

ANALYSIS OF CRITICAL SUCCESS FACTOR FOR SATISFACTORY COMPLETION OF BUILDING PROJECT AT MADHYA PRADESH

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CHAPTER-1

INTRODUCTION

1.1 GENERAL

The construction industry was accorded industrial concern status under the industrial development bank of India. Now the construction industry is the second largest industry, next to agriculture. With increasing thrust on developing infrastructure and attractive concession appealing private partnership in infrastructure projects, the Indian construction is already booming and is poised to see a bigger growth in future.

Here the term unique means that every project is different in some way from other projects and the term temporary means that every project has definite beginning and an end. A summary of unique features of construction project is given below:

Unique feature of construction industry

1. One-time activity- it must be performed correctly the first time every time
2. Complexity- it is multidisciplinary because it involves set of interrelated tasks to be done by specialists.
3. High cost and time for execution
4. High risk of failure
5. Difficulty in defining quality standards
6. Uniqueness of people relationship
7. Feedback mechanism
8. Lack of experience of client or owner.

1.2 SCOPE OF THE STUDY

The construction industry is one of the largest job creators in developing countries and is highly competitive. The high number of project failures suggests the existence of underlying critical success factors which have not been identified. This study provides foundation for understanding CSFs which will contribute to the field by integrating knowledge about it as well as identified the critical success factors that lead to project success in the construction industry. Identifying CSF's is important as it allows firms to focus their efforts on building their capabilities to meet the CSF's, or even allow firms to decide if they have the capability to build the requirements necessary to meet CSFs.

The project study will provide the most critical success factors on which to focus to reduce the potential failure in construction project. Finding in this study have high lightened which study criteria variables are considered for judging success of project, which critical success factors are considered crucial for successful project outcome.

By learning which critical success factors are perceived as most influential for achieving success in a residential construction projects, this study can lead to better performance within construction industries. Although the research study will carried out in India, it is anticipated that these results would be broadly applicable to other developing countries. Identifying critical success factors would assist in taking proactive measures for successful project management of construction project. The recommendations presented may be used as a guideline for successful execution of construction

projects. CSF is used to focus to reduce potential failure in future construction projects. This study will benefit academicians and professionals involved with building projects. The finding will also be useful for effective management for all type of construction projects, thus helping to raise the overall level of productivity in construction industry.

CHAPTER – 2

LITERATURE REVIEW

2.1 INTRODUCTION

Success is without doubt a large motivator in the outcome of any project, however, it could be argued as one of the most subjective turns of phrase that a client or project team will use. By knowing how to measure project success, it may also be possible to understand what factors can stop it from being achieved. Therefore, it is the aim of this study to gain an understanding of how project success is measured and in doing so clarify how critical success factors (CSF's) relating to project success are identified and managed. For this, a literature review with specific reference related to project success, project management success, critical success factors and management of project success factors was undertaken.

2.2 CSFs VIEW FROM MANAGEMENT GURUS

In CSFs the word "success" is very important because success is the ultimate goal and object of organization. There are various management gurus write about the critical success factors. Before defining CSFs we must clear out concept about Success, there is various definitions of success. Success has been the ultimate goal of every business activity.

In construction projects, the ultimate goal is to deliver a quality facility that meets, or exceeds, owner expectations, while eliminating as much stress as possible for the customer. To do so, there are many areas that are directly linked to the success of every project: Preconstruction Excellence, Scheduling, Safety, Change Management, Zero Defects and Project Closeout.

An assumption is made that, if a project is completed on time, within the agreed budget and set quality, referred to as the 'golden triangle', then the project is deemed successful. Evidence suggests that this is far from the truth. Hence, the construction industry needs to pay special attention to critical success factors, besides the 'golden triangle', if it is to survive the challenges posed by globalization. [2]

There are many definitions of success. Traditionally, it is defined as the degree to which goals and expectations are met. On the other hand, one of the definitions of failure is the inability of a firm to pay its obligations when they are due. In recent years, there has been an increase in the studies of critical success/failure factors especially in project management subject. The traditional approach to success in the construction industry is to focus on the ability to plan and execute projects. Traditionally, the success parameters for projects in this industry are cost, time and quality [1]

Success is more than just "on time, on budget and conformance to requirements". Success means (gaining) advantage, superiority, victory, accomplishment, achievement, added value. [3]

The term "critical success factors," in the context of projects and the management of projects, was first used by Rockart (1982) and he defined it as under:

CSFs are those few areas of activity in which favorable results are absolutely necessary for a particular manager to reach his or her own goals...those limited number of areas where "things must go right." [3]

Anton de wit defines project success as project is considered an overall success if the project meets the technical performance specification and/or mission to be performed, and if there is a high level of satisfaction concerning the project outcome among key people in the present organization, key people in the project team and key users or clientele of the project effort. [4]

Traditionally the project success criteria mainly concentrated on three parameters, time, cost and quality of projects describes as the "iron triangle" by Atkinson. [5]

Pinto and Slevin, and de Wit viewed success as being judged by the degree to which project objectives have been met. These views centered on success of project management delivery processes and also acknowledged that project success is also a matter of the project stakeholder’s perception of the value (in their terms) of what was delivered. [4, 6].

CHAPTER – 3

METHODOLOGY

ADOPTED

3.1. INTRODUCTION

To find out critical success factors for successful construction projects it is important to understand the meaning of critical success factors and how they relate to the organization’s strategic drivers and competitive environment.

CSFs are different for different organization. It cannot be specially determined for the groups since success can be defined quite differently by each individual, and for the goal at hand and hence it cannot predefine Therefore, in order to identify critical success factors, it is first necessary to understand the basic key definition and business definition of critical success factors.

This chapter provides a foundation for understanding and to be familiar with CSFs by presenting its concept including meaning, definitions and business definition of CSFs, its sources and dimensions and the relationship between goals and CSFs.

3.2 CONCEPT OF THE CRITICAL SUCCESS FACTORS FOR CONSTRUCTION PROJECTS

The construction industry is changing constantly with the developments of new business methods and technologies. Thus, construction companies have to keep focus on the activities which are critical to their project success and develop appropriate strategies to be more competitive in this industry and get success in their businesses. They are the

The dictionary of business define critical success factors as Limited number of factors, activities, characteristics or variables that have a direct and serious impact on the effectiveness, efficiency and

viability of an organization or project. Activities associated with CSF must be performed at the highest possible level of excellence to achieve the intended overall objectives.

Critical success factor is a business term for an element which is necessary for an organization or project to achieve its mission Business definition for critical success factor is that it is an element of organizational activity which is central to its future success and it may change over time, and may include items such as product quality, employee attitudes, manufacturing flexibility, and brand awareness. Critical success factors are normally identified in such areas as production processes, employee and organization skills, functions, techniques, and technologies. The identification and strengthening of such factors may be similar to identifying core competences, and is considered an essential element in achieving and maintaining competitive advantage.

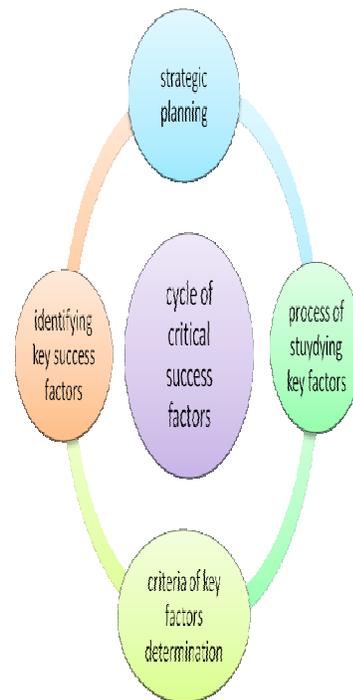


Figure 3.1: Showing Cycle of Critical Success Factors for construction projects.

3.3 IDENTIFICATION OF CRITICAL SUCCESS FACTORS FOR CONSTRUCTION PROJECT

For identifying the critical success factors, it is important to understand how they relate to the organization's strategic drivers and competitive environment.

CSFs have been used significantly to present or identify a few key factors that organizations should focus on to be successful. In actuality, its identification is a very iterative process. Steps to identify the CSFs for construction project are listed below:

1. Create project's mission and strategic goals.
2. For each strategic goal, ask "what area of project activity is essential to attain this goal?" the answers to the question are factors related to candidate.
3. Evaluate the list of candidate CSFs to find the absolute essential elements for achieving success which are nothing but Critical Success Factors.
4. Identify how to monitor and measure each of the CSFs.
5. Communicate CSFs along with the other important elements of project's strategy.
6. Keep monitoring and reevaluating CSFs to ensure project keep moving towards aims. These critical success factors are sometimes less tangible than measurable goals as it is useful to identify as specifically as possible how we can measure or monitor each one.

CHAPTER – 4

DATA COLLECTION FROM VARIOUS PROJECTS OF M.P.

4.1 INTRODUCTION

For understanding construction project performance and influence of various success factors on their projects I did survey on various residential construction projects. I choose questionnaire survey method for collecting data. Data is collected by taking personal interviews of Different level management people having different positions in company from small, medium as well as large

residential project. Then analysis of data collected is done for each company and critical success factors are found out.

The method used in this project consists of the following steps:

1. Development of a questionnaire to elicit information about critical success factors for residential construction projects as perceived by construction contracting organizations.
2. Conducting questionnaire survey through personal interviews.
3. Assessment of feedback from questionnaire survey to identify the major success factors for residential construction projects.

4.2 QUESTIONNAIRE DESIGN

A collectivity of data, in this project is done from each company rather than just collecting one individual's response from each company by taking their personal interviews.

In this project, questionnaire is chose as the method to collect data from different construction companies. There are several reasons for such a decision. From the first principle of research, opinion collected from questionnaire survey from a sample is reflective of the opinion of the population besides; using questionnaire survey allows a great efficiency in collecting data in a rather short period of time and gives high flexibility to do different kinds of analysis based on the data collected.

A questionnaire was designed for the survey for small, middle as well as large residential construction company. Questionnaire helps to retrieve the useful information from different people to be used in the analysis of the data. Different level management people having different positions in company are included in this survey for taking different opinion to the values of the company.

By taking personal interview, data collected according to questionnaire and rating is given to each factor. Rating is done according to importance of each project success factor by means of scoring

from 1 to 5. **Five point Likert** scale used to rate the factors on five-point scale, in which ‘1’ represented least critical factor and ‘5’ represented most critical factor.

Table No. 4.1:- Showing the ranking criteria.

Rating	Score
Most Critical	5
Critical	4
Moderately Critical	3
Less Critical	2
Least Critical	1

The questionnaire had three parts,

Part I consisted of requesting respondent’s personal information (e.g. Name, Age, Qualification, Designation, Experienced with that particular company and total experience in career)

Part II consisted of respondent’s organization/company details (e.g. Company/Organization Name (current job), Location (City), Established in (year), No. of employees in office (Approximate).

Part III consisted of Questionnaire which was prepared after extensive literature review. The literature review was done through books, research papers, internet, and leading construction management and engineering journals. Through literature review, all the critical factors were identified. A total of 6 possible factors that were felt to have an effect on the construction business success of companies were determined. These main factors are Project Related Factors, Project Manager Related Factors, Project Team Related Factors, Organization Related Factors, Environmental Related Factors Tools and Techniques Related Factors. Similarly, the sub-factors of these main factors were determined and they are 39.

The following questionnaire includes total main 6 factors and 39 sub factors. The meaning and definition of each main factors and its sub factors included in the questionnaire are as following:

4.2.1 PROJECT RELATED FACTORS

The project consists of a set of related activities that collectively produce an outcome to fulfill a specific objective.

All projects share four common characteristics

- They have goals
- They involve interrelated activities.
- They have a limited, finite duration, with beginnings and ends.
- They are unique

1. Project size and value: Assigning an Executive Sponsor, Project Manager, Consultants and other resources to work with the client project team depends on the size and complexity of the project.

2. Realistic schedule: It means make a project more realistic by defining and assigning resources to tasks i.e. not to create schedule in Microsoft project without assigning resources to task. By not assigning resource to tasks there is assumption that they will have all the necessary resources on hand whenever they will need them and that assumption is dangerously unrealistic because people may get sick, go on vacation, may leave the job, machinery may get failed etc.

3. Clear goals and objectives: Prior to the start of the project, specific Goals and Objectives for the project should be defined. These goals and objectives should be documented and shared with the project team. They should also be used as a guideline when decisions are made throughout the project.

4. Adequate funds and resources: Construction companies require regular funding to meet their working capital and capital expenditure requirements.

5. Uniqueness of project activities: Uniqueness of activities estimating the effort, time, and resources needed to complete project activities is one of the most challenging tasks that project managers must face. This is because of the inherent uncertainty associated with many activities.

6. Density of project network (independencies between activities): This is defined as the ratio of total number of precedence relationships to the total number of activities

7. Project life cycle: A collection of generally sequential project phases whose names and numbers are determined by the control needs of the organization or organizations involved in the project. A life cycle can be documented with a methodology.

DATA COLLECTION AND RATING OF SUCCESS FACTORS FOR RESIDENTIAL PROJECTS.

Company Size	Category	Large		Medium			Small	
Company Name		INDORE	BHOPAL	UJJAIN	GWALIOR	REWA	SATNA	JABALPUR
PROJECT RELEATED FACTORS	Project size and value	3.75	3.78	4	3.9	3.9	3.86	3.89
	Realistic schedule	3.5	3.44	3.86	3.6	3.8	3.86	3.78
	Clear goals and objectives	3.75	4.44	4.14	3.9	4.1	4.71	4.11
	Adequate funds and resources	4.38	3.89	4.29	4.7	4.5	4.29	4.22
	Uniqueness of project activities	4.13	4.33	4.14	3.9	4.4	4	4.67
	Density of project network(independencies between activities)	3	3.78	3.43	3.7	3.7	3.43	3.11
	Project life cycle	3.13	4.44	4.29	3.3	3.8	4	3.44
PROJECT MANAGER RELEATED FACTORS	Ability to delegate authority & tradeoff	3.75	3.33	3.29	3.8	4.2	3.14	3.56
	Relevant experience	3.63	3.89	4	4.6	4.8	4	3.89
	Effective leadership	4.25	4.33	4.71	4.4	4.3	4.57	4.67
	Motivation and goal orientation	3.88	4.67	4	3.7	4	4.71	4.33
	Ability to coordinate	3.88	3.78	3.86	3.8	3.9	4.14	4.11
	Effective conflict resolution	4	3.33	3.71	3.7	3.9	3.29	4.67
	Perception of role and responsibility	4	4.11	4.14	3.8	4	4.14	4
Use if most modern communication tool	4.25	4.22	3.71	4.6	4.5	4.43	4.22	

NOTE: - In above table '1' represented least critical factor and '5' represented most critical success factor.

DATA COLLECTION AND RATING OF SUCCESS FACTORS FOR RESIDENTIAL PROJECTS.

Company Size	Category	Large		Medium			Small	
Company Name		INDORE	BHOPAL	UJJAIN	GWALIOR	REWA	SATNA	JABALPUR
PROJECT TEAM RELATED FACTORS	Ability to handle unexpected crisis and deviations from plan	4.25	3.33	3.43	4.4	4.7	3.57	4.22
	Level of trust among team members	4	3.56	3.43	4	4	4.29	4.11
	Effective monitoring and feedback	3.75	3.44	3.43	3.7	3.6	4.57	3.89
	Team commitment	3.25	4	4.14	3.9	3.8	4.43	3.89
	Technical background of project team	3.13	4	4.14	3.3	3.2	4.86	3.89
	Communication	3.13	4.11	4	3.8	3.6	4.43	4
ORGANIZATION RELATED FACTORS	Top management support	4.38	4.56	4.29	4.6	4.7	4.57	4.56
	Monitoring committee	3.63	3.67	4	3.6	3.8	3.86	4
	Project organizational structure	3.5	3.44	3.86	3.2	3.5	3.71	3.56
	Functional managers support	4.13	3.56	4	3.7	4.2	4	4.11
	Degree of autonomy	3	3.33	3.43	3.8	3.1	4.29	3.44

NOTE: - In above table '1' represented least critical factor and '5' represented most critical success factor.

DATA COLLECTION AND RATING OF SUCCESS FACTORS FOR RESIDENTIAL PROJECTS.

Company Size	Category	Large		Medium			Small	
Company Name		INDORE	BHOPAL	UJJAIN	GWALIOR	REWA	SATNA	JABALPUR
ENVIRONMENT RELATED FACTORS	Political environment	2.75	2.89	3.29	4.1	2.9	3.43	2.56
	Economical	3.75	3.56	3.86	3.8	3.7	4.29	3.78
	Social	2.88	2.89	3.29	3.2	2.4	3.43	2.78
	Technological	3.5	4	3.57	3.5	3.7	4.57	3.78
	Competitors	3	3.33	3.14	2.6	2.5	3.14	2.89
	Sub-contractors	2.13	4	3.57	2.9	2.8	4	3.11
	Client knowledge and experience	3.75	3.89	4	3.3	3.4	3.71	3.89
TOOLS AND TECHNIQUES RELATED FACTORS	Proper planning/ scheduling	3.63	4.22	4.57	3.8	4.1	4.71	4
	Monitoring/control	3.88	4.22	4.57	3.8	3.6	4.71	4
	Cost estimation/budgeting	4.25	4.22	4.29	3.9	4	4.43	4.22
	Adherence to procedure	3.88	3.33	3.29	4	4.2	3.43	3.56
	Quality control	4.13	4.33	4.43	3.9	4.3	4.57	4.11
	Risk analysis	4	4.44	4.29	4.1	4.8	4.57	4.22

NOTE: - In above table '1' represented least critical factor and '5' represented most critical success factor.

CHAPTER – 5

COMPARISON & DISCUSSION

5.1 INTRODUCTION

The factors which are critical for achieving success for construction projects considered were identified based on a literature review. A total of 6 possible factors that were felt to have an effect on the construction business success of companies in residential construction are determined. These main factors are Project Related Factors, Project Manager Related Factors, Project Team Related Factors, Organization Related Factors, Environment Related Factors, Tools and Techniques Related Factors. Similarly, the sub-factors of these main factors were determined. Data collection is done from 7 different sizes residential construction projects related to these factors by taking personal interview from different managerial level from each company. The discussion of this overall project is done in short as follows:

1. 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. The purpose of this study is to systematically investigate the causes of project failure and how these can be prevented, managed, or controlled. Construction projects are frequently influenced by success factors which can help project parties reach their intended goals with greater efficiency. This study investigated the critical factors leading to construction company success. Any critical success factors such as factors related to project manager's performance, factors related to organization, factors related to project, factors related to external environment became apparent from this study. This study will be helpful to identify which factor influences the project success.
2. A building project is completed through a combination of many events and

interactions, planned or unplanned, over the life of a facility, with changing participants and processes in a constantly changing environment. Certain factors are more critical to a project's success than others. These factors are called critical project success factors. Critical success factors are important influences that contribute to project success. So, critical success factors are the set of circumstances, facts or influences which contribute to the project outcomes.

3. Literature review on critical success factors, it was found that all research work is done only on finding general critical success factors for construction industry rather than providing CSFs for a particular project. In Indian context, all work is done for finding critical success factors affecting schedule and quality performance. This study provides a frame structure for grouping CSFs for residential construction projects in MADHYA PRADESH in more systematic way and it demonstrated the interaction between the factors, how the project would be affected by these factors and whether the outcome is success or failure.
4. CSFs have been used significantly to present or identify a few key factors that organizations should focus on to be successful. These elements are vital for a strategy to be successful. Developing and communicating a set of CSFs can reduce the dependence on the perceived aims of the organization and it reflects the implicit, collective drivers of key managers and as a result are a more dependable and independent articulation of the organization's key performance areas.
5. Building projects are now much more complex and difficult and hence companies have to develop appropriate strategies to be more competitive in this industry and get success in their businesses. Hence industrial critical success factors are things that the organization must do to remain competitive.

A unique set of CSFs that particular construction project must achieve to maintain or increase their competitive positions, achieve their goals, and accomplish their missions. Failure to achieve these CSFs may render the organization unable to stay competitive in its industry and may ultimately result in its exit.

Executive-level managers must categorize a CSF as either internal or external as it is important because it can provide better insight for managers in setting goals and they should focus on the external environment in which their organizations live, compete, and thrive.

6. The method of SWOT analysis is to take the information from an environmental analysis and separate it into internal (strengths and weaknesses) and external issues (opportunities and threats). The analysis of strengths and weaknesses looks inwards on the organization, whereas the analysis of opportunities and threats looks outwards. SWOT analysis aims to identify the key internal and external factors seen as important to achieving an objective. The final step in the SWOT analysis is to identify quantitative measures for the critical success factors (CSFs). Hence SWOT analysis is a helpful technique for deciding success factors for a construction project and it acts as a guiding tool.
7. Project success criteria differ from person to person depending on their role in that project. The factors of importance range from meeting internal budgets to professional satisfaction and on to producing a job that will help the firm obtain repeat business or serve as a marketing tool for similar projects with different clients. An experienced designer serving as a project engineer may be concerned about meeting internal budget criteria as well as meeting the client's needs. A less-experienced designer working at a lower level of responsibility may consider the opportunity

to gain valuable design experience as success criteria and be less concerned about meeting the internal budget.

8. When average of all success factors related to project, project manager, team members, organization, environment and tools and techniques related are taken then following factors are found critical for achieving success for construction projects.
 - a) Uniqueness of project activities, Effective leadership and Motivation and goal orientation, Ability to handle unexpected crisis and deviations from plan and Level of trust among team members, Top management support, Client knowledge and experience, risk analysis are found most critical success factor for large companies.
 - b) Adequate funds and resources, Effective leadership, Ability to handle unexpected crisis and deviations from plan, Top management support, Economical, risk analysis are found most critical success factor for medium companies.
 - c) Clear goals and objectives and Uniqueness of project activities, Motivation and goal orientation, Technical background of project team, Top management support, Technological, risk analysis are found most critical success factor for small companies.
9. For finding critical success factors for residential construction projects, data collected from different size projects and from analysis of that data it is found that Effective conflict resolution related to project manager is critical success factor except for Indore Company having score 66.7 and Jabalpur with score 65.7 for this factor.

I would suggest that project manager of these two companies should utilize project management principles, understand the dynamics of conflict, and learn approaches to conflict resolution. Project managers will be able to establish an environment in which creativity and innovation is encouraged and project goals are accomplished. They should concentrate on building an atmosphere designed to reduce destructive conflict and deal with routine frictions and minor differences before they become unmanageable. The key to resolving conflict with a positive outcome includes looking for a win-win situation, cutting losses when necessary, formulating proactive conflict management strategies, using effective negotiation and communication, and appreciating cultural differences among project stakeholders.

10. Top-management support is on everyone's list of critical success factors (CSFs). In fact, it is usually at the very top of the list. Fail to get it, we are told, and the project stands little chance of succeeding. Top Management Support is when high level managers in a corporation seek to help lower-level employees to develop entrepreneurial behavior.

I suggest that top management should motivate Project managers and team members to finish a project successfully. Motivation comes in many forms, and one of them is to provide monetary or other rewards for successful projects. Basing a portion of persons, annual bonus on the overall success of a project is a method to encourage team members in a project.

11. From analysis of data collected from different sites, it is found that level of trust among team members is one of the critical success factor. Today, with business competition, customer expectations, new technology, and many other developments, build teamwork in organization is more critical than ever to. Team members need to be taught from the start that building trust

between the team members is key element critically important to achieve success.

In Bhopal Company and Rewa, it was found that there is lacking of trust among team members. So I would suggest that these two companies should focus first on building trust between their team members by getting team members to open up among the team and expose their weaknesses and fears to each other. Until everyone is willing to trust the other members of the team, progress towards team success will be limited and may affect success of that company.

12. Technology factor related to environmental is found critical success factor. Construction industry is very competitive and high risk business. To remain competitive in market, it is the need to use latest technology. The rapid development of technology requires quick reaction by businesses in order to survive in an emerging competitive environment and keep up with new trends and innovative services which other competitors might be offering.
13. Risk analysis factor related to tools and techniques is identified as most critical success factor for all sizes residential construction projects. Construction industry is highly risk prone, with complex and dynamic project environments creating an atmosphere of high uncertainty and risk. Risk identification and management are key contributors to a successful project. Project managers need to spend time doing risk planning and project tasks will need to include steps for risk mitigation and response.

The track record to cope with these risks has not been very good in construction industry. In light of this finding, it is imperative to educate these professionals about risk management, and thus a formal and informal system of risk management training needs to be developed. Graduate level education in construction project management should be used to provide formal education on the topic. Informal education could be provided

by career development programs and trainings, like risk management awareness programs. Such trainings can be organized by academic institutions or professional organizations. Providing such education will yield long term benefits and will be considered as a step in the right direction.

CHAPTER – 6

CONCLUSIONS

All over the world and most especially in the developing countries, the construction industry is characterized by repeated delays and cost overruns. In India, the industry has been bedeviled by a myriad of problems ranging from problems related to project team up to problems related to organization.

This cross sectional survey study aimed to determine the critical success factors for a construction industry. Data was collected by visiting the residential construction sites & structuring the interviews. Data was analyzed in terms of factors which are responsible for achieving project success and on the basis of this study the conclusion was elaborated as below :-

1. Construction project is a complex and dynamic process which involves identifying and conveying clients, actual needs and requirements accurately to the project team. Therefore, this study defined a set of conditions or factors that, when thoroughly and completely applied, ensures the successful completion of the construction project.
2. The study will contribute to the field by integrating knowledge about critical success factors. By learning which critical success factors are perceived as most influential, this study can lead to better performance within construction industries.
3. The results of the study will reveal that there are different sets of construction success factors for different objectives they are likely to improve success in building construction projects.
4. The set of critical success factors obtained in this study can serve as a checklist for practitioners when conducting briefing in their construction projects and also be considered as the foundation for further quantitative studies such as using factor analysis to determine the CSFs for briefing in general, as well as for specific types of projects such as hospitals or hotels.
5. Success criteria are the standards by which a project will be judged, while success factors are the facts that shape the result of projects. It is these that must be tracked to be able to answer the question of whether your project has delivered any benefits. Assessment on project success should be done by different stakeholder groups such as customers, managers, employees, stockholders, etc. Thus it was proposed that the criteria for assessing project success should reflect different stakeholders view.
6. Success criteria have changed considerably through time and moved from the classic iron triangle's view of time, cost and quality to a broader framework which includes benefits for the organization and user satisfaction. Success criteria are the standards by which the project will be judged to have been successful in the eyes of the stakeholders. For deciding success criteria for construction project, SWOT analysis is used to categorize internal and external success factors for projects.
7. Uniqueness of activities estimates the effort, time, and resources needed to complete project activities this is because of the inherent uncertainty associated with many activities is one of the critical success factor related to project. Hence special attention should be given on this factor for achieving success.
8. The project manager needs to be an effective and clear leadership with the power to create objectives and plans, to handle contracting issues and to approve changes in work. A successful PM has self- motivation

and goal orientation and skills to confront and challenge adversity. Thus Effective leadership and Motivation and goal orientation are critical success factors for a successful project.

9. Active and visible support from the management of the organization, often in the form of a champion for the Application or supporting the project team throughout the completion of a project is also critical success factor.

10. Construction project is a complex and dynamic process which involves identifying and conveying clients, actual needs and requirements accurately to the project team. Therefore, this study defined a set of conditions or factors that, when thoroughly and completely applied, ensures the successful completion of the construction project.

11. The Project Manager is the key person in the project. The most important element for achieving a successful construction project is that the project manager must clearly understand their role as project leader, clearly defining their extent of involvement, and the authority and control they exercise over personnel and he should motivate the project team to perform their duties, and also convince the project team to co-operate with each other.

12. There is no substitute for work experience in the field. Every member involved in Construction project including project manager, project team member, top management combine their educational background with real-world knowledge to oversee their teams and carry out projects. When at a construction site, they will be exposed to situations that they may not learn about in classrooms and being able to make decisions and react in a timely manner will help them excel.

13. With today's technology, computers and construction-specific software are constantly used to assist and expedite many different construction projects. Knowing how to correctly use software can significantly cut costs and help to keep the team and project – on schedule. In order to fully take advantage of software's capabilities, the project staff should be experienced and knowledgeable enough to use latest technologies in the market for being competitive in the market as well as achieving success.

Briefly it was concluded that for successful completion of a construction project various factors are responsible but among those some factors are more critical for achieving success than others. These critical success factors found in this project are top management support, risk analysis, technical background of project team members, technological factor, effective leadership and motivation and goal orientation of project manager.

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