

**S19-2****Learning Leadership Skills from Professionals in the Construction Industry****Younghan Jung<sup>1</sup> and Thom Mills<sup>2</sup>**<sup>1</sup>Ph.D. Candidate and <sup>2</sup>Associate Professor, Virginia Polytechnic Institute and State University, Blacksburg, VA,  
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**ABSTRACT:** Organizational personnel must have well-developed interpersonal skills to deal with the different stakeholders and departments, to work at different levels in the hierarchy, and to meet varying performance requirements. Many leadership development and mentoring programs are designed to expose students as well as construction professionals to contemporary leadership techniques and skills. Leadership skills generally separate into three decision-making styles with varying degrees: *1) Autocratic, 2) Participate, and 3) Free-rein*. This paper describes the study of leadership styles among 174 construction professionals and addresses the most appropriate leadership style for a project executive and a project manager in relation to compare with the characteristic leadership style and job functions. The study supports the growing importance of leadership skills as a component of managerial functions and provides a benchmark to identify a dominant leadership skill for a specific managerial position.

*Keywords:* Leadership, Construction Professional, Managerial position, Leadership Style

**1. Introduction**

Leadership is essential to achieving high performance and implementing a culture of productivity improvement. The construction industry is multidisciplinary by nature as many players including designers, constructors, owner, and government, initiate requirements and collaborate among each other. Construction professionals must have well-developed interpersonal skills to deal with the different stakeholders and departments, to work at different levels in the hierarchy, and to meet varying performance requirements according to each position with an organization or project. The successful executive, for instance, is generally pictured as possessing intelligence, imagination, initiative, the capacity to make rapid (and generally wise) decisions, and the ability to inspire subordinates [1]. Many believe that each managerial position has unique and dominant leadership patterns beyond the traditional contributory responsibility for efficient and effective project management. Managerial positions in the construction industry can classify hierarchically into several job categories, including: 1) project executive, 2) project manager, 3) superintendent, 4) office engineer, and 5) field engineer.

The literature ascribes leadership behaviors or decision-makings into three types: 1) Autocratic, 2) Participate, and 3) Free-rein. An autocratic pattern type is a boss-centric leadership style, and a Free-rein pattern type is a subordinate-centric leadership style.

A participate pattern type is the presence of both leadership patterns allowing involve subordinates to be involved in decisions.

The necessary degree of leadership skills varies for each managerial position, and typical patterns of leadership behaviors and decision makings are formed and required by managerial job functions traditionally. Unlike a managerial position in manufacturing process, construction professionals are command positions and confront a typical and often unique tasks and processes in each construction project. Managerial personnel in the construction industry are not only influence subordinates in the organizational hierarchy but also construction labors by providing purpose, direction, and motivation. The proper decision-making manners are very important to satisfy the various requirements for the organization's success that lead to successfully growing personal careers.

**Objective**

The main objective of this paper is to find efficient and effective leadership behaviors for construction project management executives. This paper presents results from a survey of actual decision-making styles based on the Dynamic Leadership Handbook [2]. One hundred seventy four (174) survey forms were distributed to construction professionals of 90 construction companies. The companies were

categorized into four areas: 1) general contractor, 2) design build, 3) engineering firm, and 4) specialty contractor. The study explores the perspective of construction professionals about decision-making styles in order to compare actual decision-making to preferred decision-making styles for several managerial positions within a construction organization. The recognition of leadership styles for managerial positions can offer key indicators for leadership development programs to target for preparing and guiding future construction professionals.

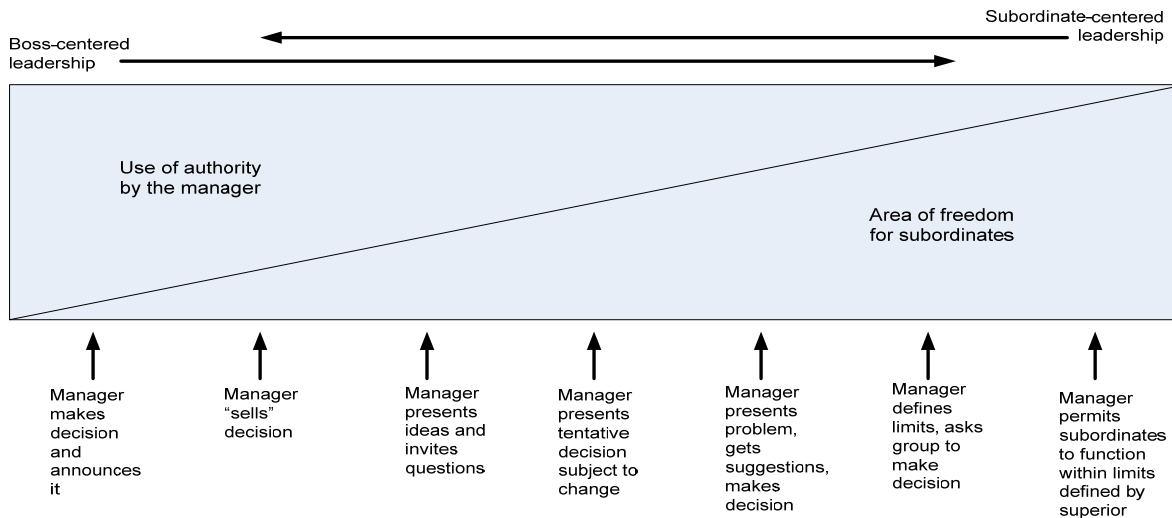
**2. Backgrounds**

Leadership has a strong interest among business organizations and connotes image of powerful, dynamic individuals who command victorious armies or direct corporate empires [3]. However, scientific research on leadership did not emerge until the twentieth century [3]. Scientific studies of Leadership were initiated by Kurt Lewin (1939) who led group researchers toward identifying different leadership styles. This influential study established three major decision-making leadership styles [4]; 1) Autocratic, 2) Participative, and 3)Free-rein. Decision-making has the most direct relevance to the processes of

interpersonal and social leadership [5] because making decisions is one of most important functions leaders perform [3]. Many management administrative activities, especially among construction professionals, involve making and implementing decisions, including subordinates selection, conflict resolution, handling change orders, and so forth. Leadership is not about personality; it's about behavior [6] aimed at boosting organizational activities efficiently and effectively.

Autocratic leadership is a manager making a decision and announcing it. In this case the boss identifies a problem, considers alternative solutions, chooses one of them, and then reports this decision to his subordinates for implementation [1]. 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 [3]. Free-rein leadership is the indirect supervision of subordinates. This form of management supervision allows others to function on their own without extensive direct supervision. People are allowed to prove themselves based upon performance rather than meeting specific supervisory criteria [7].

**Figure 1: The Continuum of Leadership Behavior [1]**



It is clear that each managerial position requires different decision-making behaviors, and Tannebaum and Schmidt (1973) suggests a continuum of leadership behavior that describes how a manager uses their degree of authority and the amount of freedom available to subordinates in reaching

decisions (See Figure 1). The action on the left of Figure 1 characterizes autocratic decision-making while the action to the right characterizes the managerial position that maintains a low degree of control, in effect free-rein decision-making. The category of project participants mainly

represents the roles of owner, designer, and constructor. 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 [8]. Designers are architects and engineers who produce the principle designs for construction projects. Constructors have responsibility for all construction activities, including specialty constructor, trades, suppliers, and so on. In a perspective of organizational hierarchy for a construction project, project-related positions are distinguished among project executive, project manager, office engineer, superintendent, and field engineer. Table 1 shows job functions for project-related positions of project executive and project manager. Each position has unique responsibilities and contributions to construction activities and requires different decision-making skills.

Managerial positions exist in many different disciplines. For instance, an engineer or architect normally manages projects associated with designing specialized equipment or structures [9]. Some responsibilities are duplicated by job category, but each managerial position deals with different players in support of the construction project and construction organization. Therefore, construction professionals are required to have specialized interpersonal skills and leadership behaviors,

especially decision-making. The survey of construction professionals is based on job categories and explores actual and preferred decision-making behaviors for the construction managerial positions of project executive and manager.

**3. Research Methodology**

To determine an appropriate leadership style for each managerial position in construction, this study approached in the total five steps: (1) design a survey tool; (2) develop questionnaires and a format, including personal information, preferred leadership styles in each managerial position, and actual leadership style; (3) distribute surveys to the selected samples; (4) collect the data and qualification; (5) analyze the collected data.

**Design a Survey Tool and Develop Questionnaire**

This survey tool was designed in three parts: 1) Informative Questions, 2) Best Leadership Style, and 3) My Leadership. The survey questions were structured with closed-ended formats including, the partial application of Likert-scale, categorical, and multiple-choice. Informative questions have used to find the educational and industrial backgrounds of the sample pool of construction professionals.

**Table 1: Job Responsibility of Project Executive and Manager**

Position	Responsibility	Deals with
Project Executive	<ul style="list-style-type: none"> <li>• Procure construction opportunities for the company as managing existing clients relationship</li> <li>• Provide overall leadership and direction on construction project with departments</li> <li>• Establish, promote and maintain a mentoring relationship with all members of the company</li> <li>• Assure the quality, profitability and success of projects through completion of the all deliverables on time and within budget</li> <li>• Maintain pro-active and communicative relationships with clients and key project personnel</li> </ul>	<ul style="list-style-type: none"> <li>• Achieving Organization’s goal</li> <li>• Department Manager in Organization</li> <li>• Project Manager</li> <li>• Clients</li> </ul>
Project Manager	<ul style="list-style-type: none"> <li>• Planning                             <ul style="list-style-type: none"> <li>○ Coordinate plans and supervise field staff, subcontractors and craft activities for the entire project.</li> </ul> </li> <li>• Operating                             <ul style="list-style-type: none"> <li>○ Maintain liaison with other department</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Delivering Successful Project</li> <li>• Project owner</li> <li>• Project Related Department Manager</li> <li>• Superintendent</li> <li>• Field Staff</li> </ul>

	managers to insure all required materials, equipment, and inspections support the project schedule <ul style="list-style-type: none"> <li>• Scheduling                         <ul style="list-style-type: none"> <li>○ Oversee job scheduling, maintain a Job in Progress Report, establish project schedule and update the project schedule</li> </ul> </li> <li>• Controlling                         <ul style="list-style-type: none"> <li>○ Communicate with field managers to ensure efficient and productive work</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Subcontractors</li> </ul>
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The survey questions of the Best leadership style were designed to determine preferred leadership styles in each managerial position within the three major decision-making leadership behaviors: 1) Autocratic, 2) Participatory, and 3) Free-rein. The original questionnaires designed to select 7 different leadership levels among three decision-making behaviors for ones' own leadership style and six different managerial positions: 1) Field Engineer; 2) Office Engineer; 3) Project Manager; 4) Superintendent; 5) Project Executive; 6) Human Resource Personnel.

**3.2 Sample Selection and Distribution**

The sample pool consisted of 174 construction professionals and employees in full time positions at 90 companies. The sample pool was composed of contractors, subs, engineering professionals and consulting firms. To maximize response rate, the distribution of survey questionnaires was dealt one to one with a personal explanation and a request to complete return the questionnaires at construction career fair.

Table 2 shows the numbers of survey responses with total distribution. There were 174 survey questionnaires distributed with 94 returned for a 54% response rate.

**Table 2: Survey Sample Information**

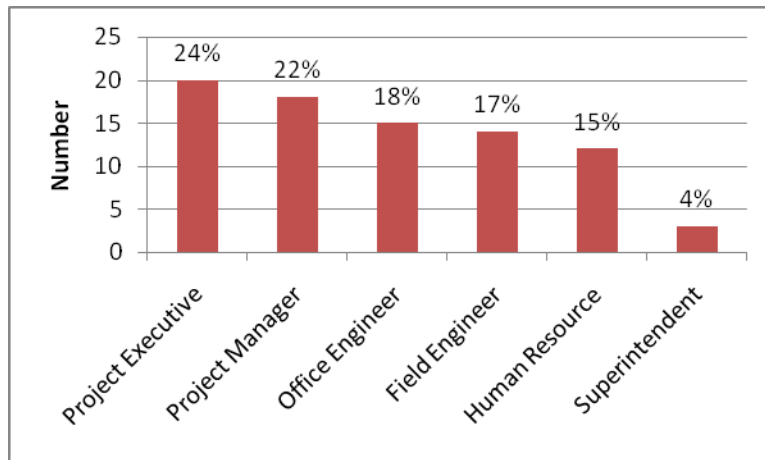
Description	Number	%
Distribute	174	100
Return	94	54

Not Returned	80	46
Return with Incomplete	5	3
Improper Responses (Not Use for Date Analysis)	7	4
Use for Data Analysis	82	47

**3.3 Data Collection and Qualification of Responses**

To qualify responses for data analysis, researchers examined these respondents' answers with two critical standards whether or not 1) a respondent provides or completes the basic information, and 2) the respondents' answers were nonsense and illogic. Five respondents didn't complete the informative questions that provide the demographic analysis in the survey, and seven respondents answer questionnaires illogically. For instance, a respondent completed questions for current position, years in current position, and years in the construction industry answered with project executive, 1 year, and 1 year respectively. Incomplete demographic data and illogically responses disqualified 12 surveys. Therefore, 82 respondents, or 47% of the distributed surveys, were used for the data analysis research, and the detailed numbers are shown in Table 2.

**Figure 2: Managerial Position of Respondents**



**4. Analysis of Survey Responses**

After qualifying, the data was divided with three business categories and analyzed separately. The business categories are General contracting, 45%, design build, 25%, specialty contracting, 11%, and other businesses, 20%, as shown in Table 3.

**Table 3: Business Type of Respondents**

Business Type	Percentage (%)
General Contracting	45
Design Building	25
Specialty Contracting	11
Other Business	20
Total	100

Further categorization of respondents was in the level of project position. 24% of respondents were project executives, followed by project manager (22%), office engineer (18%), field engineer (17%), and superintendent (4%), and human resource personnel (15%), as shown in Figure 2. The job title or position of respondents, such as president, executive director, district manager, and so on, in higher levels in the organization was considered as a project executive position because these positions have similar level of responsibility and authority.

The education levels of the respondents is all respondents hold a bachelor degree except one respondent, who hold associate degree, and 27% of the

respondents have completed graduate degrees in the area of engineering, construction management, or MBA.

**4.1 Preferred Leadership Style**

The second part of questionnaires focused on “Best Leadership Style,” and asked for the respondents’ leadership style perspective to determine the appropriate leadership styles for managerial positions. This section provided the description of three leadership styles to actualize the importance of decision-making according to each managerial position. The description of three major leadership styles is showing in Table 4 as well as in the survey questionnaires.

The selection of leadership style for each managerial position was divided into 7 different levels in a scale similar to The Continuum of Leadership Behavior [1]. Figure 3 indicates preferred leadership styles for project executive and project manager. The majority of preferred leadership style for both positions is participatory, but the distributed pattern of preferred leadership styles was different.

The distributed pattern of project executive indicated a normal curve shape, but the distributed pattern of project manager indicated strong participatory with autocratic leadership style. Two different patterns from the position of project executive and manager are a reflection of managerial job responsibilities and relationship with players.

**Table 4: Description of Leadership Style in Survey Questionnaire**

Leadership Style	Autocratic	Participatory	Free Rein
<b>Description</b>	<ul style="list-style-type: none"> <li>• Leader makes most decisions</li> <li>• Employee is given little freedom to act on their own</li> <li>• Net result is that employees are totally dependent upon leader</li> </ul>	<ul style="list-style-type: none"> <li>• Leader involves employees in project decisions</li> <li>• Employees have some independence of action</li> <li>• Leads to a more adaptive, flexible employee structure</li> </ul>	<ul style="list-style-type: none"> <li>• Allows employees to make decision and have almost complete freedom</li> <li>• Leader role is to provide necessary resources to employees</li> </ul>

#### 4.2 Preferred Leadership Style – Project Executive vs. Project Manager

Respondents in this study presume that project managers in the construction industry generally have control relationships, and their leadership styles indicated a boss-centric leadership style. While, project executives generally have trusted relationship with others, and reflect a mild distribution curve to both of boss-centric and subordinate-centric leadership from the center, participative leadership style.

Forty nine (49%) of respondents chose a participatory leadership style for a project manager while 29% of respondents chose this style for a project executive. The next preferred leadership style for a project manager bounds on boss-centric leadership style (20%) with a

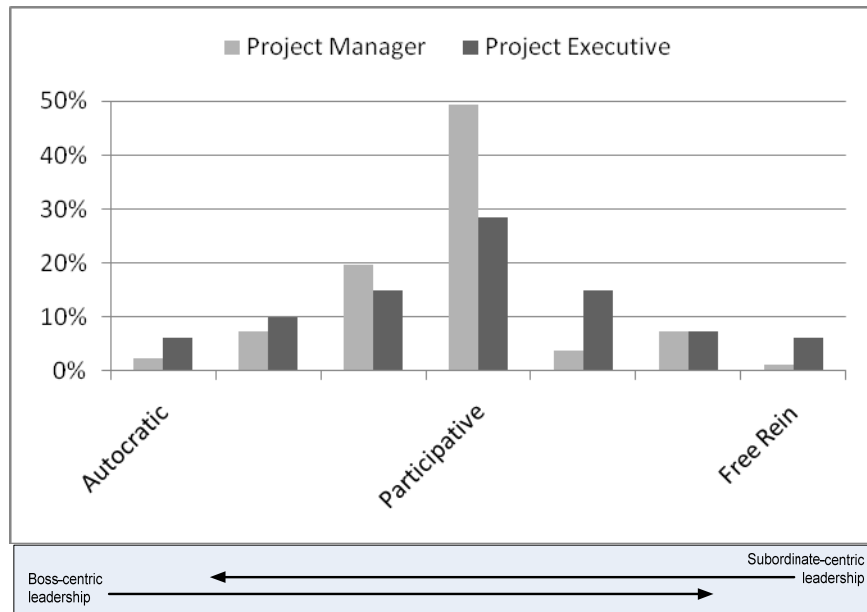
project executive bounding on both directions at 15% (Figure 3).

To compare responded leadership styles using “The Continuum of Leadership Behavior,” preferred leadership styles for a project manager with the comparison of project executive is as shown in Table 5. The findings of this study support and reflect different responsibilities and relationships from two positions. The major responsibilities of a project executive are a leadership position in the organization for the execution of all project management oversight and client deliverables. On the other hands, the major responsibilities of a project manager are that of a limited leadership position within a specific project only (refer to Table 5).

**Table 5: Preferred Leadership Style: Project Manager vs. Project Executive**

Project Manager	Leadership Behavior	Project Executive
49 %	Manager presents tentative decision subject to change	28 %
20 %	Manager presents ideas and invites question	15 %
7 %	Manager sells decision	10 %
7 %	Manager limits, asks group to suggestions, makes decision	7 %
4 %	Manager presents problem, gets suggestions, makes decision	15 %
2 %	Manager makes decision and announces it	6 %
1 %	Manager permits subordinates to function within limits defined by superior	6 %

**Figure 3: Comparison of Preferred Leadership Style**

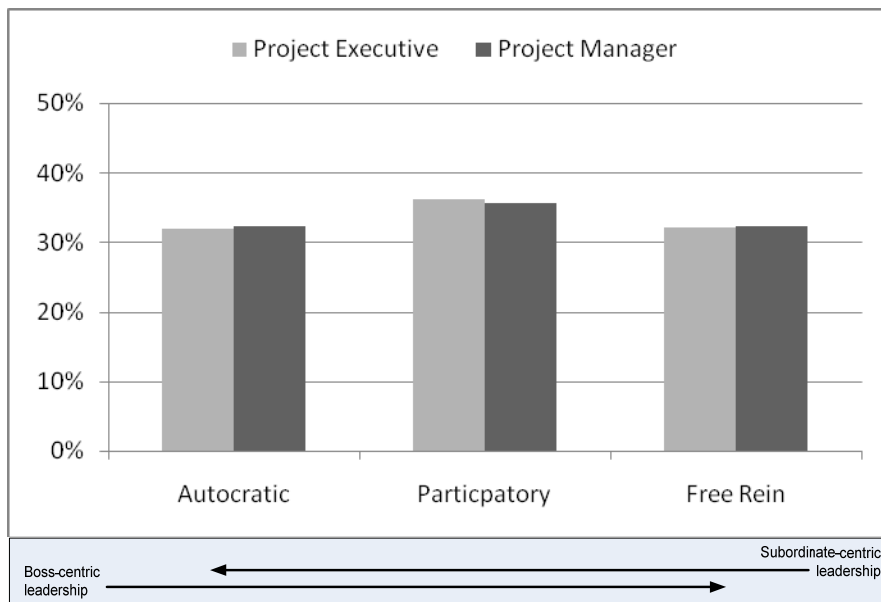


the same pattern with participatory leadership style as the dominant style, but generally will be balanced with a slight edge to the central focused boss-centric style.

**4.3 Actual Leadership Style**

The third part of the questionnaire was related to various demographic factors such as education, experience of the construction industry, characteristics, and so on to examine a propensity of construction professionals with a degree of situational questions. 18 project managers and 19 project executives responded the third part the questionnaire, “My Leadership.” Figure 4 shows the average propensity of leadership styles in both groups. Both groups indicate

**Figure 4: Actual Leadership Style Comparison**



## 5. Conclusion

Leaders are often only slightly elevated above their peers in terms of legitimate authority and, as a consequence, much of their leadership style relies on influence and persuasion, rather than on authority and commands [10]. The findings of this leadership styles study are that there are a number of alternative ways in which a construction professional can relate himself to position type responsibility. At the left of range, positioned between autocratic and participatory is on the project manager. On the other hands, the project executive generally possesses on autocratic to free-rein leadership styles. Actual leadership styles for both project manager and project executive are not associated with preferred leadership styles.

## 6. Future Research

This study obtained the perspectives of diverse managerial positions for leadership style from construction professionals who are currently working in the construction industry and provides a benchmark for new leadership education associated with the type of managerial position, responsibility, job function, and players in the construction industry. Future research can look at developing appropriate leadership styles for each managerial position in order to recognize and educate leadership to higher command positions. Additionally, this research will suggest a way for leadership development programs to prepare and guide qualified professionals in leadership education.

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