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Key Skills of Effective Leadership for Project Managers in Afghanistan Construction Sector

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Abstract

Effective leadership is crucial for the success of construction projects to achieve project goals through effective management. Therefore, improving leadership skills is one of the construction industry priorities in many countries around the world. The objective of this paper is to define the key competencies for effective leadership of project managers in the construction sector in Afghanistan. A survey questionnaire was used to identify the most important leadership competencies for successful construction projects in Afghanistan. The questionnaire was distributed to 79 participants including project managers/leaders, designers/engineers, civil engineers, construction/project management teachers/students, and other engineers (with sufficient experience in the construction field). The collected data was analyzed using SPSS.26 software and evaluated using the RII method. After reviewing the results, it was found that all the proposed leadership competencies are important in the construction sector in Afghanistan, however, according to the RII methodology, four competencies (planning and goal setting, communication, problem-solving, and decision-making) are found to be more important. Overall, this study contributes to a deeper understanding of the role of leadership skills in enhancing the success of construction projects in Afghanistan. The findings are significant for practitioners, project managers/leaders, and organizations in the construction industry in Afghanistan as they provide valuable insights and recommendations to enhance leadership skills and ensure successful project outcomes.

Keywords: leadership skills, Construction Sector, Project Managers, Afghanistan

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1. Introduction

The construction industry is critical to a country's economic development, and leadership plays an essential role in ensuring construction project success. The success of construction projects relies on leadership's ability to manage and coordinate different stakeholders, ensure project quality, adhere to timelines, and stay within budgetary constraints. The construction industry in Afghanistan faces numerous challenges due to political instability, social unrest, and limited economic resources. Therefore, it is critical to investigate how effective leadership can improve the success of construction projects in this unique context.

The concept of leadership can be summarized into three interconnected domains: the personal characteristics of the leader, leadership style, and situational theories. This means that leadership is a dynamic behavior, and the ideal style of a leader varies depending on different circumstances and traits. As a result, there is no one-size-fits-all leadership behavior, and the various ways in which leadership has been conceptualized will influence the relationship between leaders and followers who aim to achieve tangible changes and outcomes aligned with their shared objectives [16]. Therefore, effective leadership is necessary to navigate rapid, complex, and often unpredictable changes. While leadership has been recognized as a crucial factor for organizational success, there is still a lack of sufficient empirical studies exploring the connection between leadership style and project success, especially in the context of sustainable construction. Nonetheless, the overall success of a project encompasses multiple dimensions that are influenced by the leadership style and competencies of the manager [14].

Leadership is characterized as a quality, a culture, a role, a mindset, and a series of actions. It encompasses all the essential elements needed to facilitate positive and transformative change [3], [6].

According to the book "Engineer Your Way to Success" by the National Society of Professional Engineers (NSPE), leadership is defined as the capability to inspire and energize others to actively pursue a goal that is passionately envisioned [10]. “It has been said, too, that “leadership is more art, a belief. A condition of the heart, then a set of things to do” [11], [6].

Effective communication, Problem Solving and Decision Making, Team Building, Conflict Resolution, Planning and Goal Setting, Sense of Responsibility, and Time Management are fundamental skills for leaders, including project managers [5].

2. Literature Review

According to a study conducted by [7], [20], the construction industry has been facing a leadership crisis in recent years, despite the growth of construction companies. This crisis has hindered the industry's progress, as leaders have lacked the necessary skills to effectively lead and achieve desired goals. The construction industry has also gained a

negative reputation due to its high accident rate and dangerous activities on construction sites. This is evident from the increasing accident rates observed in many countries in recent years.

Research indicates that many challenges faced by the construction industry are directly related to leadership and the lack of leadership development. Effective leadership can foster a culture of dedication to quality, enhance the efficiency and productivity of teams, improve employee satisfaction, advance construction performance, and ultimately achieve personal and organizational goals [7]. Furthermore, it is important to acknowledge that leadership development has become a well-established field of theory and research, providing a scientific and evidence-based foundation to support the enduring interest in the subject among practitioners [12]. Given the coordination of various infrastructure tasks in the construction industry, it is crucial to have capable leaders who can manage and guide these activities According to [16]. The growth of any industry relies on the development of skills.

Towards the end of the 20th century, there was a shift in the research paradigm concerning leadership in the construction industry. Early researchers conducted cross-sectional studies that covered a wide range of research areas. For instance, Sui Pheng and Lee explored the application of an ancient Chinese strategy to develop leadership in construction project management, aiming to construct a managerial grid framework [13].

Since the beginning of the 21st century, leadership has been recognized as a crucial competency for effective project leaders and engineering management students, complementing their technical expertise. Studies have indicated that the behaviors exhibited by project leaders have a greater impact on predicting project performance compared to the characteristics of other team members. The literature on leadership in construction projects has gradually introduced both quantitative and qualitative methods to explore this topic [13]. In the last twenty years, leadership has been recognized as a major factor influencing the success or failure of projects. Researchers have explored the personal and interpersonal characteristics of project managers that contribute to project performance to a certain degree [13].

In construction organizations, leaders are individuals who guide and oversee the execution of tasks to ensure their successful completion. Construction leaders effectively navigate the construction process, which encompasses activities like planning, designing, and executing projects, while also prioritizing sustainability [1].

The construction industry stands out as a field that requires strong leadership more than any other. This assertion is supported by various factors related to the nature of construction projects, the industry itself, and the constructed products. Developing countries, in particular, have an even greater demand for leadership in construction due to issues like underperforming projects, challenging operating environments, the direct impact of construction on long-term socio-economic development, and stakeholders' limited awareness of construction-related aspects. The case of Afghanistan's construction industry faces its own set of challenges across different levels and dimensions of

construction and development, including inadequate project design and quality, inadequate construction policies, and a lack of professional development. These circumstances justify the need for research on construction leadership within the context of Afghanistan's construction industry.

A study found that positive leadership contributed almost 76% to the success of a project while negative or poor leadership contributed to 67% of project failure [1]. The qualities of leadership demonstrated during project execution have a direct impact on project performance, influencing it either positively or negatively [1].

Project managers' transformational leadership behavior has a direct positive impact on project success. The outcome of projects, whether successful or unsuccessful, is heavily influenced by the style of leadership. Extensive research on leadership and organizational performance has suggested that the qualities and behavioral approach of top management have a direct impact on project performance.

The leadership traits employees are looking for in a leader from management in the ETC (Engineering, Technology, and Construction) industries are vital for organizations to recognize. This improvement could help reduce costs on projects, improve design, safety, and culture, and make construction and engineering projects more successful [16]. One of the Critical success factors that was identified is the leadership style of the project manager and team-building plays a significant role in mediating the relationship between leadership and project success.

In the context of project performance, Suprapto. Suggested that teamwork acted as an intermediary, influencing the effects of rational factors on project performance.

The path coefficient for achievement motivation skills was found to be significant. The importance of motivation in attaining project success is widely acknowledged. Hence, project managers should acknowledge the significance of motivating and providing support to team members to effectively address project challenges.

The path coefficients for leadership skills and communication skills were slightly lower, measuring at 0.671 and 0.604, respectively Geoghegan and Dulewicz. Indicated that the leadership competency of project managers contributed to project success. They emphasized essential dimensions of leadership, including resource management, self-awareness, critical analysis, and sensitivity. However, Yang. Contended that teamwork had a moderating effect on the relationship between leadership competency and project success.

Likewise, effective and efficient communication plays a vital role in project management. Given the substantial amount of information generated in typical construction projects, possessing effective communication skills is crucial for achieving project success.

3. Research Methodology

This research adopts a quantitative data collection technique to gather comprehensive information about the construction industry. Various research methodologies were

considered, including experimental design, case studies, and ethnography. However, given the nature of the study, which seeks to analyze the perspectives of professionals in the construction sector, a survey questionnaire was selected as the most suitable method for collecting primary data. The survey method is widely recognized for its effectiveness in reaching a broad population, ensuring that data is collected efficiently from a diverse group of respondents.

The use of a questionnaire in this research was critical for several reasons. First, it allows for the systematic collection of data from a large number of respondents, providing a representative sample of the professional population within the construction industry [18]. The structured nature of the questionnaire ensures that all respondents are asked the same questions, enabling comparability of responses [17]. This method also allows for a mix of closed and open-ended questions, enabling the collection of both quantitative data (e.g., project completion rates, budget adherence) and qualitative insights (e.g., challenges faced on-site, recommendations for improvement). Additionally, the questionnaire was designed to be easily distributed and completed by busy professionals, maximizing the response rate while ensuring that the data collected is both relevant and reliable for analysis [4].

The primary data for this study was gathered from professionals and experts within the construction industry, including project managers, site engineers, designers, architects, and educators. These participants were selected based on their experience and expertise in managing or participating in various construction projects, both large and small. The demographic information of the participants is illustrated in Table 1.

Table 1. Data collection themes

Variable	Category	Sample	Percentage
Educational Level	Bachler	44	55.7%
	Master	31	39.2%
	PhD	4	5.10%
Total		79	100.%
Current Position	Project Manager/Leader	40	50.6%
	Designer/Architect	5	6.30%
	Site Engineer	21	26.6%
	Educator/Student in construction/project management	11	13.9%
	Other (please specify)	2	2.50%
Total		79	100.%
Work Experiences	1-5 years	15	19.0%
	6-10 years	35	44.3%
	11-20 years	18	22.8%
	Above 20 years	11	13.9%
Total		79	100.%
Organization	Public/Government Sector	28	35.4%
	Private Sector	14	17.7%
	NGO	37	46.8%
Total		79	100.%
Working Side	Client/Owner	48	60.8%
	Contractor	31	39.2%
Total		79	100.%

4. Data Analysis

Reliability Analysis: Before proceeding with the analysis of the collected data, a Cronbach's Alpha test was conducted to assess the reliability of the survey questions [19]. This statistical test evaluates the internal consistency of items, particularly those utilizing Likert scales, ensuring that the questions are measuring the intended constructs consistently. Cronbach's Alpha values theoretically range from 0 to 1. As per standard guidelines, a value of 0.70 or higher is generally considered acceptable, while values of 0.80 or higher indicate good reliability and values above 0.90 are regarded as very good, reflecting high internal consistency [2].

The second part of the survey questionnaire comprises 20 items. Table 2 presents the mean scores and standard deviations for the responses to these items, providing an overview of the central tendencies and variability in the data collected for this section of the survey.

Table 2. Statistics of the second part of the questionnaire

Descriptive Statistics				
No	**Skills**	**N**	**Mean**	**Std. Deviation**
1	Communication	79	4.11	1.251
2	Team building	79	3.97	1.165
3	Motivation	79	3.97	1.132
4	Planning and goal-setting	79	4.14	1.152
5	Conflict management	79	3.95	1.036
6	Problem-solving	79	4.09	1.064
7	Decision making	79	4.06	1.202
8	Negotiation	79	3.73	0.957
9	Delegation	79	3.57	1.058
10	Influencing	79	3.71	1.040
11	Critical thinking	79	3.73	1.083
12	Emotional intelligence	79	3.35	1.144
13	Self-awareness	79	3.67	1.129
14	Strategic perspective	79	3.94	1.090
15	Self-organization	79	3.72	1.073
16	Flexibility	79	3.54	0.945
17	Building trust	79	3.77	1.025
18	Courageous	79	3.70	1.054
19	Development	79	3.89	1.098
20	Innovation	79	3.81	1.156

Reliability analysis for the second part of the survey was conducted with SPSS 26.0 and the results are given in Table 3.

Table 3. Cronbach's Alpha reliability analysis

Reliability Statistics		
survey section	**Cronbach's Alpha**	**N of Items**
2	0.971	20

The results reveal a good internal consistency among the questions in Section 2. This is due to the high Cronbach's alpha coefficient of each item, which is very close to 1. The overall Cronbach's alpha coefficient for the second half of the questionnaire is 0.971. As a result, it was determined that the questions in the second section of the survey were reliable.

In order to evaluate the extent of the importance of different skills that are necessary for project success in the construction sector of Afghanistan, the Likert scale was used. A Likert scale is a type of equal interval scale developed for evaluating survey questions often used to measure a concept. Although five-point Likert scales are generally used, three-point, seven-point and nine-point Likert scales can also be used in some studies [8].

Likert scale is an attitude scale developed by Rensis Likert [15]. Sentences listed as a clear and single judgment, from 1 to 5,

Strongly Disagree (1)

Disagree (2)

Neutral (3)

Agree (4)

Strongly Agree (5) It is evaluated with expressions such as:

The relative importance index (RII) was calculated using the formula presented in Equation 1 to determine the ranking of each skill [9].

$$RII = \frac{5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1}{5(n_1 + n_2 + n_3 + n_4 + n_5)} \ldots\ldots\ldots\

Table 5. Key skills of leadership for construction project managers in Afghanistan

Descriptive Statistics				
No	**Skills**	**RII**	**Mean**	**Std. Deviation**
1	Planning and goal-setting	0.828	4.14	1.152
2	Communication	0.823	4.11	1.251
3	Problem-solving	0.818	4.09	1.064
4	Decision making	0.813	4.06	1.202
5	Motivation	0.795	3.97	1.132
6	Team building	0.795	3.97	1.165
7	Conflict management	0.790	3.95	1.036
8	Strategic perspective	0.787	3.94	1.090
9	Development	0.777	3.89	1.098
10	Innovation	0.762	3.81	1.156
11	Building trust	0.754	3.77	1.025
12	Negotiation	0.747	3.73	0.957
13	Critical thinking	0.747	3.73	1.083
14	Self-organization	0.744	3.72	1.073
15	Influencing	0.742	3.71	1.040
16	Courageous	0.739	3.70	1.054
17	Self-awareness	0.734	3.67	1.129
18	Delegation	0.714	3.57	1.058
19	Flexibility	0.709	3.54	0.945
20	Emotional intelligence	0.671	3.35	1.144

The quantitative analysis table presents the survey results on key leadership skills in the construction industry, using the Relative Importance Index (RII) formula. It highlights a range of skills and the level of agreement among participants. The top 20 most important skills, ranked in Table 5, include planning and goal-setting, communication, problem-solving, decision-making, motivation, team building, conflict management, strategic perspective, development, innovation, building trust, negotiation, critical thinking, self-organization, influencing, courage, self-awareness, delegation, flexibility, and emotional intelligence. Survey participants rated each skill at varying levels of agreement, with a total of 79 participants.

The findings reveal that all of the identified skills received substantial agreement among participants. However, certain skills, such as planning and goal-setting, communication, problem-solving, and decision-making, received particularly high levels of agreement, ranking at the top. Additionally, motivation, team building, problem-solving, and

strategic vision were recognized as high-ranking skills. While these skills stood out, the remaining skills were also considered important for effective leadership.

5. Conclusion and Discussion

The primary objectives of this study are to highlight the significance of effective leadership in managing construction projects, to identify and rank the key leadership skills that contribute to the success of these projects, and to assess the leadership knowledge and skills specific to construction projects in Afghanistan. To accomplish these goals, the research addresses two sub-questions, which are outlined in the following paragraphs.

Regarding the first question, "How important is effective leadership to the success of construction projects?" the literature review reveals that effective leadership is crucial to the success of these projects. Survey participants' feedback further supports this view, suggesting that the success of construction projects is largely dependent on strong leadership.

Effective leaders provide clear vision and direction, align teams towards shared objectives, and are responsible for key decision-making, team management, and problem-solving, ensuring smooth project execution. They engage stakeholders, manage risks, and adapt to changes, which are essential for maintaining project efficiency and effectiveness. Additionally, effective leadership emphasizes safety, compliance, and positive work culture, driving productivity and motivating teams to perform at their best. In contrast, a lack of effective leadership can lead to miscommunication, delays, and budget overruns. Ultimately, effective leadership is the cornerstone of successful construction projects.

The second key question addressed in this study is: "What are the key leadership skills that contribute to the success of construction projects in Afghanistan?" Based on the survey results and literature review, 20 leadership skills were identified as critical to the construction sector. These skills were evaluated for their significance, with survey participants showing substantial agreement on their importance. However, five skills—planning and goal-setting, communication, problem-solving, decision-making, and motivation—emerged as the most highly regarded by the participants, indicating their central role in the success of construction projects.

Planning and goal-setting were recognized as the most critical leadership skills. Effective planning ensures that project objectives are clear from the outset, allowing for a structured approach to managing resources, time, and tasks. Goal-setting provides the project team with a clear direction and benchmarks for success. In the absence of clear goals, projects can easily lose focus, leading to delays and inefficiencies. The participants emphasized that a project manager's ability to plan and set realistic goals is fundamental to achieving project success.

Communication was identified as the second most important skill. In the construction industry, where multiple stakeholders are involved, effective communication is essential to ensuring that everyone is aligned with the project's objectives. Poor communication

can lead to misunderstandings, errors, and conflicts, which can derail the project. The ability to communicate clearly and effectively with team members, clients, and other stakeholders is a crucial skill that project managers must possess to foster collaboration and avoid potential obstacles.

Problem-solving, ranked third, is another vital leadership skill. Construction projects are often complex, and challenges inevitably arise during execution. A project manager's ability to address these challenges quickly and effectively is essential for keeping the project on track. Problem-solving skills enable leaders to identify issues, analyze potential solutions, and implement strategies that minimize disruptions and mitigate risks. Without strong problem-solving capabilities, even minor setbacks can escalate into major project delays.

Decision-making was the fourth skill highlighted by the survey participants. In construction, timely and informed decisions are critical to maintaining project momentum. Delayed or poor decisions can lead to work stoppages, cost overruns, and other negative outcomes. Effective leaders are decisive, weighing options carefully but acting swiftly when necessary to ensure that projects proceed as planned. The participants underscored that a project manager's decision-making abilities directly impact the success or failure of a construction project.

Motivation, team building, and strategic vision were also recognized as high-ranking skills. Motivating and building a cohesive team is essential for maximizing productivity and ensuring that all team members are working towards a common goal. Additionally, strategic vision enables project managers to anticipate future challenges and opportunities, positioning the project for long-term success. These skills, while not ranked at the very top, are nevertheless crucial for creating a positive work environment and driving successful project outcomes.

In conclusion, the findings from this study confirm that a combination of leadership skills is necessary for the effective management of construction projects in Afghanistan. The top skills—planning and goal-setting, communication, problem-solving, decision-making, and motivation—are particularly important for project managers to cultivate. However, all the identified skills contribute to successful leadership, and their absence can lead to project failure. These insights are valuable for developing leadership training programs tailored to the unique challenges of the Afghan construction industry, ultimately contributing to the industry's growth and success.

6. Recommendations for further research

To conduct a thorough analysis of successful and unsuccessful construction projects in Afghanistan, and to identify specific leadership practices that contributed to their outcomes.

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Conflicts of Interest

All authors declare that they have no conflicts of interest to disclose

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