A Survey of Construction Managerial Leadership Styles

Younghan Jung, Ph.D., LEED AP BD+C   **Thomas H. Mills**
Georgia Southern University   Virginia Tech
Statesboro, Georgia   Blacksburg, Virginia

Effective leadership is essential in any company to achieve organizational goals and promote individual professional achievement. The construction industry is multidisciplinary by nature, collaborating closely and establishing requirements through its many players, including designers, constructors, owners, and government agencies. Well-developed interpersonal skills are needed to work at different levels in the hierarchy, meet varying performance requirements, and deal with the different stakeholders. The benefits of continued leadership development of are twofold, these being: 1) the ability to satisfy conflicting requirements in support of organizational success and 2) the ability to successfully grow a professional career. Individual personal leadership skills consist of different combinations of three main decision-making styles: 1) *Autocratic*, 2) *Participatory*, and 3) *Free-rein*. A survey of project level personnel was undertaken to identify a successful and/or optimum leadership style for managerial and executive levels positions. Demographic factors, including education, length of employment, and leadership program attendance for current executive and manager levels was included. The results indicate that participatory leadership styles are preferred for executives and autocratic styles for project managers and superintendents.

Keywords: Leadership, Managerial Position, Leadership Education, Achievement

Introduction

For an organization to implement a high performing culture of productivity and productivity improvement, good leadership is essential. By nature, the construction industry is multidisciplinary and successful project completion requires contributions from many players, including designers, constructors, owners, and government agencies, all of whom initiate requirements and collaborate closely with each other (Jung, 2009). Construction professionals therefore benefit from having well-developed interpersonal skills that smooth the way when dealing with the many external stakeholders, as well as enabling professionals to work at different levels within the company hierarchy, and meet the often very different performance requirements attached to each part of the project. Consequently, a successful executive is generally pictured as possessing intelligence, imagination, initiative, the capacity to make rapid (and generally wise) decisions, and the ability to inspire subordinates (Tannenbaum and Schmidt, 1973). Managerial positions in the construction industry can be classified hierarchically into specific job categories: 1) project executive, 2) project manager, 3) superintendent, 4) office engineer, and 5) field engineer. The optimum degree of leadership styles varies for each managerial position, and different levels of managerial positions have unique and dominant leadership patterns over and above the traditional contributory responsibility for efficient and effective project management (Jung and Mills, 2009).

Construction is generally considered a hand-on industry dealing with materials and equipment. Often overlooked outside the industry is that modern construction management also involves complex financial matters and interpersonal skills, with managers engaged in activities such as bidding, cost control, labor negotiations, and project planning. Unlike managers in manufacturing plants, construction professionals must deal with a wide range of tasks and processes for each construction project, both technical and managerial. Management personnel in the construction industry not only supervise subordinates within their own organizational hierarchy but also provide purpose, direction, and motivation to crafts people and sub-contractors. The need for improved leadership skills in the construction industry is gaining attention elsewhere. In January 2001 ASCE began a new quarterly publication titled *Leadership and Management in Engineering*. At the June 2003 *Top1000 Contractors Leadership Forum 2003*, industry leaders stressed the need to "push responsibility down" and "develop leadership teams" (Hirsh, 2003, as cited in Skipper and Bell, 2008). Like other efforts, the objective of leadership development is not alone focused on

the ability to satisfy conflicting requirements in support of organizational success, but also the ability to successfully grow a professional career.

Study Objectives and Overview

The main objective of this study was to have construction company executives identify efficient and effective leadership styles in those individuals holding managerial and executive positions. In addition to gathering demographic information including education level, length of employment and leadership program attendance, this study sought to identify limited aspects of career growth. To this end one hundred and seventy four (174) survey forms were distributed to construction professionals in 90 construction companies throughout the southeastern United States. The companies were categorized into four areas: 1) general contractor, 2) design/build, 3) engineering firm, and 4) specialty contractor. The study explored the perspective of construction professionals regarding appropriate decision-making styles in order to compare education level and current managerial position to their view of the optimum decision-making style for different managerial positions within a construction organization. The recognition that leadership styles contribute to professional achievement is a key indicator for leadership development programs. It enables individuals to target their efforts towards preparing and guiding their futures more effectively.

Background

The topic of leadership attracts instant attention among those in charge of business organizations, conjuring up images of powerful, dynamic individuals who command victorious armies or direct corporate empires. However, serious academic studies of leadership failed to emerge until the twentieth century (Yukl, 1998). One of the first scientific studies of leadership was initiated by Kurt Lewin (Lewin, Llippit and White, 1939), who led a group of researchers seeking to identify different leadership styles. This influential study established three major decision-making leadership styles; 1) Autocratic, 2) Participatory, and 3) Free-rein (Clark, 2010). Decision-making is directly relevant to all the processes inherent in interpersonal and social leadership (Vroom and Yetton, 1973), largely because making decisions is one of the most important functions leaders perform (Yukl, 1998). Many of the administrative activities performed by managers, especially among construction professionals, involve making and implementing decisions, including the selection of subordinates, resolving conflicts between different stakeholders, and dynamically handling changes. Leadership is not about the individual manager's personality, although this inevitably affects their style, but their behavior (Kouzes and Posner, 2007) and is primarily aimed at boosting organizational activities both efficiently and effectively.

An autocratic leader makes a decision and announces it. In this case, the manager identifies a problem, considers alternative solutions, selects the one he or she considers most appropriate, and then reports this decision to subordinates for implementation (Tannenbaum and Schmidt, 1973). In contrast, participative leadership involves the use of various decision procedures that allow other people to influence the leader's decision, including consultation, joint decision-making, power sharing, and decentralization (Yukl, 1998). Free-rein leadership is the indirect supervision of subordinates, allowing others to function on their own without extensive direct supervision. Subordinates are allowed to prove themselves based upon performance rather than meeting specific supervisory criteria (Friedman, 2000). Free rein leadership leads to the ultimate development of self-managed teams. Different decision-making behaviors are required in every company, across many different disciplines. Tannenbaum and Schmidt (1973) suggest a continuum of leadership behavior that describes how a manager can manipulate the degree of authority and the amount of freedom available to his subordinates in reaching decisions within the three major leadership styles.

Project participants in the construction industry primarily consist of owners, designers, and constructors. Owners can be individuals seeking a home for their growing family, a large organization responding to a change in technology, a municipality seeking to improve its infrastructure, or a developer working to make money by filling a perceived market need (Gould and Joyce, 2002). Designers are the architects and engineers who produce the principle designs on which the construction projects are based. Constructors have responsibility for all the actual construction activities, including those performed by sub-contractors, specialty constructors, individual building trades, suppliers, and so on. From the perspective of the organizational hierarchy of a construction project, project-related positions

can be broken down into project executives, project managers, office engineers, superintendents, and field engineers, and these positions are mainly project-related. Each position has unique responsibilities and makes contributions to different areas at different times using different decision-making skills.

Research Methodology

To determine the leadership style, as well as the level of construction professional achievement appropriate for each managerial position, this study: (1) designed a survey tool to gather sample population demographics, and response data on both preferred and actual leadership styles for specific managerial positions; (2) assimilated the data collection; and (3) analyzed the collected data and reported the results.

Design the Survey Tool and Develop the Questionnaire

This survey tool was designed in two parts: 1) Informative Questions and 2) Questions on Best Leadership Style. The survey questions were structured with closed-ended formats and included both categorical and multiple-choice formats. Informative questions were used to find the relationship between leadership style and professional achievement based on the educational and industrial backgrounds of the sample pool of construction professionals.

To simplify stratification of leadership styles a scale similar to that used for the Continuum of Leadership Behavior (Tannebaum and Schmidt, 1973) was adopted, see Appendix. The survey questions on Best Leadership Style were designed to determine industry preferred leadership styles in each managerial position using the three major decision-making leadership styles as subsets of the : 1) Autocratic, 2) Participatory, and 3) Free-rein. The questionnaires allowed participants to select from among seven different leadership levels made up of subdivisions of the three major behaviors for 1) their own leadership style and 2) what they considered ideal for six different managerial positions: a) Field Engineer; b) Office Engineer; c) Project Manager; d) Superintendent; e) Project Executive; and f) Human Resources.

Sample Selection and Distribution

The sample pool consisted of 174 construction professionals and employees in full time positions at 90 companies primarily in the southeastern United States. The sample pool was composed of contractors, subcontractors, engineering professionals, and consultants. To maximize the response rate, the distribution of survey questionnaires was conducted individually during a professional career fair and accompanied with a personal explanation and a request to return completed questionnaires at the career fairs end. Of the 174 survey questionnaires distributed, 94 were returned for a 54% response rate.

Data Collection and Qualification of Responses

To qualify responses for data analysis, researchers examined these respondents' answers with two critical standards, namely whether or not the respondent had provided or completed the basic information section, and if the answers to the questions were nonsense or illogical. Five respondents failed to complete the informative questions for the demographic analysis and seven respondents answered questionnaires illogically. For instance, one respondent completed the questions on current position, years in current position, and years in the construction industry by answering "project executive", "1 year", and "1 year", respectively. Incomplete demographic data and illogical responses disqualified 12 surveys. The remaining 82 respondents, 47% of the distributed surveys, (N=82) were used for the initial demographic data analysis.

Analysis of Survey Responses

Data were extracted from the qualifying responses and based on the responses divided into four business categories, each of which was analyzed separately. The business categories used were general contracting (45%), design/build (24%), specialty contracting (11%), and other businesses (20%). Further categorization of the respondents was conducted based on the level of their project position. The largest group was project executives (24%), followed by project managers (22%), with superintendents (4%). Other groups identified within the data but not used beyond demographic data are office engineers (18%), field engineers (17%), and human resource personnel (15%). Higher levels of organizational positions, such as president, executive director, or district manager, were treated singularly as project executive positions due to similar levels of responsibility and authority.

All except one of the respondents held a bachelor degree, with the exception having an associate degree, and 27% of the respondents had completed graduate degrees either in engineering, construction management, or an MBA.

Demographic Analysis of Higher Managerial Positions

The first part of the questionnaire examined individual demographics, including years of experience, company seniority, and educational background. These were used in analysis of the respondent's perceptions of leadership style and professional achievement needed to achieve particular managerial positions. These informative questions provided a general picture of the level of career achievement for the respondents, ranging from entry level positions to company executives. The demographic analysis shown in Table 1 focused on project executives and project managers due to the limited sample pool and high standard deviation for other managerial positions, resulting in the (n=37) sample population. For instance, most respondents of office and field engineers have a less than 2 years of experiences. Additionally an office and field engineer position is a starting position in the construction industry, so it cannot be considered to achieve the position by leadership and/or professional skills.

Table 1
Construction Professionals Demography

Demography			(N=37)	%	Construction Career (yrs)	
					Current Position	Total
Project Executive (N=20)	Educational level	Graduate	8	40	6.4	18.8
		Bachelor	12	60	7.4	21.3
	Major	Construction	5	25	8.4	17.0
		Engineering	9	45	6.4	20.1
		Other	6	30	7.2	24.6
	Leadership Program	Yes	15	75	8.4	21.4
		No	5	25	3.4	17.8
Project Manager (N=17)	Educational level	Graduate	4	24	4.8	12.3
		Bachelor	13	76	7.9	12.3
	Major	Construction	9	53	5.9	11.4
		Engineering	4	24	12.3	15.8
		Other	4	24	5.0	10.8
	Leadership Program	Yes	13	76	5.7	10.8
		No	4	24	12	17.3

Based on the collected data, respondents working as project executives had an average of 19.4 years of industry experience and project managers had 12 years of construction industry experience. They had held their current positions as a project executive or project manager for an average of 6.2 years and 7.17 years, respectively. Based on the demographic data shown in Table 1, the typical career path in the construction industry progresses from a college graduate to an executive. A college graduate with a bachelor's degree majoring in construction or

engineering may start their construction industry career as a field or office engineer. After 5 years or so they are likely to have gained sufficient experience to become a project manager, and within an average of 13 years to become a project executive. Three-quarters of those occupying the higher managerial levels executives (75%) and managers (76%) have participated in leadership programs. Of the study respondents who self-reported themselves to be project managers 24% had graduate degrees, increasing to 40% for those at the executive level.

Appropriate Leadership Style

The second part of the questionnaire examined the respondents' perspectives on the issue of "Best Leadership Style," at each managerial position from entry to executive level. Due to the limited nature of the sample pool, this was primarily from the point of view of project executives and project managers. A description was provided of the three main leadership styles, Autocratic, Participatory and Free-rein, as shown in Table 2, and respondents were asked to assess how effective each type of decision-making would be for the success of each level of managerial position.

Table 2
Description of Leadership Style Used in Survey Questionnaire

| Leadership Style	Autocratic	Participatory	Free Rein
Description	• Leader makes most decisions • Employee is given little freedom to act on their own • Net result is that employees are totally dependent upon leader • Boss-centric	• Leader involves employees in project decisions • Employees have some independence of action • Leads to a more adaptive, flexible employee structure • Team-centric	• Allows employees to make decisions and have almost complete freedom • Role of leader is to provide necessary resources to employees • Subordinate-centric

Professional Achievement and Leadership Characteristics

The survey data reveals a clear correlation between appropriate leadership styles and managerial positions. A comparison of intensive leadership styles for each managerial position provides details of what is needed to fulfill different duties, which should enable those training construction professionals to make more effective use of their interpersonal skills and master higher managerial strategies.

Participative Leadership Styles Preferred of Project Executives

In general, a project executive deals with department managers, project managers, and clients to achieve the organization's goals as follows:

- Procure construction opportunities for the company by managing the company's relationships with existing clients
- Provide overall leadership and direction on construction projects with different departments within the company
- Establish, promote and maintain a mentoring relationship with all members of the company
- Ensure the quality, profitability and success of projects by making sure all deliverables are completed on time and within budget
- Maintain pro-active and communicative relationships with clients and key project personnel
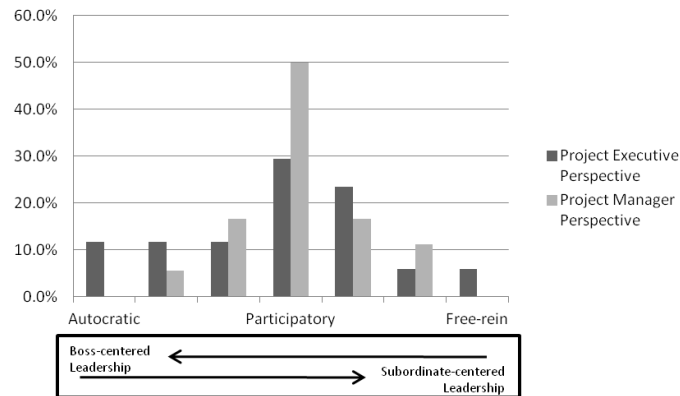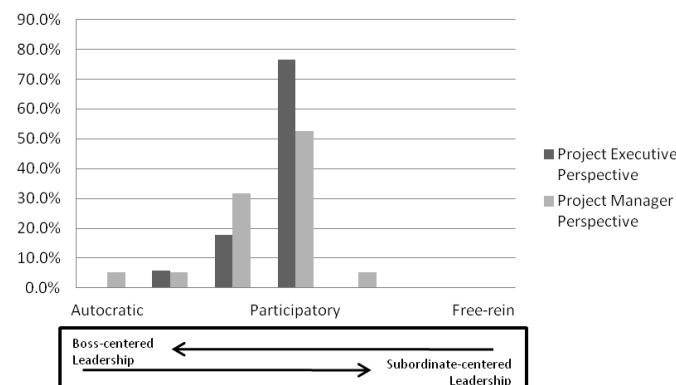
Figure 1: **Preferred Leadership Styles for Project Executives**

Project executives generally have trusted relationships with others, and their preferred leadership styles indicate a mild curve of distribution over both boss-centered and subordinate-centered leadership around the central peak for the participative leadership style.

Autocratic Leadership Styles Preferred of Project Managers

In general, a project manager deals with project owners, project related department managers, superintendents, subcontractors, and field staff to deliver a successful project and is responsible for the safe completion of his or her projects within budget, on schedule, to the company's and customer's quality standards, and to the customer's value satisfaction. It is his or her responsibility to initiate any action required to achieve these objectives and to ensure that all project activities comply with both the contract documents and company policies. The Project Manager's duties will vary as required to support the Project Superintendent and other personnel assigned to the project and are likely to include:

- Planning: coordinate plans and supervise field staff, subcontractors and craft activities for the entire project
- Operations: liaise with other department managers to ensure all required materials, equipment, and inspections support the project schedule
- Scheduling: oversee job scheduling, maintain a Job in Progress Report, establish the project schedule and update it as required
- Control: communicate with field managers to ensure efficient and productive work

Figure 2: **Preferred Leadership Styles for Project Managers**

Project managers in the construction industry generally are in positions that require a focus on control, and thus their preferred leadership styles consequently tend towards an autocratic, boss-centered leadership, as Figure 2 shows.

Autocratic Leadership Styles Preferred of Superintendents

On final insight gleaned from the results involves the role of project superintendent and the preferred leadership style for superintendents. A general superintendent deals with project managers, foremen, suppliers, and field staff to manage personnel and materials on the job site and coordinate schedules, safeguarding the company's profit margin. The superintendent is the company's representative on site, with the responsibility and authority for daily coordination and direction of the project. He or she ensures a safe job site and that the project is within budget, on schedule, meets the company's quality standards, and meets the customer's requirements. To accomplish this, the superintendent produces a day-by-day plan for the construction project and makes sure that the daily and weekly activities are consistent with this plan via the following general activities:

- Supplies information to accounting department so that records of costs can be maintained
- Keeps constant check on all trades, overseeing workmanship and materials
- Supervises personnel both directly and indirectly through the foremen
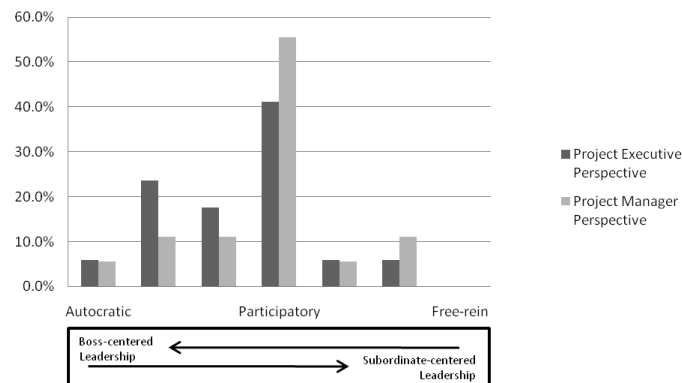
Figure 3: **Preferred Leadership Style for Superintendents**

Superintendents generally have a command relationship with foremen and workers, so their leadership styles would be expected and in fact do favor an autocratic or boss-centered leadership. The superintendent focuses primarily on the daily and short-range direction of the project. Interestingly, in the results shown in Figure 3, the project executives placed more emphasis on the boss-centered leadership style than the project managers.

Study Limitation and Discussion

This study looked at the issue of appropriate leadership styles for diverse managerial positions from the perspective of construction professionals currently working at senior project manager and executive levels in the construction industry. The survey data provide interesting new information that can serve as a benchmark for new types of leadership education based on the type of managerial position, management responsibilities, job function, and collaborations with others in the construction industry. However, the data collection is limited, by sample population access and location and thus is considered a pilot only.

This pilot study explores the relationship among desired leadership styles at different managerial levels in the construction industry and experimentally describes an approach toward successful leadership styles that can achieve high levels of performance in general duties, responsibilities, and relationships of higher managerial positions, including executive, manager, and superintendent. Extending this study with a sufficient sample pool and an extended region can have a significant impact on leadership programs being developed by academia and industry. Although the results show a minimal statistical significance, the study does provide promise that future studies with broader samples could have a significant impact in further the understanding of appropriate leadership styles at different managerial levels. Additionally, this study indicates a progressive advancement from lower to higher

managerial positions based on years at the current position. The study not only provides a vision for employee promotion, but also an insight in how future studies can explore hierarchical leadership styles.

Conclusions

The findings of this construction industry study support and identify senior managerial personnel's recognition of particular leadership styles for different managerial positions. The traditional view of leaders who set goals, make decisions, and direct troops reflects an individualistic view (Daft and Marcic, 2001) and may be shifting. Professionals, especially those in managerial positions in the construction industry, often need to deploy different leadership styles that reflect appropriate hierarchical perspectives depending on the management position they hold within the company. Construction is a heavily pre-planned activity that aims to minimize waste, time, and costs.

As identified by an analysis of the data this study revealed that project managers and superintendents lean to more autocratic leadership styles for project managerial positions and a more participatory leadership style for project executives. Construction personnel rely on having well-developed interpersonal skills in order to deal with the many different stakeholders and departments they work with. These collaborations must also function at different levels in the hierarchy and meet varying performance requirements. The recognition of appropriate leadership styles for each managerial position is related directly to the ability to perform at a high level and thus enjoy a successful career in the industry.

Leaders are often only slightly elevated above their peers in terms of legitimate authority, particularly in the construction industry. As a consequence, much of their leadership style relies on influence and persuasion, rather than on authority and commands (Rowlinson, Ho and Yuen, 1993). The findings of this study of leadership styles suggest that there are a number of alternative ways in which a construction professional can conduct him or herself to both accomplish project objectives and succeed professionally. This investigation suggests how leadership development programs may be able to work to prepare and guide qualified professionals as part of their continuing leadership education.

Reference

Clark, D. R. (updated June 13, 2010). Leadership Styles.   Retrieved March 3, 2011, from http://www.nwlink.com/~donclark/leader/leadstl.html

Daft, R. L. & Marcic, D. (2001). *Understanding Management* (3rd ed.). Fort Worth, TX: Harcourt Inc.

Friedman, J. P. (Ed.) (2000) *Dictionary of Business Terms* (3rd ed.). Hauppauge, NY: Barron's Educational Series, Inc.

Gould, F. E. & Joyce, N. E. (2002). *Construction Project Management*. Upper Saddle River, NJ: Prentice Hall.

Jung, Y. (2009). *An Approach to Organizational Intelligence Management (A Framework for Analyzing Organizational Intelligence Within the Construction Process.* Virginia Tech.

Jung, Y. & Mills, T. (2009). *Learning Leadership Skills from Professionals in the Construction Industry.* Paper presented at The 3rd International Conference on Construction Engineering and Management - The 6th International Conference on Construction Project Management (ICCEM-ICCPM), May 27-30, Jeju, South Korea.

Kouzes, J. M. & Posner, B. Z. (2007). *Leadership Challenge* (4th ed.). San Francisco: John Wiley & Sons, Inc.

Lewin, K., Llippit, R., and White, R. K. (1939). Patterns of aggressive behavior in experimentally created social climates. *Journal of Social Psychology, 10*, 271-301.

Rowlinson, S., Ho, T. K. K., & Yuen, P-H. (1993). Leadership style of construction managers in Hong Kong. *Construction Management and Economics, 11(6)*, 455-465.

Skipper, C. O. & Bell, L. C. (2008). Leadership Development and Succession Planning. *Leadership and Management in Engineering, 8*(2), 77-84.

Tannenbaum, R. & Schmidt, W. H. (1973). How to choose a leadership pattern. *Harvard Business Review, 51*(3), 162-180.

U.S. Office of Personnel Management. (2003). Interpretative Guidance for Project Manager Positions. Retrieved March 3, 2011, from http://www.opm.gov/fedclass/cg03-0001.pdf.

Vroom, V. H. & Yetton, P. W. (1973). *Leadership and Decision-Making*. Pittsburg: University of Pittsburgh Press.

Yukl, G. (1998). *Leadership in Organizations* (4th ed.). Upper Saddle River, NJ: Prentice Hall.

Appendix

Preferred Leadership Styles by Project Executive and Manager Perspectives

Project Executive Perspective	Autocratic (Boss-centric) --------------------------------------- Free-Rein (Subordinate-centric)								
Decision & Leadership Style	Makes decision and announces it	Sells decision	Presents ideas and invites question	Presents tentative decision, subject to change	Presents problem, gets suggestions, makes decision	Limits, asks group to make suggestions, makes decision	Permits subordinates to function within limits defined by superior		
Scale	**1**	**2**	**3**	**4**	**5**	**6**	**7**	Mean	Standard Deviation
Rounded to nearest %	%	%	%	%	%	%	%		
Project Executive	11.8	11.8	11.8	29.4	23.5	5.9	5.9	3.82	1.69
Project Manager	0	5.9	17.6	76.5	0	0	0	3.71	0.59
Superintendent	11.8	11.8	23.5	47.1	0	0	5.9	3.35	1.41
Field Engineer	5.9	23.5	17.6	41.2	5.9	5.9	0	3.35	0.99
Office Engineer	0	11.8	23.5	52.9	5.9	5.9	0	3.71	0.74
Project Manager Perspective	Autocratic (Boss-centric) --------------------------------------- Free-Rein (Subordinate-centric)							Mean	Standard Deviation
Project Executive	0	5.9	17.6	52.9	11.8	11.8	0	4.06	1.03
Project Manager	5.9	5.9	35.3	47.1	5.9	0	0	3.41	0.94
Superintendent	17.6	41.2	11.8	29.4	0	0	0	2.53	1.12
Field Engineer	5.9	11.8	11.8	58.8	5.9	5.9	0	3.65	1.17
Office Engineer	0	0	17.6	70.6	5.9	0	5.9	4.06	0.90