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A Study on Analysis of Dispute Resolution Mechanisms in Construction Contracts

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Abstract
The construction industry is considered one of the most complex industries due to involvement of multiple stakeholders such ass clients, contractors, sun contractors, engineers, consultants, suppliers, and regulatory authorities. Each of the is associated with their roles, responsibilities and contractual obligations. Disputes commonly occur in construction projects due to their complex nature, involvement of multiple stakeholders, technical uncertainties, time and cost pressure. Improper handling of dispute may lead to project delay, cost overruns, strained relationship and long-term relationship. To mitigate these challenges various dispute resolution mechanisms such as Negotiation, Mediation, Conciliation, Adjudication, Arbitration, and Litigation are adopted in construction contracts. This study aims to analyze the effectiveness and practical applicability of different dispute resolution mechanisms adopted in construction contracts. The research is based on a combination of primary data collected from construction professionals through structured questionnaires and interaction with industry's stakeholders, literature review. The finding highlights the preference, advantages, effectiveness of commonly used dispute resolution mechanisms while resolving construction related disputes. The study further identifies the key factors that approached for selection of dispute resolution mechanisms and evaluate their effect on the time, cost and relation management. This research analyzes the awareness and practical challenges faced by industry professionals while implementing dispute resolution clauses within the construction contract. The study offers a comparative understanding of formal and informal dispute resolution mechanisms, assessing the stakeholders for adopting evidence - based decision during contract formulation and dispute management. The outcomes of this research provide valuable insights for contractors, clients, engineers, consultants to select proper dispute resolution mechanisms, there by contributing to improved contract clauses and dispute management in construction projects.

Keywords: Construction Management, Construction Contracts, Dispute Resolution Mechanisms, Construction Project Management, Conflict Management in Construction.

1. Introduction

1.1 Background of the construction industry.

The construction industry plays a very important role in economic development by contributing to infrastructure creation, job creation, and overall societal growth. It involves coordination of various activities, technologies and stakeholders such as clients, contractors, consultants, suppliers and regular authorities. As a project-based industry, it involves considerable uncertainty, technical complexity and close interdependence among various participants. Construction projects are typically operating under strict contractual frame works that define project's scope, time, cost and quality standards. However, factors like design changes, delay in payment, delay in completion, resources constraints, contractual ambiguities and external influences always disturb planned project execution. These challenges increase the chance of disagreement among stakeholders, making disputes a common occurrence in construction projects. As modern construction projects grown in scale and complexity, the need for effective management and well-structured contracts has become critical. Therefore, understanding the origins of dispute and the mechanisms for their resolution plays a key role in improving project outcomes while minimizing delays, cost escalation and improving the relationship management with stakeholders.

1.2 Construction Dispute

Construction dispute commonly arises from issues such as variation in scope, delays, payment related conflict, design variation, unforeseen site condition and ambiguity in contract clauses. These challenges are always escalated by poor communication, insufficient coordination among stakeholders and inadequate contract administration practices. Dispute may occur at any stage of construction life cycle and, if not addressed in a timely and structured manner, can led to cost overruns, schedule delays, reduced productivity and weakening of professional relationship.

1.3 Need for effective dispute resolution mechanisms

Since disputes are unavoidable in construction projects, their impact can be mitigated through efficient resolution mechanisms. Traditional litigation is often time consuming, costly and competitive, which can further strain the stakeholder's relationship and delay project progress. Advanced resolution mechanisms such as Negotiation, Mediation, Conciliation, Adjudication, and Arbitration offer faster, more flexible and less challenging solution. Implementing appropriate dispute resolution mechanisms will ensure the conflicts are addressed promptly, minimizing project delays, controlling cost, and preserving professional's relationships. A clear understanding and adoption of dispute resolution mechanisms are essential for enhancing project performance, maintain contractual compliance, and promoting collaboration among stakeholders.

1.4 Research Gap

Even though the availability of various dispute resolution mechanisms in construction contracts, their practical effectiveness and selection inconsistent across projects. Existing studies primarily focuses on individual dispute resolution methods or theoretical frame works with limited focus on their comparatively application and real-world effectiveness with construction projects. Moreover, there is a lack of empirical research examining how construction professional considers and utilize different dispute resolution mechanisms in practice. This gap highlights the need for a structured analysis of dispute resolution mechanisms to evaluate their sustainability, effectiveness and impact on project performance.

2. Objectives of the study

The primary objectives of the study are as follows

- To identify the commonly used dispute resolution mechanisms in construction contracts.
- To examine the causes of nature of dispute arising in construction projects.
- To analyze and compare the effectiveness of various dispute resolution mechanisms adopted in construction industry.

- To evaluate the construction professional's understanding of the suitability of different dispute resolution mechanisms.
- To provide insights that support evidence-based decision making in selection of appropriate dispute resolution mechanisms for construction projects.

3. Literature Review

Amila N K K Gamage (2024) studies the various Alternative Dispute Resolution (ADR) methods used in construction projects, including Negotiation, Mediation, Conciliation, Adjudication, Arbitration, and Litigation. It evaluates the advantages, limitations, and applicability of each method compared to traditional litigation. The study concludes that ADR methods are generally time-efficient, cost-effective, and collaborative, helping preserve professional relationships while resolving disputes. However, the selection of an appropriate ADR mechanism depends on project type, dispute complexity, and stakeholder preferences.

Omar K Sabri (2025) examines the role of strategic Negotiation in resolving construction dispute, focusing on overcoming power imbalances and enhancing outcomes through structured Negotiation approaches. The research highlights that well planned Negotiation will enable parties to reach mutual acceptable solutions, reduce the conflicts, and prevents disagreement between parties. This study conclude that structured Negotiation not only improves the efficiency and effectiveness of dispute resolution but also empowers weaker stakeholders, promoting fairer outcomes.

Yu Zhang (2025) investigates dispute resolution mechanisms for construction contract disputes within the framework of civil and commercial laws. It reviews how contractual provision and legal regulations influences the construction contracts enhances the enforceability and predictability of dispute resolution outcomes, while also promoting fairness and efficiency. However, it notes that practical implementation often varies depending on the parties, understanding of the law, complexity of dispute and project specific factors.

Osifo et. al. (2025) examines the role of contract management in mitigating risks, resolving disputes and enforcing performance in construction projects. The study highlights that effective contract management through clear contract drafting, proper risk allocation, timely documentation and consistent administration significantly reduces the occurrence of dispute. The study concludes that proactive contract management supports early dispute identification and encourages the use of appropriate dispute resolution mechanisms before conflicts escalate into formal legal proceedings.

Amlogu (2025) examines the role of arbitration as a dispute resolution mechanism in construction contracts. The authors discuss arbitration's procedural framework, enforceability and suitability for resolving complex construction disputes. The study concludes that arbitration offers, advantages such as confidentiality, technical expertise of arbitrators and binding decisions, it also highlights the limitations, including high costs, procedural delays, and reduced flexibility in certain cases. The findings suggest that while arbitration is effective for resolving high valve projects and technically complex disputes, its suitability depends on dispute characteristics and contractual provisions, indicating the need for careful selection of dispute resolution mechanisms in construction projects.

4. Methodology

This study adopts a descriptive and analytical research methodology to examine dispute resolution mechanisms in construction contracts. The research is designed to capture the perspective of construction industry stakeholders regarding the causes of dispute and the effectiveness of various dispute resolution approaches. These are the main stages for conducting this study.

- Problem identification
- Objective formulation
- Literature review
- Questionnaire design
- Data collection and Analysis
- Result
- Conclusion and recommendation.

Designing and collecting data through a questionnaires survey

This study is based on both primary and secondary data sources. Primary data were collected through a structured questionnaires survey conducted among construction industry stakeholders. Approximately 40 questions were designed and compiled using Google forms to capture respondents' perspective on construction dispute and dispute resolution mechanisms. The questionnaire was distributed digitally through platforms such as emails and what's app to ensure wider reach and ease of response. The responses received from the construction professionals formed the basis for analyzing prevailing dispute resolution practices and perceptions within the construction industry. The use of digital platforms facilitated efficient data collection from stakeholders with relevant industry experience. Secondary data were collected exclusively from existing literature related to construction disputes and dispute resolution mechanisms. These sources were used to established a theoretical foundation and support the analysis of primary data.

Data collection

We have forwarded the structured questionnaires to 78 construction stakeholders such as clients, contractors, consultants, engineers and legal authorities. However, we have received responses from 45 members regarding dispute resolution in construction industry. Out of 45, 25% are clients, 9% are contractors, 53% are engineers, 13% are consultants.

Response types

The structured questionnaires are further classified based on the type of responses such as follows

- **Type 1 – Agreement based rating scale**

Each statement in these questions was evaluated using three-point Likert scale where Reponses are like Agree (1), not sure (2), Disagree (3).

- **Type 2 – Binary responses**

Each statement in these questions was evaluated using either "Yes" or "No".

- **Type 3 – Comparative ratio of dispute resolution methods**

Each statement in these questions was evaluated based on stakeholders' experience with dispute resolution mechanisms such as follows

Negotiation – "N", Mediation – "M", Conciliation – "C", Adjudication – "Adj", Arbitration – "Arb", Litigation – "L".

- **Type 4 – Experienced based or open-ended responses**

Each statement in these questions was evaluated using stakeholders experienced based responses.

Table 1: Agreement based questionnaires statements

Q No.	Questions
1	Are you satisfied with contracts management in general? If the answer is no, kindly be specific.
2	Do you think fast-track arbitration (time-bound) should be mandatory in construction disputes?
3	Do you think most disputes are avoidable?
4	Do you think involving contractors early in design stages reduces disputes?
5	Do you believe dispute resolution delays affect project completion significantly?
6	Do you believe formal dispute resolution affects long-term contractor relationships negatively?
7	Would you prefer inserting tiered dispute resolution clauses (Arbitration / Mediation / Adjudication / Litigation / Conciliation / Negotiation) in contracts?
8	Do you believe that allocating specific budgets for potential dispute resolution during project planning will be better for?
9	Do you think engineers' recommendations are respected in dispute resolution proceedings?
10	Do you think India's arbitration framework is aligned with global best practices like JCT and FIDIC?
11	Do you think early technical intervention could prevent disputes?
12	Should contracts have mandatory mediation before arbitration/litigation?
13	Would digital tools (online dispute resolution platforms) speed up the process?
14	Should independently dispute boards be mandatory for large projects?

Table 2: Yes/No questionnaires statements

Q No.	Questions
15	Should Dispute Review Boards (DRBs) include independent engineers for technical clarity?
16	Have disputes in your projects led to contract termination? (Yes / No) If yes, what was the main reason for termination?
17	Have you faced disputes related to technical design or approval delays?

Table 3: Preference based selection of dispute resolution mechanisms

Q No.	Questions
18	Which dispute resolution mechanisms have you been involved in?
19	Which mechanism would you suggest for dispute resolution in construction?
20	Which mechanism is Fastest in your experience?
21	Which mechanism is Slowest in your experience?
22	Which dispute resolution process provides the most enforceable outcomes?

Table 4: Experience based/Open ended questionnaires statements

Q No.	Questions
23	In your experience, which party initiates disputes more often?

24	What percentage of disputes in your experience are settled before reaching arbitration / Litigation?
25	Which of the following are the most common causes of disputes?
26	Which factor, generally influences, the choice of dispute resolution mechanism?
27	When disputes occur, do you usually claim for time extension, cost compensation, or both?
28	What is the biggest challenge for contractors during dispute resolution?
29	Whether your project is affected with escalation? (Yes or No) If yes, kindly specify the percentage increase with respect to the estimation.
30	Whether the client has done the full payment for the escalation?
31	What is the most challenging part of resolving a construction dispute?
32	What is the biggest barrier to quick resolution?
33	Which clause in contracts creates maximum ambiguity during disputes?
34	Average time for dispute resolution in your experience:
35	In your experience, do unclear contract clauses contribute to most disputes?
36	What reforms would you recommend in the Indian construction dispute resolution system?
37	Share one lesson learned from your own dispute resolution experience.
38	What steps can be taken to prevent disputes in construction projects?
39	What changes in contract drafting would you recommend to reduce disputes?
40	Any additional comments or recommendations?

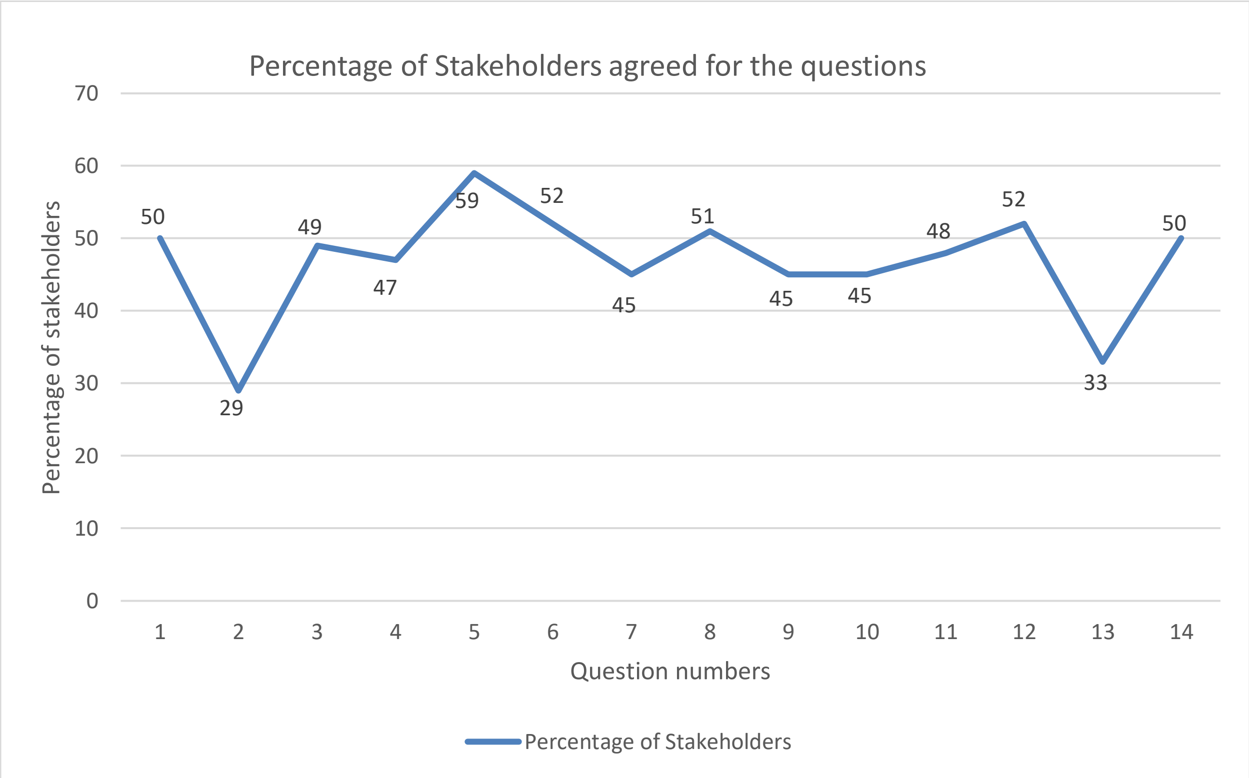
5. Result and Analysis

Table 5: Result analysis for Agreement based questionnaires

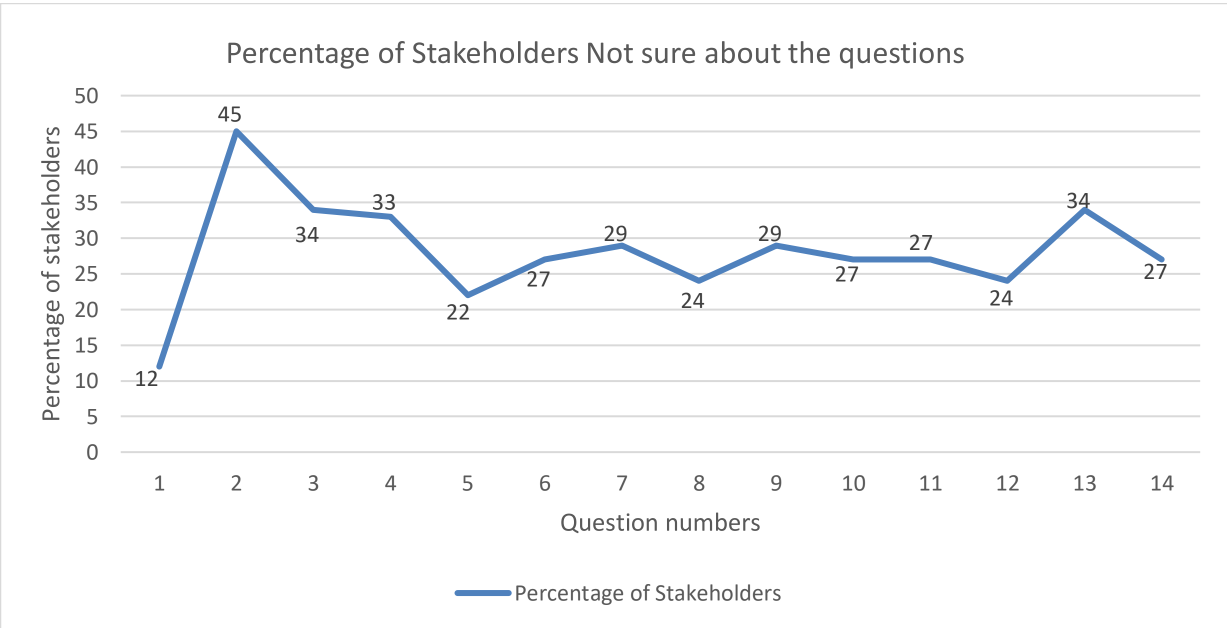
Q No	**% of stakeholders said 1 (Agree)**	**% of stakeholders said 2 (Not sure)**	**% of stakeholders said 3 (Disagree)**
1	50	12	38
2	29	45	26
3	49	34	17
4	47	33	20
5	59	22	19
6	52	27	21
7	45	29	26
8	51	24	25
9	45	29	26
10	45	27	28
11	48	27	25
12	52	24	24
13	33	34	33

14	50	27	23

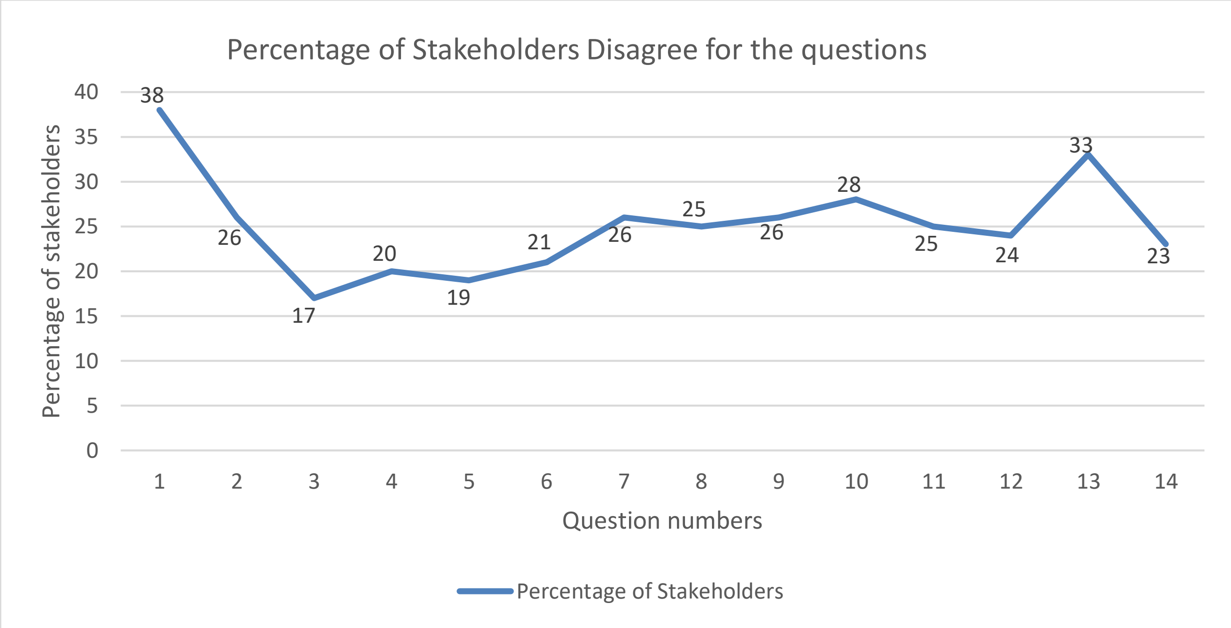
Graph 1: Representation of percentage of stakeholders agreed for the questionnaires



Graph 2: Representation of percentage of stakeholders not sure about the questionnaires



Graph 3: Representation of percentage of stakeholders disagreed for the questionnaires



Graph 4: Representation of percentage of stakeholders agreed, not sure and disagreed for the questionnaires

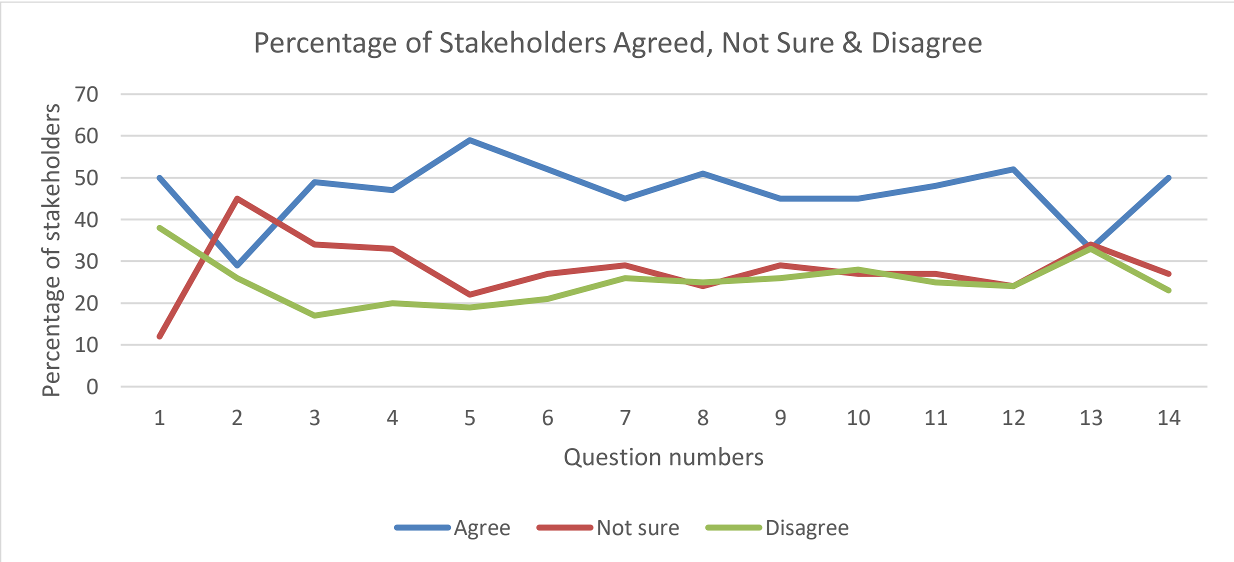


Table 6: Result analysis for Yes/No based questionnaires

Q No	% of stakeholders said "Yes"	% of stakeholders said "No"
15	60	40
16	98	2
17	56	44

Graph 5: Representation of percentage of stake holders said Yes/No for the questionnaires

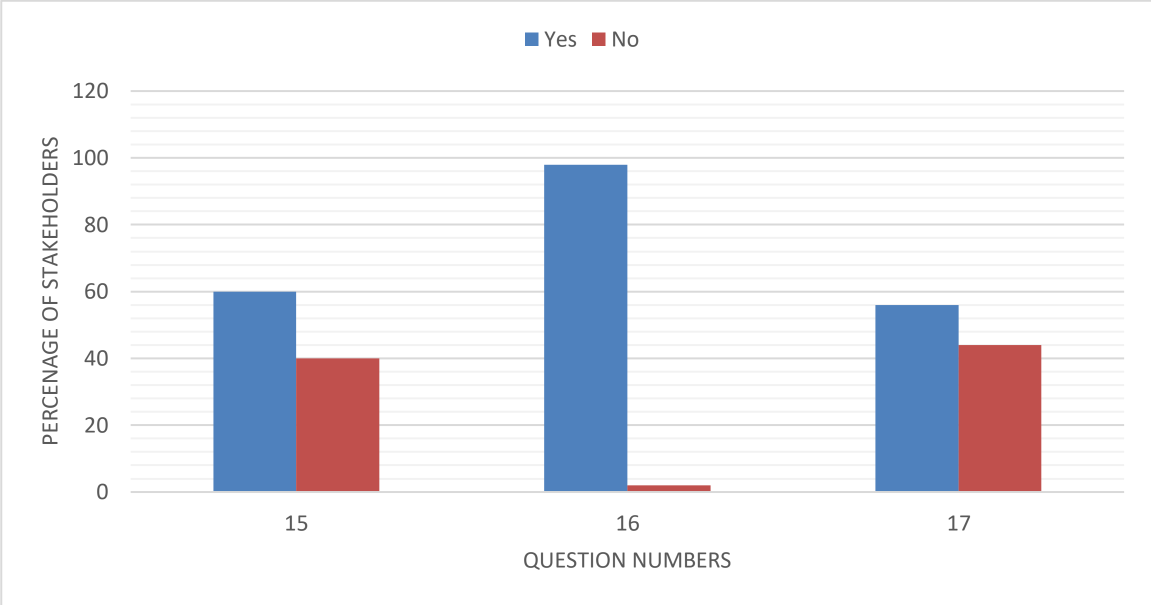
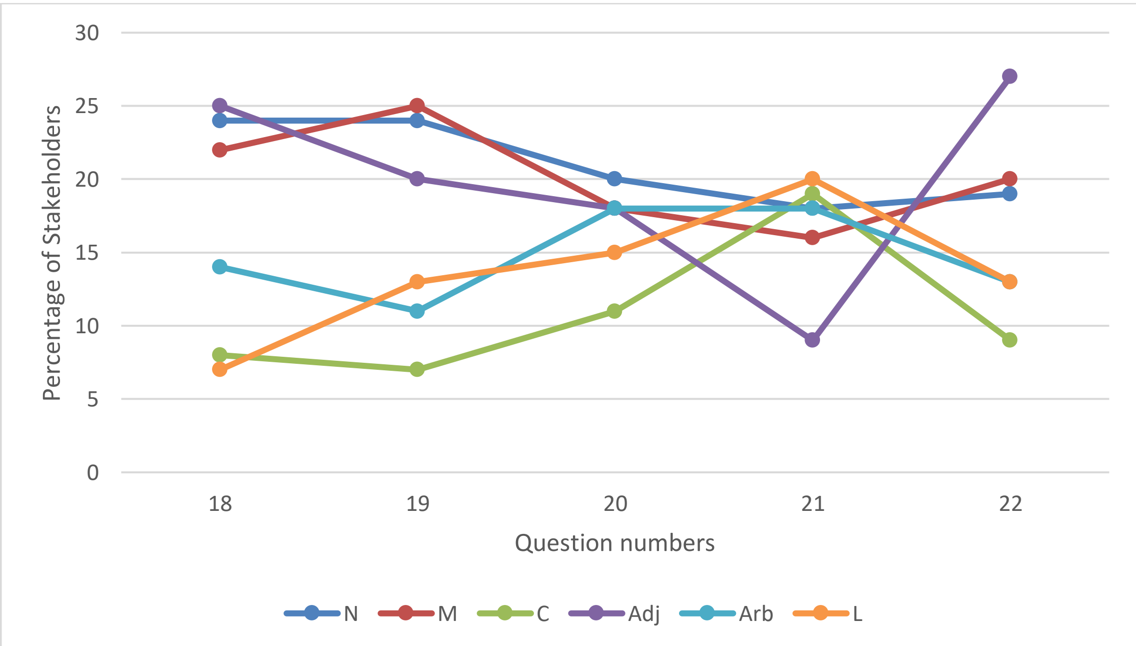


Table 7: Result analysis for comparative ratio of dispute resolution methods

Q No	% of stakeholders said					
	Negotiation (N)	Mediation (M)	Conciliation (C)	Adjudication (Adj)	Arbitration (Arb)	Litigation (L)
18	24	22	8	25	14	7
19	24	25	7	20	11	13
20	20	18	11	18	18	15
21	18	16	19	9	18	20
22	18	20	9	27	13	13

Graph 6: Representation of percentage of stakeholders said Yes/No for the questionnaires



6. Conclusion and Recommendation

This study was based on a questionnaires survey conducted among approximately 78 construction related organizations, of which 45 stakeholders provided valid responses to it. In those 45 stakeholders, 24% are clients, 9% are contractors, 53% are engineers, and remaining 14% are consultant, offering a balanced representation of key participants in construction projects. The collected data were analyzed using four categories of responses. Whereas follows,

6.1 Agreement based rating scale

- Half of the stakeholders are satisfied with current contract management, while 38% were dissatisfied and remaining 12% are unsure.
- Only 29% of stakeholders supported making fast-track arbitration mandatory, while 26% opposed it and the majority remained unsure
- Almost half of the stakeholders agreed that most of the disputes are avoidable, while 34% were insure and 17% are disagreed
- 47% of the stakeholders believed that early contractor involvement during the design stages reduces the disputes in future, while 33% were unsure and 20% disagreed to involve the contractors.
- A majority of stakeholders 59% believed that dispute resolution significantly delays project completion, while 22% were unsure and 19% disagreed.
- More than half of the stakeholders 52% believed that formal dispute resolution negatively affects long term contractual relationships, while 21% disagreed and 27% were unsure
- Nearly half of the stakeholders 49% preferred attaching tiered dispute resolution clauses into construction contracts, while 26% are disagreed and 25% were unsure.
- More than half of the stakeholder supported for allocating a dedicated dispute resolution budget would help for future dispute management, while 25% are disagreed and 24% were unsure.
- Less than half of the stakeholders 45% believed that engineers' recommendations are respected during dispute resolution proceedings, 26% disagreed and 29% were unsure.
- Nearly half of the stakeholders 45% believed that India's arbitration framework is aligned with global best practices such as JCT and FIDIC.
- Almost half of the stakeholders48% believed that purely technical interventions alone cannot effectively prevent disputes, while 25% disagreed and 27% were unsure.
- A majority of stakeholders 52% opposed making mediation mandatory before arbitration or litigation, while 24% disagreed and 24% were unsure.
- 33% of the stakeholders would believe that using online dispute resolution platforms will speed up the process, an equal proportion disagreed for same, and 34% were unsure.
- Half of the stakeholders supported the mandatory involvement of independent dispute boards in large projects, while 23 % disagreed and 27% were unsure.

6.2 Binary responses (Yes/No)

- 60% A majority of stakeholders 60% supported the inclusion of independent engineers in dispute review board to enhance technical clarity, while the remaining respondents opposed it.
- An excessive majority of stakeholder 98% reported that dispute in their project did not lead to termination, while only small proportion indicated termination due to disputes.
- More than half of the stakeholder 56% reported experiencing disputes related to technical design or approval delays, while 44% did not.

6.3 Dispute resolution methods

- Around 71% of stakeholders (Clients, contractors, consultants) have given equal opinion for adopting Negotiation, Mediation and Adjudication. Few stakeholders have opted for Conciliation, Arbitration and Litigation
- Regarding the preferred dispute resolution mechanisms, 25% of stakeholders suggested mediation, followed by Negotiation 24% and adjudication 20% arbitration 11% litigation 13% and conciliation 7%.
- Based on the stakeholder's experience Negotiation, Mediation, Adjudication and Conciliation are the fastest, while and Arbitration, Litigation and Adjudication are slowest during dispute resolution.
- Majority of stakeholders mentioned that Adjudication, Mediation and Arbitration provide the most enforcement outcomes while dispute resolution process.

6.4 Experienced based or open-ended responses

- From the study, it was found that 42% of the disputes are initiated by the Clients, 49% of the disputes are initiated by the Contractors, 9% of the disputes are initiated by consultants.
- Majority of stakeholders 58% reported that dispute is typically resolved before reaching arbitration, while 40% indicated resolution occurs after formal proceedings.
- The study indicates that payment delays were the primary cause of the disputes, with schedule delays, quality issues, variation in design and scope and poor contract documentation and communication also playing significant roles.
- Cost and speed were the most influential factors during selection of dispute resolution mechanisms among stakeholders.
- When dispute occurred a majority of stakeholders reported claiming both extension of time and cost compensation, while 27% claimed only extension of time and 16% claimed only cost compensation.
- Delayed payments and high legal costs emerged as the primary challenges faced by contractors during dispute resolution.
- All the respondents reported that their projects were affected by price escalation.
- More than half of the stakeholders reported that clients did not compensate for price escalation, while 44% indicated that such compensation was provided.
- Based on the stakeholders' responses contract interpretation and evidence related issues were the primary challenges in resolving construction disputes.
- 34% of the stakeholders identified lack of cooperation among parties as the most significant barrier to quick dispute resolution, 33% followed by poor contract clauses, 23% said procedural complexity, delays in evidence submission as 16% and poor contract management as 14%.
- 29% of the stakeholders identified payment related clauses as the most ambiguous during disputes, 25% of the stakeholders followed by extension of time clauses as the most ambiguous during disputes, 24% of the stakeholders chosen quality clauses as the most ambiguous during disputes, 11% of the stakeholders followed by variation clauses and 7% for termination clauses as the most ambiguous during disputes
- Most of the disputes were resolved within a year, with only small portion extending beyond 2 years.
- A large majority of contractors reported that unclear contract clauses are a major contributor to dispute.

Recommendations

The study highlights the complex nature of dispute in construction projects and the key recognition by the stakeholders regarding their causes, resolution mechanisms, and challenges. The survey, which was conducted among 45 stakeholders represents clients, contractors, engineers, and consultants, revealed that disputes are primarily initiated by contractors and clients, often arising from payment delays, schedule delays, quality issues, variations in scope, and ambiguous contract clauses. While most disputes are resolved before escalating to arbitration or litigation, stakeholders indicated that formal dispute resolution can delay project completion and negatively impact long term contractual relationships. Tiered dispute resolution clauses, early involvement of contractors, dedicated budget for dispute resolution, and the inclusion of independent engineers in dispute boards were identified as measure that could enhance dispute management. Additionally, stakeholders emphasized cost, speed, confidentiality and relationship preservation as key factors in choosing dispute resolution mechanisms. Based on these finding, the study recommends that construction projects should have followings:

- Incorporate clear, unambiguous contract clauses, especially related to payment, quality, and extension of time, to minimize potential disputes.
- Implement tiered dispute resolution mechanisms such as Negotiation, Mediation, Conciliation, Adjudication, Arbitration, and Litigation in contracts to ensure efficient and structures resolution.
- Involvement of contractors in early stages, particularly during design, to reduce conflicts and improve collaboration.
- Allocate a specific budget for potential dispute resolution to prevent delays and ensure timely management of conflicts.
- Enhance stakeholders' cooperation and communication to overcome procedural complexities and evidentiary challenges during dispute resolution.
- Utilize independent dispute boards and independent engineers for technical clarity, particularly in large scale projects.
- Encourage adoption of digital dispute resolution platforms to potentially improve speed and transparency in resolving dispute.
- Monitor and address project related risks such escalation proactively to reduce financial disputes.

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