International Journal of Scientific Research & Engineering Trends
Volume 5, Issue 2, Mar-Apr-2019, ISSN (Online): 2395-566X

Study and Analysis of Disputes

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Abstract- **Unforeseen circumstances, prompting debate, are an ordinary element of every construction industry since conditions experienced are typically unique in relation to those arranged or anticipated. Construction disputes emerge because of a series of components that consolidate in different approaches to deliver differences, disagreements and lastly dispute. These dispute might be of different nature like technical, money related or quality related, time related, or staff related, etc. Since, conflict and disputes are the reason of stress on the grounds that an well planned construction project cannot run smoothly, efficiently because of these problems. Therefore it is essential to oversee them for better and proficient finish of projects. The research methodology is based on questionnaire survey primarily focusing on Indian construction projects. This paper will help to find out major causes of disputes and is relied upon to be assistance for the management of the same.**

Keywords **– construction industry, dispute, conflict, causes of dispute**

I. INTRODUCTION

India is a developing country and from the past few decades the construction industry is growing rapidly. The construction sector covers a major part of the Indian industry. Construction projects are very complex in nature. There are possibilities of arising uncertain events which can come at initial stage, during the project execution or after the completion of project which can cost a lot to the project in monetary term.

These uncertainties if predicted correctly then no harm to project, if not then could leads to huge loss. Dispute have become major problem of construction industry. If they are not resolved properly they can escalate causing schedule delay, lead to claim that require litigation proceedings for resolution and destroy business relationship. Before dispute can be avoid an understanding of what the underplaying conditions that contributes to their occurrences needs to be determined so that mechanisms can be put in place to prevent them from arising.

There is need for legitimate dispute resolution system in the construction division. Presently, Arbitration and Conciliation Act, 1996 (India) is the root for all the dispute resolution. In the contract document provision for Dispute Review Board (DRB) and Dispute Review Expert (DRE) are made in sectors like National highways.

II.NEED FOR STUDY

Dispute is essentially result of misfortune or harm happened while finishing a construction project. The need to ponder this topic is to know about the different Causes of disputes in construction industry. In construction industry it is fundamental to think about the different ways by which the disputes could be kept away from or solved. If dispute is emerging in the project it takes time, money from both the worry parties, also affect psychologically to concerned parties. Dispute is most undesirable occasion in the construction process to all worry parties. That is the reason it is extremely fundamental to study the aspects of the disputes, its purpose behind occurrence and its conceivable solution to prevent its occurrence or minimize the dispute.

III. SCOPE AND OBJECTIVES OF THE STUDY

1. Objective

The main objective of study is

- To identify the category of disputes and their causes in construction industry.
- To analyze the causes of disputes in construction industry on the basis of frequency and impact scale.

2. Scope

To generate the questionnaires and to carry out pilot studies in order to collect data's from experts in different construction projects and by using collected data analysing and the way to control the same is to be find out. The approach need to develop to handle the dispute between contracting parties.

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IV. METHODOLOGY

In this chapter, the methodology adopted for the research is explained in order to make sure that the research is valid as well as reliable. Following are approaches for collection of data in the project study. At initial stage causes of dispute is found out through the research papers and the questionnaire survey is prepared on the basis of findings. Preparation of questionnaire on the above said topic & pilot study of the same in order to ensure that the questionnaire survey is reliable and get it filled with field experts and analysis of the same.

V.DATA DESIGN

The questionnaire preparation started with a survey of the significant materials from conference and journal papers. A questionnaire was created to survey the view of contractors, clients and contractors on the relative significance of elements impactingthe postponement of construction projects in India. The survey was divided into two sections. The initial section comprised of general data about the respondent. The second piece of the survey concentrated on the dispute factors depending on the impact and frequency scale in construction industry.

VI. DATA MEASUREMENT

For proper analysis purpose the method of measurement must be understood. Ordinate scale are used in this method. In this ordinate scale representing frequency scale and impact scale is as shown below were used.

Table 1 Frequency scale and Impact scale

Frequency Scale	Impact Scale
1-Never	1-Very low impact
2-Rarely	2-Low impact
3-Occasionally	3-Moderate impact
4-Frequently	4-High impact
5-Very frequently	5-Very high impact

VII. DATA ANALYSIS

A questionnaire survey for data collection was undertaken and the profile of the respondent and their responses are discussed below.

1. Respondents Gender

Among the total respondents, 87.5% (35 out of 40) are males and the remaining 12.5% (5 out of 40) are females. The females – male ration is shown in the Figure 1

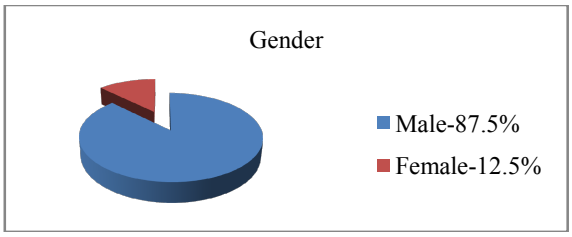

Fig.1 Respondents Gender.

2. Respondents Work Experience

Among the respondents, 40% have < 2years of experience, 22.5% have 2-5 years of experience, 22.5% have 5-10 years of experience, 7.5% have 10-15 years of experience, 7.5% have > 15 years of experience respectively. The respondents working experience are shown in the table from the above it is found that 37.5% of the respondents have more than five years of experience (considering persons with more than five years of experience in the same field as well experienced); hence, it can be said that the data collected is more reliable

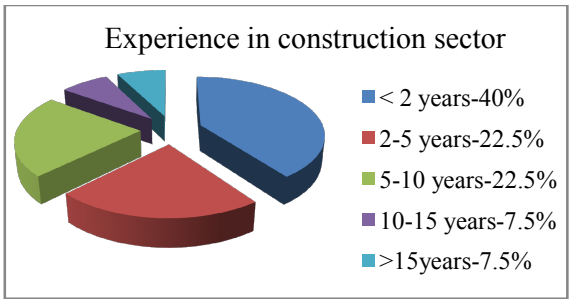

Fig. 2 Respondents Work Experience.

3. Respondents Professional Information

Out of the total respondents, 27.5% were Clients, 30% were Contractor, 12.5% were Sub contractor, 10% were Consultant while the remaining 20% belonged to other category.

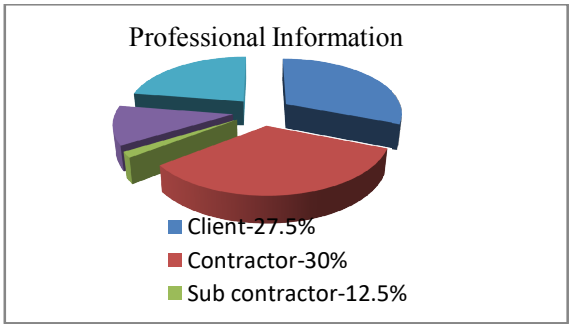

Fig. 3 Respondents Professional Information.

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4. Respondents personal experience regarding construction dispute.

Amongst the total respondents, 90% of the respondents had an experience regarding construction dispute while the rest 10% did not mentioned about the same

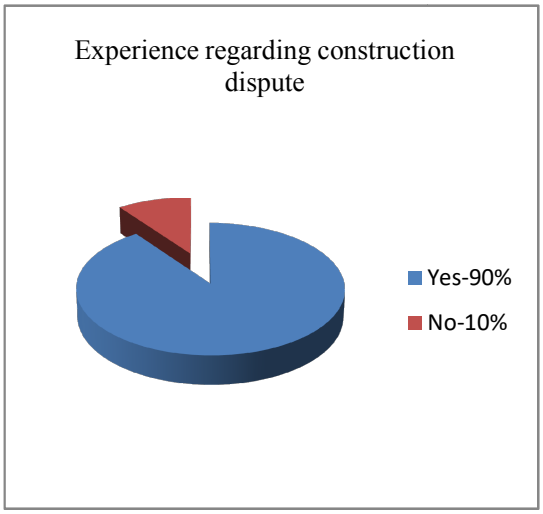

Fig. 4 Respondents Experience Reagarding Dispute.

VIII. SURVEY RESPONSES

In this chapter, the responses from the questionnaire survey are studied. The result of causes of construction dispute, depending on its impact and frequency scale is discussed. After collecting the data given by respondent, the result of the questionnaire survey is being calculated in this session. There are 18 causes of the dispute which is being analyzed using frequency and impact ranging from 1 to 5, where 1 is low and 5 is high, so that each cause will be justified more accurately.

Result may get differ upon person to person but the findings will be crucial in this case. Frequency of the cause indicates the occurrence of the cause of dispute in real time and Impact of the cause indicates the intensity of the cause of dispute up to its depth.The questionnaire survey is analyzed by using wt. average method. This will increase the accuracy of the result. Following formula is used for calculating the wt. average of frequency and impact of causes of dispute.

$$\text{Weighted average} = \frac{\sum A_i \times X_i}{\sum A_i}$$

Where,

Ai = No. of response under scale of frequency or Impact 1 to 5 for each Causes of Dispute. Xi = Frequency or Impact Scale 1 to 5. Using this formula wt. avg. is calculated for each cause for its frequency and impact. It increases the accuracy of the result as the result includes the both scale and number of response. Using this formula frequency and impact of the causes of dispute is rated and then the top most rated causes of dispute will be the findings of the research work.

Table 1 Frequency of causes of dispute

Causes of Disputes	Frequency Scale					Wt. Avg.
	1	**2**	**3**	**4**	**5**	
Extension of time(A1)	1	6	7	13	13	3.775
Design errors(A2)	2	4	7	19	8	3.675
Under certifying(A3)	2	8	5	14	11	3.6
Payment issue(A4)	1	4	10	5	10	2.725
Poor quality of work(A5)	0	7	9	16	8	3.625
Changes in work(A6)	1	7	7	17	8	3.6
Improper contract document(A7)	4	2	11	15	8	3.525
Unrealistic scope(A8)	3	6	11	12	8	3.4
Insolvency of contractor(A9)	2	8	8	16	6	3.4
Safety(A10)	5	4	10	13	8	3.375
Bid shopping(A11)	4	8	5	13	10	3.425
Slow process of sub contractor(A12)	1	5	11	13	10	3.65
Unorganized site(A13)	3	5	11	14	7	3.375
Indemnification(A14)	3	8	12	12	5	3.2
Changes in location of project(A15)	7	6	5	14	8	3.25
Provision of nominated contractor(A16)	3	9	8	14	6	3.275
Inappropriate claim by contractor(A17)	0	7	9	15	9	3.65
Delay in supply of drawing and design(A18)	1	5	10	13	11	3.7

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Table 2 Impact of causes of dispute.

Causes of Disputes	Impact Scale					Wt. Avg.
	1	2	3	4	5	
Extension of time(A1)	1	2	6	21	10	3.925
Design errors(A2)	1	0	4	19	16	4.25
Under certifying(A3)	1	2	12	11	14	3.875
Payment issue(A4)	1	3	6	20	10	3.875
Poor quality of work(A5)	0	2	7	20	11	4
Changes in work(A6)	1	3	13	14	9	3.675
Improper contract document(A7)	2	4	12	14	8	3.55
Unrealistic scope(A8)	1	3	8	21	7	3.75
Insolvency of contractor(A9)	1	5	7	16	1	2.5
Safety(A10)	1	5	6	12	6	2.675
Bid shopping(A11)	2	6	10	15	7	3.475
Slow process of sub contractor(A12)	0	6	8	19	7	3.675
Unorganized site(A13)	2	4	7	18	9	3.7
Indemnification(A14)	1	6	9	21	3	3.175
Changes in location of project(A15)	2	7	6	19	6	3.5
Provision of nominated contractor(A16)	1	9	10	10	10	3.475
Inappropriate claim by contractor(A17)	0	4	8	11	7	2.775
Delay in supply of drawing and design(A18)	1	3	9	13	14	3.9

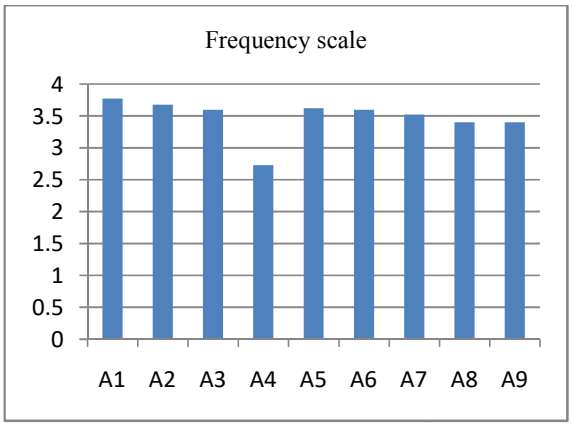

Fig.1 Frequency of causes of dispute graph.

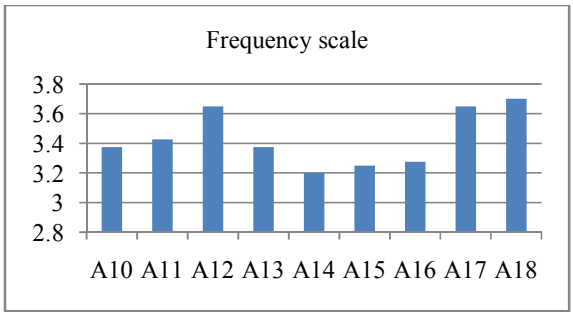

Fig.2 Frequency of causes of dispute graph.

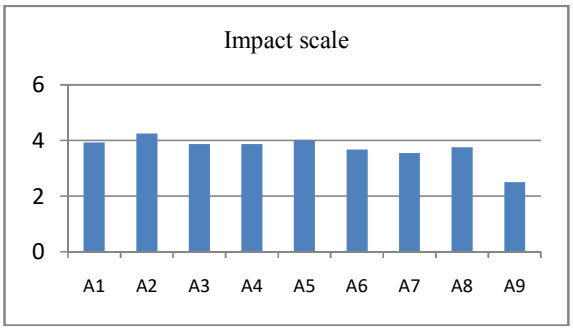

Fig.3 Impact of causes of dispute graph.

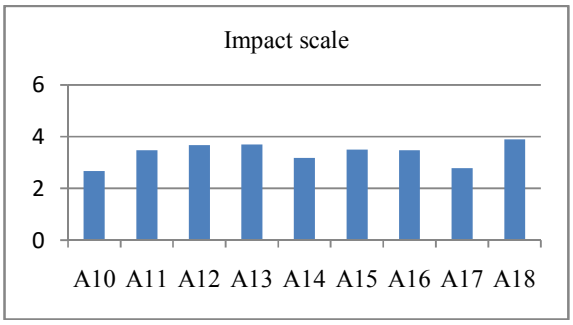

Fig. 4 Impact of causes of dispute graph.

IX. Result and Discussion

In this survey, 87.5% of males and 12.5% of females took an interest in the poll overview. In this survey the groups with different professional type respondents are targeted. Of the total participants in the study, 40% of the respondents had experience less than 2 years, 22.5% of the respondents had experience of 2 to 5years, 22.5% of the respondents had experience of 5 to 10 years , 7.5% had experience of 10 to 15 years and 7.5% of the respondents had more than 15 years of experience respectively. Amongst the total respondents,90% of them had a experience regarding construction dispute while the rest 10% did not mention about the same. And 27.5% of the respondents were clients,30% of the respondents

were contractors,12.5% of the respondents were sub contractor while the remaining 20% consisted of other category.So the characteristics of the respondent's have influenced the disputes in the construction projects.

XI. CONCLUSION

The conclusions of our study are as follows :

- By studying overall project data it is found that frequency of disputes due to extension of time, design errors, poor quality/modification in work, inappropriate claims and delay in supply of drawing and design is high.
- Also, extension of time, design error, poor quality of work has the highest impact on the construction project.
- By studying and analyzing the overall data collected , we got to know that arbitration is themost effective and frequently used method to solve the dispute.

Dispute is occurred due to various reasons which may or may not be completely evaluated.This attempt was made to find out possible causes of the dispute which is limited upon feedback given by the industrial experts and their perspective.

ACKNOWLEDGMENT

Thanks are due to all the teaching and non-teaching staff of Civil Engineering Department Shree L.R.Tiwari College Of Engineering. Above all, we express the gratitude to the almighty GOD, without whose blessing we would never have been able to complete this work successfully.

REFERENCES

[1] Alaknanda Mane and S.S.Pimplikar (2012), "DISPUTE – A CASE STUDY", InternationalJournal of Engineering and Advanced Technology, Volume-1, Issue-5.

[2] Begum Sertyesilisik (2010), "Investigation on Particular Contractual Issues in Construction",Journal of Legal Affairs and Dispute Resolution in Engineering and Construction, Vol. 2.

[3] Dhawal Parikh,G J Joshi (2013), " Modeling for time overrun prediaction due to disputes in highway projects in India". : International Journal of Research in Engineering & Technology (IMPACT: IJRET)ISSN 2321-8843 Vol. 1

[4] Diekmann, J.E., Girard, M.J. (1995), "Are contract disputes predictable?", ASCE Journal of Construction Engineering and Management, 121(4), pp.355-363.

[5] Edwin H.W. Chan and Henry C.H. Suen (2004), "Dispute resolution management for international construction projects in China", Emerald Management Decision Vol. 43 No. 4, pp. 589-602

[6] Emre Cakmak and Cakmak.P.I (2014), "An analysis of causes of disputes in the construction industry using analytical network process", Procedia - Social and Behavioural Sciences 109, 183 – 187

[7] Er. Shrishail Shirur, Dr. Suwarna Torgal (2014) "Indian Construction Industry: Challenges for the Construction Managers".

[8] Essam Zaneldin, "Construction Claims in the united arab Emirates: t, pes causes and frequency"

[9] Fredrik Karlsen, Lass Tollefsen (2000) "Purchasing Structure in the Construction Industry".

[10] Harishankar K S , Sreeparvathy G, "Rethinking Dispute Resolution in Public–Private Partnerships for Infrastructure Development in India."

[11] Ikechukwu Ikea Chinyere, "Procedures and Arrangement for Dispute Resolution Management in International Construction Development Projects."

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