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Analysis of Relationship among Critical Factors in the Construction Projects

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Abstract

The critical factors are considered to be a mean for improving the effectiveness of project. Performance can be assured by identifying and eliminating the factors that cause poor project outcomes. Thus, project managers need better understanding of critical success/failure factors and how to measure them. The purpose of this study is to systematically investigate the causes of project failure and how these can be prevented, managed, or controlled. Constructions projects are frequently influenced by success factors' which can help project parties reach their intended goals with greater efficiency. The aim of this paper is to investigate the critical factors leading to construction company success. Many 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.

Key words : *Critical Factors; Project Management.*

1. INTRODUCTION

Collins (1996) describes quality as the world's oldest documented profession. Quality professionals use a number of definitions to define project quality. Quality in its simplest form can be defined as: 'meeting the customer's expectations,' or 'compliance with customer's specification.' No matter what definition we follow for quality, it becomes very complex when we try to put it into actual practice. For a user, quality is nothing but satisfaction with the appearance, performances, and reliability of the project for a given price range.

In the realm of project management, the schedule, cost and quality achievement is also referred to as the iron triangle. Out of these three aspects, it is the achievement of schedule and cost compliances that the project management is attending to most of the time. This results in a half-hearted attempt to achieve quality at project sites. In order to achieve the schedule and cost objectives, project quality is sometimes also overlooked. Although many studies have recognized the importance of maintaining and doing quality projects these aspects are sacrificed in lieu of achieving short-term objectives, such as handing over of some critical structures, or only part of the structures falling in the critical path etc. Barnes (1987) emphasizes that the control of the performance of the installation, building or engineering structure should be managed in the same way as the management of time and cost. In a recent survey conducted among Indian construction professionals, it has also been found that, out of the five commonly used project performance criteria – compliances to schedule, cost, quality, no-dispute and safety – the quality compliance has come second next to schedule compliance (Jha, 2004).

2. LITERATURE REVIEW

In order to address quality related issues, a number of studies have been conducted in different

countries. Chua et al. (1999) have developed a hierarchical model for construction project success for different project objectives. For quality objectives they find that it is influenced by four main project aspects, namely, project characteristics, contractual arrangements, project participants, and interactive processes. Arditi & Gunaydin (1998) find that management commitment to continuous quality improvement, management leadership in promoting high process quality; quality training of all personnel; efficient teamwork to promote quality issues at the corporate level; and effective cooperation between parties taking part in the project are generic factors that affect process quality. Pheng (2004), through case studies, has shown that total quality management (TQM) – a successful management philosophy in the manufacturing and service industry – could be replicated in the construction industry with similar benefits. The benefits may be in terms of reduction in quality costs, and better employee job satisfaction. Bubshait & Al-Atiq (1999) observe that a contractor's quality assurance system, which ensures consistent quality, is essential in preventing problems and the reoccurrence of problems. His survey also points to the lack of documentation of a quality system for the majority of the contractors. Abdel-Razek (1998) has studied the quality improvement methodology and finds that 'improvement of employee satisfaction' is the most important area in contributing quality improvement in Egypt. Ledbetter (1994) has developed a quality performance management system (QPMS) that tracks labor costs in three main categories: normal work, quality management work (prevention and appraisal), and rework (deviation correction). He has assumed the cost of quality to be the sum total of quality management and rework. He finds QPMS to be useful in promoting awareness and improving the understanding of the quality process in addition to facilitating communication, reducing the overall cost of quality, and directing the management to the areas where quality improvements could be made. Love & Smith (2003) have proposed a generic framework for benchmarking rework at the interfaces of a project's life cycle. As can be seen from the above discussion, substantial research has been carried out that addresses the quality issues at international levels. Under Indian conditions, not many systematic studies have been undertaken for construction projects. Identification of Success and Failure Attributes An initial list of parameters/factors was prepared from the li1

3. CRITICAL SUCCESS FACTORS

Cooke-Davies (2002) eliminates a conceptual difference between 'success criteria' and 'success factors'. He stresses that success criteria belong to specific measurement which needs to be formulated in order to conclude whether project succeeds or fails. However, success factors are more about particular levers that can be used by project manager to increase a probability of successful outcome of a project. Project success factors are the elements of a project that can be influenced to increase the likelihood of success; these are independent variable that makes success more likely. Project success criteria are the measures by which judge the successful outcome of a project; these are dependent variable which measure project success. Success factors are those inputs to the management system that lead directly or indirectly to the success of the project or business. Project success factors are not universal for all projects since different projects and different people prioritize different sets of success factors. Project success criteria also vary from project to project and what is acceptable in one project without impact on perceived success is deemed an abject failure in another project. For instance, taking a week delay in an IT project to ensure the objectives are achieved may have a minor impact for this project in terms of success. However, this delay might be a disaster in building a function centre, which is supposed to be undertaken before its opening day. The project implementation process is complex. It usually involves attention to a broad Variety of human, budgetary, and technical variables. From a Project Management perspective, critical success factors (CSFs) are characteristics, conditions, or variables that can have a significant impact on the success of the project when properly sustained, maintained, or managed. There is a very close link between the type and scope of projects and respective

Critical Success Factors (CSF). The most important CSFs within the Project life cycle are as follows :

- Project Mission-Initial clearly defined goals and general directions. The preparation of a detailed project scope statement is critical to project success.
- Top Management Support- Willingness of top management to provide the necessary resources and authority/ power for project success. The flexible and adequate access to organizational resources is considered as a core precondition for effectively executing the project activities. This can hardly be available without definite and timely reaction and support from the top management of the project-executing organization.
- Competence of Project Manager- The competence of project manager has been identified as the most important factor for the successful realization of their project. The technical and administrative skills of the project manager, as well as his/her commitment and competence, become the most critical component during the project life cycle.
- Project Schedule/Plan- A detailed specification of the individual action steps required for project implementation.
- Client consultation - Communication, consultation, and active listening to all impacted parties.
- Competence of Project Team Members- Recruitment, selection and training of the necessary personnel for the project team. The knowledge, skills, personal aims, and personal traits should be considered not only as a vital component of the overall organizational culture but also as an essential factor of the integrity and multi-functionality of the project team.
- Quality of Suppliers and Subcontractors -In the contemporary world, it is rarely possible for one and the same organization to have capabilities and competencies in every aspect of the work required. Competence of project partnership is vital for success of project.
- Technical tasks- Availability of the required technology and expertise to accomplish the specific technical action steps.
- Client Acceptance- The act of "selling" the final project to its ultimate intended users.
- Monitoring and Feedback- Timely provision of comprehensive control information at each stage in the implementation process.

A careful study of previous literature suggests that critical success factors can be grouped under four main categories. These include: (1) Project Management Factors; (2) Procurement-related Factors; (3) Design team-related Factors; (4) Project Manager-related Factors.

(a) Project Management Factors : Project management action is a key for project success. Competent Project Managers can use management tools to plan and execute their construction projects to maximize the project's chances of success. The variables in project management include adequate communication; control mechanisms; feedback capabilities; troubleshooting; coordination effectiveness; decision making effectiveness; monitoring; project organization structure; plan and schedule followed, and related previous management experience. A number of attributes will affect this factor, including the communication system, control mechanism, feedback capabilities, planning effort, organization structure, safety and quality assurance program, control of subcontractors' works, and finally the overall managerial actions.

(b) Procurement-related Factors : Two attributes are used to measure this factor; they are procurement method (selection of the organization for the design and construction of the project) and tendering method (procedures adopted for the selection of the project team and in particular the main contractor).

(c) Design team-related Factors : Designers play a vital role as their work involves from inception

to completion on a project. Design team-related factors consist of design team experience, project design complexity, and mistakes/delays in producing design documents.

(d) Project Manager-related Factors: The project manager is another key stakeholder in a construction project and his competence is a critical factor affecting project planning, scheduling, and communication. Variables under this factor consist of the skills and characteristics of project managers, their commitment, competence, experience, and authority (Chua et al. 1999). A construction project requires team spirit; therefore team building is important among different parties. Team effort by all parties to a contract—owner, architect, construction manager, contractor, and subcontractors—is a crucial ingredient for the successful completion of a project.

4. CONCLUSION

The methodological approach used in this paper suggests that in order to promote successful R&D projects some fundamental areas should be looked at: processes, human resources, organization, markets, technology transfer, and client involvement. Once these critical factors were rigorously identified, it became clear that it is feasible to design actions to enhance impacts from positive factors and to attenuate those springing from negative ones. Although this paper is a contribution to the understanding of technology management within Public Research Centers, it also suggests a methodology to identify critical factors for the success of any R&D project. Besides the provision of variables explaining relationships between projects and their success or failure, our results can help top managers and decision makers to improve the performance of R&D projects, for the sake of the very centers which are committed to carry them out.

REFERENCES

1. Arslan, G., Kivrak S., "Critical Factors to company success in the construction industry", International Journal of Human and Social Sciences, 4(8), 561-564, 2009.
2. Chan, A. P.C., Ho, D.C.K. and Tam, C.M., "Design and Build project success factors; Multivariate analysis", Journal of Construction Engineering Management, 127(2), 93-100, 2001.
3. Cooke-Davies, T., "The real success factors on projects", International Journal of Project Management, vol. 20, issue 3, p. 185-190, 2002.
4. Fortune, J., White, D., "Framing of project critical success factors by a systems model", International Journal of Project Management, 24, 53–65, 2006.
5. Iyer, K. C.; Jha, K. N., "Factors affecting cost performance: evidence from Indian construction projects", International Journal of Project Management, 23: 283–295, 2005.
6. Jha, K. N. (2004) Factors for the success of a construction project: an empirical study. Doctoral thesis, Indian Institute of Technology, Delhi, India.
7. K. N. Jha & K. C. Iyer Critical Factors Affecting Quality Performance in Construction Projects, Vol. 17, No. 9, 1155 –1170, November 2006.
8. Rubin, I. and Seeling, W., "Experience as a factor in the selection and performance of project managers", .IEEE Trans. Eng. Management, 14 (3) 131–134, 1967.
9. Schultz, R. L., Slevin, D. P., and Pinto, J. K., "Strategy and tactics in a process model of project implementation", Interfaces, v.17, May-June, pp.34-46, 1987.
10. Sumesh Sudheer Babu1 & Dr.Sudhakar, "Critical Success Factors Influencing Performance of Construction Projects", International Journal of Innovative Research in Science, Engineering and Technology, 2015.
11. Terry Cooke-Davies, "The real success factors in projects," International Journal of Project Management, Vol. 20, No. 3, pp 185-190. 2002.
12. Walid Belassi and Oya Lcmeli Tukel, "A New Framework for determining Critical Success Factors in Projects", International Journal of Project Management, vol 14, no.3, 1996.