

INVESTIGATION OF THE OCCURRENCE AND RESOLUTION OF CONTRACT DISPUTES IN THE CONSTRUCTION INDUSTRY: A CASE STUDY IN SRI LANKA

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Graphical abstract



Abstract

The construction industry is highly dynamic and involves multiple stakeholders, often leading to disagreements and disputes during project execution. Such disputes negatively affect project performance, timelines, and cost. This study investigates the occurrence, causes, and resolution of contract disputes in the Sri Lankan construction industry and identifies effective strategies to prevent them. A total of 68 responses were collected from professionals, including 32 well-experienced adjudicators, through a questionnaire survey. The data were analyzed using the Relative Importance Index (RII) to rank major causes, assess familiarity and effectiveness of resolution methods, and evaluate the importance and ease of applying prevention strategies. Bivariate correlation analysis using SPSS was also conducted to identify relationships between familiarity and effectiveness of dispute resolution methods, and between importance and ease of application of dispute prevention strategies. The results revealed that design, contractor, and contract-related factors are the main causes of disputes. Adjudication, negotiation, and arbitration were identified as the most familiar and effective methods, while litigation was the least preferred due to its lengthy process. For prevention, clear contract documentation, regular communication, and contract administration training were found to be most important. Overall, effective communication, well-defined contracts, and greater awareness of resolution methods can minimize disputes and ensure smoother project delivery.

Keywords: Construction Disputes, Dispute Causes, Dispute Resolution Methods, Dispute Prevention Strategies

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1.0 INTRODUCTION

The construction industry is widely recognized as one of the most complex industries and is highly susceptible to disputes due to its multi-party nature, long project durations, changing site conditions, high financial commitments, and involvement of diverse professionals with different responsibilities and expectations (El-sayegh *et al.*, 2020). Even when standard contract forms are used, disputes still occur frequently because the practical management of construction work involves uncertainties, variations, and communication challenges

(Jayasena and Kavinda, 2012). In Sri Lanka, widely used standard contract frameworks such as ICTAD and FIDIC provide structured guidelines to define scope, responsibilities, risk allocation, and procedures for handling claims and disputes (CIDA, 2017), (FIDIC, 2017). However, disputes continue to arise due to both contractual weaknesses and real project execution problems. Proper contract documentation plays a critical role in ensuring clarity and accountability among project parties, but misinterpretation and poor contract administration can still lead to disputes (Gunawardena, 2003). A dispute is generally defined as an assertion of opposing views or

disagreement regarding rights, and in construction, this is often triggered by contract violations, delays, cost issues, payment-related conflicts, and unclear risk allocation (Kukoyi, Adedirefumilayo and Oyewunmi, 2024).

The construction disputes may have a great impact on the performance of a project, as it can raise the cost of conducting the project, the time aspect and the long-term working relationship between the professionals (Gamage and Kumar, 2024). Unnoticed and unaddressed disputes might eventually transform into claims or even legal proceedings, which adversely impact project success (Hettiarachchi, Wijesinghe and Perera, 2023). Even though the problem of construction disputes is worldwide, the developing countries are more affected by the fact that the systems of managing the disputes and methods of enforcing contracts are more restricted. Contract management is still very expensive and common in construction, despite the advancement of contract management methods and technology (Cheung and Yiu, 2006). In Sri Lanka, conflicts usually lead to delays in schedule, budget, and breakdown of relationships of the project participants (Love *et al.*, 2008), (Cheung and Yiu, 2006), (Kummaraswamy, 1997). The greatest problem lies in the fact that most construction organizations do not have effective mechanisms to spot and resolve conflicts early enough before they can escalate to large-scale disputes (Mitropoulos and Howell, 2001). Moreover, court proceedings as an option to resolve a dispute are also not taken, as it is time-consuming, costly, and make parties more hostile towards one another (Gould, 2004).

There exist various types of disputes in construction. The most prevalent of these are contractual disputes, which are a result of ambiguous or breached contracts; technical disputes, which are a result of errors in design or issues with the modes of building; and behavioral disputes, a result of poor communication or adverse working relations (El-sayegh *et al.*, 2020). There are disputes referred to as speculative, meaning that they are a result of misunderstanding or ambiguity of expectations, instead of errors (Francis *et al.*, 2025). Typically, the principal parties to these disagreements are the client (the party paying for the work), the contractor (the party that does the building), and the consultant (the party designing or managing the work). For instance, a client could keep changing his/her mind too frequently, prompting delays. A contractor could delay completion or work with substandard materials, and a consultant could make errors in the drawings or not control the work effectively (Alshahrani, 2017), (Waheed and Obasanjo, 2024).

Considering these issues, this study focuses on investigating the occurrence of contract disputes in Sri Lankan construction projects by identifying the major causes, examining the dispute resolution methods practiced in the industry, and evaluating practical dispute prevention strategies. The findings aim to support improved contract administration, better communication, and effective dispute management to enhance overall project delivery and minimize unnecessary project disruptions.

1.1 Common Causes of Contract Disputes in Construction

The primary cause of contract disputes in construction projects is that of changes and uncertainty during project implementation. Conflicts usually arise when the scope of the

project is varied, the project is lagging behind schedule, when the terms of the contract are not clear and when there is failure to pay the contractor in a timely. These problems lead to conflict of parties in terms of responsibility, entitlement, and financial compensation. Moreover, design-related issues like design change and incomplete information may give rise to a variation claim and time extension claim which later evolve to a contract dispute (1996; Gunawardena, 2006).

Research done by (Edirisinghe *et al.*, 2020) have highlighted that design issues and problems associated with the contract documentation are the most prominent contributors to conflict in the construction projects in Sri Lanka. Delays caused by contractors and payment related to clients were also found to be significant contributors to delays. Thus, to address the problem of contract conflicts in the construction industry, it is necessary to enhance design coordination, decrease the ambiguity of contract documents and ensure the project decisions and payments are timely (Kukoyi, Adedirefumilayo and Oyewunmi, 2024).

1.2 Dispute Resolution and Prevention in Construction

Dispute resolution methods in construction include both informal and formal approaches. Negotiation is widely used because it is flexible and helps to settle disputes quickly without harming relationships. Adjudication and arbitration are also important methods, especially when a third-party decision is required. Litigation is generally considered the least suitable method in construction because it is time-consuming and costly (Gould, 2004).

Preventing disputes is more effective than resolving them after escalation. Clear and detailed contract documentation is essential to reduce misunderstandings and strengthen contract administration. Regular communication and meetings also help to resolve issues early and avoid conflicts from developing into formal disputes. Training on contract administration and early involvement of key stakeholders further supports dispute prevention by improving coordination and reducing avoidable claims (Liyanawatta, Abenayake and Sumanarathna, 2023).

2.0 METHODOLOGY

2.1 Data Collection

This research adopted a quantitative questionnaire-based approach to investigate the occurrence of contract disputes in the Sri Lankan construction industry and to evaluate suitable dispute resolution methods and dispute prevention strategies. A structured questionnaire survey was used as the main data collection technique, and all questionnaire items were measured using a five-point Likert scale to obtain consistent responses from construction professionals. A total of 68 valid responses were received for the overall study. In addition, 32 experienced adjudicators registered under the Construction Industry Development Authority (CIDA) were considered as a specialized group to provide more reliable judgments on dispute resolution methods and dispute prevention strategies, since they are directly involved in dispute handling and decision-making processes.

2.2 Questionnaire Development

The questionnaire content was developed based on past research findings and published literature related to construction disputes. The categories of dispute causes were mainly adopted from the study by (Malkanathi and Buraitha, 2023), where dispute-causing factors were classified into seven main categories, namely client-related factors, contractor-related factors, design-related factors, contract-related factors, human behaviour-related factors, project-related factors, and external factors. These categories were used in this study to ensure that the dispute causes considered are relevant to the Sri Lankan construction industry context. A literature review was conducted to identify commonly used dispute resolution approaches and proactive dispute prevention techniques practiced in construction projects. In addition, expert interviews and discussions were carried out with selected CIDA-registered adjudicators to confirm the suitability of these methods and strategies for the Sri Lankan construction industry context. Accordingly, six dispute resolution methods and six dispute prevention strategies were finalized for evaluation. These methods and strategies were included in the questionnaire and assessed by respondents based on their professional experience and observations in Sri Lankan construction projects.

2.3 Data Analysis

The collected data were analyzed using the Relative Importance Index method to rank the most significant dispute causes, the familiarity and effectiveness of dispute resolution methods, and the importance and ease of application of dispute prevention strategies. The Relative Importance Index was calculated using the following equation.

$$RII = \sum a \times \frac{n}{N} \quad (1)$$

Where, RII - Relative Importance Index, a - Constant expression weight (1 to 5 based on a five-point Likert Scale), n - Frequency of response N - Total number of responses.

In addition to ranking, correlation analysis was carried out using SPSS Spearman correlation to identify relationships between familiarity and effectiveness of dispute resolution methods and the relationship between importance and ease of application of prevention strategies. Reliability analysis was also conducted using Cronbach's alpha to confirm the internal consistency of the questionnaire data and to ensure that the findings were acceptable for interpretation and discussion.

3.0 RESULTS AND DISCUSSION

3.1 Background of the Respondents

The level of experience of the respondents in contract administration was analyzed to ensure the reliability of the survey findings. As shown in Figure 1, most respondents had more than five years of experience in contract administration,

representing 41 out of 68 responses. This confirms that the survey data mainly reflect the views of professionals with strong exposure to contract related activities and dispute handling in construction projects.

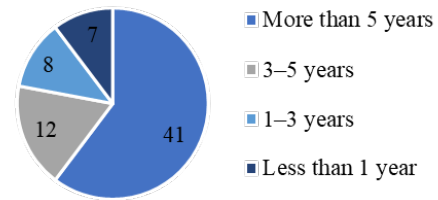


Figure 1 Years of Experience in Contract Administration

The respondents' areas of work were also analyzed to understand the relevance of the sample. As shown in Figure 2, most respondents were involved in contract administration and claims, followed by project management. Other respondents represented legal and dispute resolution, site supervision, procurement and commercial work, planning, design engineering, and quantity surveying, indicating that the survey captured views from a diverse range of construction professionals.

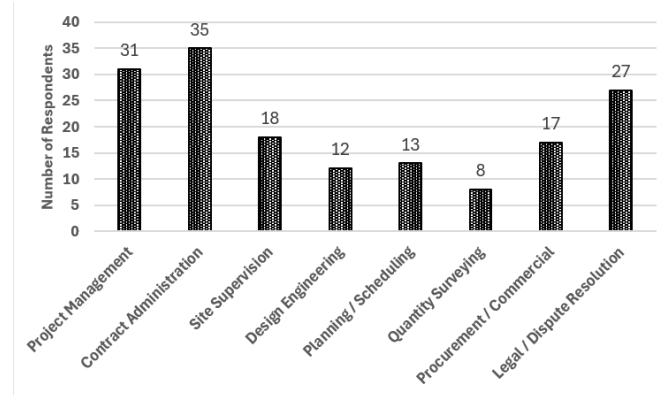


Figure 1 Area of Work of Respondents

3.2 Consistency of Survey Data

The internal consistency of the collected responses was first calculated using SPSS and the results are shown in Table 1.

Table 1 Reliability Statistics of Questionnaire

Reliability Statistics	
Cronbach's Alpha	N of Items
0.928	58

A value of Cronbach alpha of more than 0.7 is usually regarded as a satisfactory level of reliability for research (Nunnally and Bernstein, 1994).

3.3 Causes of Disputes

The Relative Importance Index (RII) method was used to rank the main categories of dispute causes based on respondents'

feedback. The category-wise RII results are shown in Table 2. The analysis shows that design-related factors are the most significant causes of disputes.

Table 2 Causes of Disputes Based on RII Values

Categories	ID	Causes	RII value	Rank	Average RII
Client-related factors (A)	A1	Variations initiated by the client	3.66	17	3.61
	A2	Change of Scope	4.03	1	
	A3	Client delays in handing over the site to the contractor	3.40	31	
	A4	Client requesting the contractor to complete work faster than planned	3.24	34	
	A5	Unrealistic expectations about project timeline, cost, or quality	3.44	28	
	A6	Payment delays to the contractor	3.91	5	
Contractor-related factors (B)	B1	Delays in work progress	4.03	1	3.71
	B2	Time extensions	3.85	10	
	B3	Contractor has financial problems	3.82	12	
	B4	Technical inadequacy of the contractor	3.50	24	
	B5	Quality of works	3.56	21	
	B6	Contractor lacks skilled workers / modern technology	3.50	24	
Design-related factors (C)	C1	Design errors	3.91	5	3.83
	C2	Design changes	3.94	4	
	C3	Poor design quality	3.62	18	
	C4	Inadequate / incomplete specifications	3.87	9	
Contract-related factors (D)	D1	Ambiguities in contract documents	3.97	3	3.69
	D2	Parties understand the contract clauses differently	3.76	14	
	D3	Cost overrun	3.72	16	
	D4	Multiple prime contracting parties	3.40	31	
	D5	Poor distribution of project risks between parties	3.60	20	
Human Behavior-related factors (E)	E1	Lack of communication	3.91	5	3.69
	E2	Lack of team spirit	3.47	27	
	E3	Misunderstanding among participants	3.56	21	
	E4	Uncooperative/argumentative working culture	3.75	15	
	E5	Unfair behavior	3.78	13	
Project-related factors (F)	F1	Poor Site conditions	3.43	29	3.65
	F2	Unforeseen changes	3.88	8	
External Factors (G)	G1	Weather and environmental issues	3.84	11	3.53
	G2	Poor coordination in the construction industry	3.43	29	
	G3	Political pressure / interference in the project	3.50	24	
	G4	Effect from the society and culture	3.31	33	
	G5	Natural disasters (Floods, earthquakes, etc.)	3.51	23	
	G6	Legal and economic factors	3.62	18	

3.4 Dispute Resolution Methods

Table 3 shows the RII values for both familiarity (F) and effectiveness (E) of dispute resolution methods. The results

indicate that adjudication recorded the highest RII value for familiarity, while negotiation recorded the highest RII value for effectiveness.

Table 3 Familiarity and Effectiveness of Dispute Resolution Methods (RII Ranking)

Method	RII value (Familiarity)	RII value (Effectiveness)
Negotiation (M1)	4.03	4.03
Mediation (M2)	3.47	3.72
Arbitration (M3)	3.94	3.91
Adjudication (M4)	4.25	3.75
Litigation (M5)	3.06	3.00
Dispute Review Boards (DRB) (M6)	3.53	3.41

Based on the SPSS bivariate correlation analysis, the relationship between familiarity (F) and effectiveness (E) of

dispute resolution methods was examined using Spearman correlation. The results show that negotiation, mediation, and dispute review boards have a strong positive and significant relationship with correlation values above 0.6, indicating that methods which are more familiar to professionals are also perceived as more effective. Adjudication shows a moderate positive and significant relationship, reflecting a reasonable association between familiarity and effectiveness. In contrast, arbitration and litigation show weak and statistically insignificant relationships, suggesting that these methods are not strongly influenced by familiarity in terms of perceived effectiveness, as presented in Table 4.

Table 4 Correlation Between Familiarity and Effectiveness of Dispute Resolution Methods

		E_M1	E_M2	E_M3	E_M4	E_M5	E_M6
F_M1	Correlation Coefficient	.621**	.532**	-.349*	-0.125	-0.060	0.169
	Sig. (2-tailed)	0.000	0.002	0.050	0.495	0.746	0.356
	N	32	32	32	32	32	32
F_M2	Correlation Coefficient	.392*	.627**	-0.100	0.056	-0.028	0.170
	Sig. (2-tailed)	0.027	0.000	0.588	0.761	0.881	0.352
	N	32	32	32	32	32	32
F_M3	Correlation Coefficient	0.078	0.296	0.116	0.106	0.189	0.160
	Sig. (2-tailed)	0.672	0.100	0.528	0.562	0.301	0.382
	N	32	32	32	32	32	32
F_M4	Correlation Coefficient	-0.169	0.039	0.227	.398*	0.187	0.067
	Sig. (2-tailed)	0.356	0.831	0.212	0.024	0.305	0.716
	N	32	32	32	32	32	32
F_M5	Correlation Coefficient	0.261	.398*	0.152	0.135	0.187	0.040
	Sig. (2-tailed)	0.148	0.024	0.407	0.461	0.305	0.827
	N	32	32	32	32	32	32
F_M6	Correlation Coefficient	-0.099	0.152	0.147	0.183	0.065	.687**
	Sig. (2-tailed)	0.590	0.405	0.421	0.315	0.723	0.000
	N	32	32	32	32	32	32

** . Correlation is significant at the 0.01 level (2-tailed).

3.5 Dispute Prevention Strategies

Table 5 shows the RII values for both importance (I) and ease of application (E) of dispute prevention strategies. The results indicate that clear and detailed contract documentation was ranked as the most important strategy, while regular communication and meetings was ranked as the easiest strategy to apply.

Based on the SPSS bivariate correlation analysis, regular communication and meetings shows a strong positive and significant relationship between importance and ease of application, indicating that it is both important and easy to implement. Other strategies show moderate positive significant relationships, while use of BIM shows a weak and statistically insignificant relationship, suggesting it is important but difficult to apply in practice, as shown in Table 6.

Table 5 Importance and Ease of Application of Dispute Prevention Strategies (RII values)

Strategies	(Importance)	(Ease of application)
Clear and detailed contract documentation (S1)	4.72	4.41
Early stakeholder involvement (S2)	4.19	3.97
Regular communication and meetings (S3)	4.47	4.06
Training on contract administration (S4)	4.28	3.88
Use of Building Information Modeling (BIM) (S5)	3.53	3.09
Inclusion of Dispute Review Boards (DRBs) at project start (S6)	4.00	3.78

Table 6 Correlation Between Importance and Ease of Application of Dispute Prevention Strategies

		E_S1	E_S2	E_S3	E_S4	E_S5	E_S6
I_S1	Correlation Coefficient	.435*	0.286	0.330	0.308	0.259	0.205
	Sig. (2-tailed)	0.013	0.112	0.065	0.086	0.152	0.260
	N	32	32	32	32	32	32
I_S2	Correlation Coefficient	0.231	.563**	0.235	0.216	.409*	.398*
	Sig. (2-tailed)	0.204	0.001	0.195	0.235	0.020	0.024
	N	32	32	32	32	32	32
I_S3	Correlation Coefficient	0.339	.437*	.736**	.506**	.379*	0.184
	Sig. (2-tailed)	0.058	0.012	0.000	0.003	0.032	0.313
	N	32	32	32	32	32	32
I_S4	Correlation Coefficient	0.114	-0.033	.468**	.408*	.380*	0.180
	Sig. (2-tailed)	0.533	0.856	0.007	0.020	0.032	0.325
	N	32	32	32	32	32	32
I_S5	Correlation Coefficient	0.261	.371*	0.097	0.012	0.314	0.202
	Sig. (2-tailed)	0.150	0.037	0.598	0.950	0.080	0.269
	N	32	32	32	32	32	32
I_S6	Correlation Coefficient	0.054	0.274	-0.058	-0.037	0.291	.504**
	Sig. (2-tailed)	0.768	0.129	0.752	0.840	0.106	0.003
	N	32	32	32	32	32	32

*. Correlation is significant at the 0.05 level (2-tailed).

4.0 CONCLUSIONS

This paper presents the findings of the conclusion that construction projects in Sri Lanka primarily cause conflicts based on the aspects of the design, especially the scope changes and the delay, and thus, the necessity to coordinate design more effectively and plan in advance. The most well-known and the most commonly used form of dispute resolution is adjudication whereas negotiation is the most effective according to its flexibility and maintenance of professional relationships. Negotiation, mediation and dispute review boards (DRBs) exhibit positive relationships between familiarity and effectiveness which are very strong meaning that they are appropriate in solving construction disputes.

Regarding dispute prevention, the most significant and feasible strategies are found to be clear and detailed documentation of the contract and frequent communications, in terms of dispute reduction. Despite the potential of the approaches to minimize disputes like Building Information Modelling (BIM), they have been applied in limited ways because of their technical or organizational barriers. Generally, the results highlight the relevance of proactive contract management and collaborative practices in enhancing dispute management in the Sri Lankan construction industry.

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Conflicts of Interest

The author(s) declare(s) that there is no conflict of interest regarding the publication of this paper

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