

# Study on Sources of Disputes in Construction Projects, to Incorporate Suitable Clauses in Contract for Dispute Resolutions

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**Abstract** - The continuing incidence of disputes based on cost in the construction industry has led to a common interest for researchers over different countries to identify the generic aspects of conflicts, claims, disputes and their declaration. This paper undertakes an extensive review of construction disputes with Indian construction industry examining the lapses in contract agreement. A preliminary examination of 20 projects has confirmed the existence and the extent of disputes in Indian projects. 50 semi-structured interviews with various project participants in India were conducted, from which a set of sources of disputes leading has been found out. Fifty cases of disputes that occurred in India were analyzed to examine the lapses in relevant contract clauses that led to same. The behavioral attitudes of stakeholder and the factors that led to disputes between the parties have been studied. Furthermore, the dispute factors encountered in these 50 cases are categorized as factors leading area for dispute, and correlation (if any) is established within the factors, in the projects considered.

**Keywords:** Dispute, Contract, FIDIC.

## 1. INTRODUCTION

Construction of new facilities necessitates two parties (hereafter referred to as the Employer and the Contractor) to enter into an agreement. Each party normally expects to receive benefits and perform obligations. The Employer aims to achieve a quality project on time at a fair price. The contractor aims to deliver a quality project on time at a fair price. However, when unanticipated changes are required, often there are consequences that are not clearly and timorously communicated by each party. As a result, misunderstanding occurs which leads to claims and in some cases disputes. For the better understanding of the causes of disputes in construction industry, it is necessary to identify the areas of conflicts, claims, disputes, and project success criteria, risks, procurement techniques and dispute resolution strategies involved in construction projects. This paper aims to identify the various sources for disputes based on type of projects and the sources of disputes are identified from vagueness in contract documents.

## 2. LITERATURE REVIEW

The literatures that are related to disputes; difference between disputes and conflicts, to understand the dispute causes, factors, purpose, their remedial methods and avoidance methods has been studied and listed as follows:

Banwell (1964) addressed matters with great briefness. He received 119 responses for the questionnaire and focused mainly on payment problems and the use of common form of contracts.

Chery Semple et. al., (1994) is of the opinion that avoiding construction claims and disputes requires understanding of the contractual terms, early non-adversarial communication, and understanding of the causes of claims. Their study indicated that critical elements in construction contracts are related to changes/extras, disputes, soil/site conditions, and delay.

Essex, R. J. (1996) discussed about the groups drawn from the construction industry. The recommendations were generally focusing on contractual obligations linking all the parties together and the allocation specific obligations to each member of the project.

The right choice of construction contractor is crucial to project success. According to Kumaraswamy (1996) the right choice of construction contractor is crucial to project success. However, selection strategies vary widely amongst different countries and even in the same country.

Kumaraswamy (1997) finds it necessary and useful to differentiate destructive from constructive conflict and avoidable from necessary claims; and also to minimize disputes arising from unresolved conflict and claims in construction projects. Authors refer to disputes as a simple disagreement, other refer to disputes as the consequence of rejecting a claim.

While conflict is inevitable on construction projects, it is necessary for management to differentiate destructive from constructive conflict, and to anticipate and minimize the former, while carefully controlling the latter. Unresolved construction claims are found to be a major source of destructive disputes. A study by Kumaraswamy M.M (1998) reveals that project in Hong Kong has increased after the entry of global players in construction.

Dispute normally arises when each of the project participant tend to perceive from their own interest instead as a team (Thomson et.al, 2009)

Contractors who deliver quality products in compliance with defined standards and in stipulated time seldom had contractual and legal issues (Philip and Islam, 2014)

Cindey and Lawrence (2013) in their study found that contract clauses that contain negative language do tend to generate negative emotional reactions to the clause, while positive contract language does tend to generate positive emotional reactions to the clause. Hence a careful drafting of the clauses becomes necessary.

In the process of drafting the contract clauses language plays a vital role in the interpretation of the same. Alvina and Amarjit (2013) report based on their studies that Provisional language fills in the gap for specifics that fall through standard clause openings and without it there are chances of open interpretation and confusion, causing disputes and ultimately lawsuits especially in respect of Contract provisions.

### 3. METHODOLOGY

The research methodology used to attain the objectives mentioned above can be summarized as follows:

- (i) The study carried out on 20 major projects in India during the recent years to study the sources of disputes in Indian construction projects.
- (ii) Conduct semi-structured interviews with 50 construction project participants. where questions are raised to discuss different aspects that lead to dispute.
- (iii) Use the results from the interviews will be used to reveal the sources of disputes in Indian construction projects.
- (iv) The data collected through interviews are analyzed to sources of disputes in Indian construction projects due to vagueness in contract agreement clauses.

### 4. DATA COLLECTION

The data collected from those 50 projects have been presented below in table 1 and table 2 to give an indication of the source of disputes in these projects The table 1 describes the type of projects taken into study. Table-2 describes sources of disputes in Indian construction projects due to uncertainty in contract agreement clauses.

The interviews have been conducted with 50 professionals in the industry divided equally between contractors and clients. The questions focused on sources of construction disputes throughout the project (i.e.,) from the procurement stage, execution of the works, until completion of the project. Only oral interviews were permitted as it may involve sensitive disputed matters. The interviews were semi-structured in nature. In many cases in answering one question the interviewees addressed remaining questions. Although all interviews covered the main questions originally set, the flow of the discussion dictate the order in addressing these questions.

**Table 1- Types of Projects**

Type & No. of projects		Percentage
Residential	15	29 %
Commercial	12	25%
Public projects	11	21%
Industrial	7	15%
Institutional	5	10%

**Table 2- Causes of Disputes due to Vagueness in Contract**

S. No	Causes of disputes	Provision in contract agreement related to causes of disputes(FIDIC contract)
1	Variations to scope Contract interpretation	Applicable to general condition clauses (1)
	Quality of construction	Applicable to general specification part(1)
	Payment system of owner	Applicable to condition of contract section-3 clause (43)
	Evaluation of completed works	Applicable to condition of contract section-3 clause (43)
	Change orders	Applicable to condition of contract section-3 clause (27,27.1,27.2)
	Unrealistic contract durations	Applicable to salient features of the agreement in agreement forum
	Violating conditions of the contract	Applicable to salient features of the agreement in agreement forum
2	Poor Project management procedure -Change order	Applicable to condition of contract section-3 clause (38)
	-Pre-award design review, Pre- onstruction conference proceedings,	Applicable to general condition section-1 clause(30.1,30.2)
	Design errors: errors in drawings and specifications.	Applicable to general specification part(1) section -6
	Site management: scheduling, project management procedures, quality control, and financial packages	Applicable to condition of contract section-3 clause (33-36) Clause(4,46)
	Bid development errors: estimating error	Applicable to general condition clauses (6)
	Quality assurance	Applicable to general condition section-4
	3	Extension of time
Variations in quantities		Applicable to general condition of contract clauses (41,41.1,41.2)
Variations in specifications		Applicable to general specification part(1) section -6
Drawing changes		Applicable in general condition part1 clause (7)
Change of scope		Applicable to general condition clauses (1)
Change site conditions		Applicable to general condition of contract clauses(8,8.1)
Payment upon Termination		Applicable to general condition of contract clauses (60,60.1,60.2)

4	Payment conditions	Applicable to general condition of contract clauses (60,60.1,60.2)
	Time for Completion	Applicable to general condition of contract clauses(43.1)
	Quality of construction	Applicable to general specification part(1)
	Accident or Injury to Workmen	Applicable to general condition of contract clauses(24.1)
	Unavailable of professional	Applicable in contract data section-3
	Revised Programme	Applicable to general condition of contract clauses(14.2)
	Valuation of Variations	Applicable to general condition of contract clauses(52.1)
	Procedure for Claims	Applicable to general condition of contract clauses(53.1-53.5)
5	Valuation in variations	Applicable to general condition of contract clauses(52.1)
	Unrealistic time/cost quality targets (by clients)	Applicable to general condition of contract clauses(32.1)
	Changes by client	Applicable to general condition of contract clauses(7)
	Unrealistic tender pricing	Applicable to salient features of the agreement in agreement forum
	Certificates and Payment	Applicable to general condition of contract clauses(60-64)
	Alterations, Additions and Omissions	Applicable to general condition of contract clauses(50)
	Suspension of Work	Applicable to general condition of contract clauses(40.1)
	Reduction of Liquidated Damages	Applicable to general condition of contract clauses(47.1)

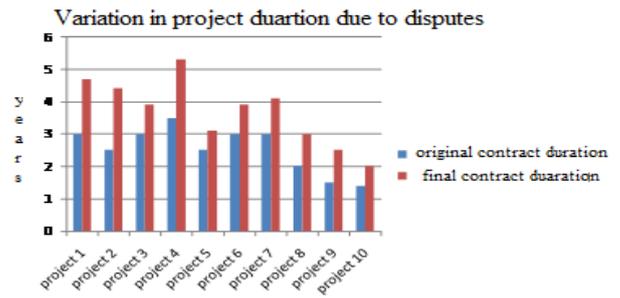


Chart 2 - Variation in Duration Due to Disputes

Table 3- Causes for Disputes

S.No	Most leading causes for disputes	Occurrence
1	Impact or effect of changes in respect of time and cost not properly addressed	33
2	Extension of time	27
3	Price escalation	25
4	Failure of payment as per condition of contract	25
5	Suspension of work	21
6	Defective work	19
7	Contractor and employers risk	14
8	Tender evaluation	14
9	Work quality	12
10	Reluctance to seek clarification financial stability	11

5. DATA ANALYSIS

This part of the paper gives a report that discusses the results obtained from various respondents, based on interviews. The following Table-3 shows that top 10 causes of disputes based upon the occurrence from 50 projects is identified. The Fig 1 shows the graph that explains the variation in cost due to dispute occurrence in the in ten projects and Fig 2 explains the graph with no of projects in x-axis and years in y-axis, describes the variation in duration due to disputes.

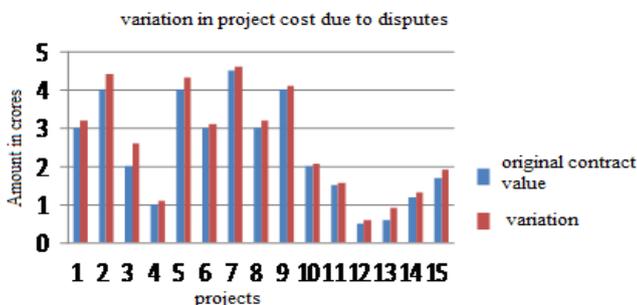


Chart 1- Variation in Cost Due to Disputes

6. RESULT AND DISCUSSION

The 50 interviewed projects examined showed the highest occurrence of disputes resulting from disagreement on time and cost assessments. The causes of disputes are identified on the basis of “when disputes actually arises” and “sources behind dispute occurrence” and are listed as follows. Almost each of these areas has been addressed by the literature producing Recommendations to promote better practice. In spite of those attempts, the disputes Witnessed have led us to consider further recommendations. Those recommendations presented in 3 sections were based on the literature, interviews. They intend to add or even re-emphasize what has already been recommended, published and known as best practice based on collected empirical evidence. The nature of the recommendation developed under three themes presents not a list of instructions but rather a reminder to the spirit that needs to be Pre- and post- contract signature. It is worth noting that the recommendation was based on problem areas witnessed and substantiated through our studies, other areas of equal significance in dispute minimization could be similarly examined focusing on the contractual mechanism for dispute resolution

### 6.1 When Dispute Actually Arises

1. Imposing of penalty by client.
2. Retention of security deposit.
3. Delay in settlement of final bills.
4. Deductions made by the client in the final bill as against that claimed by the contractor.
5. Claims made by contractor in respect of changes in design etc were not honoured by the client.

### 6.2 Sources of Disputes in Projects

1. Increase in duration and overall Cost of the project not accepted by the client.
2. Quality of construction.
3. Variation in specifications by contractor without client's or his engineer's approval.
4. Changes made by client without giving due consideration for variation in time and cost.
5. Valuation in variations.

### 6.3 Section 1: Conditions of Contract

Recommendations regarding drafting the particular conditions are of two types: promote introducing more details in some conditions mainly related to time and cost that have proved in our study to be highly prone to disputes and warn against upsetting the balance of the general conditions through commonly witnessed amendments to certain clauses.

#### 6.3.1 Introducing Mechanism for Time and Cost Assessment

The 50 dispute cases examined showed the highest occurrence of disputes resulting from disagreement on time and cost assessments. Also, the Contractor's entitlement to time and cost resulting from occurrence of Employer's Risk events and was disputed in the four projects examined. As such the following is recommended to minimize such disputes.

#### 6.3.2 Extension of Time (applicable to Clause 14 in FIDIC Red Book Fourth Edition)

The clause for assessment of extension of time should be modified in the particular conditions to account for the following details that would reduce disagreement on time assessments:

- Form and size of baseline programme to be submitted i.e. number of activities; level of resource detailing should be set in the Contract.
- The period for submitting updates (whether weekly or bi-weekly) and the format for listing the delayed activities,
- the float available for each activities, their impact on the project completion should also be specified.
- The delayed activities should be identified as Employer's delay or Contractor's delay the Employer's right to mitigate his own delay should be agreed and clarified.

- Where the delay is by the Contractor, he/she should submit details of the plan to mitigate the same.
- Where there is an ongoing delay by the Employer, the level of detail required to substantiate a claim for extension of time shall be set.
- Where the Contractor fails to do so, the Engineer shall make the assessment to the best of his knowledge based on the data available.

#### 6.3.3 Details of Compensation Entitlement in the case of Employer's Risk (applicable to Clause 65 in FIDIC Red Book Fourth Edition)

Given the fact that projects is going through a political turmoil that might result at times in political instability, a clear listing of the Contractor's entitlement to extension of time due to suspension or loss of productivity resulting from an Employer's risk, could minimize disputes regarding the same. This would include clear listing of the costs the Contractor will be entitled to in the case of Employer's Risk and the details of the substantiation that should be provided: site staff salaries, head office overhead calculation formula, site operational cost based on invoices, subcontractor's compensation, cost of extension of advance payment guarantee, performance bond, and site insurance as substantiated with bank receipts, plant and equipment depreciation (if allowed under this clause), any other cost the Contractor adds to this Clause during Tender and the Engineer approves.

#### 6.3.4 Employer's prior approval to Engineer's time and cost determination (applicable to Clause 2 in FIDIC Red Book Fourth Edition)

Employer's prior approval that is set in the particular conditions should not introduce obstacles to the Engineer in performing his duties for the cases where he/she should act as an independent certifier. As such the requirement of the prior approval of the Employer should be limited to

approval in principal to variations unless deemed necessary at the technical level. However, a budget limit for variations could be set.

### 6.4 Section 2: Procurement Practices

The Procurement practices presented below is meant to minimize on disputes that would result from misinterpretation given the prevalent contract documents condition at the time of tender in terms of design completeness, contract clarity, risk allocation. This shall be achieved at two stages:

#### 6.4.1 Pre-bid Meeting

This meeting is intended to clarify: scope of project and design intent, the conditions of contract, the project programme, method of measurement, technical requirements, design development expected, design verification and calculation required for certain systems, definition of equivalents, aesthetic requirements,

acceptable range for certain architectural items like marble should be presented. This meeting shall be minuted to be followed by queries raised in the question and answer period.

#### 6.4.2 Pre-award Conference

This conference shall be held after tender analysis to achieve the following:

- The conference will consist of two parts. The first part will consist of scrutinizing and negotiating the bid, checking qualifications, making sure that there are no errors in pricing and that all items required including risks allocated to the Contractor in the Conditions have been reasonably priced. The second part of the meeting should be attended by most project participants attending/involved to reconfirm the Contractor's understanding of all points/issues raised in the pre-bid meeting and the Q&A in more detail. This is the last attempt to reduce grounds of misinterpretation. Any detail that is not mentioned or raised during this workshop does not relieve the Contractor from his/her contractual obligations. However, the Engineer will be held responsible for all statements made by him/her during the conference. All discussions shall be minuted.

#### 6.5 Section 3: Regulating the Industry

It is contingent upon the Engineer's willingness and commitment to take more responsibility towards achieving a successful project as opposed to preparing a set of contract documents that would provide a good 'shield' during contract administration keeping both the Engineer and Employer at the safe side of the contract. Similar regulatory body in Lebanon could prevent misuse/abuse of contracts by both parties and thus promote a healthy environment. This could be achieved by enforcing regulations for the following five areas Drafting Conditions, Procurement Practices, Professional skill requirements, Violations of Safety Code: Price Indices.

#### 7. CONCLUSION

The paper has identified the disputes factors in construction projects. The interview conducted from various level contractors, project managers, owner shows the field of experience in the construction projects. Based upon the interview and analysis the provisional recommendation was formulated in this above Chapter based on the conclusion reached of the dispute influencing factors. The provisional recommendation consisted of 3 sections. The first section addresses conditions of contract where introducing a mechanism for time and cost assessment is proposed. For other dispute influencing clauses a warning is set against amendments in particular conditions that would render the conditions unbalanced. The second section addresses procurement practices where pre-bid meeting/pre-award conference is encouraged. The last section recommends regulating the

industry mainly the procurement practices, professional skill requirements, violations of safety code and price indices. These recommendations were sent to five experts for their review. There was common consensus by at least 3 of the 5 experts on each of the points raised in the recommendation.

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