

Bad for Business: Skilled Labor Shortages in Alabama's Construction Industry

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The decline in the number of skilled laborers in the United States has been heavily investigated over the past 20 years. However, little research has been done to determine the direct effects of the crisis on general contractors' business operations. In addition, very little information is available examining whether the labor market in Alabama mirrors the decline witnessed in other areas of the country. For this study, general contractors were surveyed to determine whether the skilled labor pool in Alabama mimics that of the national shortage, and, if so what direct effect that has on Alabama's general contractors. After defining the problem, this paper begins the process of exploring possible solutions. Traditionally, vocational programs have provided training for the skilled labor trades. Vocational programs in Alabama were surveyed to determine their level of participation in the construction-related fields.

Key words: labor shortage, Alabama, skilled labor, general contractors, vocational programs

Introduction

Of the nearly 7,200,000, people employed by the U.S. construction industry, over five million own or are employed by companies specializing in certain trade crafts (Davidson, 2007; Bureau of Labor Statistics, 2007). Although statistics vary slightly from source to source, most research points to the fact that there has been, and will continue to be, a national shortage of skilled labor (Whyte & Greene, n.d.; Sweet, 2007; Sitek, 2007; Staff, 2008; Rosenbaum, 2001). In fact, the industry "…will need to recruit and train 275,000 workers *per year* (180,000 for growth, 95,000 for attrition) for at least the next 10 years" to fill the gap in the labor pool (Whyte & Greene, n.d.). The Construction Industry Institute estimates that 75 percent of contractors are suffering from a noticeable shortage in skilled labor (Davidson, 2007). Despite the current financial hardships in the U.S., the construction industry will continue to grow; however, the number of adequately trained trade personnel does not seem to follow the same growth patterns. The National Center for Construction Education and Research (NCCER) says, "Nearly half of what will be the built environment in 2030 doesn't exist yet. The industry is facing staggering growth while simultaneously wrestling with significant workforce challenges" (Whyte & Greene, n.d.).

The industry has universally accepted broad causes for the skilled labor shortage including an aging workforce and difficulty recruiting replacements. The last generation of truly skilled craftsmen will be retiring within the next decade. In fact, the average age of a blue collar worker in the U.S. is 55 years (Phair, 2007). Retirement of trade veterans, combined with poor enrollment rates in training programs affects every entity involved in the construction industry including subcontractors, manufacturers, suppliers, general contractors, owners, and laborers themselves. The skilled craft shortage is not a shortage of workers. The Institute of Management & Administration (IOMA) wrote that, "it is a shortage of adequately trained, skilled, and productive workers available for certain jobs" (IOMA, 2005). The construction industry lacks appeal to young potentially skilled workers. An increasingly poor image over the last couple of decades has discouraged young people from looking into the construction industry as a viable career path (Tucker, Haas, Glover, Alemany, Carley, Eickmann, Rodriguez, & Shields, 1999). Young people in today's society are being pushed towards college and not towards blue collar jobs. The shortage of skilled craft labor will only grow without adequate training, giving workers the opportunity to acquire new skills.

For this study, general contractors ("GCs") located in Alabama's seven largest metropolitan areas (Birmingham, Montgomery, Mobile, Huntsville, Tuscaloosa, Hoover and Dothan) were surveyed to determine the existence of a skilled labor shortage in the state and pinpoint any residual effects felt by their business operations. Many

contractors who responded to the survey believe that a possible solution to the problem lies within vocational schools. The respondents believe that, if vocational programs were structured in a way that encourages and includes construction-related trades, their efforts would help mitigate the problem. For this reason we have surveyed the state's vocational educators to find out how they are incorporating construction related trades into their curricula.

Methodology

An online service (zoomerang.com) was utilized to formulate a 19 question survey consisting of multiple choice and short answer questions. The survey was sent to 137 general contractors who have performed work within the state of Alabama for at least two years. The surveys yielded 40 complete responses, with 4 partial responses, producing a 29 percent response rate. One of the initial questions was designed to classify the respondents by the sector(s) of the construction industry in which they are involved. Each respondent was allowed to choose more than one sector. 82 percent of respondents perform work in the commercial sector, 57 percent perform industrial type work, 20 percent work in residential, and 18 percent specified other sectors, including 3 heavy civil contractors, 3 healthcare builders, and 1 marine contractor.

Another survey (also using zomerang.com) was utilized to survey high school vocational programs throughout Alabama to determine to what extent they were incorporating construction related trades in their curricula. The contact list for the survey was developed via information contained within the Alabama Department of Education website and from information obtained using a SkillsUSA® website. The survey was sent to approximately 200 vocational educators within Alabama. From those initial contacts we received a total of 26 responses equating to a response rate of 13 percent.

Data & Results

Skilled Labor Shortage

34 out of 40 industry respondents (85 %) work for or own a general contracting business in Alabama that currently employs skilled labor within their own company. The three most common trades employed by responding GCs are: Carpenters (27, 79%), Concrete tradesman (22, 65%), and Equipment operators (18, 53%). (Fig. 1)

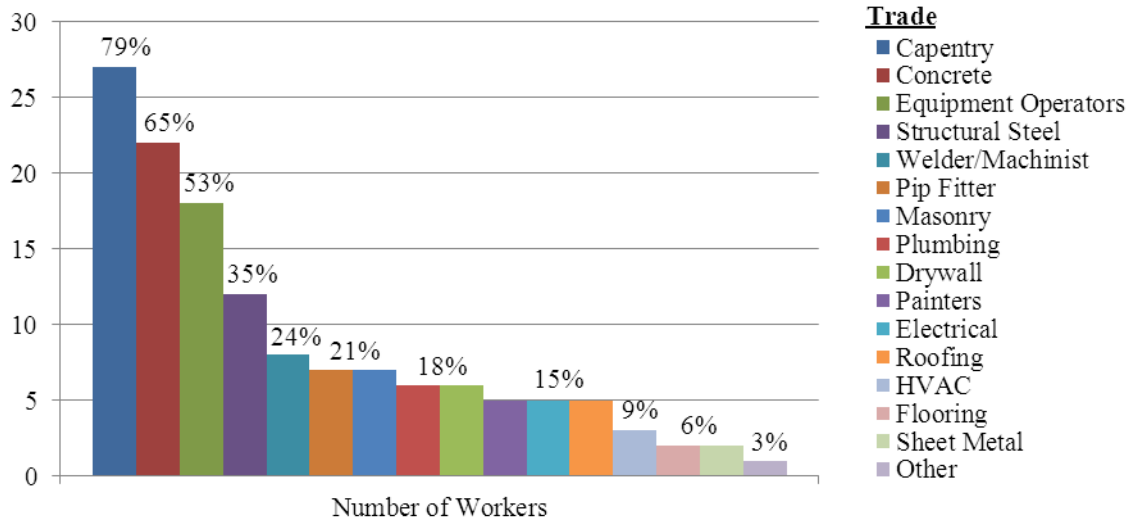

Figure 1: Skilled laborers employed by GCs

Survey respondents fall into two categories: (1) general contractors who employ skilled labor within their own companies and (2) general contractors who do not directly employ skilled laborers. Of the above general contractors

who employ skilled labor, 62 percent report experiencing a shortage of carpenters. A lack of equipment operators was also evident, with 24 percent of respondents reporting a need. The remaining 13 trades appeared on fewer than 20 percent of the survey responses. (Fig. 2)

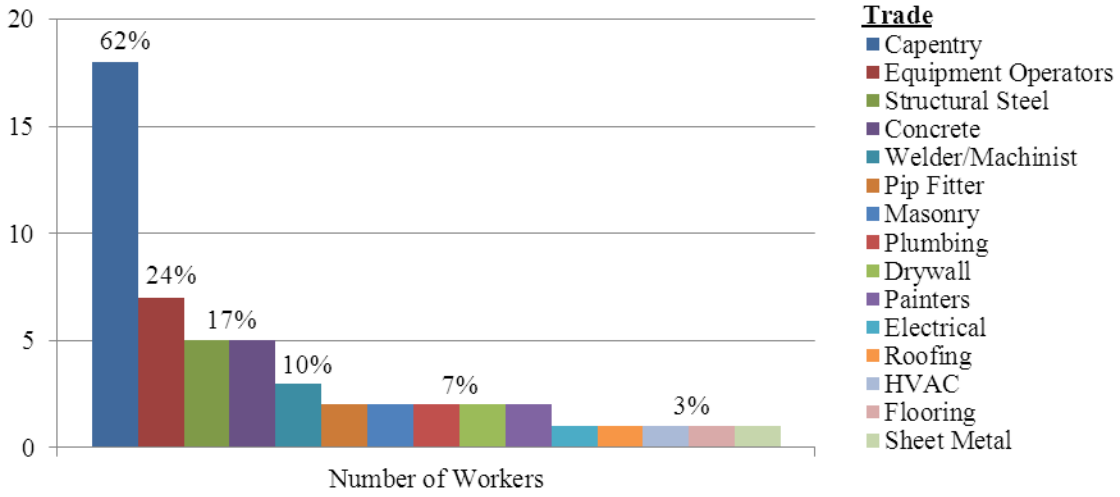

Figure 2: Trades lacking skilled workers, as observed by GCs who *do* employ skilled craftsmen in their companies

Of the 34 respondents who currently employ skilled labor within their own company, 21 (62%) note their subcontractors suffer from a lack of quality skilled craftsmen. 21 percent were not sure and 18 percent reported no noticeable shortage of skilled craftsmen on the part of their subcontractors. When those GCs who do *not* employ skilled laborers in-house were asked if they had noticed any of their subcontractors suffering from labor deficiencies, the results were convincing. A full 90 percent felt their subs had difficulty hiring or maintaining an adequate workforce. The remaining 10 percent all marked "not sure." When asked which subcontractors were lacking skilled workers, respondents who employ skilled laborers in-house identified: (1) Electricians (13, 48%), (2) Plumbers (9, 33%), (3) Masonry (8, 30%), (4) Carpentry (8, 30%), (5) Equipment Operators (8, 30%); and many others. (Fig. 3a)

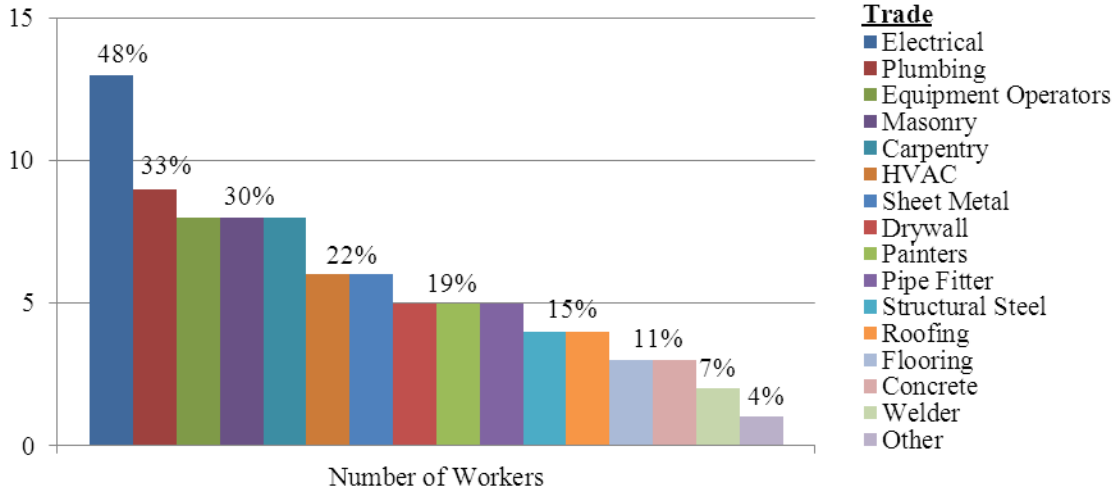

Figure 3a: Subcontractors lacking skilled workers as observed by GCs who employ skilled laborers in-house

Each of the respondents was asked how/if the shortage of skilled workers has affected their projects. They were given five categories of potential impact: (1) Higher overall project costs, (2) Lower productivity, (3) Increased safety concerns, (4) Decrease in quality, and (5) Increased supervision needs. Respondents were asked to rank the level of impact they have felt within each of these five categories on a scale of "0" to "4," with "0" being no impact, "1" some impact, "2" moderate impact, "3" elevated impact, and "4" severe impact.

The results suggest that a lack of skilled labor does not significantly affect the overall costs of a project. However, 65 percent of the responses assessed the level of impact on project costs to have been somewhere between "some" and "moderate." (Fig. 4)

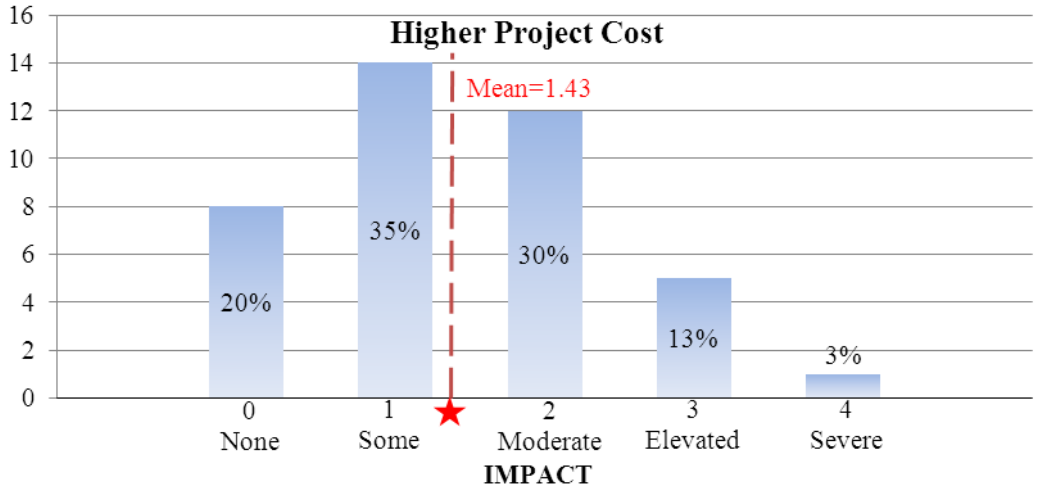

Figure 4: Higher costs due to lack of skilled workers

Unlike the effect on costs, the responses reflected in Figure 5 suggest that a substantial relationship exists between a lack of skilled workers and the productivity level of a project. 75 percent of the respondents believe that a lack of skilled trade labor produces a moderate to severe impact on project productivity.

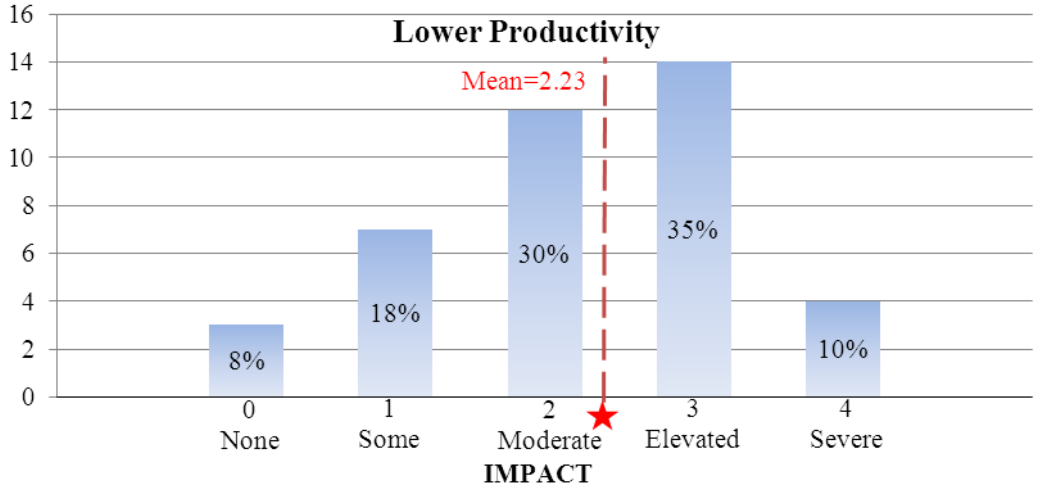

Figure 5: Perceived lower productivity due to lack of skilled labor

The responses also denote a strong corellation between a skilled worker shortage and increased safety concerns for the general contractor. In fact, 66 percent of those surveyed agreed that the lack of skilled workers produced a moderate to severe increase in safety concerns. (Fig. 6)

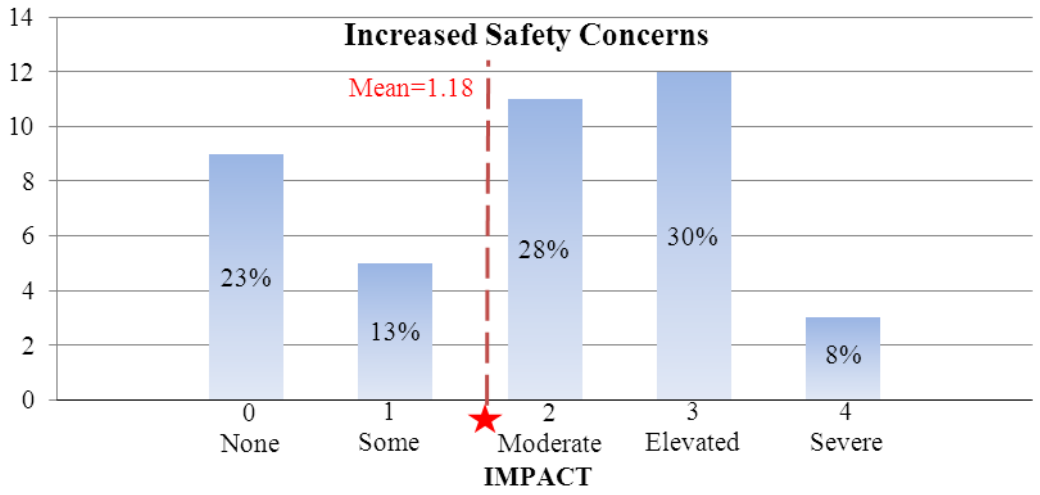

Figure 6: Increased safety concerns due to lack of skilled workers

In addition, respondents also made the link between the skilled labor shortage and a decrease in quality of workmanship. 53 percent of the respondents reported an elevated to severe drop in quality, while 23 percent reported a moderate decrease in quality. (Fig. 7)

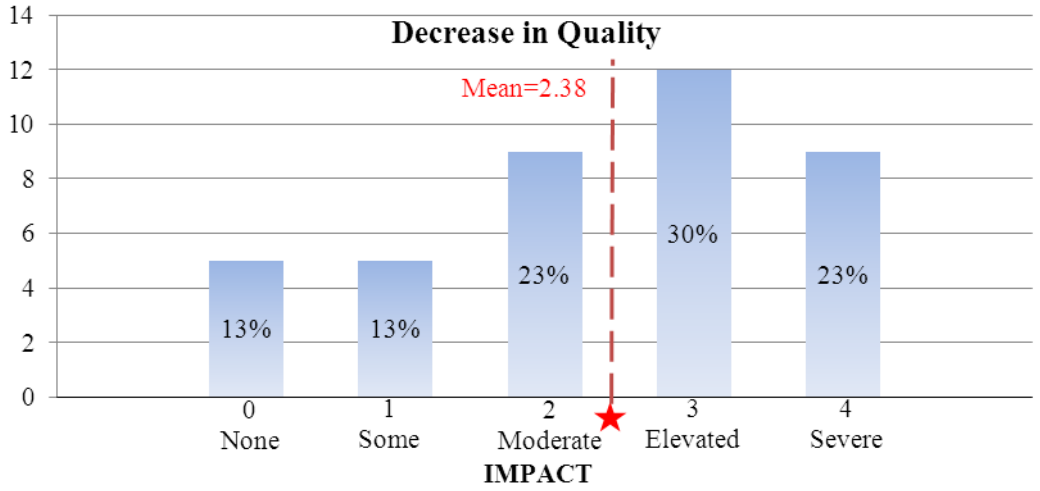

Figure 7: Perceived decrease in quality of work due to lack of skilled workers

The respondents identified a strong corellation between the skilled craft labor shortage and an increased need for supervision by the general contactor over their subcontractors. Specifically, 28 percent reported a moderate need for increased supervision, 30 percent an elevated need, and 33 percent a severe need. (Fig. 8)

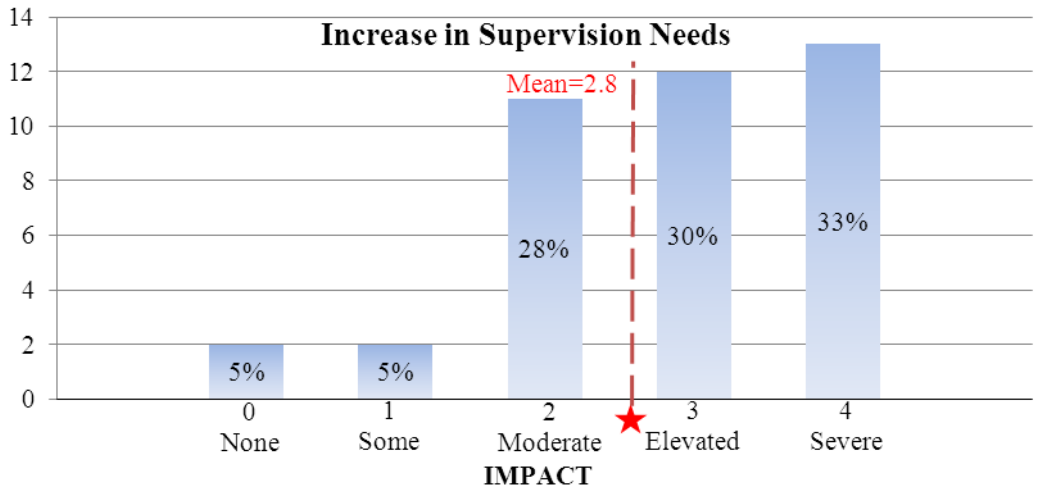

Figure 8: Increase in supervision needs due to lack of skilled workers

Finally, respondents were asked what they thought was the most effective solution to the skilled labor shortage in Alabama. The majority of respondents (58%) believed that increased funding to high-school vocational institutions was the answer.

Secondary Vocational Institutions

26 responses were received from representatives of secondary vocational institutions within Alabama. These respondents were asked specific questions about which construction-related trades were being included in their vocational curricula. The top four programs offered were welding, carpentry, cabinetry and the electrical trades. The focus of these programs seems slightly out of line with the needs expressed by the contractors above. While the electrical trades and carpentry were certainly identified by the contractors as an area of need, welding and cabinetry were not perceived as deficient nearly as much as plumbing and masonry. (Fig. 9)

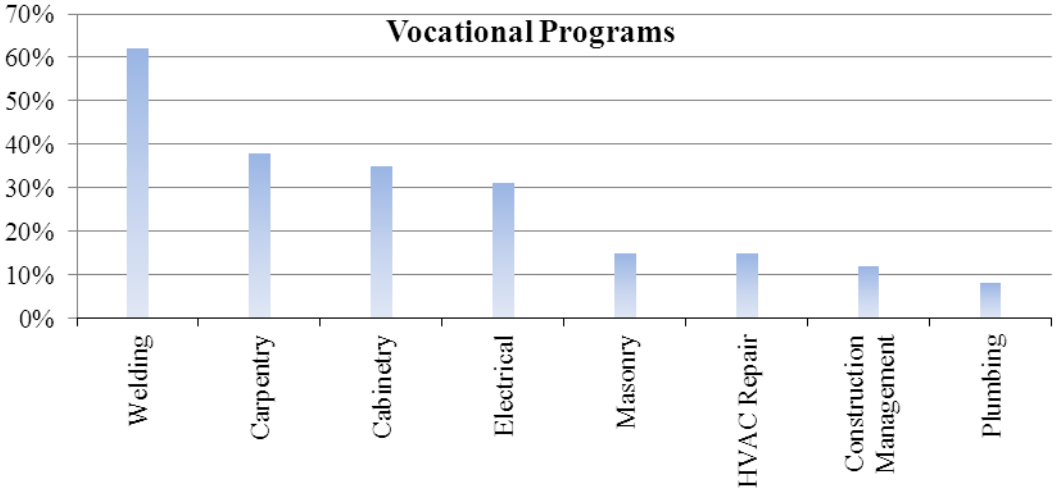

Figure 9: What Construction Related Vocational Programs are Offered?

In addition to the above, the respondents were asked the following two questions: 1) Over the past ten years has the construction related education in the vocational curricula increased or decreased?; and 2) Over the past ten years has the student interest in construction related vocational training increased or decreased? The majority of respondents

reported that there was no change in the amount of construction related vocational training offered and further that there had been no change over the past ten years in students' interest in construction related vocational training.

Conclusions

The first objective of this project was to identify the extent of skilled labor shortage in Alabama and determine what effect it is having on our contractors' business operations. Out of 40 responses, 21 reported noticeable shortages of skilled workers employed by their subcontractors. This finding is significant considering the survey was taken during an economic downturn which had drastically slowed the pace of new construction. The findings showed that a number of trades had recognized deficiencies, but the following made up the top five; (1) Carpentry, (2) Concrete, (3) Equipment Operators, (4) Electrical, and (5) Plumbing.

The results proved a strong correlation between a lack of skilled workers on projects and: (1) lower productivity, (2) increased safety concerns, (3) decrease in quality and, most significantly, (4) the increased need for supervision. Surprisingly, a higher overall project cost was the only item which contractors did not feel was a consequence of a lack of skilled workers. This result seems counter intuitive since lower productivity and increased supervision would seem to result in higher costs. This may be explained by advances in other areas not relating to worker production offsetting the apparent additional costs. The survey concluded by asking contractors for proposed solutions to the shortage of skilled laborers. The majority of those surveyed indicated that the most effective solution is to increase the funding for high school vocational programs.

The research went on to survey Alabama's high school vocational programs to determine if they are in line with the construction industry's needs. It appears that in some areas the vocational programs need to shift their focus. For instance the top five offerings from Alabama's vocational programs are; (1) Welding, (2) Carpentry, (3) Cabinetry, (4) Electrical, and (5) Masonry. The industry needs would suggest an additional emphasis on plumbing and equipment operations is necessary. Outside of a slight shift in focus, the data suggests the overall capacity of these vocational programs to train students in the construction related trades needs to increase. The big picture suggests that vocational programs in Alabama have not increased their construction related training over the past ten years, despite a persistent skilled labor shortage that is likely to worsen when the economy regains strength. This is a case of supply not meeting demand and industry members believe that vocational schools in Alabama have a primary role to play.

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