

EXPLORING CRITICAL SUCCESS FACTOR OF BUILDING PROJECT CASE STUDY OF SURAT

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Abstract: Critical success factor (CSF) is a management term for an element that is necessary for a project to achieve its mission. A key area where satisfactory performance is required for the construction projects to achieve its goal. The objective of this research is to identify and priorities Critical Success Factor of building projects and to Check the feasibility and agreement of analyzed factors. From detailed literature review and expert interviews, total 48 success related factors that affect building construction projects. A questionnaire survey has been done to identify top 10 critical success factor by using Significance index method with 178 respondents from Surat city of Gujarat region. After data analysis, Adequacy of funding, Adequacy of plans and specification, safety, project planning, Quality control & assurance, technology transfer, technical approval authorities, Risk identification & allocation, project size found to be most significant factors. Ranking of success related factor was checked as per Spearman's rank correlation coefficient.

Keywords: Critical success factor, Construction management, Success Related factors, Significance index, Building projects

INTRODUCTION

The construction industry is dynamic in nature due to the increasing uncertainties in technology, budgets, and development processes. Nowadays, building projects are becoming much more complex and difficult. The project team is facing unprecedented changes. The study of project success and the critical success factors (CSFs) are considered to be a means to improve the effectiveness of project. However the concept of project success has remained ambiguously defined in the mind of the construction professionals. Various attempts were made by different researchers to determine CSFs in construction. A number of variables influencing project success have been proposed. Some variables are common to more than one list, but there is no general agreement on the variables.

This Paper examines the success factors and determines which success factor is more critical in a successful completion of a project. This will provide organizations involved in the construction industry with the foundation on which such strategies can be developed in the future. This Study focuses on the building construction projects in Surat.

JUSTIFICATION OF THE STUDY

The problem of failure of construction project is worldwide. This problem can be solved by identifying critical success factor for construction project. These factors (CSFs) are success key for taking decision & preparing strategies in the choice of suitable project. Project success is not only determined exclusively by the PM, monitoring, and control efforts. It is also determined by CSFs.

CRITICAL SUCCESS FACTOR

Using ideas from Daniel (1961), Rockart (1979) proposed the CSF method to help CEOs specify their own needs for information about issues that were critical to the organization so that systems could be developed to meet those needs. CSF are "the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organization" (Rockart 1979).

Rockart further defines these factors as areas where things must go right and as key areas where favorable results are absolutely necessary if management goals are to be reached. Rockart (1979) stated that "the critical success factors are areas of activity that should receive constant and careful attention from management".

Information about their status must be made available in a timely fashion at the appropriate levels. Thierauf (1982) stated that if the results in these areas are not adequate, the organization's efforts for the period will be less than desired. As the name implies, the purpose of any CSF approach is "the determination of the set of factors that the manager considers critical for his or her success. Once identified, these factors are stated as his or her objectives and the information required to monitor their performance is then identified" (Dadashzadeh 1989).

METHODOLOGY

A two-stage research methodology was adopted: First, detailed literature survey and interviews with site engineers, consultants, project managers in the Surat were conducted to identify factors affecting the success of building construction projects. Second, a questionnaire methodology was adopted to evaluate and rank these factors using significance index method. The questionnaire survey was conducted in Surat city of south Gujarat region with site engineers, consultants, architect and Owner.

SUCCESS RELATED FACTOR

There are various success related factors that affect the success of building construction projects. I carried out a comprehensive analysis of relevant available literature and interviews to classify and highlight the most important success related factors that affect the building construction projects (Table 1). The success related factors are then classified into four major group. The enlisted factors in Table 1 cover most of the success related issues

Table 1: Success related factor

Project Aspect	No.	Success Related Factor
A.Project Characteristics	A1	Good Governance
	A2	Political Support
	A3	Social Support
	A4	Technical Approval Authorities
	A5	Adequacy of Funding
	A6	Constructability
	A7	Project Size
	A8	Project Nature
	A9	Site Condition
	A10	Project Planning
	A11	Project Control
	A12	Multi Benefit Objective
	A13	Project Technical Feasibility
B.Contractual Arrangement	B1	Risk identification & Allocation
	B2	Contractual Motivation
	B3	Adequacy of plans & Specification
	B4	Formal Dispute Resolution Process
	B5	Procurement Process
	B6	Realistic cost & Time Estimates
C.Project participants	C1	Competency of project team member
	C2	PM commitment & involvement
	C3	Capability of project team member
	C4	Top management support
	C5	Project team turnover rate
	C6	Project team track record
	C7	Project team level of service
	C8	Project leader stability
	D1	Design communication

D.Interactive Process	D2	Construction Communication
	D3	Functional plan
	D4	Design complete at construction start
	D5	Constructability program
	D6	Level of modularization
	D7	Level of skilled labor required
	D8	Report updates
	D9	Budget updates
	D10	Schedule updates
	D11	Design control meetings
	D12	Construction control meetings
	D13	Site inspection
	D14	Work organization chart
	D15	Common goal
	D16	Motivational factor
	D17	Relationships
	D18	Quality control & assurance
	D19	Safety
	D20	Technology transfer
	D21	Weather condition

DATA ANALYSIS & RESULTS

The primary data collected from the first part of the questionnaire was analysed from the perspective of total 178 respondents comprise of Consultant, contractor, site engineer and Owner. The responses of them were taken for the analysis with the help of Significance index method. The top ten factors derived from result are shown below in table.

Table-2 Top 10 factors from SI method

CRITICAL SUCCESS FACTOR	SIGNIFICANCE INDEX	RANK
Adequacy of Funding	97.0786	1
Adequacy of plans & Specification	95.9550	2
Safety	94.2696	3
Project Planning	91.6853	4
Quality control & assurance	91.6853	5
Technology transfer	89.6629	6
Project Control	86.9662	7
Technical Approval Authorities	81.5730	8
Risk identification & Allocation	80.8988	9
Project Size	79.6629	10

In this research, ranking of criteria by various groups was checked as per Spearman's rank correlation coefficient. In order to test the relative agreement between the responses from different groups, the ranks of the calculated Significance index corresponding to success related factors of building project were analysed using the Spearman's rank correlation method. The values of Spearman's rank co-relation coefficient between various groups were between 0.90 to 0.98. This shows that there is very marginal difference in opinion of experts for ranking of criteria and they all exhibit strongly positive correlation.

CONCLUSION & RECOMMENDATIONS

Critical Success Factor (CSFs) becomes the most crucial strategic decision for success of construction of building projects. After analysis of Data top 10 critical success factors are Adequacy of funding, Adequacy of plans and specification, safety, project planning, Quality control & assurance, technology transfer, technical approval authorities, Risk identification & allocation, project size .Before starting of any building construction project these top 10 critical success factor should be consider for successful completion of construction project also these factor will help to make strategies and decision making.

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