Project Management For Construction Projects

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Abstract- *The objective of this research is to study the project management of construction projects in Kerala. The construction sector has a great importance not only to the economical and social life, but also to the needs and inspiration of the local culture. This study stressed on many aspects on the subject of project management in terms of problems and impediments, and suggested solutions through this research, in order to motivate and develop the management of the projects. Mainly qualitative method and partly quantitative method to complete the research work in the study. This research planned to met with a number of specialists in this area and conducted 15 interviews with project managers in different parts of the Kerala in both its first, second and third categories in the structural area. After examining the text of the interviews within a set of questions that were posed to project managers in construction companies, the analysis showed that there are several factors and many problems faced by the management of construction projects in the Kerala. The most important problems were the poor planning, poor project management and poor communication between all parties to reach optimal solutions, in addition to gaps and points that are clarified in the context of the search. We should develop a framework to arrange and organize the management of construction projects, to be an effective tool to help project managers in setting priorities and show places of success and failure. Moreover, it shows the management process as an important part of the success of any engineering project by several factors*

Keywords- Construction management, project management, manager criteria, construction project

I. INTRODUCTION

The future of Kerala is what they are building today, and the Kerala goals along with other means and resources will allow the nation to determine the future of the country. Kerala has suffered greatly in recent decades as a result of occupation, closure and lack of resources. That and other issues have caused stagnation in many aspects of civilization and progress for the Kerala society. Despite this, commercial and residential construction work in Kerala is increasing rapidly to meet the growing needs of the population and to keep up with global development. For Kerala to progress in terms of construction, project construction must be studied carefully and prepared well in order to get the best results, and to help in moving in the right direction to establish the future goals. These conditions led me to study how project are managed in Kerala, and what are the major elements and problems affecting the construction industry, and also urged me to suggest a framework that copes with the development and the growing concerns regarding the construction industry within Kerala compared to other states, in order to help managers to plan and implement construction projects in a proper way that will lead to better results and less risks, and to achieve success with good quality.

II. LITERATURE REVIEW

Construction is a vital sector contributing significantly to the economics of all states. The construction industry must be dynamic to be able to respond to the changes that the world is constantly facing, as well as the social, economic, and technological challenges affecting all industries. The opportunities and problems in construction are different from those of the last century. The demands of clients, companies and employees differ from time to time, and thus the vision of the construction industry is always developing; to keep up, management must change too. This research will address the growing need to develop project management in Kerala, which in turn will help in shaping the goals of the future.

Project management is the science and the art of planning, organizing, and managing resources to bring the best achievement of specific project goals and objectives. Project management is a long procedure needing the involvement of many persons and an efficient plan; without these, a project can end in chaos.The construction industry through the past years has suffered from criticism, as it always adopt the conservative way in work, and lack innovation, new ideas, and creative methods in implementing the construction projects are needed to be implemented in the new ways of technology. The start point and the end point of each phase of the project life cycle is crucial, as they are the key project decision point, between the various phases are decision points, at which an explicit decision is made concerning whether the next phase

should be undertaken, and whether the previous stage is finalized in a proper way as planned from the beginning.

III. RESEARCH METHODOLOGY

This chapter shows an overview of the methodological approach used for studying project management in Kerala, through studying the current situation in contracting companies, and through studying project management in similar states; this is empowered by the literature review which will helps in selecting the way to conduct the analysis. This thesis also provides a wide view of the interviews, the targeted population, the samples used and the analysis and evaluation of the survey followed by the framework designed that will help in organizing the management of construction projects, and the conclusions of the interviews and of this study.

FIRST STAGE:

Includes a comprehensive literature review, which supports the survey methodology, identified the research problem, and identified aims and goals. In this phase the following activities are included:

1. Creation of a clear description of the problem.
2. Identification of the problem.
3. Development of the research methodology.
4. Study of problems in other states with similar conditions in order to make comparison.

SECOND STAGE:

This stage included data collection, using interviews with contractors working in construction projects through Kerala. Taking into account that existing data on construction management in Kerala is very limited, a great deal of the research will be built according to the field investigation and local survey.

This phase includes the following activities:

- Clear identification of Kerala as the core study.
- Collection of data.
- Identification of local barriers and constraints of the survey.
- Making modifications according to the pilot study.

THIRD STAGE:

In this phase analysis is made (thematic analysis) using data from the interviews, knowledge from literature review and the information about Kerala and the construction work in Kerala. This phase will include the following activities:

- Extensive analysis of the information and data available.
- Conclusion and recommendations from the analysis.
- Suggestions for further studies.

IV. ANALYSIS AND RESULTS

A survey was done in Kerala (India) by interviewing project managers. The interviews were conducted mainly in Thiruvananthapuram, Kollam, Ernakulam, Pathanamthitta and Alappuzha with India contractors who work in first, second and third class companies, categories.Some questions were discussed, in which respondents could express themselves freely. Each question was analyzed and some answers were quoted precisely from the respondents in order to express their point of view. This is the main attraction of free-text analysis, to let respondents express themselves without constraints.

OBSTACLES AND BARRIERS

The interview stage was difficult for many reasons:

- Lack of cooperation among contractors was a major symptom which was noticed clearly, and sparing time for such interview was not easy for them.
- Many of the contractors did not make the scheduled interview but delegated it to the company engineer. Others, although a minority, refused to be interviewed, or said they were not interested.
- Many contractors just gave simple answers to questions, rather than discussing broader issues of conditions in their companies.
- A lack of studies concerning project management in the India made investigating this field harder than expected, as there are no local references.

INITIATION PHASE:

This is the preparation stage for a project. At this time, a company decides which elements should be considered before participating in a bid.

Main elements to choose a bid:

About 29 percent of contractors, taking into consideration the overlap between elements and when more than one element was picked. Overall, it indicates that kerala contractors' decisions tend to be cost oriented. For first degree

companies the most important consideration was the availability of resources. When resources were determined to be available, the next consideration related to corporate cash flow. Availability of resources combined with cash-flow calculations are for all Indian contractors.

Experience:

To understand the experience of the companies and the number of projects undertaken. Companieswere grouped into those who had completed between 10-50 projects, 50-100 projects and more than 100 projects. The majority of the companies had done between 10 and 50 projects. This indicates that many India projects are by companies that were established not so long ago.

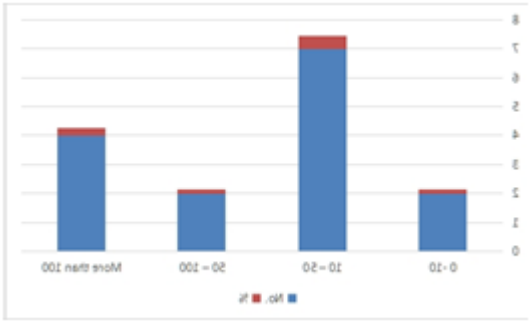

Figure 4.3: Number of projects achieved compared with the classification of the company

Figure 4.3shows that the more projects undertaken, the higher the company will be classified. Grade A companies will gain more experience and will be stronger in the market, also this is a part of its classification in PWD which enables the company to participate in larger scale project.

PLANNING PHASE:

Preparing a plan is one important step in managing a project. Good planning takes time, effort and costs more, but the results can reduce risks, reduce waste and fulfill the client's requirements. Planning involves

- Risk assessment, allocation and management throughout the project
- Performance measurement and reporting.
- Use of control mechanisms for quality, cost, time and management changes.

Good planning helps to deliver better design; reduces waste and trains the project team to anticipate and deal better with risks. Good planning involves integrating design, construction and maintenance of the facility.

Suppliers & construction materials:

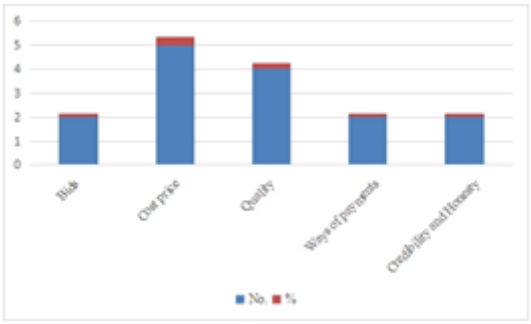

Figure 4.4: Basis to deal with suppliers

In dealing with suppliers, the most important factor was cost, followed by means of payment, (whether cash or installment payments). A third factor considered is the credibility and honesty of the supplier. Quality as ranked as fourth most important; when asked why, many managers answered that they just followed and stuck to the specifications in the bid. Other elements mentioned were including tax bills when purchasing, being on time and schedule as a supplier.

EXECUTION PHASE

Using software:

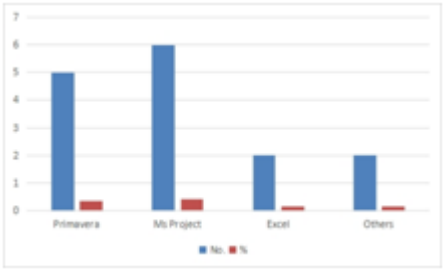

Figure 4.5: Software used by construction companies

Software helps to manage projects, but does not manage them. All project mangers agreed that computer software is useful in project management. The most used are Microsoft Project (MS Project) followed by Primavera, and then other programs. One manager who used Primavera was asked if his project was progressing according to plan. He answered: "*this plan was prepared at the beginning of the project and now it doesn't work because so many things since then changed*"

Unfortunately, many project managers talked about using computer software in preparing plans, but admitted that they did not use the software that much, or did not make the best use of it.

Cash Flow:

All mangers agreed in interviews that there is no commitment by the funding parties to pay their bills on time, especially in local government projects, which suffer from bureaucratic procedures and lack of commitment by the employees. Therefore, government projects are seen as difficult as, and less desirable than private sector jobs. One project manager said: *"I will not work if all the projects are for the government only".*

One manager said: "*There is a strategy in our company which is to provide 25 percent from the value of the tender, to comply the payments for the suppliers"*

Main reasons for failure of construction projects:

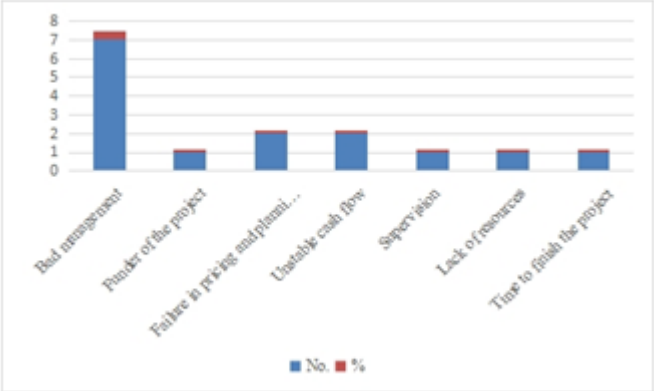

Figure 4.6: Main reasons for project failure

As seen in the figure 4.6, with the overlapping and the selection of multiple items, 43 percent of the contractors agreed that bad management is one key reason for the failure of a project. Lack of experience is next, at 17 percent, followed by failure in pricing at 13 percent; other reasons were also
given. Project managers agreed on these reasons for project failure:

- Lack of a good feasibility study at the beginning of the project (leading to economical problems and social failure).
- Lack of commitment by the funding party to paying bills on time (cash problem issues).
- Financial weakness of the contractor in conducting such projects (bad management).
- Bad or weak supervision (inexperienced engineers).

It should be clearly understood that if the project fails then the failure affects the contractor, owner, designer and supervisor. The failure is for all of them.

Project success:

All project managers considered their project successful, but some of their projects faced difficulties, and in a survey managers said:

- "*The most important sign in succeeding in projects is completing it on time and within pre-defined cost".*
- *Conviction and self-satisfaction".*

Most of the project managers agreed that their projects are successful, and they connected success with time and cost mainly, regardless of the quality or the owner satisfaction.

The most important indicator of project failure is time-related, as mentioned is 28 which is 39 percent in the answers and in the above chart. All mangers stressed the importance of time, many of their projects finished behind schedule.

Qualifications of project manager:

As mentioned in the figure 4.12, 35 percent of the project managers put experience as the first qualification for the project manager, rather than other qualifications.

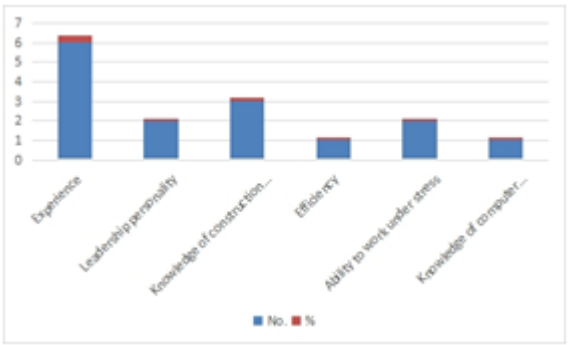

Figure 4.12: Qualifications of a project manager

V. CONCLUSION

The construction industry is a development tool for achieving goals in modern society. As the world becomes more complex, and remains hazardous and risky, so do the processes and management of the construction industry. The art of project management is a mixture of administration, planning, experience, analysis, people skills, leadership and a little bit of luck. The construction industry in India is also under pressure to meet future demands and changes, not merely because of the political instability, but because it would be difficult to obtain sustainable development in this challenging world if these changes do not occur. In order to

meet future demands and foster successful projects, it is hoped that this study may contribute to the development of India by helping define some of the difficulties facing project management.

The main aim of this research was to study the situation of project management in India and to identify the problems in managing construction projects. This research has suggested a framework to organize the managing of construction project, and to achieve the long and short- term goals, it provides a foundation for a successful management construction. This research is made to help and develop the work of project managers to produce better work that is well-defined between the strategic and operational components.

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