

# The Project Manger's Strategic Leadership Attributes for Effective Construction Project Performance in Nepalese Context

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## Abstract

Demand for construction project performance is skyrocketing in construction industry around the globe; Construction project performance challenges are becoming more severe than ever before. Since, construction industry plays an important role in the national economy of the country, construction project influence long-term socioeconomic development in developing countries, the Construction projects are expensive and technically demanding, the poor performance of projects has severe implications for the nation and its citizens but the Project performance is one of the most critical challenges for all grassroots, national and international development of construction industry. A project manager, a critical resource in the project performance since, the project teams in construction industry is large and diverse, a project manager as leader; only the person that has the overall responsibility for the successful initiation, planning, design, execution, monitoring, controlling and closure of each and every aspect of project activities in construction industry, only the person that could motivate and influence all the allied subordinates and followers to achieve the specific goals and objectives of the organization for success by executing the project within project performance constraints such as time, cost, and quality, achieving project objectives and beneficiary satisfaction towards making the project success, so greater attention and emphasis must be given for the adoption and application of project manager's strategic leadership attributes as per established regression model and its respective parameters to be considered in priority and preference as per relative importance index (RII) and Rank value from study for effective each construction project performance constraints/indexes as required for the project manager's strategic leadership attributes and parameters for effective construction performance in Nepalese Context.

## Keywords

Project Manager, Strategic, Leadership, Construction Industry, Responsibility, and Project Performance.

## 1. Introduction

A project manager and leader, a person that have the overall responsibility for the successful initiation, planning, design, execution, monitoring, controlling and closure of each and every aspect of project activities in construction industry [1], only the person that could motivate and influence all the allied subordinates and followers to achieve the specific goals and objectives of the organization.

The leadership concept has been widely reviewed in different sectors, such as; business, education, health, military and others; however, there is a lack of research in the construction field.[2] Construction Project failure is a shockingly high since Project manager has greater influence over the performance

of projects[3] argued that the project manager strategic leadership attributes is one of the primary answers to the problems of the construction industry especially in developing countries [4] suggested that project managers leadership attributes[5] includes –Leadership behavior[6], Leadership styles[7] and Leaders qualities[8] may be the important independent variable for effective project performance(dependent variable) in construction industry.

### 1.1 Problem statement

Analyzing the major construction project failure, the project failure due to lack of preparation, inadequate documentation and tracking, poor leadership failure to define parameters and enforce them, inexperienced

project managers, inaccurate cost estimates, little communication at every level of management, culture or ethical misalignment, lack of resource planning, disregarding project warning signs shows that poor leadership is one of main reasons [9]

Similarly, In context of Nepal, analyzing the practical difficulties in project planning and implementation ,the major difficulties are due to unclear policy and objectives, political intervention, political instability, weak institutional capabilities , lack of user participation , defective project design considering time cost and quality control, delays in project approval, delayed appointments of consults, delays in releasing the budget, delays in procurement, delays in contract award, lack of coordination, lack of public participation, reimbursement problems from donor agencies, lack of counterpart funds, poor monitoring and evaluation, corruption[10] shows that Project planning and implementation in Nepal demand project managers strategic leadership, Similarly analyzing the trend of construction project performance, Almost half of national pride projects fail to meet performance target ,according to online E-paper September 13, 2016,Kathmandu.

Similarly, Since from 2017 to 2021 At least 50 bridge failures have been highlighted in national media. On April 06, 2021, a 200 m long under-construction pre-stressed concrete bridge failed in Chitwan district in central Nepal. Two of the four bridge spans collapsed without any notable evidence of dynamic force application and every year increasing number of blacklisted construction company in construction industry for failing to abide by the procurement laws.Companies are barred from taking part in construction of any government projects for the prescribed time period.

On July 26, 2022 news published on Republica shows that Project failure may be common outcomes due to project manager leadership issue as the one of the main reason in the context. Since, the project manager is responsible for planning, allocating, directing controlling and implementing each and every aspect of project activities , have full responsibility and authority to complete the assigned project,accountable to the success and failure of a project[10].

In this regards, the project manager must have the ability to influence other allied team members in a very personal way through his leadership attributes [1] for the effective construction project performance of

construction industry in Nepalese context.

## 1.2 Purpose and Objectives of Study

A project manager and leader,one who looks into the application of knowledge, skills, tools, and techniques to plan, organize, manage, control and implement the various project activities and processes, has the overall responsibility and authority for the successful planning and execution of a project and its associated activities. A successful project management through project planning to implementation of the project, the project managers Strategic Leadership Attributes leads to overall success through effective project performance. For the purpose,the study objectives were:

- To determine the importance of project manager's strategic leadership attributes(leadership behaviors ,leadership styles and leaders qualities)for effective construction project performance and
- To develop relationship between the project performance and leadership attributes (leadership behaviors, leadership styles and leaders qualities) and evaluate project managers strategic leadership attributes through statistical significance of experiential perceptual views from industry professionals and experts of construction industry in Nepalese context.

## 2. Research Methodology

### 2.1 Research Design,Conceptual frame Work and Logical Framework and Process

This Research designed to collect data from questionnaire surveys through experiential perception of respondents toward the project manager's leadership attributes and its respective parameters to consider in priority and preference through empirical study for effective construction project performance of construction industry in Nepalese context.

The study population targeted to stakeholders group as main contractors and subcontractors construction company's Project Manager as industry professionals and experts in the related field having role of project manager and leader for controlling project activities of construction industry , directly engaged in construction project planning, allocating, directing and controlling overall project activities ,having full

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responsibility and authority to complete the assigned project and accountable to the success and failure of a project.

Assuming that there is a big population, but we don’t know the proportional variability; for populations that are large, Cochran developed the Equation to yield a representative sample for proportions [11].

$$n_o = \frac{z^2 pq}{e^2} \quad (1)$$

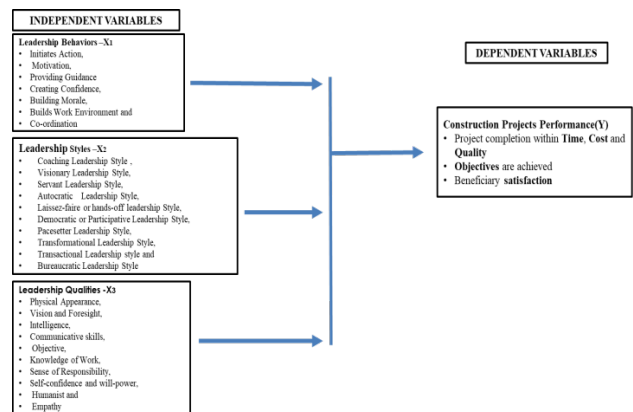
Assuming,  $p = 0.5$  as Maximum variability. Assume 90 % confidence level and a 10 % precision. For random sampling, the sample size calculated as a result is 68. This sample size use in questionnaires survey for data collection as a tool and feature structured questions that provide quantitative data for statistical analysis to evaluate the importance and relationship of the project manager’s strategic leadership attributes for effective project performance in Nepalese context.

Each item in the instruments was reviewed by focus group discussion through industry professionals and expert of construction industry to specify the study objectives and research questions in the instrument and Ascertained by determining adequate sample of the domain for validity and A pilot study was conducted to reflect the demographic characteristics and A test-retest technique and the consistency test was performed for reliability The data were collected through filled questionnaire distributed to study target respondent of construction industry.

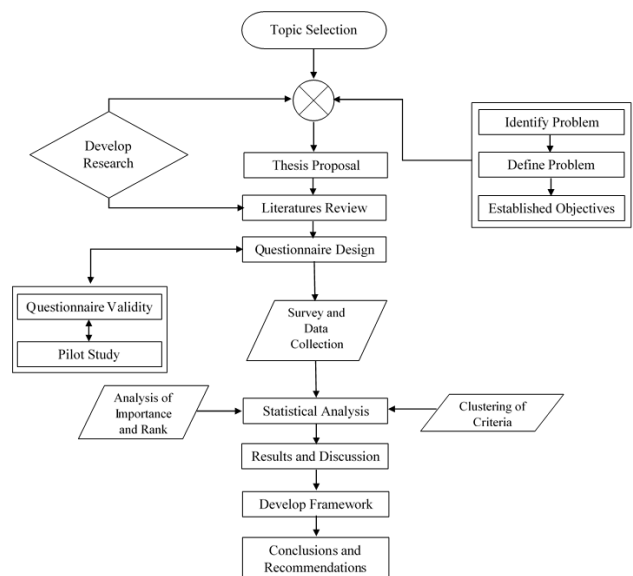
Respondent use for questionnaire through Online questionnaire survey (Kobo Toolbox) were allied project team members of construction industry including HR-Manager, CEO, Supervisor, Project Engineer, Project Manager, consultant supervisor and project beneficiary to study the each and every aspect of Project Managers leadership attributes and its respective parameter through large and diverse experiential perception to minimize biasness of the study.

For the purpose,the study applied both qualitative and quantitative approaches for data analysis using SPSS, Microsoft Excel and online statistical calculator. Qualitative data were analyzed through descriptive statistics through quantifying Likert scale of qualified responses such as: frequencies, percentages, means and standard deviations, Ranking and also presented in the form of tables and charts. The study also employed a multiple linear regression analysis

through online statistical calculator to develop relationship between the project performance and leadership attributes (leadership behaviors, leadership styles and leaders qualities) and evaluate project managers strategic leadership attributes through statistical significance of experiential perceptual views from industry professionals and experts of construction industry in Nepalese context. See figure 1 for conceptual framework of research and figure 2 for Research logical Framework and Process. flow chart.



**Figure 1:** Research Conceptual Frame Works



**Figure 2:** Research Logical Framework and Process Flow chart.

Hence, a mixed method of research approach was used to meet the objectives of this research, basically descriptive statistics such as measures of central tendency and location like Mean, Frequency Analysis, Percentages, Relative important Index(RII), Ranking Standard Deviation were used to measure the research variables and its respective parameters while measures

such as Multiple Regression Analysis, Normality Test, correlation analysis, regression analysis through ANOVA's-Table and Paired test were used to demonstrate statistical significance of the relationship between dependent variable(Project performance) and independent variable-leadership attributes including leadership behavior, leadership styles and leaders qualities) along with its respective parameters(sub independent variable) to develop relationship and evaluate project managers strategic leadership attributes through statistical significance of experiential perceptual views and opinions from industry professionals and experts of construction industry in Nepalese context

### 3. Result and Discussion

#### 3.1 Response Rate

The study targeted to 68 respondents as per sample size from industry professionals and experts from construction industry. Out of 100 issued questionnaires to the respondent's 70 questionnaires representing 70 of the total questionnaires distributed were returned fully completed shows that it can be inferred that the response rate of the study was good since it is above the 50% statistical significance[12] and justify the response rate of all questionnaires issued were adequate of data for analysis.

#### 3.2 Reliability Analysis

Cronbach's coefficient alpha value was used to check the reliability of questionnaire during the pilot survey. The acceptable value is considered to be 0.7. Using SPSS, Cronbach's alpha was computed to be 0.825 for Demographic information section and 0.735 for experiential perceptual views and opinion sections. In this questionnaire, so the questionnaire was used for primary survey.

After primary data collection, Cronbach's coefficient was computed to check reliability of data collected. The value of Cronbach's coefficient computed as in table 1.

**Table 1:** Cronbach's coefficient value

Item	$\alpha$ -Value for Demographic Information Section	$\alpha$ -Value for Experiential Perceptual Sections for Effective Construction Performance
Respondents	0.825	0.735

#### 3.3 Gender of the Respondents

Analyzing the data it shows that it involves both male and female respondents and out of the 70 the respondents, majorities were of males, representing 82.86% while the female counterparts were 17.14 %. See table 2 for gender of respondent.

**Table 2:** Gender of the Respondents

Gender	Frequency	Percentage (%)
Male	58	82.86
Female	12	17.14

#### 3.4 Age Group of the Respondents

The majority of the respondents age groups were 40 and above age group then 30-39 years and 20-29 years representing 51.43%,44.29% and 4.29% respectively.See table 3 for gender of respondents.

**Table 3:** Age Group of the Respondents

Age Group	Frequency	Percentage (%)
40 and above	36	51.43
30-39 years	31	44.29
20-29 years	3	4.29

#### 3.5 Qualifications of the Respondents

The majority of the respondent's qualifications were of master's degree then bachelor's degree and finally PhD representing 60%, 28.58% and 11.42% respectively.See table 4 for qualifications of the respondents.

**Table 4:** Qualifications of the Respondents

Qualification of Respondents	Frequency	Percentage (%)
Below / Secondary Level	0	0
Higher Secondary/College /Diploma	0	0
Bachelor's Degree	20	28.58
Master's Degree	42	60
PHD	8	11.42

#### 3.6 Years of Experience of the Respondents

The majority of the respondents were 5years and above years of experience, then were of 3-5 years and then 1-3 years of experienced representing 82.85%, 11.44% and 5.71% respectively.See table 5 for years of experience of the respondents.



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**Table 5:** Years of Experience of the Respondents

Years of Experience	Frequency	Percentage (%)
0-1Years	0	0
1-3 years	4	5.71
3-5 years	8	11.44
5 years and above	58	82.85

### 3.7 Job Title of the Respondents

The majority of the respondent were Chief Executive Officer, then project manager, project Supervisor, human resource manager, project Engineer and Architect, project consultant and project beneficiary representing 34.29%, 22.86%, 17.14%, 11.43%, 8.57%, 4.29% and 1.43% respectively. See table 6 for job title of the respondents.

**Table 6:** Job Title of the Respondents

Job Title of Respondents	Frequency	Percentage (%)
Chief Executive Officer	24	34.29
Project Manager	16	22.86
Project Supervisor	12	17.14
Human Resource Manager	8	11.43
Project Engineer and Architect	6	8.57
Project Consultant	3	4.29
Project Beneficiary	1	1.43
Other	0	0.00

### 3.8 Category of Organization of the Respondents

The majority of categories of organization of the respondents engaged with were Private organization, then governmental and other representing 92.86%, 4.29%, and 2.86%, respectively. See table 7 for category of organization of the respondents.

**Table 7:** Category of Organization of the Respondents

Category of Organization	Frequency	Percentage (%)
Private	65	92.86
Government	3	4.29
Other	2	2.86

### 3.9 The Project Manager’s Strategic Leadership Attributes and its Parameters ranked through relative important index for Effective Each Project Performance Constraints

The respondents were asked about the experiential perception for the importance of project manager’s

strategic leadership attributes and its respective parameter for effective project performance in construction industry in Nepalese context. There were five options of this question: Very great extent, Great extent, Moderate extent, and little extent and not at all. The result for ranking the leadership attributes (independent variables) and parameters (sub independent variables) for each construction project performance constraints/indexes (dependent Variable)- Project Time Performance , Project budgeted Cost Performance , Project allocated quality achievement performance , Project allocated Objectives achievement performance , Project allocated beneficiary satisfaction achievement performance and overall project performance respectively.

#### 3.9.1 The Project Manager’s Strategic Leadership Behaviors- Parameters for Effective Each Project Performance Constraints

The table 8 summarizes the rank values through relative important index for leadership behaviors attributes and its respective parameters for the effective each construction project performance Constraints or indexes.

Analyzing the rank values from the study through the experiential perceptions of the respondents, it shows that the priority and preference of leadership behaviors parameters need to be considered based on the rank values as the project manager’s strategic leadership behaviors parameters for effective each project performance constraints as required in Nepalese construction industry.

**Table 8:** The Project Manager’s Strategic Leadership Behaviors- Parameters for Effective each Project Performance Constraints

Project Manager Strategic Leadership Behaviors Attributes Parameters	Rank for Project Time Performance (Y1)	Rank for Project Budgeted Cost Performance (Yc)	Rank for Project Allocated Quality Achievement Performance (Yq)	Rank for Project Allocated Objectives Achievement Performance (Yo)	Rank for Project Allocated Beneficiary Satisfaction Achievement Performance (Ys)	Rank for Project Overall Performance (Y)
Initiate Action	5	3	2	1	2	1
Motivation	6	4	3	2	7	5
Providing Guidance	2	6	1	3	3	2
Creating Confidence	3	5	6	7	1	6
Building Morale	3	1	5	6	6	3
Builds Work Environment	1	6	7	3	3	7
Co-ordination	6	2	3	5	3	4

#### 3.9.2 The Project Manager’s Strategic Leadership Styles- Parameters for Effective Each Project Performance Constraints

The table 9 summarizes the rank values through relative important index for leadership styles attributes and its respective parameters for the effective each

construction project performance Constraints or indexes.

Analyzing the rank values from the study through the experiential perceptions of the respondents, it shows that the priority and preference of leadership styles parameters need to be considered based on the rank values as the project manager’s strategic leadership styles parameters for effective each project performance constraints as required in Nepalese construction industry.

**Table 9:** The Project Manager’s Strategic Leadership Styles- Parameters for Effective Each Project Performance Constraints

Project Manager Strategic Leadership Styles Attributes Parameters	Rank for Project Time Performance (Y1)	Rank for Project Budgeted Cost Performance (Y2)	Rank for Project Allocated Quality Achievement Performance (Y3)	Rank for Project Allocated Objectives Achievement Performance (Y4)	Rank for Project Allocated Beneficiary Satisfaction Achievement Performance (Y5)	Rank for Project Overall Performance (Y)
Coaching Leadership Style	1	1	1	1	1	1
Visionary Leadership Style	4	2	3	3	3	2
Servant Leadership Style	10	4	6	2	6	6
Autocratic Leadership Style	2	6	4	6	7	5
Laissez-Faire Or Hands-off Leadership Style	8	3	2	4	2	3
Democratic Or Participate Leadership Style	3	7	8	6	9	7
Pacesetter Leadership Style	6	5	5	5	3	4
Transformational Leadership Style	5	9	10	6	8	10
Transactional Leadership Style	6	8	7	10	10	9
Bureaucratic Leadership Style	8	10	9	6	5	8

### 3.9.3 The Project Manager’s Strategic Leaders Qualities- Parameters for Effective Each Project Performance Constraints

The table 10 summarizes the rank values through relative important index for leaders qualities attributes and its respective parameters for the effective each construction project performance Constraints or indexes.

Analyzing the rank values from the study through the experiential perceptions of the respondents, it shows that the priority and preference of leaders qualities parameters need to be considered based on the rank values as the project manager’s strategic leaders qualities parameters for effective each project performance constraints as required in Nepalese construction industry.

### 3.10 Regression Analysis

The multiple regressions analysis was performed to develop relationship between the project performance (dependent variables) and leadership attributes (leadership Behaviors, leadership styles and leaders Qualities) as independent variables to evaluate project

**Table 10:** The Project Manager’s Strategic Leaders Qualities- Parameters for Effective Each Project Performance Constraints

Project Manager Leaders Qualities Attributes Parameters	Rank for Project Time Performance (Y1)	Rank for Project Budgeted Cost Performance (Y2)	Rank for Project Allocated Quality Achievement Performance (Y3)	Rank for Project Allocated Objectives Achievement Performance (Y4)	Rank for Project Allocated Beneficiary Satisfaction Achievement Performance (Y5)	Rank for Project Overall Performance (Y)
Physical Appearance	1	1	1	1	1	1
Vision And Foresight	3	5	8	4	5	5
Intelligence	4	2	7	5	2	3
Communicative Skills	7	4	4	2	7	4
Objectives Orient Knowledge of Work And Skills	2	7	2	3	2	2
Sense of Responsibility	8	6	5	6	8	7
Self-Confidence And Will Power	6	3	10	6	2	6
Humanist Empathy	5	9	3	8	6	8
	9	8	5	9	9	9
	10	10	9	10	10	10

manager’s strategic leadership attributes through statistical significance and validation of experiential perceptual views from industry professionals and experts of Nepalese construction industry.

#### 3.10.1 Regression Analysis Result

The multiple regressions were performed based on model.

$$Y = \beta_0 + \beta_i X_i + \epsilon_i \tag{2}$$

Where,  $\beta_0$  is the intercept,  $\beta_i$  is the slope and  $\epsilon_i$  denotes the residual errors in term.

Analyzing the data through multiple regression analysis by statistical control with suitable model selection to study actual effect of each predictor variable, the regression equation optimized through the y-intercept and errors in terms equals to zero to normalize for goodness of fit to address biasness of regression model as per Theil (1971, p. 176) [13] to cross validate with statistical significance for weak correlation.

Hence, the effective and optimized regression model was developed for the leadership attributes and for effective each construction Project performance in Nepalese context listed out as:

#### Project Time Performance Model:

$$Y_t = 0.25 X_{t1} + 0.21 X_{t2} + 0.38 X_{t3}$$

Project Time Performance ( $Y_t$ ) = 0.25 Leadership Behaviors ( $X_{t1}$ ) + 0.21 Leadership Styles ( $X_{t2}$ ) + 0.38 Leaders Qualities ( $X_{t3}$ )

#### Project Cost Performance Model:

$$Y_c = 0.28 X_{c1} + 0.34 X_{c2} + 0.16 X_{c3}$$

Project Cost Performance ( $Y_c$ ) = 0.28 Leadership Behaviors ( $X_{c1}$ ) + 0.34 Leadership Styles ( $X_{c2}$ ) + 0.16 Leaders Qualities ( $X_{c3}$ )

**Project Quality Performance Model:**

$$Y_q = 0.15 X_{q1} + 0.5X_{q2} + 0.4 X_{q3}$$

Project Quality Performance ( $Y_q$ ) = -0.15 Leadership Behaviors ( $X_{q1}$ ) + 0.50 Leadership Styles ( $X_{q2}$ ) + 0.40 Leaders Qualities ( $X_{q3}$ )

**Project Objective Performance Model:**

$$Y_o = 0.28 X_{o1} + 0.16X_{o2} + 0.27 X_{o3}$$

Project Objective Performance ( $Y_o$ ) = 0.28 Leadership Behaviors ( $X_{o1}$ ) + 0.16 Leadership Styles ( $X_{o2}$ ) + 0.27 Leaders Qualities ( $X_{o3}$ )

**Project Beneficiary Satisfaction Performance Model:**

$$Y_s = 0.37 X_{s1} - 0.04X_{s2} + 0.41 X_{s3}$$

Project Beneficiary satisfaction Performance ( $Y_s$ ) = 0.37 Leadership Behaviors ( $X_{s1}$ ) -0.04 Leadership Styles ( $X_{s2}$ ) + 0.41 Leaders Qualities ( $X_{s3}$ )

**Overall Project Performance Model:**

$$Y=0.33 X_1 + 0.23X_2 + 0.22 X_3 \text{ i.e.}$$

Project Performance ( $Y$ ) = 0.33 Leadership Behaviors ( $X_1$ ) + 0.23 Leadership Styles ( $X_2$ ) + 0.22 Leaders Qualities ( $X_3$ )

**4. Conclusion**

The purpose of the study was to determine the importance of project managers leadership attributes for effective construction project performances secondly, develop the relationship between the leadership attributes and Project performance in Nepalese context.

Hence,the empirical study conclude that the adoption and application of project manager’s strategic leadership attributes as per established regression model and considering respective parameters in priority and preference as per rank values for effective construction project performance of construction

industry in Nepalese context and the findings of the study will be of great importance to project managers or leaders to understand on how the project manager’s strategic leadership attributes influences the performance of construction projects, assist in selection of project managers with the right strategies that will lead to better performance of the construction project, assist policy makers in the field of project management, designing policies with an aim of improving project leadership development, add to the body of knowledge on the project manager’s strategic leadership attributes for the project performance of construction projects and finally,satisfy not only conflicting requirements in support of organizational success but also the ability to successfully grow construction project managers successful professional careers in Nepalese construction industry.

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