

# RANKING OF FACTORS CAUSING CONFLICTS & DISPUTE IN CONSTRUCTION PROJECTS BY IMPI METHOD

Pradeep sikarwar<sup>1</sup>, Dr.M.K. Trivedi<sup>2</sup>

<sup>1</sup>PG Scholar, Department of Civil Engineering, M.I.T.S Gwalior, Madhya Pradesh, India

<sup>2</sup>Professor & Head, Department of Civil Engineering, M.I.T.S Gwalior, Madhya Pradesh, India

\*\*\*

**Abstract** - Construction project generally experience cost overruns and schedule overruns. Conflicts and dispute is an important aspect that directly contributes to these overruns. Reducing Conflicts and dispute is widely regarded as an effective way of improving construction performance in terms of productivity, cost, schedule, quality, and safety. . The aim of this research to identify, evaluate and ranking of Conflicts and dispute factors. For the ranking of these Conflicts and dispute factors an onsite questionnaire survey was done and the data obtained were analyzed by relative importance methods which gives the relative significance of these variables. According to this study the most contributing factors are client related factor due to lack of experience and knowledge of design and construction process and payment of low fee for preparing contract documentation, contractor field management due to the poor quality of construction technique and lack of use of advanced mechanical equipment's and external environment factors due to the adverse natural condition and study on conflicts and dispute cost shows that it affects overall project cost.

**Key Words:** Conflicts, Disputes, Construction, Project management, Claim, Delay, Contractor.

## 1.INTRODUCTION

Construction industry is a major contributor in the economic growth and civilization in any country. Construction industry not only includes buildings construction, but also includes roads construction, bridges construction, dam's construction etc. There were no adequate design information and people had to do everything by human force because there was no machine at that time. Although the role of human in construction is decreased in recent years, still human has a major role, so errors still exist. In any construction work, mistakes frequently occur and they lead to conflicts and dispute in different stages of construction. As it is known that the disputes are the main reason to worry. Thus, it is very important to find out factors responsible for conflicts and dispute because they leads to increase time and cost in construction projects (Fenn, 2007). Moreover, by the involvement of dispute in construction projects results in the failure of anticipate budget, and also lead to the ruining of business relations between connectors . According to Gebken (2006), it has been seen that the disputes have to be resolve out quickly in the first place as it arise to avoid the need of formal claim by the intrusion of the third party, which would minimizing the chance of ruining to relation among the participant involved in the construction work . As we studied that the disputes in the construction vary with size, budget & time of the project. Since, the public sector involves a lot of work which have to be got done across the country. However, these kinds of projects are associated with a large amount of conflicts & dispute, complexity due to the size of the covering field.

## 2. OBJECTIVE

- 1.To identify and evaluate the main sources of conflict and dispute.
- 2.To distinguish the factors responsible for conflict and dispute in construction.
- 3.Study the impacts of cost and schedule of conflict and dispute on the construction project.

## 3. SOURCES OF CONFLICTS AND DISPUTE

For finding out the factor responsible for conflicts and dispute in the construction projects, a literature survey is conducted in which several works of the researchers have been analyzed and the critical factors are taken which was common in most of the papers. Further, the selected factors are again classified with in their appropriate or desired categories. Total 35 numbers of factors are identified by literature study and these factors are classified into five categories as show in Table. 3.1.

**Table -3.1: Lists of Factors Causes Conflicts & Dispute In Construction Projects.**

Sr no.	Group	Factors
1	Contractor field management	Poor construction technique
		Lack of use of advanced equipment's
		poor construction material
		Poor supervision of material
		Frequent change of subcontractor
		poor use of construction management standard
		Lack of use of construction methods
2	Client related factors	Lack of experience of design
		Lack of funding for site investigation
		Lack of client interface
		Inadequate cost spent on briefing process
		Poor communication with design members
		Payment of low fees for preparing contract documentation
		New request by the client to improve standard during construction
3	External environment factors	Poor site conditions
		New request from end user to improve standards during construction
		Adverse natural condition
		Change in government regulation
		Shortage of construction materials/equipment's
		Effect of social and cultural factors
		New request from end users final inspection and certification stage
4	Design management factors	Poor coordination between design team members
		Design error due to many design tasks
		Lack of attention to detail
		Scope and design changes
		Insufficient data collection and survey before design
		Poor used of advanced engineering
		Incomplete design at the time of tender
5	Human performance group factors	Inadequate knowledge of action required to complete task successfully
		Lack of domain-specific skill
		Deficiencies in personnel training
		Violation of rules or policy
		Lack of motivation
		Poor decision making process
		Poor monitoring and control

#### 4. RESEARCH METHODOLOGY

For reaching out the goal of this paper approaches is used is important index (IMPI) which is used to find out the relative importance of all the factors.

#### 4.1. Importance index (IMPI)

This research methodology is done in two stages. The first stage incorporated a literature search and meeting. The factors were derived through books, articles, web and worldwide project administration diaries causing conflict and dispute. As a result of this stage, 35 causes of conflict and dispute is find out. These causes were classified into 5 groups. The second stage incorporates arrangement of data for positioning of causes of conflict and dispute in construction projects by calculating Frequency index and severity index.

Table-4.1.1

Sr no.	Factors	Formula
1	<b>IMPORTANCE INDEX(IMPI)</b>	$IMPI = (F.I.*S.I.)/100$
2	<b>FREQUENCY INDEX(F.I.)</b>	$F.I. = \sum a \frac{n \cdot 100}{N \cdot 4}$ <p>Where,  <b>a</b>, is the constant expression weight given to each responses  <b>n</b>, is the frequency of responses  <b>N</b>, is the total no. of responses</p>
3	<b>SEVRITY INDEX(S.I.)</b>	$S.I. = \sum a \frac{n \cdot 100}{N \cdot 4}$ <p><b>a</b>, is the constant expression weight given to each responses  <b>n</b>, is the frequency of responses  <b>N</b>, is the total no. of responses</p>

#### 5. DATA ANALYSIS

The data is analysis are as follows:

Table 5.1

Factors	Weight in %	Overall rank
Poor construction technique	75.93	2
Lack of use of advanced equipment's	69.16	5
poor construction material	38.11	24
Poor supervision of material	18.66	32
Frequent change of subcontractor	48.72	14
poor use of construction management standard	45.79	13
Lack of use of construction methods	39.79	23
Lack of experiance of design	78.42	1
Lack of funding for site investigation	23.82	30
Lack of client interface	41.58	21
Inadequate cost spent on briefing process	42.29	19
Poor communication with design members	52.42	11
Payment of low fees for preparing contract documentation	52.00	12
New request by the client to improve standard during construction	73.00	3
Poor site conditions	29.12	26
New request from end user to improve	17.71	33

standards during construction		
Adverse natural condition	<b>58.31</b>	<b>7</b>
Change in government regulation	<b>46.83</b>	<b>15</b>
Shortage of construction materials/equipment's	<b>44.42</b>	<b>17</b>
Effect of social and cultural factors	<b>54.07</b>	<b>10</b>
New request from end users final inspection and certification stage	<b>42.02</b>	<b>20</b>
Poor coordination between design team members	<b>44.17</b>	<b>18</b>
Design error due to many design tasks	<b>34.30</b>	<b>25</b>
Lack of attention to detail	<b>67.76</b>	<b>6</b>
Scope and design changes	<b>46.44</b>	<b>16</b>
Insufficient data collection and survey before design	<b>26.55</b>	<b>27</b>
Poor used of advanced engineering	<b>71.50</b>	<b>4</b>
Incomplete design at the time of tender	<b>15.33</b>	<b>34</b>
Inadequate knowledge of action required to complete task successfully	<b>11.57</b>	<b>35</b>
Lack of domain-specific skill	<b>26.26</b>	<b>28</b>
Deficiencies in personnel tanning	<b>19.69</b>	<b>31</b>
Violation of rules or policy	<b>40.85</b>	<b>22</b>
Lack of motivation	<b>25.68</b>	<b>29</b>
Poor decision making process	<b>57.01</b>	<b>8</b>
Poor monitoring and control	<b>56.58</b>	<b>9</b>

## 6. CONCLUSION

Conflicts and dispute is a comprehensive problem in construction industry. conflicts and dispute affects the construction project time and cost. The data collected from various construction projects through a questionnaire survey so The important conclusion withdrawn from the study is that the conflicts and dispute caused by client related factor and contractor field management is most critical sources for conflicts and dispute in construction. Based on the importance index methods raking of 5 main groups respectively are client related factors, contractor field management factors, external environment factors, design management factors and human performance group factors respectively were evaluated.

## REFERENCES

1. Fenn, P, (2007) "Predicting Construction Disputes: An Aetiological Approach," Proceedings of the Institution of Civil Engineers - Management, Procurement and Law, Volume 160, Issue 2, pp. 69-73.
2. Gebken R. J., (2006), Quantification of transactional dispute resolution costs for the US construction industry.
3. Gibbons M., (2007), Better dispute resolution: A review of employment dispute resolution in Great Britain, London: DTI.
4. Commerce O. O. G., (2002), Dispute resolution guidance: Norwich.
5. Triantaphyllou Evangelos, and Stuart H. Mann, (1995), "using the analytic hierarchy process for decision making in engineering applications: some challenges," International Journal of Industrial Engineering: Applications and Practice, Volume 2, No. 1, pp. 35-44.