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Construction Industry Perception of Construction Managers and Superintendents

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In the United States, there are many career routes that one may take in construction. Project managers and superintendents are two of many career paths offered, but there are inconsistencies nationally about which of these two roles has the greater career outlook. Although project managers and superintendents have developed responsibilities, their skill sets tend to vary and are not as defined as other positions within the construction industry. An industry survey was administered through the professional networks of the survey administrators to gauge employees' perspective. 51% of the survey respondents indicated that superintendents and project managers are perceived equally in their company and they both report to their superiors whether it is general superintendents or project executives. Only 33% of the survey respondents gave an edge to project managers where superintendents had to report to them in their respective companies. Based on the set of responses, 4 out of the top 5 required skills needed for the superintendents and project managers were identical. Those skills were: understand construction process, communications skills, leadership/mentoring skills, time management skills. The findings of this research provide important feedback on how the routes taken in the construction industry are perceived.

Keywords: Construction Career Paths, Industry Expectations, Project Manager, Superintendent

Introduction

Historically, construction has been a vital part of human civilization dating back to ancient times. First was the concept of master builders where one individual took on the combined roles of what is known today as architect, engineer, and construction manager by overseeing every aspect of construction embodying the essence of creativity and skill (Yates et al. 2003). Transitioning from the era of master builders to the modern construction landscape is marked by a significant shift toward specialization and role definition (Payne, 2003). The role of the general contractor has evolved to focus on coordination and oversight rather than the day-to-day details of physical work (Costantino, et. al. 2011). In the past, contractors used to be very involved in the construction process, managing labor, materials, and equipment on-site. Contractors now oversee the entire construction project, from start to finish, managing subcontractors, scheduling, budgeting, and ensuring that regulations and specifications are met. While they may still have construction expertise, their primary responsibility is to coordinate the various aspects of the project, ensuring that it progresses smoothly and meets the client's requirements. This evolution reflects the changing dynamics of the construction industry,

emphasizing the importance of effective project management and collaboration among different stakeholders. This has led to a plethora of different roles and has separated them based on characteristics and skills that one may need to successfully do their job (Madiedo, et. al 2019).

The aim of this research is to enhance the understanding of project manager and superintendent responsibilities, and the skills set needed to perform their duties and to reflect on the industry professionals' perceptions regarding these two positions.

Background of Roles and Skills Needed in the Construction Industry

A construction company's specialized jobs cover a wide range of responsibilities, each requiring unique qualifications and expertise. Estimators use their understanding of construction costs to generate accurate estimates and manage project finances. The skills that are needed for estimators include understanding the construction process, time management, and cost control to ensure financial success of any project (Rajpatty 2008). Schedulers in a construction company curate and maintain the project specific schedule to ensure the project is on track and set to be completed on-time. Some skills that are necessary for schedulers to create successful and meaningful schedules include software skills, understanding the construction process and having specialized knowledge of a particular construction sector (Mubarak 2015). Safety managers and environmental compliance officers are experts at ensuring that safety and environmental regulations are followed, which requires training in occupational health and safety or environmental science. Procurement managers and contract administrators are in charge of contracts and procurement processes, so they must be extremely knowledgeable about procurement practices and contract law. Building Information Modeling (BIM) managers and technology specialists usually have backgrounds in architecture, engineering, or construction management, along with expertise in BIM software and emerging technologies, otherwise known as the Virtual Design and Construction (VDC) (Maali et al., 2022). Project managers, project engineers, superintendents, and site engineers are the most hands-on construction professionals, having typically worked their way up from entry-level positions in construction companies. Although they have developed responsibilities, their skill sets tend to vary and are not as defined as other positions within the construction industry. Project managers have the responsibility to manage a project with the objective to achieve defined goals within allotted resources (Neeraj, et. al. 2006). Superintendents' roles differ in the sense that they control the daily operations of a construction site and are also a crucial contributor to the success of a construction project (Rios, et. al. 2020). Although both roles are believed to be critical for the success of a construction project, the skill sets needed of these two positions differ between employers and employees, as well as from both superintendents and project managers point of view. This variation of required skills comes from specialization within different companies, sectors of construction, and different demographics. However, as specialization increases, do the requirements of specific positions affect the perception of construction personnel differently?

The construction industry continues to evolve and transform as more research is done on what skills and attributes have been continuously working for the success of a construction project. Due to the unpredictability of construction, those whose roles are to manage and oversee construction services must possess several crucial attributes that allow for high-yielding work (Broughton, 2016). As methods of construction change over time and specialization continues to advance, the attributes of construction professionals, particularly project managers and superintendents, must also adapt to changing times (Gunderson, et. al, 2015). This affects how both superintendents and project managers are perceived because there is an ambiguity to what attributes are deemed the most critical to the success of a construction project.

Methodology

In order to achieve the objectives of this research, the authors decided to collect and analyze construction job posting for project managers and superintendents to gauge employers' perception followed by a survey targeting professionals in the construction industry to gauge their opinions. For the first part of the study, the authors utilized a sample that included multiple job listings to look at the variance in responsibilities across the different roles to meticulously investigate the industry's perception (employers) of the distinct roles and effectiveness of project managers and superintendents, and how these perceptions vary across demographic lines. For the second part of the study, the authors conducted a survey to gauge the construction professionals' (employees) perception of their peers and identify the set of skills required for each position.

Sample Selection

The job listings used in the study were found on Indeed.com using filters based on position searches for both superintendent and project manager roles located in different areas of the country covering different construction sectors. To understand what is expected of these positions, information was taken from twenty-six job descriptions posted in 2023, thirteen of which were for project manager roles and thirteen were for superintendent roles. These job descriptions were intentionally chosen to feature diverse companies, locations, and sectors of construction. This was extremely important to ensure there was no bias in the information that was gathered.

Survey Instrument Development

Employers that have the responsibility of hiring construction professionals may also have different perceptions than those that are currently employed as either project managers or superintendents. The skills and attributes developed by Gunderson in 2015 were used in the analysis. These selected job listings were analyzed, quantifying the consistency of words in job descriptions. Concurrently, a comprehensive literature review was conducted to critically examine the description of responsibilities as portrayed across various roles within the different sectors. The results of the literature review supported the development of our survey, which was strategically designed to subtly draw out the strong opinions of participants with respect to our hypothesis. This methodological framework enabled us to further understand connections between personal and company-wide demographics and the industry perceptions. Our survey was directed to gather data on perceptions, experiences, and suggestions from professionals within the construction industry. The survey was divided into two subsections to accomplish the main objectives, which included: understanding the demographic background of the participants; and examining their interpretation through our hypothesis of the two specific roles: Project Managers and Superintendents. The individual survey questions were composed of two types of questions: (1) close-ended questions concerning their personal and corresponding firm demographics; and (2) opinionated scale questions. The opinionated scale questions consist of a series of questions that delve into the participants' views on the importance of project managers and superintendents on the overall project delivery process and on the necessary skills and attributes for succeeding in their roles.

Survey Distribution

The overall research process of the study involved the following steps: (1) developing a test survey and distributing it to a small group representative of the larger target audience; (2) using feedback from the test group to refine the survey's key topics and determine the appropriate length; (3) having the survey reviewed by industry experts to ensure it accurately captures the relevant aspects of the

construction industry; (4) assessing the reliability of the survey by analyzing the consistency of responses across similar questions; (5) distributing the final survey to the targeted audience; and (6) analyzing the collected data. The survey questionnaires were distributed to professionals in construction-related industry from the authors professional network. The survey was conducted from October 2023 through March 2024. The population for the study consisted of current construction industry professionals with a wide range of ages from under 25 to over 65. Note that the survey also represented a variety of genders, ethnicities, construction experiences, work sectors, sizes and types of firms. This approach ensured a diverse and relevant cross-section of industry representatives. It was assumed in the study that the respondents' insights reflected those of similar demographics, expectations of the respective organizations, and accurately represented the organizations by which they are employed. The professionals in the study had a variety of backgrounds in education and work experience. The analysis of the response included the results from project manager and superintendents and occasionally referred to the rest of the respondent group as a whole with "other roles". This also allowed the perceptions to be analyzed in a way that relates to our research as it was solely based on those two roles.

Analyzing the Collected Data

As mentioned previously, twenty-six job descriptions were found on Indeed.com that featured construction companies of different sizes, locations, and sectors. Of these twenty-six job listings, thirteen were job postings for the role of superintendent, and thirteen for the role of project manager. Some companies were chosen based on different locations and positions to understand if job descriptions were adjusted depending on location (Table 1). The authors used attributes to analyze the skills required for each position as stated in the job postings. The attributes were identified from literature and condensed from forty-three to only ten by grouping the ones that fall in the same category together (Gunderson & Gloeckner, 2011). Using these construction companies job postings, the attributes were identified within the postings and then ranked based on keywords by importance for both superintendents and project managers.

The survey questionnaires were divided into two sub-sections. The first section was comprised of ten questions and meant to understand the demographic background of the participants. The second section contained 7 items to determine the expected construction skills needed for each position, the perception of the construction professionals, and to examine their interpretation through our hypothesis of the two specific roles: Project Managers and Superintendents.

Table 1. Background information on companies involved in job postings

Companies Used for Superintendent Job Postings		Companies Used for Project Manager Job Postings			
Company Name	Sector	Company Name	Sector		
Schimenti Construction	Commercial	Schimenti Construction	Commercial		
Gilbane Building Company	Commercial	Gilbane Building Company	Commercial		
Gilbane Building Company	Commercial	Turner Construction Company	Commercial		
Turner Construction Company	Commercial	Bridgford Construction	Residential		
Rock River Homes	Residential	Ball Construction Inc.	Residential		
Turncycle Solutions	Residential	Paragon Commercial Builders	Residential		
ValueBuild Homes	Residential	Paragon Commercial Builders	Industrial		
JF White Contracting Company	Heavy Civil	Concept 8, LLC	Residential		
The Middlesex Corporation	Heavy Civil	Edgerton Contractors, Inc.	Heavy Civil		
Hunt Electric	Heavy Civil	Clearwater Construction, LLC	Heavy Civil		
KEAR Civil Corp.	Industrial	Hendrick Construction, Inc.	Heavy Civil		
Johnsons Controls International	Industrial	Jacobs (Industrial, north carolina)	Industrial		
		Miller Environmental Group	Industrial		
		GSM Industrial Inc.	Industrial		

Findings

When all data was collected and verified, they were then analyzed. The following sections present the findings of the analysis.

Employers' Perception of Attributes Contributing to the Success of Construction Projects

The attributes ranking taken from the job postings represents the mean response based on the emphasis of each attribute within each job posting (Figure 1). According to the results, hiring professionals expect project managers and superintendents to embody most of these attributes. Based on the data collected from the job posting, it was found that the top 5 skills needed for the superintendents and project managers were identical with small changes in the ranking of importance. Those skills were: understand construction process, communications skills, leadership/mentoring skills, problem solving, and time management skills. With more emphasis on understanding constructions process for superintendents and communication skills for project managers.

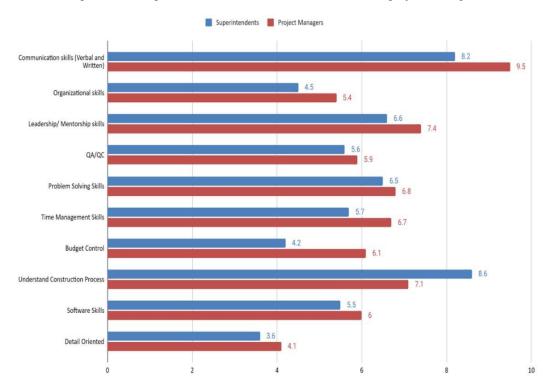


Figure 1. Job listing analysis - key attributes ranking for PMs and Supers

Demographics and Background

Overall, a total of 122 construction employees participated in the survey. However, the number of participants who answered all the questions in the survey varied depending on the questions. After analyzing all responses, only 80 responses were considered (responded to all questions). This survey was sent through multiple platforms, including posting it on professional social media sites, such as LinkedIn and by sent emails to the authors professionals' connections. Respondents answered multiple demographic questions, and were able to select the types of projects they delivered among

four different construction sectors: (1) Residential; (2) Commercial; (3) Heavy Civil; and (4) Commercial. Commercial construction was the most answered project sector, with the majority of the respondents (73.86%) being involved in companies that focus exclusively on commercial work (Figure 2). Another question was about the primary contractual role(s) assumed by the construction firms in which the employees were currently employed; the respondents could select among four categories: (1) General contractor; (2) Construction Manager; (3) Subcontractor; (4) Owner's Representative. General contractor was the highest (53.41 %) contractual role the respondents assumed in their respective companies, followed by construction manager (23.86 %) (Figure 3).

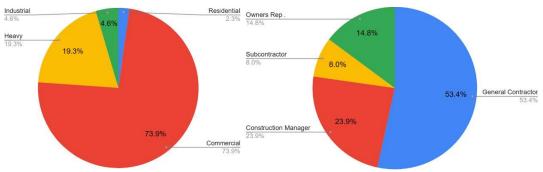


Figure 2. Representation of construction sectors the survey

Figure 3. Company type

To show how representative the sample was across the construction industry company size, employee salary range, as well as the location of the employee was collected (Table 2). The major respondent group with respect to the number of employees within a company was 1000+ employees (41.57%). Companies with 1-99 employees were the runner-up (34.83%). Within these companies, employees expressed their salary range within the survey. The majority of survey respondents expressed that their salary range was \$110,000 or above (66.29%). To understand where the employees of these construction companies are located, the geographic location was asked of the employees; most of the survey participants being from the Northeast (69.23%).

Table 2. Background information of the employees' construction firms

Background Information	Responding Participants (%)		
Participants Firm Size			
1-99	(34.83%)		
100-499	(16.85%)		
500-999	(6.74%)		
1000+	(41.57%)		
Annual Salary			
< \$64,999	(1.12%)		
\$65,000-\$79,999	(6.74%)		
\$80,000-94,999	(11.24%)		
\$95,000-109,000	(14.61%)		
\$110,000+	(66.29%)		

Table 2. Continued

Current Region Employment	
Northeast	(69.23%)
Southeast	(7.69%)
Southwest	(6.73%)
West	(8.65%)
Midwest	(7.69%)

Demographics were recorded to better understand the participants background and location. The majority of the respondents were white/ Middle Eastern (82.69%), as well as male (80.77%) (Table 3). The age range of survey participants is showcased in Table 3. A little over 55% of the respondents fell in the age range of 26-44. In regards to the survey, a question was asked about the respondents' current job title. The highest percentage of respondents were project managers (23.26%), while superintendents were only around 20.93% of the total respondents.

Another survey question that was asked was years of experience. Most of the respondents answered between 6-15 years (40.78%); however, the second highest response was less than 5 years of experience (28.16%).

Table 3. Demographic Information of Responding Employees

Background Information	Responding Participants (%)		
Ethnicity			
Asian	(2.88%)		
Black/ African American	(1.92%)		
Hispanic/Latino	(5.77%)		
Native Hawaiian/Pacific Islander	(.96%)		
White/ Middle Eastern	(82.69%)		
Gender			
Male	(80.77%)		
Female	(17.31%)		
Other	(0.00%)		
Age Range			
< 25	(23.30%)		
25-44	(56.31%)		
45-64	(14.56%)		
Over 65	(5.83%)		
Current Job Title			
Superintendent	(20.93%)		
Project Manager	(27.91%)		
Project Engineer/ Assistant Project Engineer	(23.26%)		
Site Engineer/ Assistant Superintendent	(4.65%)		
Project Executive	(17.44%)		
President	(4.65%)		
Construction Trades (Labor/Foreman)	(1.16%)		

Analysis

The reach of the survey was limited to mainly the northeast region representing the largest portion of respondents of the survey at 72.5%. We had limited responses from the other regions: Midwest (3.75%), Southeast (8.75%), Southwest (7.5%), and West (7.5%). In reviewing the organization hierarchy regarding the communication between project managers and superintendents the most prevalent hierarchy was for Project Managers and Superintendents to report directly to each other (51.28%). The second most common hierarchy was for the Super to report to the PM (33.33%). This does show that while it is most common for the Super and PM to be at the same position in organizational hierarchy the second most common option is for the Project manager to be at a higher position in the organization (Table 4).

Considering the smaller number of responses from the industrial and residential sectors (Table 2), we then had a closer look at the two main sectors the participants responded from: heavy civil and commercial. There were small discrepancies between them but the majority of responses indicated that project managers and superintendents report directly to each other with the second being Superintendents reporting to the project managers. This echoes the previous discussion that the Project manager and Superintendent will most likely be at the same level in organizational hierarchy regardless of sectors or regions.

Table 4. Company Hierarchy

Region	Other	PM and Super Report to Each other	PM report to Super	Super reports to PM	
Midwest	0.00%	33.33%	0.00%	66.67%	
Northeast	10.53%	52.63%	5.26%	31.58%	
Southeast	42.86%	28.57%	0.00%	28.57%	
Southwest	0.00%	33.33%	0.00%	50.00%	
West	0.00%	83.33%	0.00%	16.67%	
Total	11.54%	51.28%	3.85%	33.33%	

When reviewing the data for correlations between regions and responses to questions on organizational hierarchy and skills needed for each position there was no statistically significant correlation to link a particular region to a specific characteristic need for superintendents or project managers. The authors also couldn't find any correlations to link a region of the country to a particular organization hierarchy. Furthermore, when respondents were asked if their current position provided a path towards executive leadership, 79.73% responded "yes" with 16.22% responding "maybe" leaving only 2.70% of respondents believing their current position did not have a path towards being an executive in both respondents currently holding positions on a "Project Management" and "Superintendent" track. This shows a general belief that no matter if in the field or office respondents believe their current position will eventually lead to an executive position within their company.

Looking at the two largest populations of responses from the Heavy Civil and Commercial sectors, there was some variances across the importance of skills for both project managers and superintendents. The respondents from the Heavy Civil sector placed less importance on software skills, organizational skills, and QA/QC skills for project managers and the most important skill in their opinion is "Leadership/Mentorship". The largest difference for skills by sector in regards to

superintendents was the emphasis on QA/QC skills for the heavy civil sector and the lower ranking for Budget Control (Figure 4).

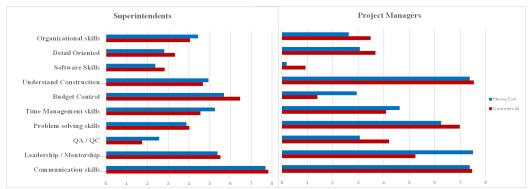


Figure 4. Survey analysis - key attributes ranking for PMs and Supers

When comparing the two sectors' rankings from 1-10 in comparison to the data gathered from employers there were minor discrepancies across the different categories. The respondent data does match the employers in a few categories, showing a general consensus for the necessary skills for each position. The largest difference between the responses average and the employer data is the necessity of budget control for a project manager with respondents ranking it as the 2nd most important category and employer data ranking it as the 6th most important category outside of the top 5. Software skills was seen ranking lower in importance to both respondents and employers with a ranking as the 9th and 10th (PM, Super) for respondents and 7th with employers (Table 5).

Table 5. Skills ranked from 1-10 (1 Being most important

Table 3. Skills fallked i	IOIII I-	TO (T DCIII	g most i	проган					
Skills	Heavy Civil		Con	Commercial		Respondent Average		Employers	
	PM	Super	PM	Super	PM	Super	PM	Super	
Communication skills	2	1	2	1	1	2	1	2	
Leadership/Mentorship skills	1	3	4	3	3	4	2	3	
QA / QC	7	9	5	10	10	6	8	6	
Problem solving	4	7	3	7	7	3	4	4	
Time Management	5	4	6	5	5	5	5	5	
Budget Control	8	2	9	2	2	9	6	9	
Construction Process	3	5	1	4	4	1	3	1	
Software Skills	10	10	10	9	9	10	7	7	
Detail Oriented	6	8	7	8	8	7	10	10	
Organization	9	6	8	6	6	8	9	8	

Conclusion

The goal of this research was to obtain a better understanding of current skills required and industry perception of project managers and superintendents from employer and employee perspectives. Most

of the responses received from the survey covered the northeast area and from two major construction sectors: heavy civil and commercial, which limited our analysis to draw broader findings based on the different regions of the States and sectors. Nevertheless, the authors were able to find some correlation between the employers and the employees sought of importance of skills required for project managers and superintendents. Most of the participants felt that the path taken in construction (office or site) will lead to an executive position which is opposite to the common myth in construction industry that project manager path is more prestigious than superintendent path. The authors will pursue this research by broadening the pool to include more representation from different sectors and regions.

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