

Study the Importance of Leadership in Construction Projects

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Abstract- The purpose of this study was to identify the most important leadership skill required for successful completion of construction projects. Projects are conceived and completed by people, who are involved in the whole process of project execution and completion. Thus, project management not only requires an efficient project manager, but also a qualified leader who can lead the team effectively. A leader is someone who sets direction in an effort and influences people to follow that direction. It is important to have skills in forming, leading and facilitating a project team. Therefore it is essential to study and analyse the skills of leadership. This research paper present list of leadership skills retrieved from literature. The feedback of construction experts was obtained through interviews. Subsequently a questionnaire survey was prepared .The questionnaire survey was distributed to Project Manager, project Head, Sr. engineer. Frequency Analysis, Average Index & Relative importance index are calculated and according to highest value of them, the top Fifteen Skills of Leadership for residential construction projects are find out. The number of recommendations ends the paper. The findings of this paper can be used as a reference by project owners, managers, and agencies in developing the leadership skills.

Keywords – Project manager; leadership; skills; leader; construction management

I. INTRODUCTION

In recent day, remarkable transformations in technology have drastically changed the way project managers manage things. The more attributes the project manager has, the more likelihood there is of successful project completion. Although some of these attributes may not be required at times, it is important to use them in specific conditions and situations. The success in construction project is a result of the effective use and implementation of the important attributes that project managers have.

However, project managers have a wide- ranging variety of personal characteristics, from their belief, personal values, professional ethics, technical knowledge, superior social skills to their management abilities. However, the success of a project is impossible to continue from a single attribute of project manager. Thus, the study will mainly focus on the assessing the most important attributes as Leadership skills that project manager should have in order to have a smooth and successful development of construction project.

A leader is someone who sets direction in an effort and influences people to follow that direction. It is important to have skills in forming, leading and facilitating a project team. However, a coherent theoretical foundation that explains how leadership engages people fully and effectively is lacking.

II. OBJECTIVES OF STUDY

Following are the objectives of study:

Study the importance of leadership skills in construction projects and analysis of collected data by using frequency analysis. The Leadership skills are collected from the previous studies.

III. LEADERSHIP

The national society of professional engineers (NSPE), in its book, engineer your way to success, defines leadership as. The ability to motivate others to move with enthusiasm toward a goal that is seen with passion. “It has been said, too, that “leadership is more art, a belief. A condition of the heart, than a set of things to do”. [1]

Wateridge noted that there has been no assessment of the relative importance of each of the skills proposed by different authors. In his literature review, he observed that leadership skill appears as the most important skill a project manager needs to possess, probably based on the frequency of mention. This is followed by people management, which involves observation, listening, motivation, conflict management, delegation, understanding, empathy, patience, and many other skills and qualities. [10]

Leadership is one of the most important skills an engineer can possess in the twenty-first century. Many leaders of business, government, and education have indicated that the Boy Scout program was one of the most important experiences in their lives, one that impacted their thinking and actions throughout their careers. The aim of the Boy Scout program is still character training and helping boys become independent persons who are helpful to other people. The Scout method by which this aim is achieved involves giving challenges, which a Scout learns to solve by himself. The emphasis on “learning by doing” provides hands-on experiences to enhance learning and confidence building. Small group activities build unity and develop responsibility, character, self-reliance, self-confidence, reliability, and readiness. A Scout is trained to be independent and show leadership using the Scout Oath and Scout Law to promote positive goals, all under the example of dedicated adult leaders. [6]

Amarjitsingh and Gempo jampel making a model which is proposed for evaluating leadership capability, which is observed on a grid called the leadership flexibility space. The model evaluates two basic parameters: 1. decision making capability and 2. Information input by group during decision making. Five types of leaders are evaluated: consultative autocrats, complete autocrats, consensus managers, impoverished managers, and active managers. Granting greater authority, support, and trust to all engineers, being selective in recruiting new engineers, and taking steps to re-educate the existing ones are among the most important. It is ironic that those to whom we look most for leadership, the more experienced engineers, are the ones who lack most the leadership skills at PWD. Demographic evaluations are made for age group, number of projects handled in one’s career, number of projects handled at PWD, years of experience, years with PWD, years of design experience, marital status, and family encouragement. Among other findings, it was discovered that older engineers, and those who had handled more than 20 projects at PWD, tended to fall in the impoverished manager’s zone more than other engineers. [5]

IV. QUALITIES OF LEADERSHIP

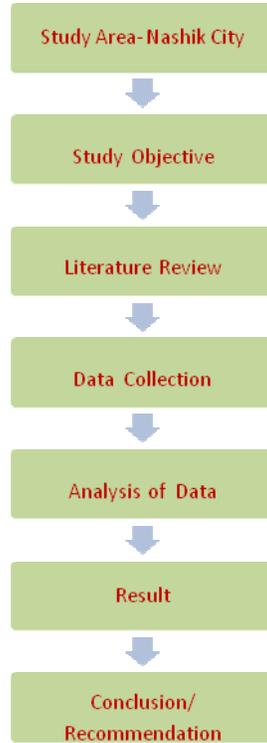
Another way to discuss leadership is in terms of characteristics associated with effective leaders. Fig illustrates nine qualities drawn from a variety of sources but heavily influenced by the work of Bethel and Walesh. An in depth understanding of these nine qualities is essential to defining not only what constitutes good leader, but also to present specific areas on which development can be focused.

Leaders must be big thinkers in terms of both quality and responsibility. They must have high ethics because people still look for ethical leaders who have courage. Courage includes persisting, surviving, maintaining stamina as well as doing the right thing and making the right decisions. They must master change and be responsive to people in our culturally diverse society.

Leaders are risk takers. They must have the courage to begin new projects, make changes, and so on. No other quality is more important for a leader than to have a mission that matters. This commitment, when effectively communicated, inspires and motivates others. It also produces the energy and dedication that are important throughout a professional career. If a leader is to make a difference, he or she must be able to make hard decisions after careful data and opinion gathering and analysis. They must also use power wisely because it is the prime mover of people and events. Team building is required to inspire the group to maximize people potential, productivity, morale, and creativity. These nine qualities as a framework for presenting techniques for developing leadership in engineers at all levels. [7]

III. METHODOLOGY

This study includes three major steps. The first step involves general information collection, including both first-hand and second-hand data, in order to identify major themes from the literature. Surveys and interviews are conducted, in which a list of important skills in successful leadership are identified. With these skills, expert interviews, conducted in the second step, are used to decide the most significant factors among them. The last step is the conclusions and suggestions for researchers or practitioners.



IV.ANALYSIS OF DATA

In this chapter, a detail analysis of data and result will be shown and elaborated by using frequency analysis, average analysis and relative analysis. for completing this study 72 respondents like project managers, project head, Sr. Engineer were targeted . the questioner were send to all respondents among these 51 set replied with completed questionnaire form that cover 71% of the total 72 set questionnaire form in the study.

Frequency Analysis

Frequency analysis will be using tabular form to represent result of data analysis of frequency of response that respondent give to the different variables in the questionnaires. The result was tabulated in the form of frequency number and percentages according to total respondents.

Average Index Analysis

The result will be further summarized to obtain the overall level of importance and evaluation in local construction industry. The respondent were requested to evaluate project manager's roles and responsibilities based on five-points scale starting with 1 for not important, 2 for less important, 3 for average, 4 for important, 5 for very important. The average index analysis for each variable is calculated by using:

$$\text{Average Index} = \frac{\sum 1 X_1 + 2 X_2 + 3 X_3 + 4 X_4 + 5 X_5}{5 \sum X_1 + X_2 + X_3 + X_4 + X_5}$$

Where x_1 = number of respondents for not important, x_2 = number of respondents for less important, x_3 = number of respondents for average, x_4 = number of respondents for important, x_5 = number of respondents for very important. The overall level of importance and evaluation in local construction industry are summarized under such categories:

Table-1 The level of importance and evaluation for Average Index Analysis

Average Index	Level of Importance
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0.00 Average Index 1.50	Not Important
1.50 < Average Index 2.50	Less Important
2.50 < Average Index 3.50	Average
3.50 < Average Index 4.50	Important
4.50 < Average Index 5.00	Very important

Relative Index Analysis

In average index analysis, the result will be further summarized to obtain the overall level of importance and evaluation in local construction industry. The respondent were requested to evaluate project manager's roles and responsibilities based on five-points scale starting with 1 for not important, 2 for less important, 3 for average, 4 for important, 5 for very important. The relative index analysis for each variable is calculated by using:

$$\text{Average Index} = \frac{\sum 1 X_1 + 2 X_2 + 3 X_3 + 4 X_4 + 5 X_5}{5 \sum X_1 + X_2 + X_3 + X_4 + X_5}$$

Where x_1 = number of respondents for not important, x_2 = number of respondents for less important, x_3 = number of respondents for average, x_4 = number of respondents for important, x_5 = number of respondents for very important.

V. RESULT

The following is the brief discussion of the different groups and skills. Based on the relative importance index and ranking in table 2, Also the top 15 most important leadership skills were shown in table 3, the top 15 least important leadership skills were shown in table 4.

Table-2 The brief discussion of the different groups and skills

Sub group	No.	Skills	% of Frequency					Relative index	Rank
			Not important	Low important	Average	Important	Very important		
Personal skill	1	Communication skill	0	0	4	22	75	0.941	1
	2	Interpersonal skill	0	2	4	53	41	0.867	13
	3	Mentoring skill	0	2	10	61	27	0.827	28
	4	Persuasion skill	0	4	8	63	25	0.820	30
	5	Convincing skill	0	0	4	51	45	0.882	8
	6	Composure skill	0	0	8	61	31	0.847	21
	7	Cognitive skill	0	0	12	59	29	0.835	25
	8	Being a quick learner	0	2	4	41	53	0.890	7
Team building	1	Controlling group performance	0	0	8	47	45	0.875	11
	2	Setting an example	0	2	8	59	31	0.839	24
	3	Conflict management	2	0	10	57	31	0.831	27
	4	Listening skill	2	0	4	39	55	0.890	7
	5	Dealing with difficult people	0	2	10	43	45	0.863	14
	6	Compassion	0	0	16	69	16	0.800	32
	7	Building & mending relationship	0	2	4	59	35	0.855	17
	8	Confronting people	0	0	8	53	39	0.863	14
Vision & Strategy	1	Decision making	0	0	4	41	55	0.902	4
	2	Planning skills	0	0	4	47	49	0.890	7
	3	Ability to give influential pep talks	2	0	12	69	20	0.804	31
	4	Motivational skills	2	0	6	55	39	0.854	18
	5	Sharing leadership	0	0	12	65	24	0.824	29
	6	Optimism	0	0	8	63	29	0.843	22
	7	Inspiring a shared vision	0	0	16	53	31	0.831	27
	8	Doing whatever it takes	0	0	22	55	24	0.804	31
	1	knowledge	0	0	0	41	59	0.918	2

Sub group	No.	Skills	% of Frequency					Relative index	Rank
			Not important	Low important	Average	Important	Very important		
Decision making	2	vision	0	0	4	47	49	0.890	7
	3	problem solving	0	0	4	33	63	0.918	2
	4	negotiation	0	0	2	47	51	0.898	5
	5	courage	0	0	10	45	45	0.871	12
	6	challenging the process	0	0	10	59	31	0.843	22
	7	Culturably adaptable	0	0	14	49	37	0.847	21
	8	Decisiveness	2	0	8	59	31	0.835	25
Planning skill	1	Goal setting	0	0	4	45	51	0.894	6
	2	Crisis planning	0	2	4	53	41	0.867	13
	3	Prioritization	0	4	6	51	39	0.851	19
	4	Strategizing	0	0	4	61	35	0.863	14
	5	Confidence	0	0	4	39	57	0.906	3
	6	Strategic planning	0	0	6	61	35	0.858	16
	7	Networking skills	0	0	4	43	53	0.898	5
	8	Resource fullness	0	0	4	53	41	0.876	10
Relationship magt skill	1	Developing others	0	0	10	53	29	0.843	23
	2	Influence	0	2	10	65	24	0.820	30
	3	Communication	0	0	6	47	47	0.882	8
	4	Conflict Management	0	0	16	39	45	0.859	15
	5	Building bonds	0	0	2	63	35	0.867	13
	6	Team work & collaboration	0	0	4	53	43	0.878	9
	7	Respecting individual differences	0	0	10	65	25	0.831	27
	8	Change catalyst	0	0	4	61	25	0.848	20
Empathy	1	Understanding others	0	2	8	45	25	0.834	26
	2	Developing others	0	2	2	63	33	0.855	17
	3	Service orientation	0	0	10	59	31	0.843	23
	4	Leveraging diversity	0	0	22	59	20	0.796	33
	5	(Socio)-Political awareness	0	2	35	49	14	0.749	34
	6	Sensitivity	0	0	16	67	18	0.804	31
	7	Putting people at ease	0	0	6	73	22	0.831	27
	8	Encouraging the heart	0	0	10	49	41	0.863	14

Table-3 The top 15 most important leadership skills

Sr no	Top 15 most Important Leadership skills	Group	Sub group	R.I.	Rank
1	Communication skill	leadership skill	Personal skill	0.941	1
2	knowledge		Decision making	0.918	2
3	problem solving		Decision making	0.918	2
4	Confidence		Personal skill	0.906	3
5	Decision making		Vision & Strategy	0.902	4
6	negotiation		Decision making	0.898	5
7	Networking skills		Planning skill	0.898	5
8	Goal setting		Planning skill	0.894	6
9	Being a quick learner		Personal skill	0.890	7
10	Listening skill		Team building	0.890	7
11	Planning skills		Vision & Strategy	0.890	7
12	vision		Decision making	0.890	7

13	Convincing skill		Personal skill	0.882	8
14	Communication		Personal skill	0.882	8
15	Team work & collaboration		Relationship management skill	0.878	9

Table-4 The top 15 least important leadership skills

Sr no.	Top 15 least Important Leadership skills	Group	Sub group	R.I.	Rank
1	(Socio)-Political awareness	leadership skill	Empathy	0.749	33
2	Leveraging diversity		Empathy	0.796	32
3	Compassion		Team building	0.800	31
4	Ability to give influential pep talks		Vision & Strategy	0.804	30
5	Doing whatever it takes		Vision & Strategy	0.804	30
6	Sensitivity		Empathy	0.804	30
7	Persuasion skill		Personal skill	0.820	29
8	Influence		Relationship magt skill	0.820	29
9	Sharing leadership		Vision & Strategy	0.824	28
10	Mentoring skill		Personal skill	0.827	27
11	Conflict management		Relationship magt skill	0.831	26
12	Inspiring a shared vision		Vision & Strategy	0.831	26
13	Respecting individual differences		Relationship magt skill	0.831	26
14	Putting people at ease		Empathy	0.831	26
15	Understanding others		Empathy	0.834	25

IV.CONCLUSION

Leadership is one of the most important and essential factors in good construction project management. Leadership is more than simply managing people or projects: it is the art of affecting other team members' behavior in order to achieve the goals and accomplish the tasks successfully.

The importance of leadership skills has been achieved through questionnaire survey. Total 56 leadership skills under 7 sub groups as Personal skill, Team building, Vision & Strategy, Decision making, Planning skill, Relationship management skill, Empathy are studied .From the analysis, the top 15 important leadership skills are found from that personal skills in communication is the most important skill required to be an effective Leadership in construction industry. Second highest most important skill required is decision making in knowledge followed by decision making in problem solving as the third most important skills required in making a project really successful . and also the least 15 important leadership skills are found from that Empathy in (Socio)-Political awareness is the

least important skill required .second least important skill required is Empathy in Leveraging diversity followed by Team building in Compassion as third least important skill.

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