

Identification of Causes of Conflicts and Disputes in Construction Industry

L.Madhumitha, A.Sivakumar, G.Dhanasekar, P.Karthikeyan

Abstract: In construction industry number of participants from various professions having with different levels of knowledge and talents are involved and the conflicts are unavoidable. Conflicts and disputes are the major factor that will lead the projects to be unsuccessful. Thus it is necessary to identify the causes of conflicts and disputes to complete the project on estimated time, budget and quality. The main aim of the project is to identify and analyze the main causes of conflicts and disputes in construction projects. In order to attain the aim, a literature review was conducted to identify the factors causing conflicts and disputes. The factors identified were categorized into eight and the main causes of conflicts and disputes were determined. Finally analysis were conducted to rank the major factors causing conflicts and disputes in construction industry.

Keywords: Conflicts, Disputes, Literature review, Factors, Construction industry.

I. INTRODUCTION

Throughout the world, dispute is unavoidable in the construction field. A dispute was defined as situation where two parties differ in the assertion of a contractual right. The causes are abundant mainly occurred by what happened on site between the parties. All the project management team are challenged by the risk of dispute from the initiating to the closing stage of a project (Wantong Zhao, 2019). Conflicts have to manage as soon as possible or else they rapidly turn into disputes. Dispute is one of the crucial factor which inhibit magnificently accomplishment of any project. Hence it is necessary to be attentive of the sources of conflicts and disputes to complete project within the estimated time, quality and budget (Sagar sony et al., 2017). Based upon the identification of the sources responsible for conflicts we can deal more effectively and efficiently to these problems (Acharya et al., 2006). Conflicts are such situation of occurrence of the discrepancy between the values or aims to be achieved, both in the individual and in relationship to others (Anita Rauzana, 2016). Naturally, if the events can't reach a resolution themselves, high-priced, time-consuming felony techniques begin, which severely affects the participants. Disputes are facts in all over the construction industry.

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Ms.L.Madhumitha, M.E Construction Engineering and Management, Department of Civil Engineering, Kongu Engineering College, Erode, Tamilnadu, India.

Mr.A.Sivakumar, Assistant Professor, Kongu Engineering College, Erode, Tamilnadu,

Mr.G.Dhanasekar, M.E Construction Engineering and Management, Department of Civil Engineering, Kongu Engineering College, Erode, Tamilnadu, India.

Dr.P.Karthikeyan, Assistant Professor, Kongu Engineering College, Erode, Tamilnadu

Without any method to address them at the early stage, minor issues can fester and develop, with crippling result for task members. Waiting till the end to deal with dispute inevitably makes it tougher and extra expensive to resolve. Parties involved in a certain disputes, or indeed any industrial disputes, typically opt to maintain manage over the outcome and preserve a working business (Shaikh SK Sameer et al., 2016).

II. RESEARCH METHODOLOGY

To identify the causes of conflicts and disputes in construction industry, the following methodology is followed based on the literature review and questionnaire survey was conducted to ensure the robust methodological design.

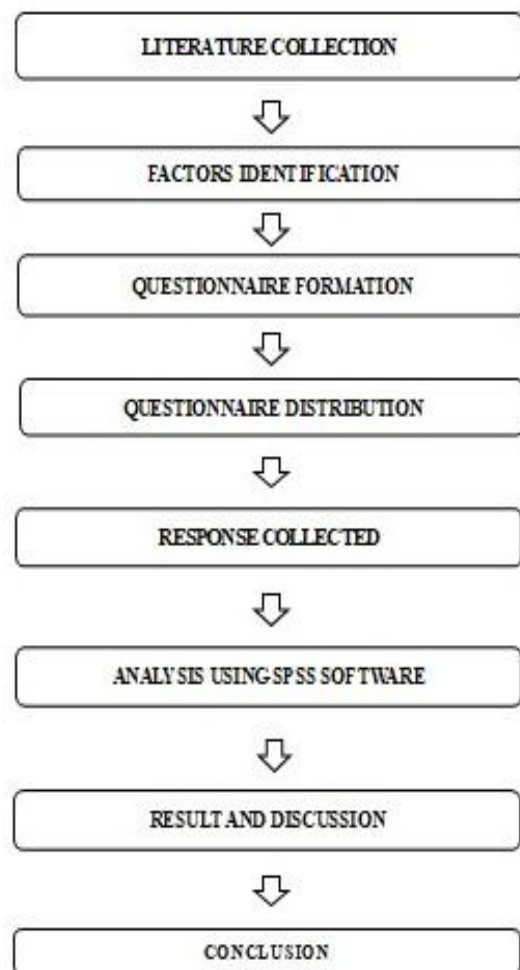


Fig 1. Methodology

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III. FACTOR IDENTIFICATION

There are some factors which influence conflicts and disputes in the construction industry. These factors were identified based on literature study.

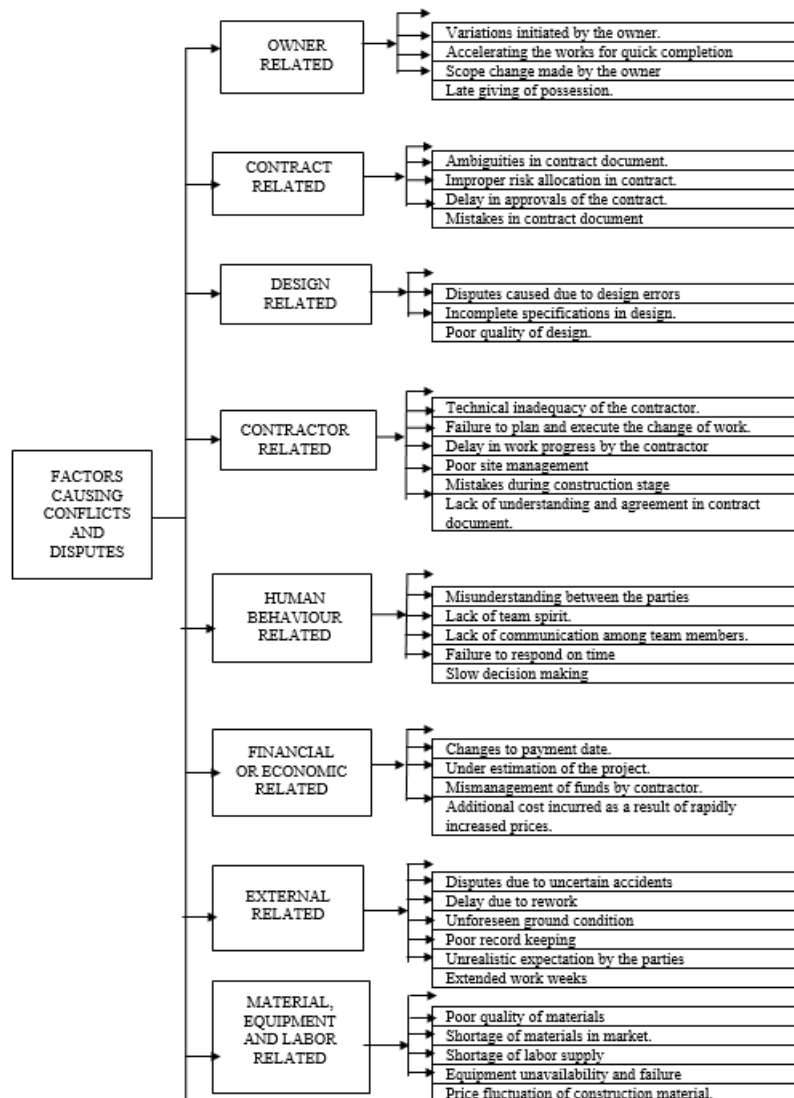


Fig. 2 Factors causing conflicts and disputes

Table No: 1. Causes of Conflicts and Disputes

S.NO	FACTORS	SUB FACTORS	RESEARCHES
1	OWNER RELATED	Variations initiated by the owner.	Charlie Woodley(2019), Essan K. Zaneldin (2018), Malek Mishmish et al.,(2018), Emre CakmaK et al.,(2014), C. Bvumbwe et al.,(2011), Kumaraswamy, M.M(1997)
		Accelerating the work for quick completion.	Essan K. Zaneldin (2018), Malek Mishmish et al.,(2018), Dimitrios Robert et al.,(2018), Nirmal Kumar Acharya et al.,(2016), Kumaraswamy, M.M(1997)
		Delay in payment for cumulative works.	Essan K. Zaneldin (2018), Malek Mishmish et al.,(2018), Sagar soni et al., (2017), Nirmal Kumar Acharya et al.,(2016), Nirmal Kumar Acharya et al.,(2016), Enshassi et al.,(2014)

		Scope change made by the owner	Charlie Woodley (2019), Essan K. Zaneldin (2018), Malek Mishmish et al.,(2018), Dimitrios Robert et al.,(2018), Nirmal Kumar Acharya et al.,(2016), Sepani Senaratne et al.,(2014)
		Late giving of possession.	Malek Mishmish et al.,(2018) Nirmal Kumar Acharya et al.,(2016), Kumaraswamy, M.M(1997)
2	CONTRACT RELATED	Ambiguities in contract document.	Essan K. Zaneldin (2018), Malek Mishmish et al.,(2018), Dimitrios Robert et al.,(2018), Sagar soni et al., (2017), Anita Rauzana(2016), Nirmal Kumar Acharya et al.,(2016), Nancy Dangrochiya et al.,(2006), Kumaraswamy, M.M(1997)
		Improper risk allocation in contract.	Essan K. Zaneldin (2018), Nirmal Kumar Acharya et al.,(2016), Kumaraswamy, M.M(1997)
		Delay in approvals of the contract.	Malek Mishmish et al.,(2018), Emre CakmaK et al.,(2014)
		Mistakes in contract document	Sagar soni et al., (2017), Emre CakmaK et al.,(2014)
3	DESIGN RELATED	Disputes caused due to design errors	Charlie Woodley (2019), Essan K. Zaneldin (2018), Anita Rauzana(2016), Nirmal Kumar Acharya et al.,(2016), Nirmal Kumar Acharya et al.,(2016), Nancy Dangrochiya et al.,(2006), Kumaraswamy, M.M(1997)
		Incomplete specifications in design.	Essan K. Zaneldin (2018), Malek Mishmish et al.,(2018), Anita Rauzana(2016), Nirmal Kumar Acharya et al.,(2016), Sepani Senaratne et al.,(2014), Nancy Dangrochiya et al.,(2006)
4	CONTRACTOR RELATED	Poor quality of design.	Nirmal Kumar Acharya et al.,(2016)
		Technical inadequacy of the contractor.	Malek Mishmish et al.,(2018), Sagar soni et al., (2017), Nirmal Kumar Acharya et al.,(2016)
		Failure to plan and execute the change of work.	Malek Mishmish et al.,(2018), Anita Rauzana(2016), Nirmal Kumar Acharya et al.,(2016)
		Delay in work progress by the contractor	Malek Mishmish et al.,(2018), Nirmal Kumar Acharya et al.,(2016)
		Poor site management	Malek Mishmish et al.,(2018), Anita Rauzana(2016)
		Mistakes during construction stage	Dimitrios Robert et al.,(2018)
5	HUMAN BEHAVIOUR RELATED	Lack of understanding and agreement in contract document.	Anita Rauzana(2016)
		Misunderstanding between the parties	Sagar soni et al., (2017), Nancy Dangrochiya et al.,(2006)
		Lack of team spirit.	Sagar soni et al., (2017), Nirmal Kumar Acharya et al.,(2016), Nancy Dangrochiya et al.,(2006)
		Lack of communication among team members.	Charlie Woodley(2019), Sagar soni et al., (2017), Anita Rauzana(2016), Nirmal Kumar Acharya et al.,(2016), Sepani Senaratne et al.,(2014), Nancy Dangrochiya et al.,(2006), Kumaraswamy, M.M(1997)
		Failure to respond on time	Anita Rauzana(2016)
6	FINANCIAL / ECONOMICAL RELATED	Slow decision making	Charlie Woodley(2019), Essan K. Zaneldin (2018), Nirmal Kumar Acharya et al.,(2016), Enshassi et al.,(2014)
		Changes to payment date.	Nirmal Kumar Acharya et al.,(2016)
		Under estimation of the project.	Essan K. Zaneldin (2018), Malek Mishmish et al.,(2018), Anita Rauzana(2016), C. Bvumbwe et al.,(2011), Enshassi et al.,(2014)
		Mismanagement of funds by contractor.	C. Bvumbwe et al.,(2011)
7	EXTERNAL FACTORS	Additional cost incurred as a result of rapidly increased prices.	Essan K. Zaneldin (2018), Enshassi et al.,(2014)
		Disputes due to uncertain accidents.	Malek Mishmish et al.,(2018), Vahidreza et al.,(2016), Nirmal Kumar Acharya et al.,(2016), K. C. Iyer et al.,(2008)
		Delay due to rework.	Essan K. Zaneldin (2018)
		Unforeseen ground condition of the project.	Essan K. Zaneldin (2018), Malek Mishmish et al.,(2018), K. C. Iyer et al.,(2008)
		Poor record maintenance.	Vahidreza et al.,(2016), C. Bvumbwe et al.,(2011)
8	MATERIAL, LABOR AND EQUIPMENT RELATED	Unrealistic expectation by the contractor.	Sagar soni et al., (2017), Vahidreza et al.,(2016), Nancy Dangrochiya et al.,(2006)
		Extended work weeks.	Charlie Woodley(2019), Malek Mishmish et al.,(2018), Dimitrios Robert et al.,(2018)
		Poor quality of materials.	Nancy Dangrochiya et al.,(2006), Enshassi et al.,(2014)
		Shortage of materials in market.	Nirmal Kumar Acharya et al.,(2016)
		Shortage of labor supply	Nirmal Kumar Acharya et al.,(2016)
		Equipment unavailability and failure	Nirmal Kumar Acharya et al.,(2016)
		Price fluctuation of construction material.	Essan K. Zaneldin (2018), Dimitrios Robert et al.,(2018), Enshassi et al.,(2014)

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IV. QUESTIONNAIRE DETAIL

Questionnaire has been formulated with the identified factors taken from both the literatures and direct inspection. Questionnaire should be such that it is simple to read and understand. Also the questionnaire was framed as per Likert scales running from not at all, to less extent, marginally, to certain extent, substantially.

These five positions were given weights of 1, 2, 3, 4 and 5 for scoring purposes. Questionnaire consists of two sections, first section consists of respondent's demographic profile and the second section consists the set of questions based on the factors contributing to the performance of an employee. It requires the respondents to indicate the degree of agreement with each of a series of statement related to the stimulus objects. This type of question is easy to construct and administer. Respondents readily understand how to use the scale. Questionnaire development is an effective data collection method to measure the adaptable of importance.

V. DATA COLLECTION

A total 37 questionnaires were framed to identify the causes of disputes and conflicts in the construction industry. Totally 75 number of question were distributed and out of those 72 responses has been received. The response rate will be explained in following table and chart.

Table No: 2. Response rate

DESCRIPTION	RESPONSE RATE
Number of questions distributed	75
Number of response received	65
Response rate (%)	86.66%

VI. RESULT ANALYSIS

The target population of the present study is restricted only to the experienced project managers client, and contractor. The questionnaire consist of 2 parts, the first part consist of demographic profile of engineers, second part covers variables relating to factors causing conflicts and disputes in the construction industry. The collected data were analyzed by using the SPSS 16. The total samples collected were 65.

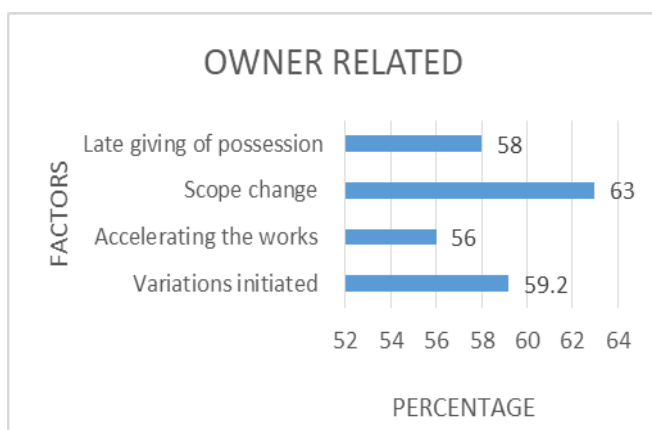


Fig 3. Owner related

63% of the respondents feel that scope change made by the owner is the top owner related causes of conflicts and disputes in the construction industries.

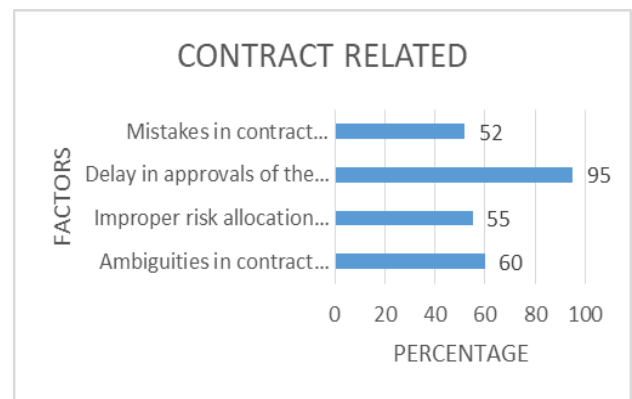


Fig 4. Contract related

95% of the respondents feel that delay in approvals of the Contract is the top contract related causes of conflicts and disputes in the construction industries.

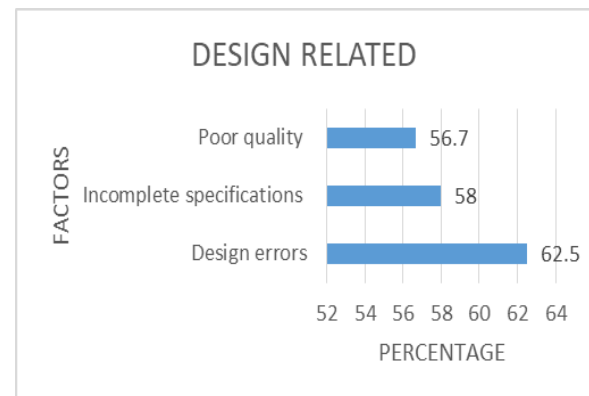


Fig 5. Design related

62.5% of the respondents feel that disputes caused due to design errors is the top design related causes of conflicts and disputes in the construction industries.

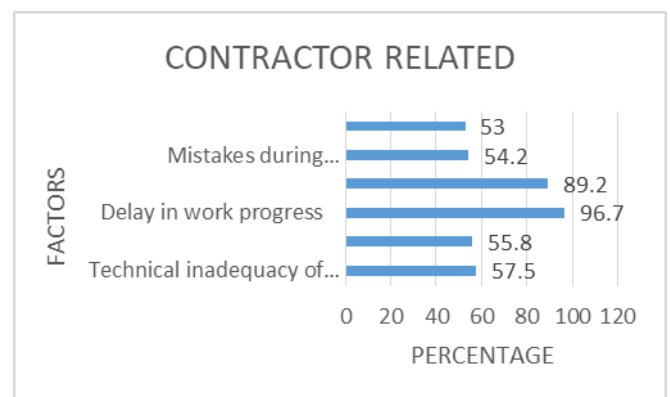


Fig .6 Contractor related

96.7% of the respondents feel that delay in work progress by the contractor is the top contractor related causes of conflicts and disputes in the construction industries.

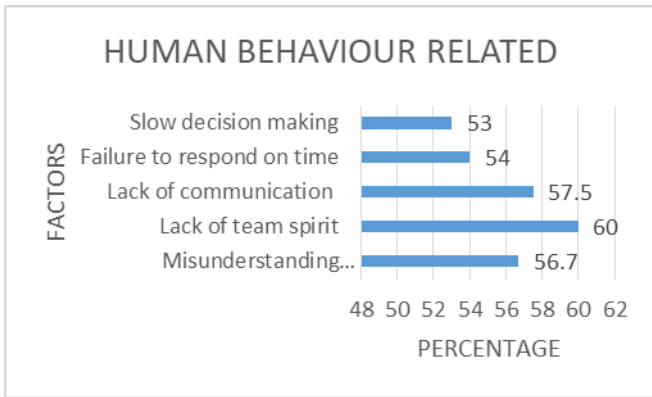


Fig 7. Human behaviour related

60% of the respondents feel that lack of team spirit is the top human behaviour related causes of conflicts and disputes in the construction industries.

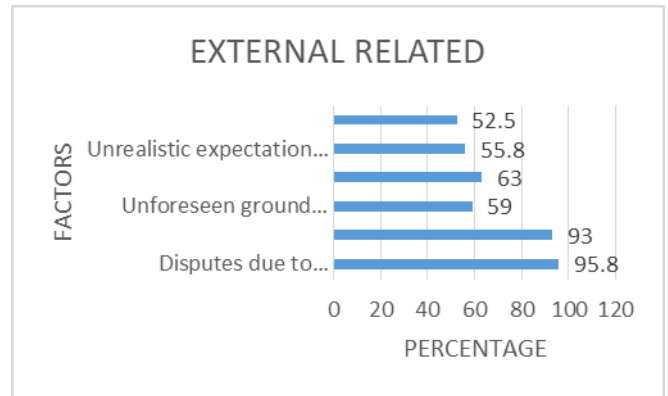


Fig 8. External related

95.8% of the respondents feel that disputes due to uncertain accidents is the top external related causes of conflicts and disputes in the construction industries

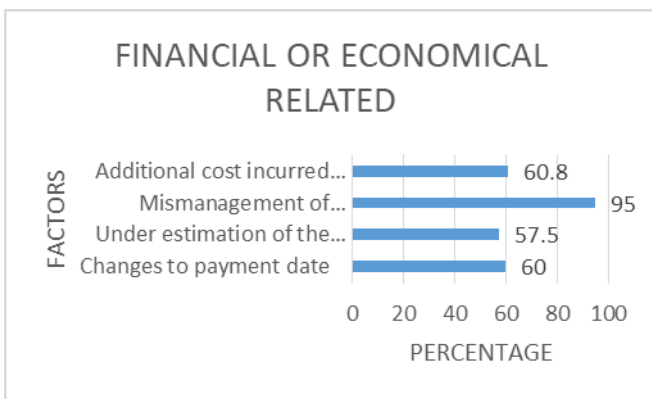


Fig 7. Financial or Economic related

95% of the respondents feel that mismanagement of funds is the top financial or economic related causes of conflicts and disputes in the construction industries.

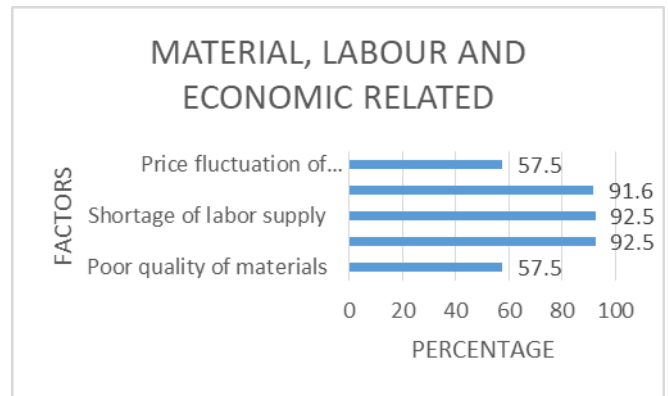


Fig 8. Material, Labour And Economic Related

92.5% of the respondents feel that shortage of material and labor supply is the top material, labor and equipment related causes of conflicts and disputes in the construction industries.

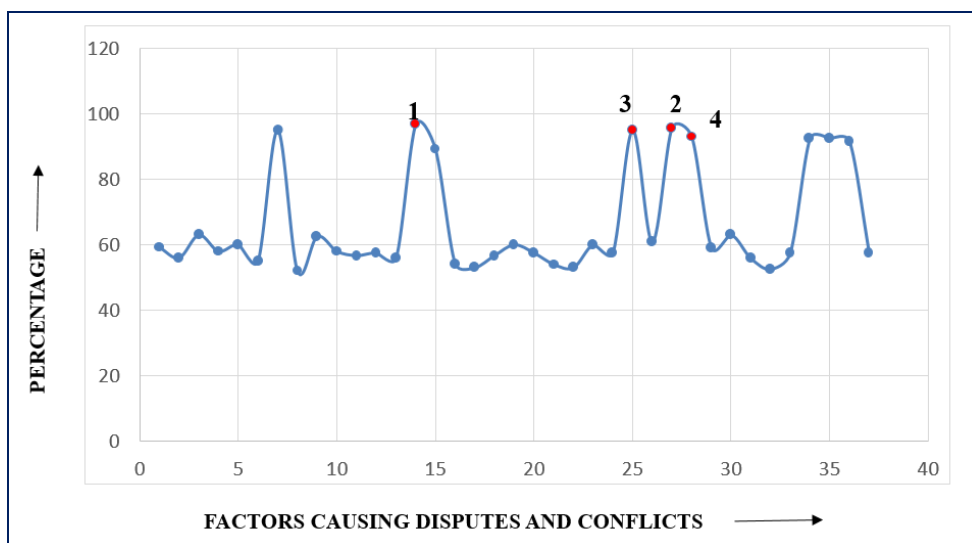


Fig 11. Overall graph

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Table No: 3. Descriptive Statistics for Factors

S. No	Factors	Mean	Std. Deviation	Variance	RII	RANK
1	Variations initiated by the owner.	2.96	.859	.737	0.592	11
2	Accelerating the works for quick completion	2.79	.509	.259	0.56	16
3	Scope change made by the owner	3.16	.565	.319	0.63	7
4	Late giving of possession.	2.91	.584	.341	0.58	13
5	Ambiguities in contract document.	3.00	.590	.348	0.6	10
6	Improper risk allocation in contract.	2.75	.532	.283	0.55	18
7	Delay in approvals of the contract.	4.75	.532	.283	0.95	3
8	Mistakes in contract document	2.58	.775	.601	0.52	23
9	Disputes caused due to design errors	3.13	.612	.375	0.625	8
10	Incomplete specifications in design.	2.92	.654	.428	0.58	13
11	Poor quality of design.	2.83	.761	.580	0.567	15
12	Technical inadequacy of the contractor.	2.87	.612	.375	0.575	14
13	Failure to plan and execute the change of work.	2.79	.884	.781	0.558	17
14	Delay in work progress by the contractor	4.83	.482	.232	0.967	1
15	Poor site management	4.46	.932	.868	0.892	7
16	Mistakes during construction stage	2.71	.690	.476	0.542	19
17	Lack of understanding and agreement in contract document.	2.67	.702	.493	0.53	21
18	Misunderstanding between the parties	2.83	.381	.145	0.567	15
19	Lack of team spirit.	3.00	.590	.348	0.6	10
20	Lack of communication among team members.	2.88	.537	.288	0.575	14
21	Failure to respond on time	2.71	.690	.476	0.54	20
22	Slow decision making	2.67	.637	.406	0.53	21
23	Changes to payment date.	3.00	.590	.348	0.6	10
24	Under estimation of the project.	2.88	.537	.288	0.575	14
25	Mismanagement of funds by contractor.	4.75	.608	.370	0.95	3
26	Additional cost incurred as a result of rapidly increased prices.	3.04	.464	.216	0.608	9
27	Disputes due to uncertain accidents	4.79	.415	.172	0.958	2
28	Delay due to rework	4.67	.482	.232	0.93	4
29	Unforeseen ground condition	2.96	.690	.476	0.59	12
30	Poor record keeping	3.17	.816	.667	0.63	7
31	Unrealistic expectation by the parties	2.79	.658	.433	0.558	17
32	Extended work weeks	2.63	.924	.853	0.525	22
33	Poor quality of materials	2.88	.797	.636	0.575	14
34	Shortage of materials in market.	4.63	.495	.245	0.925	5
35	Shortage of labor supply	4.63	.576	.332	0.925	5
36	Equipment unavailability and failure	4.58	.504	.254	0.916	6
37	Price fluctuation of construction material.	2.88	.338	.114	0.575	14

The Relative Importance Index (RII) was employed to rank the causes of conflicts and disputes in projects. The RII value was calculated with the following equation:

$$RII = \frac{\sum_{i=1}^N WiXi}{A \times N}$$

Where,

RII – Relative Importance Index.

W – Weighting given to each factor by the respondent and range from 1 to 5.

X – Frequency of ith response given for each factor.

A – Highest Weight.

N – Total number of respondents.

VII. CONCLUSION

Conflicts and disputes is considered to perform a key role in an organization, which affects the successful completion of project to within a specific budget and within a certain period of time. It is very clear that conflicts and disputes in any construction will undergo cost overrun. This study “Identification of Causes of Conflicts and Disputes in Construction Company”, provides a detailed investigation with their impact towards performance.



Based on the analysis, the result shows that below factors were caused conflicts and disputes in Construction Industries

- Delay in work progress by the contractor =96.7%
- Disputes due to uncertain accidents = 95.8%
- Delay in approvals of the contract =95%
- Mismanagement of funds by contractor =95%
- Delay due to rework=93%

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AUTHORS PROFILE



Ms.L.Madhumitha, pursuing M.E Construction Engineering and Management, Department of Civil Engineering, Kongu Engineering College, Erode, Tamilnadu, India. She can be reached at Email: madhuloga1996@gmail.com



Mr.A.Sivakumar working as Assistant Professor in Kongu Engineering College, Erode, Tamilnadu in the stream of Civil Engineering. He published 8 international journals and 2 National journals. He is a life member in Indian Concrete Institute and International Association of Engineers. He can be reached at Email: sivakumarcivil36@gmail.com



Mr.G.Dhanasekar, pursuing M.E Construction Engineering and Management, Department of Civil Engineering, Kongu Engineering College, Erode, Tamilnadu, India. He can be reached at Email: dhana7284.7@gmail.com



Dr.P.Karthikeyan working as Assistant Professor in Kongu Engineering College, Erode, Tamilnadu in the stream of department of Management Studies. He published 6 international journals and 10 National journals. He can be reached at Email: ptp_karthi@kongu.ac.in