

Evaluation of Expert System to Eradicate Various Kinds of Disputes in Major Contracts of Construction Projects

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ABSTRACT: Contractors play a major role in the success of any construction project. Disputes have become an endemic feature of the Indian construction industry. If they are not resolved promptly they can escalate causing schedule delays, leads to claims that require litigation proceedings for resolution and destroy business relationships. The competitive nature and complexity within the construction aggravate the incidence of disputes. Research over the last decades has revealed that factors such as scope changes, poor contract documentation, restricted access, unforeseen ground conditions, and contractual ambiguities are contributors of disputes.. The developed models are used to identify a number of strategies that can be adopted to reduce the immediate incidence of disputes in constructionThe research was conducted by sending a questionnaire to different contracting and contract based consulting firms. The results of the questionnaire survey were analysed using IBM SPSS Statistics software. The above study and analysis are aimed to provide recommendations in pursuit of better evaluation of construction disputes easily and effectively.

KEYWORDS: Bid, Client, Contractor,Evaluation, disputes, eradicate, IBM SPSS Statistics(Statistical Package for the Social Sciences).

I. INTRODUCTION

Contractors play a vital role in any construction project. Construction project are an important of any country's infrastructure and industrial growth. As part of the process of standardization and improving efficiency in the construction sector, harmonized bidding conditions and regular bidding documents for domestic construction contracts have been developed and distributed to all government agencies and public sector organizations as guidelines. There is necessity for proper dispute resolution mechanism in the construction division. A considerable amount of money is locked up due to disputes between contravtor4s and clients, leading to cost and time over runs .wide ranging dispute resolution mechanism necessities to address all these concerns. At present, the arbitration and conciliation act 1996 (India) is the foundation for all dispute resolutions. In sectors like national highways, provisions are made in the contract document foe a dispute review expert (DRE) and dispute review boards (DRB).Construction contracts provide rise to disputes of unusual difficulty and complexity even by evaluation with other types of litigation .the performance of many construction contracts run over much longer periods than most other forms of commercial contract, with potential scope for disagreement and financial disagreement arising constantly during the construction period, and with large sums of money and cash flow pressures concerned on both sides. There is a plenty chances of disputes or difference of opinion from the very inception of entering into the contract and commencing the work because consistently both the parties have to meet with reciprocal obligations on either side one after schedule of completion of work.

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II. LITERATURE REVIEW

MavendraSinha, Dr. A.S Wayal (2006) describes about the construction projects and recognize the causes of disputes. Based on their findings presented, strategies for reducing the disputes are identified and discussed. They have also contributed, to the study of quality in construction by identifying the underlying factors that influence the disputes in projects. A considerable amount of research has been undertaken with regard to the dispute causation within construction. Despite calls for the construction industry to improve its performance through the adoption of principles and techniques associated with lean production and supply chain Omkar Ashok Pawar, Rahul S.Patil 2004 describes about this paper to identify the disputes during the construction process . In addition, this study is focused on the necessity for proper dispute resolution mechanism in the construction division. This paper also explains the project characteristics that were evaluated and the conclusions that we made from this analysis. The critical review undertaken in this paper covers various definitions of conflicts & disputes. AAElziny, M.A .Mohamaiden, H.M. Ibrahim, And M. K Abdul Fattah (2002) describes the evaluation of prevailing dispute handling methodology process and consequently to recommend possible alternative disputes resolution methods. This study indicates the actual problems facing by contractors and owners during dealing with disputes, and how to assist in reaching a good resolution methodology by the application of the proposed ADR. The study proposes a reliable and accurate method to quantify and analyze sources of construction disputes .on the other hand Dispute where this issue can affect the contractor in losing his rights to the dispute and the relation between the contract parties. Denny Mc George (2007) aim of the project is to identify and communicate to key industry stake holders recommended change management strategies to avoid dispute between clients ,contractors and other industry stake holders and where dispute cannot be avoided .the factors that currently impede the efficient ,productive ,timely and cost effective performance of projects ,the root causes of disputes and practical strategies to avoid disputes or minimize. Dr. JurTunayKoksal (2006) describes that the construction industry needs alternative dispute settlement mechanisms which are able to solve rapidly the disputes relating to international construction projects especially, even in the construction site as far as they emerge. Cyril Chern (2009) describes that contract disputes arise in the construction industry. While ships come in a diverse assortment of configurations, varying in sophistication, they all share the common denominator of being a "floating city." In addition to providing the transportation service for which the vessel was designed, the ship is a complex, self-sustaining unit, capable of producing all of the services necessary to comfortably accommodate its need of shipyard services for a wide variety of reasons. Ships and their owners may seek shipyard services for everything from a relatively simple annual "check-up" to a major conversion, renovation or new construction. Often, many of the technologies incorporated within the vessel require maintenance, repair, or even reconfiguration. In ship building/conversion contracts, the potential for contract disputes arises from the necessarily different objectives of the owner and the shipyard. Shipyards are business entities with an obligation to strive for some degree of profitability.

III. METHODOLOGY

- Data collection and literature survey
- Identify the most important factors that causes disputes in construction projects
- Preparation of questionnaire
- Questionnaire survey
- Resolving the problems for adopting new methods
- Results and conclusions

IV. PILOT STUDY

Technical experts working in the construction field were interviewed and the literature study has provided an idea on the process involved in the various kinds of disputes. The disputes process involves basically the three steps as follows.

- Notification

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- Disputes solving methods
- Interview

From the study, a Questionnaire was developed with the help of experts, in order to find the importance of various criteria involved in disputes process. The factors that causes disputes in the construction projects are the following.

A. Operational Problems

When solving problems within operations, it is possible to do so partially and to have said problem manifest itself again, with the various mutations that would make us think we are dealing with multiple disputes. By completely and thoroughly resolving the core issue, we can accomplish two things: stop wasting resources dealing with problems, from the same core issue.

B. Legal Disputes

Legal disputes is the disagreement over the existence of a legal duty or right, or over the extent and kind of compensation that may be claimed by the injured party for a breach of such duty or right. Legal disputes include any dispute in which legal claims are made. They are framed at one end of the spectrum by disputes resulting in case law. Many legal disputes are never litigated but have some effect on the parties to that matter.

C. Management Disputes

Management disputes are the process of limiting the negative aspects of conflict while increasing the positive aspects of conflict. The aim of conflict management is to enhance learning and group outcomes, including effectiveness or performance in organizational setting. A party is required to engage in an activity that is incongruent with his or her needs or interests. They hold behavioral preferences, the satisfaction of which is in compatible with another person's implementation of his preferences.

D. Contractual Problems

The market disputes resolution division is an office working under the enforcement bureau of the federal communications commission (FCC). The MDRD is responsible for resolving complaints by market participants, entities or organizations against common carriers for alleged violations of the communications act that are filled pursuant to section. The division also resolves the complaints filed by cable operators, telecommunications carriers, utilities and other parties relating to the reasonableness of rates, terms, and conditions for pole attachments.

E. Behavior Problems

Behavior problems are not possible to provide a standard set of guidelines for dealing with every neighbor problem. This is because the problems are so varied and the solution to any particular dispute will depend on the individual circumstances of the case. This describes some common disputes and indicates which of the alternative courses of action would be most suitable in each case. This outlines the range of actions that may need to be taken to resolve disputes. There may be a right entry specifically for the purpose of inspection or repair in the property legal documents. If there is no such right, or no agreement can be reached, the law allows you as the person wishing to carry out repairs.

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V. DATA ANALYSIS

TABLE I

FACTORS RELATED TO OPERATIONAL PROBLEMS

Factors Related To Operational Problems	Mean
Site limitations, consideration storage	2.51
Problems with authorities / neighbors affecting progress	2.57
Changes in environmental regulations	2.51
Consultants quality control procedures	2.69
Late supply of equipment & suppliers	2.6
Poor labour productivity	1.83
Variation in quantities	1.91
Bad quality of contractor works	2.51
Inadequate site / soil investigation report	2.74

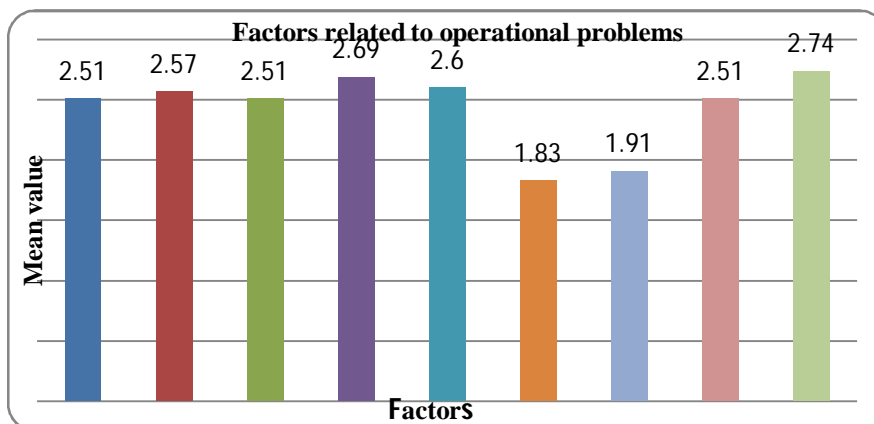


Fig 5.1 Factors related to operational problems

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TABLE II

FACTORS RELATED TO LEGAL DISPUTES

Factors Related To Legal disputes	Mean
Breach of contract by project partner	2.66
Lack of enforcement of legal judgment	3.17
Improper verification of contract document	2.34
Lack of knowledge of arbitration	2.51
Uncertainty and unfairness of court	2.31

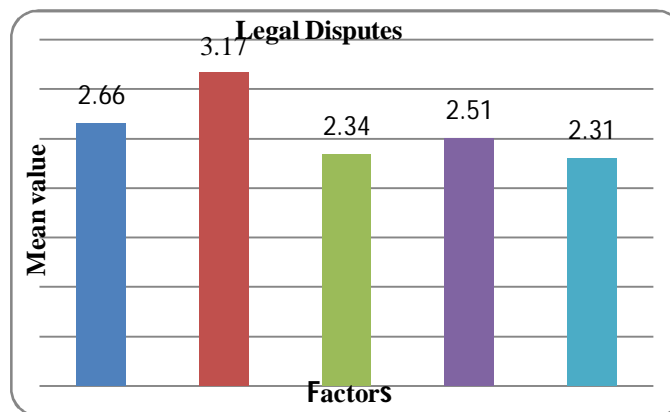


Fig 5.2 Legal Disputes

TABLE III

FACTORS RELATED TO MANAGEMENT DISPUTES

Factors Related To Management Disputes	Mean
Change of top management	2.37
No past experience in similar project	2.57
Short tendering time	2.54
Improper project feasibility study	1.8
Improper project planning & budgeting	2.03
Sub-contractor related problem	2.31
Improper project organization structure	1.46

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Internal management problem	1.3
Teamwork coordination	1.94
Poor relationships with government department	2.17
Time constraints	3.43
Project delay	3.09
Bad relationship of client	3.09
Inadequate choice of project partner	2.06

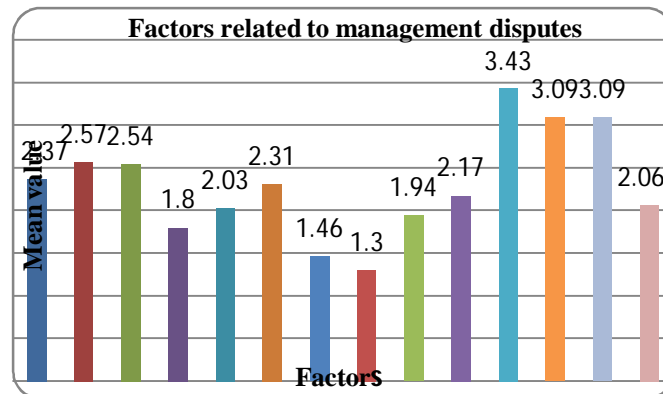


Fig 5.3 Factors related to management disputes

TABLE IV

FACTORS RELATED TO MARKET DISPUTES

Factors Related To Market Disputes	Mean
Delay interim payment from client	1.74
Extension of time	2.06
Inadequate scope definition	2.17
Incomplete drawings specification	2.26
Poorly written contracts clauses	2.66
Inaccurate estimating	1.89
Errors of costing	2.2
Quality of technical specification	2.6

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Planning errors accelerations	1.74
Change orders	2.34

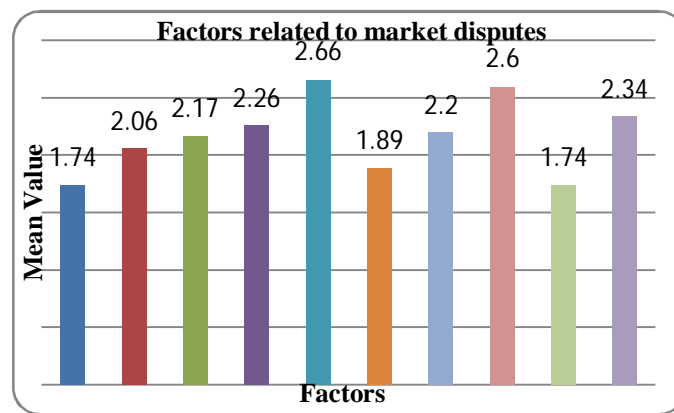


Fig 5.4 Factors related to market disputes

TABLE V

FACTORS RELATED TO BEHAVIORAL PROBLEMS

Factors Related To Behavioral Problems	Mean
Co-operation & communication nature among project team	1.74
Conflicting goals & objective of project parties	2.06
No trust between parties	2.17
Qualification of team work	2.26
Negotiations lacked experience	2.66
Lack of team work spirit	1.89
No trust on mediator	2.2
Other issues in human behavior	2.6

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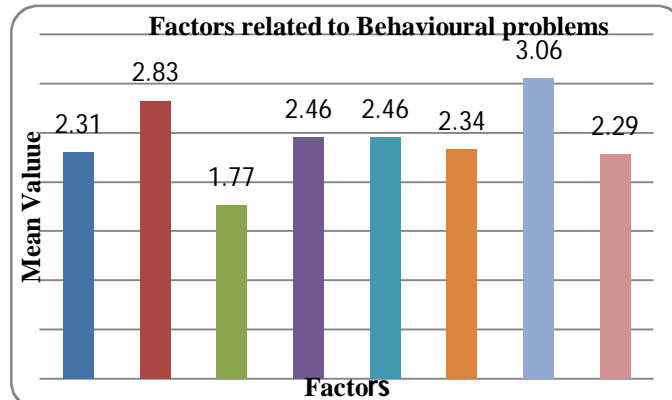


Fig 5.5 Factors related to Behavioral problems

TABLE VI

MOST ESSENTIAL DISPUTES CRITERIA

Criteria For Disputes	Mean Score	Rank
Time constraints	3.43	1
Lack of enforcement of legal judgement	3.17	2
Project delay	3.09	3
Bad relationship of client	3.09	4
Lack of team work spirit	2.86	5
No trust on mediator	2.79	6
Inadequate site / soil investigation report	2.75	7
Consultants quality control procedures	2.69	8
Breach of contract by project partner	2.66	9
Poorly written contracts clauses	2.65	10

V1. RESULTS AND DISCUSSION

The responses were collected from various contracting and consulting firms in Chennai. The majority of the respondents are from various levels of management (project managers, project management consultants and owners).

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VII. CONCLUSION

The critical review undertaken in this paper covers various definitions of conflicts and disputes. Construction projects are big budget endeavors, it is difficult if not impossible, to completely avoid construction conflicts. Minimizing their impact brings many advantages, such as reducing contractual problems, educating training construction personnel to increase their ability to resolve problems and establishing alternative dispute resolution methods. In construction projects, an effective and cooperative project team owner, consultant and contractor can minimize the effects of large complex problems. An organizations, ability and agree on sharing responsibilities depends on the parties intentions behavior and decisions processes

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