

A Review On Critical Success Factors In Construction Project

S. Srimathi, S. Dinesh, R. Sethuraman

Department of Civil Engineering, Sri Ramakrishna Institute of Technology, Coimbatore. Tamil Nadu, India

ABSTRACT

Critical Success Factor (CSF) is necessary in construction industry to achieve its goal. Construction industry in India has shown a significant development in recent years and its effect on environment has also increased. Building projects are becoming more difficult and complex nowadays. The project team is facing unprecedented changes. Building maintenance play an important role compared to other factors in building operation. Also, construction research and development process has various factors which affect its success. The earlier approach to success in the construction industry places great emphasis on the ability to plan and implement projects. In the past, companies completing projects in a timely manner within a stipulated budget and meeting optimum quality have been considered successful companies. Minimizing an importance on management practices and organizational stability, companies with successful project completion have been considered as top-performers. In contrast, other industries insist management practices at a corporate level as an essential element of success. However, the future environment of the construction company will be different due to technological and economic advancements. The critical success factors are considered to improve effectiveness and efficiency of the project. The aim of this study is to identify the critical success factor, analyse them and point out which critical factors are important in stages of construction. Some of the factors are identified as crucial to success of the project.

Keywords: Critical Success Factor, Construction Project, Success, Research and Development.

I. INTRODUCTION

The concept of "success factors" was coined in 1961 by D. Ronald Daniel of McKinsey & Company . It was refined into critical success factors between 1979 and 1981 by John F. Rockart . In 1995, James A. Johnson and Michael Friesen applied it to many sector. Critical success factors ensure success for a manager or an organization managerial area that must be given special and continual attention to bring about high performance. It includes issues vital to an organization's current operating activities and to its future success. CSF's are a limited number of key variables or conditions that have an impact on how successfully and effectively an organization meet its mission of a program or project. Businesses must perform the activities associated with CSF at the highest possible level in order to achieve their intended objectives and competitive advantage. Identifying CSF can provide business teams insight into which tasks are truly important to direct the success of a program or project.

Nowadays, Success is the mandatory goal in every business activity to survive in the competitive environments like construction. The construction industries have to adopt new methods and techniques to achieve their goal. The traditional approach to success is to focus on planning and executing projects and success parameter for projects are cost, time and quality. Recently the projects are mainly focusing on CSF's which have a direct impact on their success. The important factors leading to success are implementing accounting system, company's management system, training, education and frequent review of financial statement. SMART is used to determine rating of CSF's and an extension of direct rating techniques. Project success criteria are dependant variable which measures success. Research and Development is identified as a key factor to develop the construction industry worldwide and to improve its effectiveness and efficiency. They are important to the construction industry to address the challenges and to be competitive. Identifying the factors that influence the success of R&D activities is important and would help the research team to concentrate on the most important and

influential factors and proper management of them to improve the performance of activities. The different phases of research and development namely initiation, conceptualisation, development and launch on the project management were evaluated. It helps to raise their international competitiveness through managerial developments and technical advancement.

II. LITERATURE REVIEW

Baishali Partra et.al (2014) conducted a study on performance of environmental critical factors in building construction project. Environmental protection must be considered as a significant aspect in any construction project. They have considered five building project across their state in which 31 buildings are under the project. The process includes preparation of checklist, weighing of different sub factors and rating them. The data's are collected by interactions with supervisors, engineers and workers associated with the project. With the help of average scores obtained by various buildings the scoring was made with the implementation of environmental sub factors and their respective weight.

Zainal Abidin Bin Akash et.al conducted a review of factors affecting the success of building maintenance projects. Building maintenance is much difficult and complex from other projects. Since, they are related to service works and help to interact with people. They identified 84 factors affecting success of project in building maintenance which are further grouped into 8 main groups. They are: Project participants, Project Management, Quality, Time, Health and Safety, Finance, Environment and Site and others. The project which is delivered on time, in good quality and managed within budget is considered as a successful project. As a result, Project management and Project participants play a vital role in assessing success of the project when compared to other factors.

Abdelnasar Omran et.al evaluated the critical success factor for construction projects in Libya. The geographical area selected includes where the construction process are high. The questionnaire survey was used as tool for collecting data. Initially the data were collected using close ended self-administered questionnaires. And then this study was employed survey method to obtain the perception of the respondents towards the critical success factor. The first

part of the questionnaire was designed for the purpose of eliciting information of the responder's background and years of worker's experience.

Jing Yang et.al made an in-depth study on exploring critical success factor for stakeholder management in construction projects. They identified critical success factor associated with the project, explored their rankings and underlying relationship by conducting interviews and questionnaire with professionals in construction industry. The questionnaire include these 15 critical factors were given to project managers and 183 completed questionnaire were received. The topmost ranked factors are further subdivided into 5 groups. This helps to identify high prioritised factor, evaluate performance of management and identify areas for improvement.

Hassan Sharaffudin and Abdulla AL-Mutairi (2015) conducted a review on critical success factor for the implementation of Built Operate Transfer (BOT) project in Kuwait. The study is made to explore the attitudes of concessionaires and government officials for implementing BOT projects. The results revealed that there is an agreement between concessionaries and government officials toward the significant factor for implementing BOT project. However, the concessionaires give priority to stable political situation and appropriate project identification whereas government officials give priority to public safety and training local staffs.

Pankaj P. Bangale (2016) analysed the critical success factor for high rise building. They identified and analysed the critical success factor affecting the local construction project. A questionnaire contain two parts Part A and Part B. Part A includes the general information and respondent of the company and Part B includes different factors which affecting the success of the project. The ranking method is used for analysing the factors. The questionnaire was given to respondents and asked them to rank the factors from one to five based on their severity. The top 5 critical success factor were identified with respect to response of respondent.

S.H.Zulkarnain et.al (2011) conducted a review on critical success factor in building maintenance management practise for university sector. Building maintenance plays an important role among other activities in building operation. Building maintenance

includes the inspection of defects and damages in building so as to determine the performance of the building. The quality and efficiency of maintenance depends mainly on the information about the building condition and maintenance activity. They reviewed the critical factors in building maintenance based on the four perspectives and are capable of reaching the maintenance goals for better living environment.

K.N. Jha and K.C. Iyer (2006) made an in-depth study on critical factors affecting the quality performance in construction project. There were 55 attributes which impact the quality performance in construction project was identified in preliminary survey. The statistical analysis is made by using questionnaires which resulted into two sets of attributes namely success and failure attributes and they are further grouped into success and failure factors. As a result, the contribution of critical success factor varies with current performance. With respect to manufacturing industry management play an important role to maintain the quality.

Albert P.C. Chan et.al (2008) analysed the factors affecting the success of construction project. They developed a conceptual framework of critical success factors and study of key performance indicator is also essential to know the relationship between critical success factor and key performance indicator. This study is used to select the project team members, develop the skills of project team members and much useful for forecast the level of project performance before it commences.

U. Kulathunga et.al (2010) made a research on implementing the critical success factor in construction research and development projects. Construction R&D process has series of problems which affect its success. If the problems arises means it indicates that the critical factors related to research and development are not properly addressed. If the critical factor is not known it leads to delay in implementation of project. A questionnaire survey was prepared to evaluate the critical factors and their consideration. They are derived with 4 phases namely initiation, conceptualizing, development and launch. On the whole there is a gap between importance and implementation of critical factors. They are not properly implemented when compared to importance addressed to them.

Ehsan Alvani et.al (2014) analysed a critical success factors on design build project. Wide recruitment of reputed and specialised contractors is necessary due to specialization and complication in construction industry for subdividing the entire project into small parts. The complication arises due to implementation of innovative modern projects. The time and cost can be minimized by using innovative techniques like design and build. In design and build concept the project must be contracted to an individual organisation and is responsible for design, procurement, engineering and commissioning of the project. This study is made to determine the supportive factors for implementing D&B technique in Karaj urban projects. The analysis is made through three stages, review of literatures is done in 1st stage, semi structured interview with experts is done in 2nd stage and finally questionnaire was prepared and distributed to managers. By using SPSS 21 software data obtained from the questionnaire was analysed.

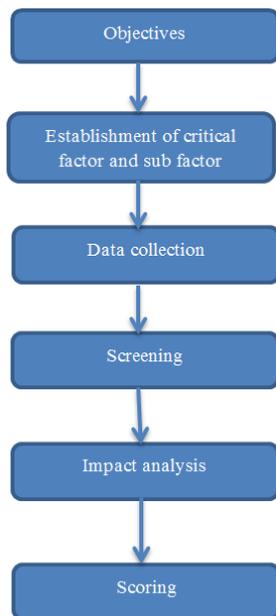
Chirag Patel et.al (2016) conducted a review on exploring the critical success factor of building project. CSF is key area necessary for a construction project to achieve its mission. The aim of this study is to identify, prioritize and to check the possibility and agreement of analysed critical factors of building project. Totally 48 success related factor that affect building construction project were collected from review and interview with experts. A questionnaire has been prepared and distributed to experts to rank the top 10 critical factors by significance method index. As per Spearman's rank correlation coefficient the ranking of the factors was cross checked.

Dubem .I. Ikediya (2014) analysed a project failure factor of infrastructure projects in Saudi Arabia. This review helps to develop frame work to identify and classify the reasons for failure of projects in Saudi construction practise. A quantitative questionnaire survey was made to collect responses from civil engineer, architects, quality surveyor and building engineers in Saudi who have years of experience in infrastructure project management. Based on survey, the top 3 rated critical failure factors are poor risk management, budget overrun and poor communication. As a result, the project risk management procedures should be re-designed to avoid further unexpected risk.

C.S. Chenga et.al analysed a critical factors for sustainable social project. Sustainable development is a

trending process in most developing countries. This study entails two processes historical process involves collection of data from various literature reviews. The survey process includes personal interview with the respondents. Thorough study on social and economic landscape is essential to ensure the sustainability. With respect to these researches 10 factors are identified and are required to analyse stress, weakness, opportunity and threats.

III. METHODOLOGY



IV. CONCLUSION

Based on the complete research, the results of critical success factor obtained are discussed below

- By using renewable resources and adopting recycling process can significantly reduce usage of renewable energy resources.
- The success of building maintenance project can be analysed using 84 factors in 8 groups. For further research, investigation can be made using questionnaire survey and structural equation modelling.
- The CSF's helps to achieve the organisational goal as early as possible by removing barriers in competitive environment.
- Favourable project management is considered as an important factor to both concessionaire and government officials while implementing BOT projects.

- Every single activity must be directed towards achieving overall success in project by applying critical factors effectively.
- The process of rehabilitation is also a critical success factor and helps to saves money as well as increases the economic momentum.
- Financial supply of project is considered as the important factor in urban infrastructure projects.

It can be briefly concluded that various factors are responsible for successful completion of the project. Among those various factors we have to identify and screen the at most critical factor and given special care. We can achieve greater success in the project by thorough understanding between critical factors relationship and based on this understanding we have to make necessary changes in working strategy of a company.

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