the best/most positive image of people in construction. In order to resolve shortage of skilled workers, the industry must target youths at a younger age. In this way they can become more familiar about the industry before their perceptions of construction change due to outside influences. The results of this research show that high school students have worse perceptions about the construction industry than the younger youths. This is important to note because it is at high school that half of the youths decide what they are going to do as far as a career is concerned.

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**Appendix A**

## College Student Survey

1. I am a: (check one)  
 Male  
 Female
2. At what point in time did you become interested in construction? (check one)  
 Elementary School  
 Middle School  
 High School  
 After I got to college  
 I don't know
3. At what age did you decide to pursue a career in construction? (check one)  
 Elementary School  
 Middle School  
 High School  
 After I got to college
4. I believe a person working in construction to be: (check as many as you like)  
 A Professional  
 A Non-Professional  
 Skilled  
 Trustworthy  
 Corrupt  
 Honest  
 Dishonest  
 Important  
 Not Important
5. What made you want to obtain a college degree, rather than being a skilled laborer? (check one)  
 Money  
 Laborer work is physically demanding and too hard  
 Having job security  
 No benefits  
 Parents want me to be a professional  
 Other (specify) \_\_\_\_\_

**Appendix B**

## Youth Survey

1. What is your age? (check one)  
 7 – 10 yrs. Old  
 11 – 14 yrs. Old  
 15 – 18 yrs. old
2. I am a: (check one)  
 Boy  
 Girl
3. I believe a person working in construction to be: (check as many as you like)  
 A Professional  
 A Non-Professional  
 Skilled  
 Trustworthy  
 Corrupt  
 Honest  
 Dishonest  
 Important  
 Not Important
4. In construction, a Project Manager is someone who: (only check one)  
 Is responsible for supervising the construction and managing the construction workers.  
 Uses different tools to construct the building.  
 Works at the office and at the construction site making sure everyone is doing their job.  
 Makes decisions on what the building will look like.  
 I don't know
5. In construction, a Superintendent is someone who: (only check one)  
 Is responsible for supervising the construction and managing the construction workers.  
 Uses different tools to construct the building.  
 Works at the office and at the construction site making sure everyone is doing their job.  
 Makes decisions on what the building will look like.  
 I don't know
6. In construction, a Construction Worker is someone who: (only check one)  
 Is responsible for supervising the construction and managing the construction workers.  
 Uses different tools to construct the building.  
 Works at the office and at the construction site making sure everyone is doing their job.  
 Makes decisions on what the building will look like.  
 I don't know