

# Study on the Influence of Stakeholders in Construction Projects

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**Abstract:** *The interactions and interrelationships between stakeholders largely determine the overall performance of a construction project, and have the crucial responsibility for delivering a project to successful completion. An important component of stakeholder management is stakeholder analysis.*

*Two case studies are conducted within Kerala (India). The main objective was to carry out stakeholder analysis using stakeholder organiser deluxe software, considering the data's collected from the project execution team using questionnaire. During data collection the key stakeholders were identified, to know how to manage them, their interest, power, attitude level etc, for quality improvement. Analyze the results using the software Stakeholder organizer deluxe and modeling of stakeholders is to be done. Finally validate the models of the projects. These findings may mainly reflect the stakeholder management environment in the respective regions of project implementation.*

**Keywords:** *Stakeholders, identification, prioritization, power, interest and attitude level, validation*

## I. INTRODUCTION

### A. General

Stakeholder management is an important issue in project management as a project can be seen as a temporary coalition of stakeholders to create something together. Freeman defines a project stakeholder as “a person or a group of persons, who are influenced by or able to influence the project”. The main participants in a construction project coalition are the client, the architect and the contractor. The interactions and interrelationships between these participants largely determine the overall performance of a construction project, and have the crucial responsibility for delivering a project to successful completion. Stakeholders can be divided into internal and external, internal stakeholders being those directly involved in an organization's decision-making process (e.g. owners, customers, suppliers, employees) and external stakeholders being those affected by the organization's activities in a significant way (e.g. neighbours, local community, general public, local authorities). In construction, there has traditionally been a strong emphasis on the internal stakeholder relationship such as procurement and site management, while the external stakeholder relationships to some extent have been considered a task for public officials via the rules and legislation that concern facility development.

An important component of stakeholder management is stakeholder analysis. A variety of techniques can be used either individually or collectively to gather the information for the analysis, such as workshops, focus group discussions, individual interviews and various Participatory Rapid Appraisal (PRA) techniques. There

are a number of possible tools that can be used to represent information gathered in a stakeholder analysis. These diagram tools are used to provide a visual representation of the relative importance of different activity variables. In this thesis two different construction projects from Kerala were chosen as case studies. The first case study was an ESIC (Employees' State Insurance Corporation) medical college hospital project at Kollam Kerala executed by construction division of Larsen & Toubro Ltd. The second case study was Construction of Ladies Hostel Projects, Thiruvananthapuram, executed by North Stone Builders Pvt. Ltd. Important stakeholders were identified from each project separately and feed into the Stakeholder Organiser Deluxe software and results were obtained. The ratings for each stakeholder were interviewed and feed into the software. Modeling the influence of stakeholders in each project is plotted with the help of the software and finally validates the models.

## II. OBJECTIVES OF STAKEHOLDER MANAGEMENT

- You can use the opinions of the most powerful stakeholders to shape your projects at an early stage. Not only does this make it more likely that they will support you, their input can also improve the quality of your project
- Gaining support from powerful stakeholders can help you to win more resources – this makes it more likely that your projects will be successful
- By communicating with stakeholders early and frequently, you can ensure that they fully understand what you are doing and understand the benefits of your project – this means they can support you actively when necessary

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- You can anticipate what people's reaction to your project may be, and build into your plan the actions that will win people's support.

### III. COPE OF STAKEHOLDER MANAGEMENT

The main scope of the project is to identify the key stakeholder groups and assess their positioning with respect to the change in initiative, to identify potential opportunities and threats to project implementation and finally to determine the extent to which certain groups should participate in project planning, implementation and evaluation. Stakeholder analysis is carried out in the early stages of planning a quality improvement initiative.

#### A. Types of stakeholders

- Internal Stakeholders** : Stakeholders which directly influence the project  
Examples: Owner, Customers, Contractors, Suppliers.
- External Stakeholders**: Stakeholders which indirectly influence the project.  
Examples: Local Community, bank, Government.

### IV. PROJECT METHODOLOGY

The project methodology adopted for this project is given below:

A comprehensive study of literature related to Stakeholder Management in construction projects referring previous studies, formulating strategies, influence of stakeholder mapping and visualization and critical success factors for different construction project objectives etc. Formulating the questionnaire based on these factors and collect response from the company . Observed response from the company is analysed and modelling by using the software Project stakeholder organizer deluxe V 3.7. Finally validating the models and made conclusions.

#### A. Critical success factors considered for the project stakeholders

- Power level**: A person, group or firm having great influence or control over others.
- Interest level**: A state of curiosity or concern about or attention to something.
- Attitude level**: A predisposition or tendency to respond positively or negatively towards a certain idea or object, person or situation.

### V. PROJECT CASE STUDIES

#### A. ESI Medical College projects, Kollam, Kerala, India

Overall 15 stakeholders are identified from the ESI Medical college projects. The responses from the questionnaire survey are shown in table 1.

TABLE I  
QUESTIONNAIRE SURVEY ANALYSIS OF ESIC PROJECT, KOLLAM

Stakeholder	Critical Factors Influence Level		
	Power level	Interest level	Attitude level
Owner	Very High	Very High	Very High
Consultant	Very High	High	High
Cement & Steel supplier	Low	Medium	Medium
Sand & Coarse aggregate supplier	Low	Medium	Medium
Formwork supplier	Medium	Medium	Medium
Project Manager	Very High	Very High	Very High
Structural Engineer	High	High	High
Architect	High	High	High
Safety Engineer	VeryHigh	High	High
Quality Engineer	High	High	High
Labour union	High	Medium	Medium
Electrical Engineer	High	High	High
Plumbing Engineer	High	High	High
Account Manager	Medium	Medium	Medium
Local Community	Low	Low	Low

Modelling of critical factors by using Project stakeholder organizer deluxe software:

- Power level

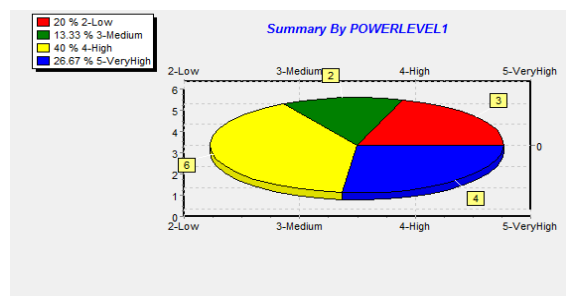


FIGURE I  
POWER LEVEL SUMMARY OF ESIC PROJECTS

- Interest level

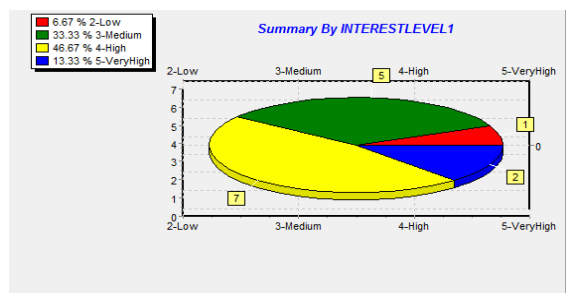


FIGURE II  
INTEREST LEVEL SUMMARY OF ESIC PROJECTS

- Attitude level

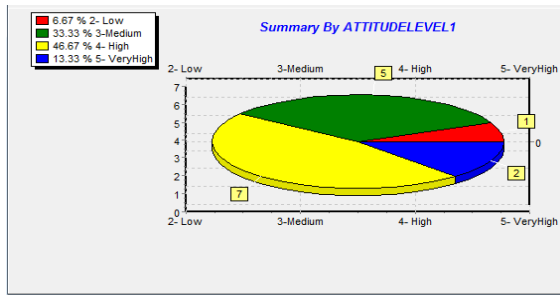


FIGURE III  
ATTITUDE LEVEL SUMMARY OF ESIC PROJECTS

- Interest level

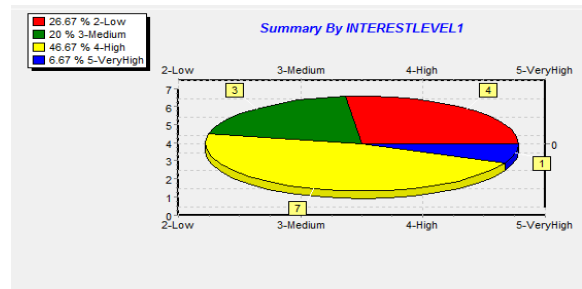


FIGURE V  
INTEREST LEVEL SUMMARY OF LADIES HOSTEL PROJECTS

**B. Ladies Hostel Projects, Trivandrum, Kerala, India**

Overall 15 stakeholders are identified from the Ladies hostel projects at Trivandrum, Kerala. The responses from the questionnaire survey are shown in table 2.

TABLE II  
QUESTIONNAIRE SURVEY ANALYSIS OF LADIES HOSTEL PROJECT, TRIVANDRUM

Stakeholder	Critical Factors Influence Level		
	Power level	Interest level	Attitude level
Owner	Very High	High	High
Consultant	Very High	High	High
Brick & Sand supplier	Low	Low	Low
M Sand & Coarse aggregate supplier	Low	Low	Low
Cement & Steel supplier	Low	Low	Low
Project Manager	Very High	Very High	Very High
Design Engineer	High	Medium	Medium
Safety Engineer	High	High	High
Quality Engineer	High	High	High
MEP Engineer	Medium	Medium	Medium
Account Manager	High	High	High
Labour union	High	High	High
Local Community	Low	Low	Low
Formwork supplier	Medium	Medium	Medium
Site Engineer	High	High	High

- Attitude level

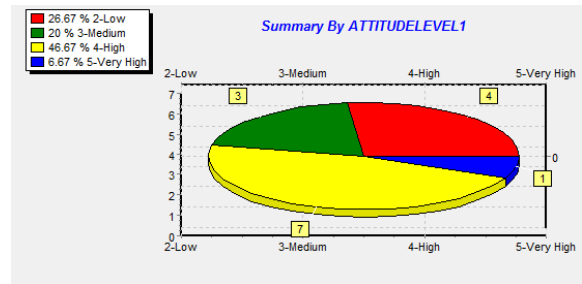


FIGURE VI  
ATTITUDE LEVEL SUMMARY OF LADIES HOSTEL PROJECTS

**VI. RESULTS AND DISCUSSIONS**

Collected data were analyzed using the Project stakeholder organizer deluxe v 3.7 and the results obtained for the two case studies as shown below:

TABLE III  
OUTPUT OF ESIC PROJECT, KOLLAM

Factor	Rating system			
	Very High	High	Medium	Low
Power level(%)	26.67	40	13.33	20
Interest level(%)	13.33	46.67	33.33	6.67
Attitude level(%)	13.33	46.67	33.33	6.67

TABLE IV  
OUTPUT OF LADIES HOSTEL PROJECT, TRIVANDRUM

Factor	Rating system			
	Very High	High	Medium	Low
Power level(%)	20	40	13.33	26.67
Interest level(%)	6.7	46.67	20	26.67
Attitude level(%)	6.7	46.67	20	26.67

Modelling of critical factors by using Project stakeholder organizer deluxe software:

- Power level

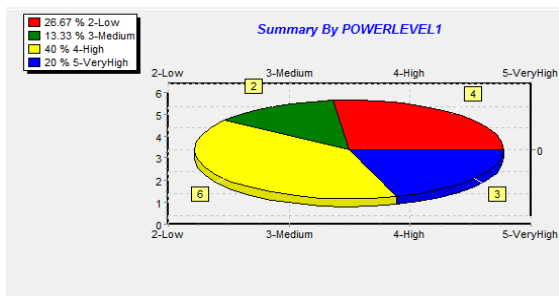


FIGURE IV  
POWER LEVEL SUMMARY OF LADIES HOSTEL PROJECTS

**VII. CONCLUSIONS**

A project is successful when it achieves its objectives and meets or exceeds the expectations of the stakeholders. The interactions and interrelationships between the stakeholders largely determine the overall performance of a construction project, and have the crucial responsibility for delivering a project to successful completion. For the present study two construction projects are identified from Kerala and collected the company and project information. Also the study identified the various

stakeholders which can influence the project execution. A detailed questionnaire is prepared based on the factors power, attitude and interest and sent to the companies for getting the information regarding the influence level of stakeholders.

Stakeholder analysis for the project ESI Medical College, Kollam and Ladies hostel projects, Trivandrum as modeled and the results obtained are discussed based upon the factors Power level, interest level and attitude level. From the analysis, it is concluded that the power, interest and attitude levels of stakeholders in ESIC projects, Kollam are greater than that of stakeholders of Ladies hostel projects, Trivandrum. This is because of the following reasons as:

- The project value of ESIC project is 2.3 crore rupees and Ladies hostel project is 12 Lakhs rupees. So the turnover will be higher in ESIC project, it will affect the stakeholder management.
- Organisational structure of ESIC project is better than the Ladies hostel project.
- L&T is the contractor for ESIC project and Northstone builders are the contractor for Ladies hostel project. So the contractor qualification and past performance will influence the stakeholders in the project.

So from the analysis it is suggested that, need more attention for the stakeholder management in Ladies hostel projects, Trivandrum for the successful implementation of the project.

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