

## Dispute Management Between Project Management Consultant And Civil Contractor

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**Abstract:** To manage the various kinds of construction projects, it requires how to deal with organizations. The Project management consultants has characteristic of Knowledge, Performance & Inter-personal Skills. The purpose of this study is to analyze or breakdown various services & role of Project Management Consultants (PMC) and to study the problems faced by PMC during execution the project. Dispute management is an inevitable process in construction project management to reach the desired results successfully. The frequency of dispute is unavoidable due to the nature of the contracts, their complexity, the number of parties involved, the risk and the pressure of time and cost constraint, improper preparation of the contract documents and the realisation of the work. The significantly increasing number of construction disputes indicates the need for the implementation of an effective construction dispute management. This thesis looks into dispute issues in construction projects. This study adopts a comparative approach on dispute management. The problems identified from this thesis is used to determine the factors causing as well as enhancing dispute between project management consultants and civil contractors.

**Keywords:** Dispute, Construction, Project Management

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### I. Introduction

Construction projects involve several factors influential both internal (e.g. consultant, client and contractor) as well as external (stakeholders who do not partake in the construction process such as users). Research has shown, risks is inherent in construction projects and are more when compared with projects in other industries. However, it must be noted that unmanaged risk results into conflicts, exacerbate the fragmented nature of the construction industry.

During the execution of a project, several issues arise that cannot be resolved among project participants. Such issues typically involve contractor requesting for either time extension or reimbursement of an additional cost, or sometimes both. Such requests by the contractor are referred to as claim. The owner accedes to the claim of contractor and grants him extension of time or reimbursement of additional cost, or both, the issue is sorted out. If the owner does not agree to the claim put up by contractor and there are differences in the interpretations, the issue takes the form of a dispute.

The Project Management Consultancy has a wide variety of roles to play during the construction process. Construction project gives benefits to the customer / client in terms of satisfaction and it consists of business development, profit, resources utilization, etc. Because of this consultancy plays a multifaceted part in the construction project, and is usually involved in the project from the project's inception to its completion.

It is important to fully understand Project Management Consultancy and authority. Doing so ensures that the Consultancy can be fully maximized on each construction project. Efficiency in Management is needed to gain a higher level in competitiveness. Every construction project is different i.e. unique, every construction project demands the full attention, professionalism and energy of its project team, every construction project depends upon an experienced leader to make it happen. The construction industry in India has grown very fast with the construction of new projects. Due to the rapid expansion in the construction industry, the services provided by the Consultancy need to be improved in terms of performance and quality of work to meet the construction project goals and objective and also the clients satisfaction.

Dispute is divergence of interests, objectives or priorities between individuals, groups, or organisations; or non-conformance to requirement of a task, activity or process. However, a common definition that emerges from the definitions found in literature shows that dispute is any disagreements which arise amongst individual due to non-convergence of ideas, interest and concerns. It is evident that disputes in construction projects arise due to differences in interest, concerns, training, and perception of individuals.

## **II. Literature Review**

Suzanne Wilkinson (2001), finds that the fundamental problems faced were relationship-based, mostly between the project management consultant and the contractors.

According to Shweta Manoj Raut (2011) reported that the PMC service provided is though adequate, improvements and level of service to be provided in future is to be enhanced.

According to Atul R Nikumbh and Dr. S.S. Pimplikar (2014) - Various success characteristic in performance of project are found through correlation analysis.

A study by Waled Gaber Mohammed Hakami et al (2014) on Sudanese construction projects, states that project management consultants indeed have an important role to play so as avoid disputes between clients and contractors

According to Ashish D. Joshi et al (2015) in their Study analyzed most critical delay factors and reported over budgeting and material wastage are to be addressed appropriately for effective cost control

According to Anurag, Sarda and Snehal Dewalkar (2016) New Techniques to implement, project management knowledge and skills in construction industry by a project manager is essential.

A study by Divyanshu Rathore et al (2016) states that various roles of a PMC in pre-tendering, tendering and post-tendering stage of a road infrastructure project starting from Client's requirement, conceptual alternatives, surveys and investigations, estimation to operation and closing stage are indeed the key areas to be concentrated so that no disputes arise later.

K Aneesha et al (2017) in their study have reported that top management support, competent project team, are some of the factors

Effective engagement of project managers is lacking and if their services are utilized fully then quality delivery of products is achieved (N A Haron et al 2017).

In a study Ogunde Ayodeji et al (2017), found the parameters for measuring the performance of project managers on any construction project are time, cost, quality, health and safety, meeting requirements of the owners and satisfaction of stakeholders. It is concluded that there is need to engage the services of project managers in projects for better efficiencies and quality delivery of projects.

According to Mr. Prashant D. Kumbhar et al (2017), studied the role of project management consultancy in construction. In this study we found the need for project management consultancy, role of project management consultancy and also some of the problems faced by these consultancies for successful implementation of the project

## **III. Need For Study**

Dispute is essentially an outcome of loss or damage occurred. In most cases for dispute, both the consultant and contractor really start thinking about the matter after the dispute arises. They are seldom prepared in advance. It is essential for the contractor and client to estimate the exact value of loss or damage incurred due to the increased cost and extension of time. Moreover it is necessary to view the current scenario in the construction industry for the level of practice used in the dispute process of the clients consultants and the contractor and what should be done to manage dispute if they arise.

## **Objective**

The main objective of study is.

- To identify the disputes between PMC and civil contractor and to study the various services provided for project management through discussions from experts and real time case studies.
- To identify the factors enhancing and obstacles for Project Management Consultants during project implementation of real time infrastructure and real estate projects.

## **IV. Scope**

- This study is to be carried out based on the literature review and data collected by the given questionnaires to consultants, contractors, Construction Company and client.
- The study is limited to Project Management of real estate projects and infrastructure project undertaken by Project Management Consultants.
- Then the data are collected and fed into SPSS software, and factors affecting as well as enhancing project are to be found out through considering data in various background.

## **V. Research Methodology**

The methodology of this study is described and explained based on the objectives of the project. This study started by reviewing the literature reviews and interviews from various experts. From the literature study the factors influencing project management consultants is identified. The factors that are prone to affect project management consultants are identified from literature reviews and interviews. Based on these factors

questionnaire is prepared and survey is conducted to find the top factors that contribute as well as affect project management consultants service

In this study, questionnaires were used as tool for collecting data for quantitative analysis. The questions has been formulated and selected carefully and the aim of the project should be continuously borne in mind. Manual field survey and online survey were done. The questionnaire survey was in the form of 4 point likert scale determining the rating of each factor. The 4 point likert scale mentioned 1 Disagree, 2 as Neutral, 3 as Agree, 4 as Strongly Agree.

The next phase of the methodology is the analysis phase. The analysis has been done using SPSS software. This phase is classified into three stages. In the first stage the response from the respondents are entered into SPSS database. The second stage of analysis involves finding the overall mean rank and RII of the factors based on the mean of the responses. The third stage of analysis is Partial correlation analysis. The fourth stage of the analysis involves Linear regression analysis to find the factors causing as well as influencing Project management consultancy roles in construction projects

## **VI. Questionnaire Details**

The questionnaire was prepared and distributed to Project managers, contractors/Builder of different construction companies and consultancy in order to grab their views regarding the factors affecting between project management service and contractors in construction projects. Questionnaire is prepared based on the selected factors taken from both the literatures and direct inspection. Four point scale has been used for detailed analysis which involves

- 1- Disagree The factor has no effect on dispute
- 2- Neutral- The factor has mild effect but dispute
- 3- Agree- The factor has moderate effect can be considered as a direct factor
- 4- Strongly Agree- The factor has great impact on dispute

The questionnaire was distributed to various organizations through e-mails with Google form and via whatsapp to who were involved in various construction projects in Tamil Nadu state personally and officially. The feedback from the respondents through the questionnaire was collected. In addition, other reasons and data for the dispute were also collected. Finally there were 65 successful responses. Questionnaire development is an efficient data collection technique to measure the variable of interest. From response of the questionnaire it is grouped according to experience and project category. According to Experience The distribution of years of experience Less than 5 years is 23%, 5 to 10 years is 30% and 10 to 20 years is 23% and above 20 years is 24 % Also depending upon project category respondents were Residential 45%, Commercial 25%, Industrial 13% and Government projects 17%.

## **VII. Initial Factors**

From questionnaire 33 factors are taken they are Delay in time, Payment, Planning and scheduling by contractor, Errors in design drawing, Contract margin is not enough to attain expected quality, Improper material management, Lack of experience to labour, Lack of training to labour by contractor, Improper inspection, Incorrect budget preparation, Planning in pre engineering works, Safety management, Incorrect work progress, Failure to understand price of work, Lack of communication, Roles of PMC, Coordination between PMC and contractor, Weakness of project manager, Separate PMC service, Clarity in distribution of work flow, Understanding of agreement, Failure to determine responsibility, Insufficient employee for reviewing the contract, Contractor management coordination, Employment contracts and lack of construction document, Inconvenient site access, Conflict between contractor and PMC, Problem due to contractor sub contractor, Problems faced by top management, Mechanism is not clear, Stake holders, Political pressure at time of contract selection, Dispute related to failures.

## **VIII. Data Analysis**

### **9.1 RII INDEX METHOD**

Data from responants were analyzed by RII Index

$$RII \text{ Index} = \frac{\sum W}{(A*N)}$$

Where, W = weight given to each factor by the respondents, ranges from 1 to 4, A = highest weight (i.e. 4 in this case) and

N = total number of respondents.

### **9.2 MEAN METHOD**

The mean is the average of all responses

$$MEAN = \frac{\sum W}{N}$$

Where, W = weight given to each factor by the respondents, ranges from 1 to 4, N = total number of respondents.

Total of thirteen factors are found to be significant factors from thirty three factors by Mean ranking method and RII method. This thirteen factors are taken from mean values >2.5. 2.5 is considered because having likert scale as 4 its mean being 2 and therefore value >2.5 is considered for selecting significant factors from mean ranking method.

The thirteen significant factors were:

- Delay in time
- Payment
- Planning and scheduling by contractor
- Errors in design drawing
- Contract margin is not enough to attain expected quality
- Improper material management
- Lack of experience to labour
- Lack of training to labour by contractor
- Improper inspection
- Incorrect budget preparation
- Planning in pre engineering works
- Safety management
- Incorrect work progress

These thirteen factors are further fed into SPSS analysis for finding the most critical factors

### **9.3 PARTIAL CORRELATION ANALYSIS USING SPSS**

Partial correlation measure the strength of relationship between two variables, while controlling for the effect of one or more other variables. Partial correlation has one continuous independent variable (the x-value) and one continuous dependent variable (the y-value); This is the same as in regular correlation analysis. The value of r should be from -1 to 1. From partial correlation analysis, by considering, Dispute due to role of PMC factor control variable six factors are found out to be the most critical factors causing dispute between PMC and civil contractors. Correlation coefficient 2 tailed with zero order correlation is the analysis test

- Lack of training to labours by contractors
- Errors in design drawing
- Improper inspection
- Delay in time
- Planning and scheduling by contractor
- Payment

### **9.4 LINEAR REGRESSION USING SPSS**

Linear regression is a basic and commonly used type of predictive analysis. The overall idea of regression is to examine two things: does a set of predictor variables do a good job in predicting an outcome (dependent) variable, Which variables in particular are significant predictors of the outcome variable, and in what way do they—indicated by the magnitude and sign of the beta estimates—impact the outcome variable. These regression estimates are used to explain the relationship between one dependent variable and one or more independent variables. The simplest form of the regression equation with one dependent and one independent variable is defined by the formula  $y = c + b \cdot x$ , where y = estimated dependent variable score, c = constant, b = regression coefficient, and x = score on the independent variable. From linear regression using enter method, By considering dispute due to role of PMC as dependent variable six factors are found out to be the most critical factors causing dispute between PMC and civil contractors

- Lack of training to labours by contractor (16)
- Payment (31)
- Planning in pre engineering works (3)
- Delay in time (1)
- Errors in design drawing (13)
- Improper material management (9)

Initially from ranking analysis thirteen significant factors were found to be the most significant factors. These significant factors are further fed into SPSS analysis of partial correlation analysis and linear regression analysis. Six factors are found in each test.

### **IX. Results & Discussions**

Initially thirteen factors are found to be the significant factors from mean ranking method. Further by analyzing these significant factors in SPSS through Linear regression analysis and Partial correlation analysis eight factors are found to be the most critical factors. As a result when a construction project is initiated these factors have to be given importance to avoid dispute between PMC and contractors. The most critical factors are

- Delay in time
- Payment
- Errors in design drawing
- Improper inspection
- Lack of training to labours
- Planning and scheduling by contractor
- Improper material management
- Planning in pre engineering works

From this above research the most critical factors are found which causing as well as enhancing dispute between project management consultants and contractor. This result can be taken during implementation of construction project for successful completion of project.

### **X. Conclusion**

Construction dispute have such high impacts on the projects 'cost and time that the contractors and owners should establish the effective dispute management. The objective of this paper to make effective dispute management to reduce risks of construction disputes. Furthermore, finance-related, relationship and communication problem, design-related and contract related problems are the major categories of factors leading to disputes. Thus, the findings show that poor financial projections on the client's side and poor planning are the main sources of project dispute.

- Before execution of a construction project time should be given very much high importance. While scheduling, each task with feasible time have to be allocated.
- Finance and payment issues are the main important cause of dispute, because they result in a financial problem and disputes between the owner and the contractor.
- While designing drawings, site inspection should be made before making drawings to avoid practical impossibility.
- As per standards, proper site inspection have to be made during executing construction project
- Before allocating labours to each task in a project, labours should be trained to do the task to avoid wastage of time and resource planned.
- Planning and scheduling should be made feasible that makes ease during execution.
- Proper material with right quality have to be procured and material allocation should be wise and right to each task.
- During Pre engineering works all planning, approval, feasibility studies have to be made effectively.
- The most serious and harmful impact of construction dispute is damaging company reputation.
- Negotiation is the most frequently using method to resolve the construction dispute.

### **XI. Recommendation**

- It is recommended that the clauses in the contract related to the payment should divide the total prices of the contract into smaller, more numerous payments. This may make it easier to be paid by the owner on time. This may reduce delay in payment.
- There should be Safety factor consider while allocating time for each task in project to avoid dispute.
- The contractor may collect the payments directly from the financial institutions after he gets approval from the owner's representative.
- It is recommended to have a standard contract which is flexible. It should be prepared carefully to describe the rights and responsibilities of the contractors as well the rights and responsibilities of the owners and engineer.
- Careful preparation of the planning and scheduling will help to avoid disputes. The scope of the project should be clear, correct, adequate and concise. Also, the contractor should ask the owner to write the change orders instead of giving oral change orders.
- The owner is recommended to use the experienced consultant before signing the contract.
- Coordination of design documents is extremely important. Written specifications should be reviewed to avoid ambiguities and conflicts between architectural and engineering drawings.

- Bringing talented pool of employees within organization give better results. They have the ability to solve complex situations within less time. Good HR management should be developed. This play a major role in the construction industry.
- In small scale industries also project management training should be required. Most of the small industries face cost and time overrun because of inexperience in the initial stage.
- Right quality of material should be suggested by consultant and checked while procuring.
- Proper training in the conception stage in the project management gives fruitful results in the upcoming future. Planning, scheduling and estimation are the main area to be focused.

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