

# SOLVING CLAIMS AND DISPUTES IN CONSTRUCTION INDUSTRY USING CLAIM FACTOR AND SEVERITY INDEX

Veebhadrha Basavraj Pandarge<sup>1</sup> and Prof. H. H. Salunkhe<sup>2</sup>

1 Second Year M.E. Construction & management D Y Patil Institute of Engineering & technology, Ambi, Pune, Maharashtra, India

2 Professor Department of Civil Engineering management D Y Patil Institute of Engineering & technology, Ambi, Pune, Maharashtra, India

\*\*\*

**Abstract** - The occurrence of disputes in construction industry results in damaging the relationship between the parties hence delaying the project, cost over runs, legal issues etc. To avoid these type of disputes, conflict, and claims a proper management should be used. This project aims to analyse the main causes of disputes which occur in the construction industry and how to solve this type of disputes and if the dispute is resolved than how claim should be given to an affected party. This project analyses such needs and proposes means of meeting them through an appropriate classification of construction claims and estimation of their relative significance in terms of magnitude and frequency and identification of the proximate and root causes of the significant claims. In this project we will solve the disputes using claim factor method.

**Key Words:** claims, disputes, claim factor, severity index.

## 1. INTRODUCTION

Dispute means a disagreement or argument between two parties during a project. This may cause project delay, cost overrun if not settled soon in a proper manner. The increase of conflicts, claims and disputes in construction projects has emerged specialists in claims management and dispute resolution. However, different approaches and differentials in terminology used in contract documentation suggest the need to clarify the related concepts, and to study the critical impacts on projects and the implications for the industry itself. The complex characteristics of construction projects, improper contractual terms, breach of contract, human behaviour, construction defects and various external factors have created necessity for predicting the project disputes and the need to

improve management system, techniques, and guidelines for dispute management. There is a lack of an accepted method of dispute management among professionals in the construction industry. This study is to shed some light on the view and attitude of the typical construction contractors in the India towards construction risks. A preliminary study in this project suggested a further need to identify the common sources of disputes in construction, so as to minimize and control the root causes by finding it. Finding the root cause will help us to classify the claims and give out the solution. After classification of claims a severity index will be allotted and according to affected amount a penalty amount will be applied.

## 2. METHODOLOGY:

### Use of severity index factor.

In this project claim factors will be used to find out the major root causes of disputes, and using severity index factor we can find out the affected amount and penalty to be paid to settle down the issue. Dispute can be solved by the parties themselves using severity index factor.

### Overview to claims and disputes:

#### Causes of claims and disputes

1. Owner related
2. Contractor related
3. Design related
4. Contract related
5. Human behaviour related
6. Project related
7. External factors
8. Bond claims
9. Construction defect claims
10. Breach of contract claim

11. Construction delay claim
12. Failure to disclose claim.

### Questionnaire survey:

A questionnaire survey was done visiting various sites, and reason for disputes and how the claim was given were asked.

## 2 CASE STUDY:

After various data collection all the claims are categorized in 6 types of claims.

- Contractual claims
- Design related claims
- Construction quality claims
- Bond claims
- Delay claims
- Other types of claims

### Types of claims in detail

#### Contractual claims

Contractual claims concern matters with consideration to the contract itself. This includes any disagreement on the responsibility or liability of some parts that are not included in the documents. The main reason of these types of claims is poorly written contracts

#### Design related claims

Design claim is **any claim that is ordered or changed by the owner or contractor after construction has started** that was not included in the original contract.. However, the contractor believes that he is performing extra work, while the owner believes the work was part of original contract. Or simply any extra work that is done due to design change or design failure.

#### Delay claims

Construction delay claims, or disputes related to schedule impacts, are one of the most common types of disputes in the construction industry. Delay claims typically relate to unanticipated project events and/or circumstances which extend the project and/or prevent work from being performed as originally planned. There are many common causes for schedule delays on a

construction project. Any project faces delays and disruptions especially the mega/complex projects of today, with many interfaces. Proving delay and/or disruption is not an easy task and it is a time consuming process especially in the mega/complex projects with thousands of activities, lots of details and interfaces with the involvement of many stakeholders.

#### Construction quality claims

Construction quality claims are one of the main reasons for disputes. These claims are made due to bad quality of construction work which impacts a particular type of work or may be whole project. These are caused due to poor use of materials, a non eligible man doing that work or due to low cost given by the owner.

#### Bond claims

A bond claim is a claim against a surety bond that has been provided for the purpose of ensuring payment, generally by a prime contractor. These are most common when working with governments and public projects. It provides a way to ensure subcontractors can be paid without having to file a lien against government property or a lawsuit against a government. This process involves a third party that has finances to cover the project and is required to do so, means you are much likely to get paid for your efforts.

#### Other types of claims

Other types of claims include all other types of claims which are not categorized in all the above type of claims e.g. Owner related, Human behavior related, Project related, External factors, Breach of contract claim, Failure to disclose claim.

Below are some of the disputes mentioned

After visiting many sites there are few case study:

1. Dispute between s\*\*v associates and P\*\*C.
2. Dispute between kunal construction and V properties.
3. Dispute between divine dazzle and ta\*\*ir associates.
4. Dispute between s\*\*v associates and divine dew society.
5. Dispute between s\*\* raj surveyors and pa\*\*I B\*\*\*de associates.

6. Dispute between Ath\*\*va earthmovers and hazel properties.
7. Dispute between client and vidya associates.

**Dispute between kunal constructions and V properties.**

There was a dispute between kunal construction and V properties regarding delay of RCC work which was directly impacting other works and a delay in RCC work would cause a delay in whole project and a huge budget increment would be needed so they decided to have a penalty on kunal construction which both party was initially not agreeing on a amount, but later on they settled for an arbitrary amount.

Claim factors which were included

Delay claim

Contractual claim

Severity index -2

Delay amount:-50cr project duration 1100 days, 10% interest every year than per day cost of project is

$$(50,000,0000 \times 10\%) / 365 = 130000/-$$

so delay was of 40 days so affected amount 5200000/-

Total affected amount=52,00,000/-

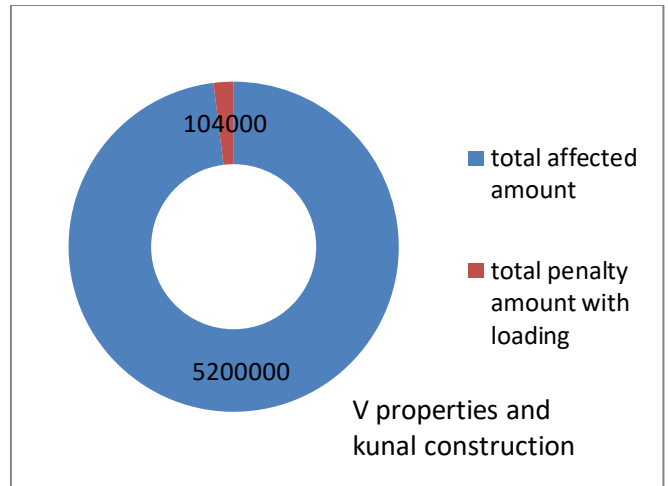
severity index=2

Formula to calculate total penalty amount

$$x = i/100 \times \text{Total affected cost} + \text{loading\%}$$

$$2/100 \times 5200000 + 0 = 1,04,000/-$$

Hence penalty of 1,04,000/- should be paid from kunal construction to V properties.

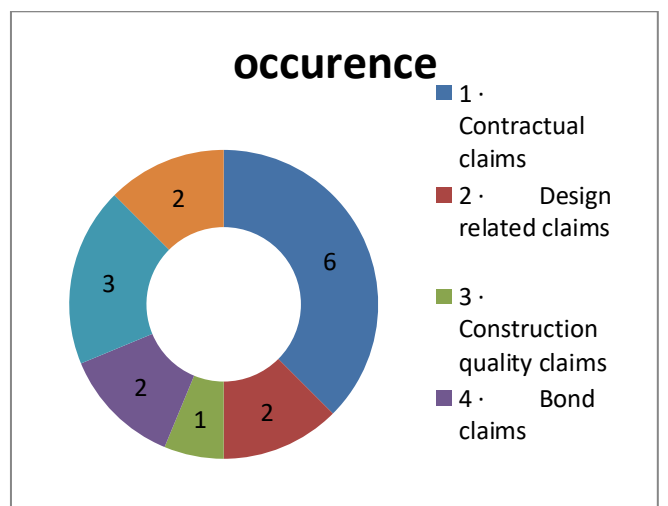


**chart 2:-Dispute between V properties and kunal construction**

**3. CONCLUSIONS**

After studying various cases now we can find out which types of disputes have been impacted the project most.

Sr.no.	Types of claims	occurence
1	• Contractual claims	6
2	• Design related claims	2
3	• Construction quality claims	1
4	• Bond claims	2
5	• Delay claims	3
6	• Other types of claims	2



In construction industry there are tremendous disputes in this project we are going to use claim factors to find out which types of claims are to be done and according to claims a severity index will be applied and a penalty amount will be calculated. Using this claim factor and severity index a problem statement will analyzed after that severity index will be applied to the dispute

The formula which we are going to use is

$$x=i/100 \times \text{Total affected cost} + \text{loading\%}$$

Sometimes according to other actual conditions this cost may vary.

## REFERENCES

- 1) Mohan m kumarswamy “**Conflicts, claims and disputes in construction**”, Engineering, Construction and Architectural Management, Vol. 4 Iss 2 pp. 95 – 111, 2015.
- 2) Emre Cakmaka, Pinar Irlayici Cakmak “**An analysis of causes of disputes in the construction industry using analytical network process**”, 2nd World Conference on Business, Economics And Management WCBEM 2013.
- 3) N.B. Chaphalkar, K.C. Iyer, Smita K. Patil “**Prediction of outcome of construction dispute claims using multilayer perception neural network model**”, International Journal of Project Management 2015.
- 4) Ms. Zabeen Motorwala “**Arbitration and conciliation (amendment) act, 2015 -key changes and circumstances leading to the amendments**”, 2015.
- 5) David Arditi and Bhupendra K Pate “**Expert system for claim management in construction projects**”, butterworth and co ltd Vol7 No 3 August 1989.
- 6) A.A. Elziny, M.A. Mohamadien, H.M. Ibrahim, M.K. Abdel Fattah “**An expert system to manage dispute resolutions in construction projects in Egypt**” Ain Shams Engineering Journal (2015).
- 7) Anita Rauzana , “**Causes of Conflicts and Disputes in Construction Projects**” IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE) e-ISSN: 2278-1684,p-ISSN: 2320-334X, Volume 13, Issue 5 Ver. VI (Sep. - Oct. 2016).
- 8) N. Raid, D.Arditi nd J.Mohammad “**A conceptual model for claim management in construction: an AI approach**”, great Britain engineering conference, Compurers CLS ~rucnres Vol4. 0,N o. I, pp. 67-74, 1991
- 9) K.C. Iyer, N.B. Chaphalkar, G.A. Joshi “**Understanding time delay disputes in construction contracts**”, International Journal of Project Management 26 (2008) 174–184.